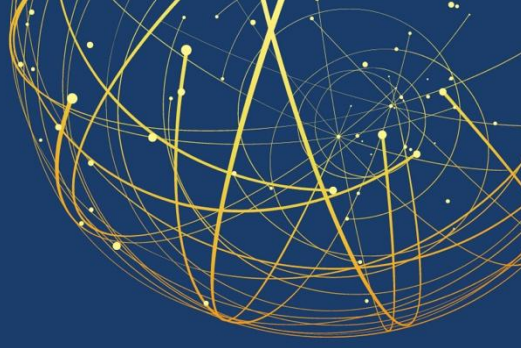

THE INSTITUTIONAL AI SHIFT: CAPITAL, STRATEGY, AND EXECUTION

Hema Parmar 00:00:15

Hello, everyone. Thank you for joining us today. Our panel, I think, is a great one and a fun one. Our panelists are experts in the space. We are going to be digging into AI and the institutional shift, and obviously this is one of the most transformative times in modern history, and we are going to be able to dig into the way our panelists are thinking about AI and implementation risks, what it means for the workforce, and a lot of great topics. So before we begin, there is a QR code where you can scan and send any questions should you have them. It'll go to my iPad here, and I'll be able to see them. So starting with our introduction of our panelists. We have Joerg Ambrosius. He is president of investment services at State Street, which has $54 trillion in assets under custody. Beside him, Charles Holive, chief AI officer of BNP Paribas. We have Alyssa Rieder, CIO of CommonSpirit Health. She oversees more than $40 billion in assets. We have Andy Kreuz on the far right over there, deputy CIO of WorldQuant, and Brian Ruder, co-CEO of Permira, which is a PE fund. So let's dig into it. To frame our conversation, let's start with how each of you are using AI, how you've adapted your firms with specific use cases that you've implemented recently. Joerg, why don't we start with you?

Joerg Ambrosius 00:01:53

Yeah. Good morning, Hema. Good morning, everyone. Pleasure to be here. And obviously, very prominent subject of this week. And you can feel the positive buzz around AI, where now everyone feels we are really seeing the productivity gains that everyone was expecting for a long time. So we have operated with machine learning for more than 10 years, and we've naturally grown into this AI journey. But we are operating this now at scale. Obviously, as a GSIB bank, you're doing this in a strictly regulated space. And it is really, really important that you have a framework in place, that you understand the data and can trace any data point back. So that's where we spent a lot of time over the last years. But now we are really embarking at scale on this AI journey. Agentic is reality these days. So give you a concrete example. We process, on a daily basis, millions of transactions. So you mentioned we custodize more than $56 trillion on behalf of our institutional investors, and there's a lot of volume, a lot of scale that you have to process every day. And one concrete task that we do is reconciliations, where you reconcile between systems if a

transaction has settled or not settled. And for a long time, machine learning has played a key role there, where we have operated with an exception-based process, where only exceptions were then dealt with by staff. Now, with agentic coming into play, we, over the last 18 months, eliminated 10 million manual interactions of human beings that is now being operated by AI. So there are very concrete productivity gains that the industry is seeing, and we are actually very positive that this will have a fundamental shift on how we will operate our business long term.

Hema Parmar 00:04:08

Ten million, this year? Do you think that changed this year?

Joerg Ambrosius 00:04:10

Over the last 18 months.

Hema Parmar 00:04:11

Over the last 18 months.

Joerg Ambrosius 00:04:12

Yeah.

Hema Parmar 00:04:12

Charles?

Charles Holive 00:04:13

Yeah. So first, thanks for having me. Pleasure to be here. So at BNP Paribas, in complement, I think, to what Joerg is saying is the first thing we thought about is how do we set it up. And so my role actually report directly to the chief executing officer, and the idea is to think of AI not just as a cost exercise or cost-cutting exercise, but also as a business opportunity. And so we're organizing that in a way that we augment our workforce with agentic AI, and so we can change the way we deliver value to our customers and clients. The thinking being there's a way to change the unit economic if you can AI-source more work to those agents. And so in that respect, we're spanning across all the business units that we have, including security services or global banking or global markets, but also within IT. So the obvious one would be how we think about agentic coding, which for us is really not just how much code you can produce, but much more important, how much of your AI life cycle you can agentify. So if you produce more code, you can test also more code with agents, and you can run and monitor more code with agents. How we do, let's say, the end-to-end client journey, how we start agentifying our coverage, and how we get our human capital more ready to interact with our customers. And so really thinking of it as a game changer. And the

key for us is we don't want to be the best 2025 bank in 2030. So important to me. Because I don't think the world is the same in five years or four years from now. Want to be the best 2030 bank and setting up the standards for financial services in 2030, accounting for the fact that all of us are embracing this AI and this agentic AI, and that our ecosystem will have different expectations.

Hema Parmar 00:06:04

Alyssa. How about you?

Alyssa Rieder 00:06:05

So, CommonSpirit Health, we're one of the largest nonprofit health care systems in the United States. We're in 24 states and have about 20 percent of the US population in our service area. As a company, we certainly do a ton in AI around clinical care, around finance operations, workforce productivity, and around the things you'd expect, like patient navigation or sort of trying to do that. Running the investment program, instead of 160,000 people, I really deal with 23 people. And so we have a much smaller use case for AI and do still try to think about how to use it to manage to run reports that we used to have to calculate by hand around market data, around our managers, and things like that. So those are the ways in which we're using it right now, but we're still finding it a little short, honestly, in some of the things that we'd like it to do, in trials that we've made where it's sort of failed to live up to some of the expectations and the hype. But really have hope for the next year or two that things will get better.

Hema Parmar 00:07:01

We'll dig into that still. Andy, tell us what you're doing at WorldQuant.

Andreas Kreuz 00:07:05

Yeah. So WorldQuant is a quantitative investment management firm, and we have been around for nearly two decades now. And AI is really part of our DNA. It's deeply ingrained in our investment process and what we do on a day-to-day basis. And AI to us is not something which is neither new nor opaque or black box-ish. It's more like the intersection of computer science and statistics, which are two foundational pillars of quant investing anyway. So we do deploy AI across the entirety of our investment process. We use AI to help us find or identify, develop new trading signals. We use it to help us optimize, construct portfolios. We use it to help us refine execution. But I think one of the biggest use cases that we have seen is really on the data science side. There is so much unstructured data becoming available all around us on a daily basis. We all have heard about the impressive stats, like 90 percent of the world's data has been developed over the past two years, or every four years we are doubling the amount of data and accelerating. And that to us is a massive opportunity. The problem is most of that unstructured data is not useful for quant research or hasn't been traditionally. Now, AI changes that. AI has the ability now to really bring structure into unstructured data, and with that, unlock new sources of alpha and develop time series which are much more useful for quant research. On the research side itself, I think the biggest leap recently really has been agentic systems and the sophistication that you're seeing with agents. And the ultimate goal is to have agents which help our human resources, our human investment professionals in

their day-to-day jobs. And that doesn't just include efficiency or productivity. I think we are past that inflection point. I think we can now really rely on agents to not just implement ideas that researchers come up with, but teach machines to come up with their own ideas. So we are crossing into really innovation and autonomous creativity of agentic systems. And to us, that's a very exciting spot to be in. So it's really kind of this leap from backward-looking analytics that's AI-provided for a long time to forward-looking intelligence, and that is very exciting to us.

Hema Parmar 00:09:32

Brian, tell us how you're looking at it through the private equity lens and as you look at portfolio companies.

Brian Ruder 00:09:38

Yeah. Permira is a private equity fund. We're 40 years old. We invest in a variety of sectors, about $100 billion of assets under management, technology, services, healthcare, consumer, digital backbone through all this. So we're actually investing very actively in and around AI transformations ecosystem, the technology universe. Inside the GP—we are a low-velocity judgment engine, right? We are trying to make a number—a limited number of really good decisions per year. So if you look at how we've been using AI, there's the building factor of how do you actually make models more efficient and the like. That's been useful, but not actually as impactful, I think, as people like to think because you're shifting jobs from being builders to being checkers. And, as a guy who spends a lot of my time in Claude Code and building spreadsheets with Claude—I build a lot of spreadsheets, for example, with Claude, and they all have two things in common. They're all really impressive, and they're all wrong. So, the checking job here, it is really almost as much work to check some of this stuff as it is to build it, and you have to train the systems to check it. And so for us, when you're low velocity, it's interesting, and it's fun, but we're not seeing massive efficiencies from there. On the other side, on the judgment side is where it's gotten to be very interesting. So helping to make much better decisions around the investment process. Surprisingly, I would've predicted before that, oh, this would be great. It's going to build PowerPoint slides and all that much faster. But it's not going to be really good at the judgment. The judgment's actually really good. Helping me to really assess critical questions when I read documents is actually better than I would've expected. And, example use case, we have deal teams no. We're kind of moving towards presenting—our model was, you have this giant corpus of data when you diligence a business in the private markets. You filter that through a deal team who presents a 45-page PowerPoint deck that we all consume and read. And we're now moving towards an era where you can take that entire corpus and actually present it to the investment committee for judgment using a Claude project or the like, and therefore I can interrogate directly all of the raw underlying information. And what that allows for is the elimination of bias, because in all of these industries, we are just incredibly biased creatures. And really well-meaning people will introduce bias in a lot of different places. And it's fascinating to see when you actually compare what a deal team says about what customers talked about versus what the customers actually said. There's a real delta there. We kind of always knew that, but it's really helpful to see the exact line items of where that actually shows up. The corollary, by the way, is that the models themselves can give very biased answers unless you're careful about how you interrogate them. So it's really interesting in how it's moving the model. But I'd also say, I'm more with Alyssa, that even when you look in the portfolio, the efficiency use case of AI, of all these amazing transformations, we're struggling to see it in scale when you look at real end-to-end efficiency. So

you can automate some business processes, but in general, including in coding, when you look at engineering departments, actually seeing end-to-end efficiency where you can see ROI has been harder to see. Because in the general rule we've found is that you just move the choke point. You do one thing that's really cool, you increase your code generation, you just move the choke point somewhere else, whether it's testing in QA deployment. And so actually getting something that's end-to-end efficient is still very much on the come, we think actually for the whole industry. And I have a single metric for how to measure the ROI of AI, which is can I see it in the P&L? And if you can't see it in the P&L, then it's not really there yet in a way that we think is driving lasting impact.

Hema Parmar 00:13:22

And no, these are great points. There's a Bloomberg story out today that there's a tech start-up and it gave Claude, Gemini, ChatGPT, and Grok about $10,000 to invest, and the portfolio as a whole lost about a third of its capital. So when we look at the biases, when we look at AI autonomously investing in some cases, how are each of you thinking about weighing the advantages of the technology right now and the fast pace of change with some of these real issues when it comes to actually getting ROI, actually making money and glitches that can be quite significant at this stage of where we are? Whoever wants to jump in.

Brian Ruder 00:14:09

So I could have a stab at it. Just because I'm picking up on there. We had a team—by the way, I should say it's really important to build a culture of tinkering around this stuff because there's really cool things that can come out of people just tinkering and including personal use cases. One of our teams in our services team, amongst many things, they built a bot to do that. It was actually sports betting, and they gave it a couple of hundred dollars, not $10,000. They gave it a couple of hundred dollars to go sports bet, and it just mechanically lost money. It was amazing. And then somebody else offered the option to build a bot, which would just do the opposite of what the first one did which would then mechanically make money. But yeah, it's tricky.

Hema Parmar 00:14:43

It's tricky. Charles?

Charles Holive 00:14:45

Yeah, I think it's important to have a north star. I agree with you, experimentation was important to start thinking about what it can do, and I encourage all of you to play with it if you don't by now. And it's amazing. I only text my Mac mini. I don't log into my Mac mini. And it does marketplaces in 10 minutes, but that is not really for scale. I think if you want scale, I fully agree with what you said earlier. You have to think about your P&L. So you have to set that target, okay, if everything goes as planned, which it will not, but at least we have a north star. That's how much you think you can generate in top line and bottom line by transitioning your workforce from a pure human mix with technology to a human plus AI mix. And if you do that, you change the unit economic. That's a north star. And then you go after all the very challenging components, especially for us as regulated industry, of governance, data, technology. You have

to have a good token factory. We can talk about that later. And obviously the business commitments. I think if you don't have that, what's happening is very diluted value, because people are saving 10 minutes, are saving an hour, but sometimes they have to check, so they're actually spending an extra two hours and that never comes to your P&L. It's too diluted. If you get the CEO to commit to, "That's what I think we can unlock if we go for it," then everything is all the energy available in a company, and we have a lot of energy. We have 170,000 employees. So all that energy is going after the right thing, and then you actually drive a step-change transformation as opposed to a small optimization.

Joerg Ambrosius 00:16:19

I couldn't agree more. So this is exactly what we have done. So we, as a management team, have together, obviously under the leadership of the CEO, chosen a couple of domains, and we have put financial targets against these domains. So we have a very clear goal to get executed, and it is measured by the real P&L impact. And we have chosen opportunities where some are driving efficiencies, some are actually driving additional revenue. So this is not all about efficiencies. This is also about what other revenue opportunities can we unlock. But you have to be disciplined. If you're not disciplined, and if you don't have the governance in place, this is ending up all over the place. And you have to agree on, these are the domains, this is the way in how we operate this, and we measure this on a continuous basis. So sometimes obviously we'll figure out, well, it's actually not showing up. But then you have to course correct, and you have to say, "Okay, we have other opportunities that we can go after." But this discipline and governance is critical if you really want to see the P&L impact in the bottom line.

Hema Parmar 00:17:28

How close are you to your goals when you look at the metrics? Are you hitting them?

Joerg Ambrosius 00:17:32

We're actually on a good trajectory. On some of these initiatives or domains, we are further advanced. Some are actually more recent. But we clearly can see very concrete financial impact at scale, and that is really, at least in the business we are operating in, which is a scale business, and we do that on behalf of our clients. And clients come to us amongst a lot of things for providing them scale and providing them resilience, and that is clearly what we are focusing on.

Hema Parmar 00:18:05

Before we go to—

Alyssa Rieder 00:18:06

I would say, though, in the companies that we look at and the managers, basically table stakes have just gone up. And so everyone has to get more data, use more data, do this analysis, and there's a little bit of running in place just to not to be the 2030 and not be the 2025. Where I think really the value is is where

you have great people who can really leverage that data better. And so the value to really high-quality people, really smart people who can execute and deliver on things, has gone up really much more exponentially. So the data itself isn't necessarily valuable because it's sort of somewhat commoditized. Everyone can get that. Or democratized. But that if you have some really good people, they can really leverage that into bigger things.

Hema Parmar 00:18:53

If we're talking P&L, we have to talk to the hedge fund expert here. With WorldQuant, are you seeing measurable P&L impact from the changes you've made with adopting AI?

Andreas Kreuz 00:19:02

Yeah, I was just about to say, for us, it's a much more direct translation of the AI that we put to work into what we see ultimately at the end of the day in P&L, and the ultimate ROI is P&L for us, no doubt. So AI helps us to produce our target positions that we put into the market, and if AI was right, then we make money. If AI was wrong, then we lose money. So it's a direct reflection of how we deal with this advanced technology. So it does come down to understanding the AI advanced technologies that we put to work. It's really important to implement quality controls which go against the overfitting or the bias induction that you mentioned before with the 30 percent losses by just blindly feeding anything into a black box like Grok or Gemini. And to us, that's crucial, and that's something that we have always been doing as a quant firm. Now, we oftentimes hear from investors, "Are you worried about AI commoditizing the alpha that you have and have implemented for a long time?" And exactly for the reasons or the example that you made before, Hema, we are not that concerned because it requires the humans to really understand what the objective function should be, how we account for data quality and integrity, and how we make sense of the outputs that are being produced by AI. And only if you can do that, then you differentiate signal from noise and put up trades that actually have a good chance of positive P&L. And all the noise which can result in the market now, due to this availability of AI to everybody is to us even an opportunity to arbitrage that noise away. So it's really coming full circle in some sense.

Hema Parmar 00:20:59

Are you able to measure, since we have leaned into using AI and adding the agents, our P&L has been impacted by X quantitative way? Is there a way you can describe that?

Andreas Kreuz 00:21:14

I think there are many ways that we run our attribution of the P&L that we realize back to datasets—alphas, PMs, strategies, what is human, what is the machine? So there are many ways that we can track that, and there's certainly a lot of improvements on the AI side, for sure. The quality of those signals has gone up over the years significantly.

Alyssa Rieder 00:21:39

Show us the numbers. *[Laughter]*

Andreas Kreuz 00:21:41

Yeah.

Hema Parmar 00:21:43

If everyone is implementing AI, to your point earlier, if it's being highly democratized, where is the edge? What makes one fund or one firm do something that puts them above the rest? Are we talking data or talking infrastructure? What is the thing that makes one firm better at utilizing or implementing it than everyone else if we're all rushing towards this right now?

Charles Holive 00:22:09

If I may. I think there's still a phase where not everybody's there. Okay? So there's a first-mover advantage probably over the next 18 months, that if you do it faster with more focus within the constraints, so far as being regulated industries, I think there's going to be a reward because in this world being rewired, everything is new. Then if you're the first one, then you become a node in that new ecosystem, and then you can be very sticky moving forward. So I think even though eventually everybody's got it, everybody knows how to use it, everybody's getting the benefit from it, I think the next two years will define winners and losers still. And then when everybody has it and the ones who survived from that transition, the agentic era, then data, obviously, and the way you manage it, the way you protect it, the way you integrate it into the ecosystem, I think will make a big difference. So that would be my take.

Brian Ruder 00:23:12

Maybe coming just in a smaller firm, I'd say it takes a real transformation, we're seeing, because it's pretty easy to just push tools out and say the organization's using tools, and talking to my peers in the private market, investing, nobody actually knows what they're doing. So they'll, everybody will hire a head of AI, and if you look at the backgrounds of the heads of AI, they're very variant. And the point of this is you need to import some talent and knowledge, great, but using AI in your systems actually requires a changing of your workflows, and that takes time to actually work its way through. So I don't think there even is a definition of best in class of what that looks like at the moment. But on the investing side, it's actually really interesting what we're seeing and where we're in companies out there, because you have much larger engineering teams that you can drive. We're seeing incredible alpha opportunities. Actually, the closer our businesses are to the considered AI disruption, actually the better that we're seeing performance there. So take in software, we have two contact center software assets, Genesys and Zendesk. These businesses are seeing accelerating growth in great part driven by AI revenue. So for us there, where you're seeing the P&L impact is actually on the revenue line much faster than you're seeing it on the cost line. In consumer, we own Squarespace, which has been a very fast growth business, pivoting its operation for building websites to using AI. We have health care businesses that have radiology clinics which have built AI radiologists. We're seeing really interesting innovation around that. And actually what we're seeing is the differentiation is better in areas that are the less technical. Meaning in services, health

care, if you can find and build the team that actually is able to bring engineering into the building and actually innovate around AI, your competitor set usually is just much slower. Much easier to underwrite that than you can see it in, for example, software, where every software company right now is investing in AI. Every software company is building and transforming themselves on AI. Trying to pick the winners around that of who's going to have, for example, the best agentic solution in three years' time, good luck. It's going to be very hard to predict that. So the exercise there is about buffering and building more interesting use cases that don't rely on winning head-to-head what the exact best AI solution may be in one area. So service is very interesting.

Joerg Ambrosius 00:25:37

Yeah. So, we're in the service business and at scale. So for us, the critical element here is, and it is also the differentiator, is the business process know-how that we have in our company. And to your point, the crux is how do you reimagine the end-to-end process so that the client experience is a much better one and that it drives efficiency? The challenge that we as an industry and the investment services industry are facing is that over the last two or three decades, the processes were cut into pieces, and you have now experts that know every single detail of this one part of the process. What they don't understand anymore is how do I fit into the end-to-end process? So you have various generations now in our workforce. And let's say our vintage still knows how to manually run an end-to-end process. So we still understand what is the end-to-end problem that we are trying to solve for. And that really is the potential that AI brings to the table, that we reimagine the way on how we solve for this problem. So if you are focused on solving the problem in the little pieces and the steps, that's not giving you the real benefit. And that is the challenge, but also the opportunity here, that we look at these end-to-end processes, use the business process engineering capacity that the firm has developed over a long time, which I would argue is a significant part of our IP, which also we want to preserve because that is hopefully also our IP in the future. But if you get that right and if you approach this in the right way, in a very disciplined way, that's what we believe will really give you a competitive edge and increase your competitiveness long term.

Hema Parmar 00:27:39

That touches on the idea of whether you build or you buy, and whether—how do you embed AI technologies on each individual layer, or is it advantageous to rethink the organization and build AI from the bottom up? Especially when it's a big firm, I would imagine that's incredibly challenging versus a smaller firm, where they have fewer people. How should a firm think about how to adapt their business? Especially when you think about workflow and talent, because not every layer of a firm has talent that's keen or adaptable to the technologies. And there's probably a gap, I would imagine, between having the systems and then having people that are ready to use it.

Alyssa Rieder 00:28:26

In our organization, we both have some where we've built and some where we've bought. As a client or customer of folks in the investment ecosystem, I certainly feel that there are many firms, many even on my panel here who have much more resources than we do, who will be building tools, hopefully, which I will be able to benefit from and get to use, and that will help my business as well. But I do think that this idea

of integration, which sort of was touched on by folks, and the importance of keeping the humanity involved in all of this is really critical as well. In healthcare diagnostics, AI, its pattern recognition, has shown tremendous capabilities to really enhance the ability there. But in terms of delivering that diagnosis to someone or something else, keeping that humanity and making sure that we continue to be empathetic with each other, is a tremendous part of being healed and everything else as well.

Charles Holive 00:29:27

I think there's a new category between build and buy. And I may be contentious on this one, but there's a buy until you can build, I think is a new category. There are agents that work today, might as well subscribe to them. And then when you have time or when you develop the expertise, when your employees are ready to create that agentic system, then might be six months was good enough to buy, and then you can shift to actually a build phase. So this is kind of new, because in the past you kind of commit for one, two, three years. I don't think this is necessary as much, especially with new offerings pretty much coming every day from every vendors. What you need to decide, though, is which pieces you will never buy. Because I think you want to own your IP, a little bit what Joerg was saying. So that orchestration layer, I would argue you don't want to buy that because that's your company. So you want to own and build it and understand how it works deeply, put all the guardrails for your company in there. I wouldn't go and buy that piece. But there might be agents, like a loyal agent, yeah, sure. I buy it for now, and then we'll see later.

Joerg Ambrosius 00:30:32

I agree with what Charles just said, and I think it's a really important point. When you, in our case, do that with 50,000 staff, the biggest challenge we are facing is how can you upskill the workforce? And the upskilling absolutely happens to a large degree by buying, by bringing this intelligence and this know-how in, and then merge it with the know-how that you bring to the table. So for organizations that have not evolved as tech firms, we really have to adopt a different way of working. So we are moving towards a true agile way of working, which traditional firms have not necessarily learned how to do that. So that is a significant part of the transformation that we are doing. And for that, at least our experience has been, it is helpful to accelerate stuff by buying not only systems, but also advice to really scale this across a pretty broad franchise.

Alyssa Rieder 00:31:38

And that's something that we've looked at, too. As a large company, we have an AI academy now to try to train folks who are interested and make those resources available, where you can get credentialed and things.

Hema Parmar 00:31:48

For a quant firm, which Andy, WorldQuant has been investing in machine learning, I imagine, for years, and has an incredibly rigorous data science background. When you look at agentic AI, how are you embedding those systems? What are you building and buying? And give us a sense of how the agents are distributed

across WorldQuant.

Andreas Kreuz 00:32:10

Absolutely. Maybe I'll go back to the differentiator question—

Hema Parmar 00:32:13

Sure.

Andreas Kreuz 00:32:14

—which is quite important to us as well. And I think the differentiation really comes in threefold. It is the investment in infrastructure, in our case, GPU. We have the war for talent and the battle for GPU, if you will. Then there's the human talent, which is equally important. So WorldQuant is a firm that has about 1,100 employees worldwide, 28 offices, 17 countries. We try to recruit people from all over the world. Talent is global, opportunity is not, so we go where top talent is and recruit them. Now, talent and the machines, the human talent and the machines, they need to work together, in our case, very closely. AI helps us to become much more productive, but the humans are still the ones which are setting the objective functions, and that's not going to go away in the short term. The models have the conviction, but the humans have the accountability, ultimately, and that is very important. That's kind of a business model which we've been pursuing for a long time. So we continue to hire humans, but the hiring philosophy has evolved a little bit. We want to attract top talent, which has the ability to be adaptable, to deploy AI in context, to know how to work with AI, with the toolkits that we give to them. Igor was speaking on a panel, our founder and CEO, on Monday, and he talked about the two percent. And with that, he meant that ultimately, AI will be able to take care of 98 percent of the tasks that we pursue on a day-to-day basis. But the two percent, they will remain with the humans. And I think to us, it's important to maximize this utility for the humans to know how to deploy AI in context and most effectively. And the third element, which I think is important here, is change management. To us, it's probably a little bit easier because we have been doing AI for such a long time. For firms with 50,000 employees, it's much more difficult to perform this change management, which is so important as AI is accelerating. If you think about it, the headline is no longer the rate of change of AI. The headline really is the rate of change of the rate of change of AI. And not many institutions are set up well to absorb second-order derivatives. So it's a little bit a leadership challenge to really effectively bring your organization to AI and know how to work with AI effectively. So anyway, to your question, so agentic systems, they will become a big part. So we do put a lot of efforts and investments into the deployment of agentic systems across our process. And look, the vision ultimately is to maintain the human capital that we have for the reasons that I mentioned before, but to achieve a multiplier effect. If we can assign multiple agents to every one of our portfolio managers to, for example, filter and select the alphas that they want to include in a new strategy, or the next agent back tests the strategy, the next one building the risk framework that we build into the optimization, the next one looking into the execution efficiencies and the algos that you want to select, then you really multiply not just what you can do quantitatively, but also qualitatively. And that's the ultimate goal that we have at WorldQuant.

Hema Parmar 00:35:38

So you would have thousands of agents currently? How would you quantify how many?

Andreas Kreuz 00:35:42

So we are—

Hema Parmar 00:35:43

At every level, it sounds like you have.

Andreas Kreuz 00:35:46

We are working on many agents.

Brian Ruder 00:35:50

I have a thought on this.

Hema Parmar 00:35:50

Yes.

Brian Ruder 35:51

The human element, which, by the way, we're similar at small scale, which is for us, AI is there to make ultimately a human decision better. And however that might manifest, there's lots of dialogue in private markets about creating AI investment committee member, of letting it make its own decision. And I always ask people, like, when do you think the date will be that entity is allowed to overrule a human, and most people say, "Well, I don't think it's ever going to do that." But once you kind of acknowledge that, then the system really does exist to actually make human decision-making dialogue better, which maybe you can do via having an independent group of agents debating to come up with something. But really, it's about supporting kind of the information flow and kind of decision criteria for a person at the end of the day. I worry actually a bit about kind of the empathetic side of this because as much as I would love for humans to retain this role of the most empathetic of creatures, every time they do these studies on these systems, humans actually prefer interacting with AI from a bedside manner standpoint, and even for those who saw the Turing test being passed last year, and they keep doing these. They ran a two-party Turing test of the AI versus a human, and 75 percent of people back then, and it was Llama and ChatGPT 4 or 5, I think. Seventy-five percent of people thought that the AI was the human and the human was AI. So it's really, really good at being like us, and even if it's not real empathy in the way we think, I think actually these systems are going to increasingly be the interface that humans not just get offered but actually prefer

when they're touching a lot of these systems. You guys are banks and State Street. I bet you that's going to be a primary interface in the future.

Alyssa Rieder 00:37:29

And I understand that and I do as a mom of two 20-somethings, they absolutely like to interface more with technology probably than people a lot of the time. But part of what I was thinking about is in a number of our hospitals, we have a program called No One Dies Alone. And I have parents on the different coast than where I live, and if something were to happen to them, and having someone sit by someone's bedside and either listen to them and hold their hand and talk to them, I don't think that's something, if they're in their final stages of about to pass, that's not something that AI's going to be able to replace really quickly. I would not feel the same if an AI were to be empathetic in that way to me. So I think there's still some role for humanity in there, too.

Brian Ruder 00:38:13

I couldn't agree more with that. But also, but look at startups like Hippocratic that are now moving, for example, a lot of the conversations for nurses to the phone, and they're really good—

Alyssa Rieder 00:38:24

Yeah, absolutely.

Brian Ruder 00:38:25

—so what you're talking about is absolutely, I hope that's always human.

Joerg Ambrosius 00:38:29

So the human judgment factor is not to be underestimated here. And when you look at our business, if things go right, if things go well, right, mass production, great. The problem really happens when things go not right, and if something unexpected happens, and that can be a factor that is out of your control. And that's where you have to then decide, do we make this payment, yes or no? And I don't feel comfortable, and I don't feel, for a long time, comfortable that the ultimate decision on that will be made by an agent. An agent will give you, hopefully, a better fact set so that you can make this decision, but the consequences that could be there for a counterparty, for a client, or a regulatory side can be dramatic, and that's where the human being still will make this final decision. The challenge that we will create now is how do human beings develop experience so that if these situations occur, they will be able to do the judgment? We all learned this because we were doing this manually initially, then with machines, but we had a real opportunity to kind of gain that experience. And that is one of the questions that we ask ourselves, and I would say that has not been solved for the future. How do we continue to develop talent, that talent has that experience and the judgment to make good decisions if these bad events occur?

Charles Holive 00:40:11

I agree with you. I think one of the things you start seeing is a lost of critical thinking. People tend to agree with what they see on the screen, or it was right 10 times, so why would it be wrong the 11th time? And this is difficult to—we are lucky because we spent decades building our own critical thinking through experience. There's a generation we need to take care of to make sure they keep a little bit of that sight on. But you know it might be wrong. Well, it's actually wrong most of the time with Excel, agree? And it's super important, at least for us at BNP Paribas, we're investing a ton on building that new corporate ladder. It's a different one that would foster employee of the future, and the one thing we work on is empathy, and the second one is critical thinking.

Hema Parmar 00:40:56

Alyssa, we were talking earlier. You mentioned a great example about AI LLMs looking at resumes?

Alyssa Rieder v41:00

Yes. I was thinking about that just as he was saying about thinking about attracting talent. I read an article recently, or this week, around the use of Fortune 500 companies of using LLMs in either resume screening or interviewing or selecting new employees is estimated to be kind of 80 to 98 percent in different categories. But there was an article which showed that kind of, again, this preferential bias. We talked a little bit earlier about LLMs are not unbiased, and that they actually prefer—so LLMs, in screening resumes, will prefer resumes that have been edited with other LLMs. And in fact, they're self-preferential. Within one LLM, they actually prefer emails that they have actually done the editing on themselves. And so basically, the article was sort of saying, "So generally, ChatGPT should be screening your resume and editing it so that you have a better chance of being selected if you're looking for a job right now." And they also sort of had an assessment that humans actually pick different resumes as their top resumes versus the LLMs. I think actually we're not so bad at picking the people and the skills and the other things like that versus an LLM right now today. But I think it's something, and knowing and understanding and remembering this bias is really critical for our future.

Hema Parmar 00:42:21

Yeah. What is the biggest thing that each of you is worried about right now? Where can this go wrong in the near term? Because we're still somewhat nascent in the grander scheme of things.

Joerg Ambrosius 00:42:31

So for us, it's cyber, by a mile. So we believe for the financial industry more broadly, cyber is the one largest single risk out there. And obviously, given the very recent developments, we feel we are at an inflection point here in terms of how we have to, as an industry, deal with that challenge that is there today that most likely is going to be a multiple of a challenge in the future.

Hema Parmar 00:43:02

Charles?

Charles Holive 43:03

And since you said cyber, I gave another one, but obviously cyber is very important to us as well. I think the cost element starts playing a role. So AI is not free by any stretch of mind, and we're very conscious about our token factory, our intelligence factory, making sure we balance out the most powerful model for the most complex tasks, the same way you would deploy the most expensive headcounts to the most difficult jobs, and then you would have [less] expert employees on simpler tasks. The same way, you want to think about your token factories. So we're trying to make sure we predict our needs, which is very difficult. We don't know. It's on an exponential, so we're trying to match that. And then how do we balance our cost between what's a CapEx cost, so our own infrastructure running our own token factories versus more of a SaaS consumption of models, and how do we balance out over the next few months or next few years? I think it's critical to solve early on, because at some point, the dependency on those SaaS providers might become a challenge to a P&L that we're trying to solve for.

Alyssa Rieder 00:44:10

Cyber too, I think, obviously. But I think there's also the fear within firms. If too many firms are using the same LLMs or the same types of strategies, that you'll see the same kind of quant factor alignment and could have more volatile market movements up and down.

Andreas Kreuz 00:44:28

So we are mostly excited about AI and the opportunities there. There is, of course, the cybersecurity fear, but that has been here before. Maybe it accelerates a bit, and that's why we put measures in place to control that. If there was a fear in the quant investing industry, it's almost like sprinting a marathon nonstop, and AI, and the advances in AI, have even further accelerated that. So we've got to be able to stay on the right side of the curve in order to maintain an edge and an advantage. So it's a constant pressure to be cutting-edge when it comes to the deployment of AI in the marketplace, but it's also a positive fear or a positive kind of motivation for us to pursue the best practice out there.

Brian Ruder 00:45:20

I think cyber is going to be it.

Hema Parmar 00:45:22

Yep. It is.

Brian Ruder 00:45:22

Something bad is going to happen, right? Nothing actually that bad has happened yet, but something bad is going to happen, and it's sort of the known unknown that's coming here, and who knows when that's going to be, but I think that could be a major hiccup. I think this point Charles makes about cost, the thing that is for sure going to happen in the next 12 months to us is the CFO getting involved a bit more. And wait till you start hearing about token consumption on earnings calls. And not so much upfront of ra-ra token consumption. It's going to be in the CFO section of, "Well, we're off by a penny or two pennies per share because of token consumption." People are not figuring out how to actually manage the overall gross and netting of the cost of running these systems, and this is a universal problem. It's an enormous amount of spend. Look at the revenue of the big foundation lab companies. There's a high bar on what that's going to need to deliver in terms of ROI, and at the moment, you're seeing this widespread use, and it's uncontrolled use because the people that are actually in control of token consumption aren't actually footing the bill. Strangely, I actually have greater faith in the consumer use case because if you're renewing your ChatGPT subscription every month for $20, by definition, you're getting $20 of utility out of that, so that's okay. On the enterprise, some of the people that are actually burning through thousands of dollars per month or per week on tokens aren't necessarily responsible for actually driving an appropriate amount of ROI on that. And I think you're going to see, in terms of something that could be a headwind now or a hiccup that needs to be dealt with, it's going to be the CFO getting more involved on the token side.

Charles Holive 00:46:53

Can I bounce on this? Because I agree with you on the consumer. So my personal token consumption was around 200 flat December, January, February. Then I play with OpenClaw and it gets to $1,000. I'm like, "$1,500 in April." I'm like, "Alright. I need to do something about it." And then I started balancing same consumption, but different type of tokens for different tasks, and I'm back to a reasonable 200 bucks. And thank god, because otherwise at some point I need to talk to my wife about it, but I had to deal with it because I saw it directly on my credit card statements. I think the same would happen to companies soon.

Brian Ruder 00:47:26

Yeah.

Hema Parmar 00:47:27

I want to make sure we get a couple questions from the audience. We have a nice list here. Okay, so one audience member has said, "How do you own the orchestration layer and the IP around it all if your intelligence is going to Anthropic or OpenAI?" I guess, how do you manage IP when you look at building out? *[Crosstalk]* Whoever is interested.

Andreas Kreuz 00:47:54

Start with this one.

Hema Parmar 00:47:55

Yes.

Andreas Kreuz 00:47:56

IP is hugely important to us. Obviously, IP is what generates P&L ultimately. And therefore, IP protection is paramount to everything that we do, and AI hasn't changed that. So IP is local. It's where we can control it and ring-fence it. And none of the AI tools that would be available externally can infringe in that IP in any way, shape, or form. So we protect ourselves quite a bit. And then also most of the AI tools that we build internally is proprietary-developed as well, and therefore, from that perspective, also ring-fenced internally.

Charles Holive 00:48:33

Never thought I would say that *[Inaudible]*. The fact that we're a regulated industry helps because we have all those processes to protect our IP, our client's IP, already in place, and so we live by that. So specific to BNP Paribas, which is a leading bank in Europe, that's where we started. Sovereign cloud, sovereign AI, or enough of it, and making sure the classification of data and actions is respected. And so we're not using SaaS models for everything. Only for the things we're allowed to use them for, and for the things we think we cannot do on a more, let's say, closed ecosystem. So very diligent thanks to the fact that we've been regulated forever.

Alyssa Rieder 00:49:13

Regulated as well, and also care a lot about HIPAA and sort of healthcare data that's accessible. What folks on my team have done sort of creatively is they'll use dummy data out in the public to work out the kinks out of something they're programming or modeling, and then after that works, then they bring it in under the sort of ring fence, and then use our actual data with it.

Brian Ruder 00:49:34

Can I ask?

Hema Parmar 00:49:34

Sure.

Brian Ruder 00:49:35

I'm actually really curious because you guys have big organizations. Do you see a resurgence? One of the answers has been a resurgence out of the cloud and back to prem, and running models locally so you don't

actually have to go to that. Do you see your own kind of infrastructure moving back to prem?

Charles Holive 00:49:51

Yes, I think you need to, you must. And I think many companies are about to have to do a bit of a CapEx investment, because if this is your workforce and your intelligence, how much do you want to rent it versus own it has to be a question in the next 18 months.

Hema Parmar 00:50:07

Touching on the workforce, aren't humans not still the bottleneck, even in the age of AI? Are humans the bottleneck?

Joerg Ambrosius 00:50:17

So the question is how you define bottlenecks. So we strongly believe that if AI is deployed the right way, it actually creates a lot of capacity for the human being to focus on more valuable tasks than the tasks that AI will basically take off your desk. That doesn't take away from the upskilling. And so you have to create a right mix of talent in your organization. So that's why we, for example, have clearly decided we will continue to hire. A lot of organizations right now have stopped hiring because they say, "Well, right, all these tasks and jobs will disappear." We have a different philosophy. We're hiring digital natives because it will also create a very good mix in your workforce. We have digital natives coming together with the people who bring the experience of the business. That mixture, we believe, is a very good recipe to create the human-being capacity that we are all striving for. And end of the day, we are here for our clients. We are here to give them a better experience to solve their problems. And that mixture of talent, we believe, is going to address that challenge. So I wouldn't necessarily agree that this is necessarily the bottleneck.

Hema Parmar 00:51:43

Within investing, where do we see—because there will be some areas that will be challenged when you look at talent. What roles are going to be challenged or less relevant when you look at hedge funds, when you look at alternative investing firms?

Andreas Kreuz 00:52:00

Yeah. In our case, we are in a unique situation because most of our employees are investment professionals. They have been coding on a day-to-day basis since forever, and therefore everybody's kind of used to AI and the deploying of AI in code. So we don't perceive this as a big issue.

Hema Parmar 00:52:21

What about when you look at fundamental long-short funds that have had less of a runway, perhaps, when it comes to AI and machine learning? Or the role of an analyst, for example. Is that going to be very different in the next two, three years?

Andreas Kreuz 00:52:35

I think it requires this adaptability element that I mentioned earlier. I think analysts, they need to evolve. They need to embrace the use of AI tools in their day-to-day work, and with that they can amplify what they can contribute to a firm as well.

Brian Ruder 00:52:53

We see in the private side that the profile of people and what you need to either come in with or reskill yourself around is more of a constructive mindset. So there's been all this talk about why study engineering anymore, and I think actually engineering is as important or more important now than it has ever been, not because you're going to go to a job which has engineer on the top of the masthead but because that mentality and familiarity is going to become more and more important in really all departments in the companies in five years, in 10 years, even today. And so, the people that have actually found a way to become—and kind of either they don't have to have had an engineering degree, but kind of that creative build mentality and mindset, more jobs are going to have that feature to them in using AI. Because these tools, as much as people love the idea that you can just go in and ask a plain language question to one of these models and have it build something beautiful, you get a much better result if you actually know how to properly prompt engineer in there. And so people who've gone through either the training, they have that innate curiosity to be able to do that, those people, it's not so much roles are going away at all, but the people that are innately curious builders are going to thrive across all segments of inside the firm and we see in our portfolio. And actually kind of current generation, the young population, it's not that they're young, but I see a lot of that mentality out there, and it's pretty exciting actually when you find it kind of day-to-day.

Hema Parmar 00:54:20

Where in the investment process do you think AI is genuinely creating an edge, and where is it just theater?

Andreas Kreuz 54:27

I think data is a tremendous opportunity. I think the uncovering of new sources of alpha by looking at unstructured data is a massive opportunity. At WorldQuant, we deploy about 1,700 unique datasets that we feed into our research engine. And when we look back like, four or five years ago, 90 percent of that data was acquired. So we bought the data from data vendors, identified datasets all over the globe, and then if there was alpha in it, then we purchased the data. Now, by now, close to 50 percent of the data in our library is proprietary research that developed, and that's a huge change. That's a massive opportunity that I think can give you a real edge.

Charles Holive 00:55:15

I think maybe, from the conference, the other opportunity is AI is definitely redistributing the cards or reshuffling the economy or rewiring, whatever you want to use. That means company, there's a lot of movement which drives a ton of opportunity because if you can figure out how to identify winners, and that's probably more for my colleagues here from PE and hedge funds, but if you can identify or understand what drives that movement and how those company will be repositioned over the next two, three years, there are massive opportunities now that did not exist three years ago. Because three years ago it was fairly static digital economy, and now everything is being challenged. So I think the new valuation of everything is an interesting time to be an investor.

Hema Parmar 00:56:02

What about the theater part? What's out there that strikes you as sounding great but maybe not having as much weight around it?

Alyssa Rieder 00:56:10

I would say there's a lot of marketing around AI more than I've seen real delivery, and that doesn't mean there's not opportunity. That doesn't mean there are not firms that are utilizing data in an amazing way, and also will have the opportunity to do that. But right now, there are a lot more people who have a slide or two in their deck kind of touting something that may—

Hema Parmar 00:56:28

What do you look for then when you're looking at, and you're assessing a fund manager? How can you tell?

Alyssa Rieder 00:56:32

We do a lot of deep diligence with our managers and try to really understand what they're doing, how they're doing it, why they're doing it, and asking for numbers. And getting those real facts.

[Crosstalk]

Brian Ruder 00:56:44

I think there's going to be like the, for me in this, there's no big lie and there's no big truth on the investment process. And what I mean by that is where it's actually—there's a lot of these performative kind of marketing claims. I completely agree. People want that to show, look at this massive transformation. The place where it's actually having an impact are little places, right? It's little workflows, little judgments kind of around there, which are actually valuable. Because to this tune of we're trying to make human

judgment better, the little interactions that you have to kind of ask the right question, like one point that was made, one point you might have missed otherwise, that's really valuable in using these tools, and then kind of constructing an analysis you might not otherwise have seen. And they're generally, if you kind of do enough in there and you just put them in the right context, they kind of work. And so they're all good, and none of them are—I don't think there's much that's kind of super oversold, but there's also nothing yet that's like, oh my god, this is a complete transformation in how the investment process works.

Hema Parmar 00:57:41

I have a couple quick lightning questions. So short answers, a sentence or so. The biggest game changer I see coming in the next 12 months is? Joerg, would you like to start?

Joerg Ambrosius 00:57:58

It's a real improvement of the client experience.

Hema Parmar 00:58:02

A declined experience?

Joerg Ambrosius 00:58:04

Of the client experience.

Hema Parmar 00:58:06

Okay.

Joerg Ambrosius 00:58:06

So the way on how clients—

Hema Parmar 00:58:08

Oh, client experience—

Joerg Ambrosius 00:58:09

—experience the services that we as an industry provide to them.

Hema Parmar 00:58:14

They will engage more with AI at the front level?

Joerg Ambrosius 00:58:17

Well, they will have a very different or much easier way to consume the services that were being provided. And it creates really value for them. And one value we are offering is these data insights, for example, that trigger additional alpha for the investment management industry that we service.

Hema Parmar 00:58:39

Got it. Charles, biggest game changer in the next 12 months.

Charles Holive 00:58:42

I'd say the ability to have more people, so I'm going to go on the people side, able to manage and orchestrate and hire and improve agents. I think there's going to be the breakthrough. The technology is there, but change management not yet. But I don't think it's too far off. And I'm excited to see what people will do with the technology to increase and amplify the value we get from it.

Hema Parmar 00:59:15

Alyssa?

Alyssa Rieder 00:59:16

Physical AI, robotics, and the AI integration. I think that there's companies who've figured out touch, and that as that gets widely rolled out, that will be very transformative.

Hema Parmar 00:59:27

Andy?

Andreas Kreuz 00:59:28

More and more autonomous intelligence and creativity.

Hema Parmar 00:59:34

Brian?

Brian Ruder 00:59:35

Geopolitical. The interest of this on the geopolitical stage. For example, a divide, lots of Chinese open source being used in US application companies, and it's really good. It works really effectively. And I don't think this is a very likely thing, but something that could happen in the next 12 months, is an emergence of geopolitical tensions to actually interfere between the China-US connection on this.

Hema Parmar 00:59:55

Oh, interesting. The biggest AI misconception?

Joerg Ambrosius 01:00:03

That AI is the answer to everything. So AI is a supercharged tool, but without intelligent deployment, it is actually not giving you what you're looking for.

Charles Holive 01:00:15

I think there's still too much investment on the legacy of faster, better, cheaper, as opposed to transform. And I think we need to step out of that phase of let's do the same thing faster, better, cheaper, into that let's reinvent everything.

Alyssa Rieder 01:00:30

I would agree with the first, that it's not where it needs to be yet, and there are too many places where it falls short.

Andreas Kreuz 01:00:39

The claim that AI is a black box.

Brian Ruder 01:00:42

Mass job loss in the next 24 or 36 months. I think we're not going to see that, and people will be thankful for it.

Hema Parmar 01:00:51

And last question. Biggest piece of advice for firms or founders that are thinking about AI adoption.

Joerg Ambrosius 01:00:56

That are thinking or are—

Hema Parmar 01:00:58

That are embracing it, that are on this journey.

Joerg Ambrosius 01:01:00

So clearly define the goals and the outcomes that you try to solve for. Attach concrete targets to it. Keep yourselves and your team honest and monitor, and if things don't realize, don't be shy in accepting that that might have been the wrong use case, and then choose something different. So discipline and being very clear in your mind on what the desired outcome here is, is critical.

Charles Holive 01:01:35

So I'd say surface or hire builders, creators, entrepreneurs, hands-on people. This is a phase where everything has to be recreated, reinvented, so this is the talents you're going to need. And if somebody tells you, "I'm not playing with it," or, "I've listened to a bunch of videos," that's probably not somebody you want in your organization. If someone tells you, "That's what I've done over the weekend," that's definitely somebody you want in your organization.

Alyssa Rieder 01:01:59

Be thoughtful about the importance and where to target the role of humanity.

Andreas Kreuz 01:02:03

I think as a user and a leader, you've got to embrace AI and what's going on in the AI space at the moment. There's so much opportunity, and optimism in any industrial or technological disruption ended up more successful than pessimism, so embrace AI.

Brian Ruder 01:02:20

Embrace a culture of tinkering and experimentation, and make sure from the top down that people know when they encounter roadblocks to surface that, because there are going to be lots of them in this era.

Hema Parmar 01:02:32

Great note to end it on. Thank you everyone for joining us. Thank you also to our panelists for their time and their insights.

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