

# Data, Data Everywhere, but Which Drops Should I Drink?

## Featuring:

**Scott Guthrie**, Executive Vice President of the Microsoft Cloud + AI Group, Microsoft

**Sandy Rattray**, Former Chief Investment Officer, Man Group

Adam Bass (00:03):

This is MSCI Perspectives, your source for insights for global investors and access to research and expertise from across the investment industry. I'm your host Adam Bass and today is May 5th, 2022. Today on the program, investors have always depended on data, accessing it, getting it ahead of others, legally of course, sorting through it to find what's valuable and finally deciding how to make it work for them. Technology has helped this process but it's also spawned a bit of a data tsunami and one that can overwhelm anyone caught unprepared. In March of this year, MSCI hosted a conference to discuss some of these challenges that are specifically facing investors. We'll link the full playback of the conference for you on the MSCI Perspectives page but on today's episode, we'll explore some of the insights from the keynote on that conference. Specifically, we'll hear from Scott Guthrie, executive vice president of the Microsoft Cloud and AI group and from Sandy Rattray, former chief investment officer at Man Group and co-inventor of the VIX Index, whose storied career in finance crosses heavily with technology. Scott, set the scene for us. Tell us about this data explosion.

Scott Guthrie (01:26):

The use of data is fundamentally changing across every organization, across every industry, in fact, but just thinking about the volume of the data that is now being collected and growing, it's growing exponentially. It's not just it's doubling or tripling, you now have systems that are IoT enabled.

Adam Bass (01:48):

IoT, that's internet of things, objects with sensors, devices, endpoints that exchange data on a network. Think about your local office printer or your Nest thermostat. Anyway, back to Scott.

Scott Guthrie (02:04):

You now have systems that are IoT enabled, you have real time trading, you have access to large data sets around weather and supply chain and other things that weren't possible to get access to real time today. And how do you deal with that much data? How do you get insight from that much data? How do you connect it with your existing data estate so that you can find insights across multiple disparate data sets that maybe weren't obvious if you just looked at the individual silos?

Adam Bass (02:34):

There's a regulatory aspect for investors to consider, of course. Isn't there always?

Scott Guthrie (02:39):

As more data is being collected, there's going to be regulatory conditions, there's going to be privacy laws, in some cases that have to be honored. And I think every organization's grappling with how do I get my hands around the data? How do I make sure that I'm staying compliant with that data, especially as I start to give it to more people in my organization to use? And then lastly, from a cybersecurity perspective, how do you make sure that both your data and your other critical systems remain secure and remain under your control?

Adam Bass (03:10):

Sandy was right there with him.

Sandy Rattray (03:12):

My experience has been that when we collected data ourselves, when we scraped it or found it on the internet and things like that, it really made a difference where we did it because of these different rules in different parts of the world, especially in the EU, you have extremely strong privacy rules but at the same time, the value of that data could be extremely high. And so you have this pretty significant tension between some of the most valuable data you wanted to scrape but at the same time, there's this question about whether the data that you were getting hold of, whether the people are giving consent for you to go and take that data and if they hadn't given consent, could you use it?

Scott Guthrie (03:51):

I think one of the things that we often hear from just building on top of your comments there, Sandy, is around data lineage. I think there's cases where you know whether a consent has been given or not. And there's frankly, we hear from a lot of clients who are not sure where the data even came from and might have an automated way of collecting data or maybe in the past has done something where they've got an original data set and then someone in their organization has run a report against it, synthesized it, aggregated it, turned it into another data set that maybe is quite different. And so understanding both, did someone give consent on the end result? But also what was the original data? And did they give consent on that row of data that you then transformed into a different data set and then maybe trained an AI model on top of?

Adam Bass (04:41):

All really good points but we're just getting started and already we're broaching data collection privacy and artificial intelligence discussions. Let's just take a step back and let's hear what Sandy has to say about drinking from the data fire hose.

Sandy Rattray (04:57):

Yeah. No, it's a tough one. The first thing I'd say is that clearly the explosion of data for some people is a revenue opportunity and for other people is a cross headache. It's not happiness for everyone. If I look at my career, 30 years ago as a quant, we would buy all the data that we could buy, everything. We just have the whole lot because there wasn't that much to buy. Today, you can't possibly do that. There's just too much of it coming in. And even if you have a huge budget, you can't keep up. You can't buy everything. That's the first problem.

Sandy Rattray (05:28):

And then the second problem is you need to decide, well, what are you going to look at? Because it's growing so fast, you can't look at everything. We found that the amount of data was growing faster than processing capabilities were. It's this extraordinary thing that everyone knows that processing capabilities have grown enormously, in Moore's law and all these other extraordinary long run themes. But data is actually growing faster, with this sort of terrible consequence of what's actually happening is you're actually processing less of the available data today than you used to because you've got more. The ratio has shifted in the wrong direction. What that all means is you need to be very thoughtful about where you're doing your spending, what you want to invest in. You need to have a strategy, very clearly need to have a data strategy where 30 years ago, my strategy was very simple, just have everything.

Scott Guthrie (06:18):

There's so much data out there in the world now. I think one thing you want is a data platform that is not limited by scale. Meaning if you want to try to get petabytes or exabytes of data, you want to have a data platform that's going to enable that. You don't want to run into, this is the max amount of data that you can actually process or any kind of headroom there. That's I think where cloud and cloud based data solutions really excel is they really change the dimensionality of limits and some way make it unlimited in terms of what you can do. And then really the question is just comes down to how much value can you get from the data? At the end of the day, if you can get more value than it costs to store and process the data, you can grow your returns quite nicely. And so I'd say broadly, that's what you kind of want to look for as you think about your data platform.

Adam Bass (07:11):

You can't really talk about the explosion of data without talking about the introduction of what is known as alternative data but what does that really mean? What is alternative data? Sandy?

Sandy Rattray (07:25):

What is it? Firstly, it is sort of data that is different to the stuff we've been used to, which is not a very helpful definition. But it includes nonfinancial data. I think it includes images. It certainly includes text. It includes data which can't be easily tabulated in some shape or form. It's pretty broad range of data types. And at some point for the investment world, it might even include video, which I don't think it really does today.

Adam Bass (07:51):

Wow. It sounds like it could be pretty powerful.

Sandy Rattray (07:54):

Most of this stuff is useless. That's the first thing that's worth saying is, it's no value in it. And I have always viewed a little bit like gold prospecting and the gold rush, which is most people went prospecting and came back with exactly nothing. And it was a very painful and costly experience for them. And some people came back and they found gold. The challenge I think with alternative data is that you know there is gold there. And I don't think there's any doubt that there's gold there. And it's very, very simple reason. The investment industry, better information has always been how you produce better returns. It's just as simple as that, better information. If you knew the stuff that the other people didn't know because you'd somehow discovered it through your prospecting for data, that was your edge. That was your advantage.

Sandy Rattray (08:42):

And so alternative data, the challenge, I think again, it's the same challenge of there's too much data out there. You have to have a very conscious strategy of where you want to go. The other thing I'd say on this is that alternative data tends to be much messier. If you want price data from exchanges or something, it's pretty clean. Sometimes there are some confusing bits in it but you read the instruction manual and you're there. With alternative data, there usually isn't an instruction manual and so your ability to understand and process your data, the importance of that and your capabilities, goes up a whole lot. How are you going to filter this stuff? How are you going to work out what's a bad data point versus a really interesting data point that's just different to all the other data points? And that I think becomes a much bigger problem in the alternative data space.

Adam Bass (09:33):

Not surprisingly, Sandy quickly took the discussion to a higher level, talking about how the integration of new technology could literally transform even more parts of the investment industry, whether they are ready for it or not.

Sandy Rattray (09:49):

Something that we saw in the trading world that I think you're going to find in the fund management world. In the trading world it became more and more automated and more and more high frequency traders, then the other thing that happened is if you were second, you were last. There was no room for second anymore. You had to be first. And if you couldn't be first, then you had to go and find some other area to go and be first. Fund management has not been like that. It's actually been okay to be whether you're a hedge fund manager or a long only manager, it's been okay to second. Actually second's not bad. There's a lot of people behind second and I think that will evolve so that you are no longer will it be okay.

Sandy Rattray (10:26):

And then I think new areas. And so some of the ones that I would highlight would be the credit markets, which have been pretty antiquated, they are modernizing but data is still hard to get hold of. Many companies have public debt but they don't have public equity so they don't have to release financial information, which makes investing and building databases and credit markets quite difficult. It applies even more in private markets. And I think areas like execution in again, credit, actually will become steadily more sort of automated. What I'm trying to say is I think that many of the market areas which have sort of being closed off, they'll just get encroached on. And that might be a place actually where people should think of how do I get to be first?

Scott Guthrie (11:18):

Building on what Sandy just said in terms of the need to not be second, I think that's something that we're seeing broadly really across, not just the financial services and investing market but every industry. We're now living in a global environment and the pace of an innovation cycle of both technology but then business model transformation, I think, has never been higher. And when I think about what is cloud? And how does cloud help? I think the single biggest thing it helps with is that innovation pace and that ability to move much quicker than what organizations have been used to in the past, to create new apps, to stand up new environments, to do new things and not have to wait for servers to be installed, for databases to be provisioned, for data center space or power to be purchased.

Scott Guthrie (12:15):

How can you literally walk up to, in a browser portal and say, "I want to stand up that environment now," and seconds later, it's provisioned and ready to be built. We've seen that with COVID the last two years, a number of people in other industries, including financial services that have told me, "If you told us we were going to send all of our employees home and ask them to work remotely for two years, I would've completely freaked out years before. And we did it. And because we were in the cloud, we were actually able to whether it was with Teams or zoom, communicate and collaborate and it actually worked." And, I think that again, that to me is sort of how do we leverage that speed and pace to be able to handle the unexpected and to actually pursue the opportunity that comes in front on the more positive side to the maximum pace and speed that an organization can.

Scott Guthrie (13:09):

One thing that we've always recognized at Microsoft is that, organizations are going to have multiple systems. That might be strategically they decide they want to have multiple vendors or it could be through acquisitions, which is obviously something that happens on a regular basis. And so we've always kind of assumed a hybrid model with things like Azure and Microsoft Cloud, so that we can let our clients take advantage of the existing infrastructure they have on premises but then also run systems, whether it's in other vendors' cloud environments as well and be able to kind of integrate them. For example, our data solutions run not just in Azure but they'll run in AWS or GCP. Similarly, our Windows server runs everywhere. Our identity management system runs everywhere. Our development tools with GitHub and Visual Studio work everywhere. And that gives our clients options. And I think helps them take advantage of that multi-cloud footprint and manage it holistically and ultimately get results.

Sandy Rattray (14:12):

Man Group as a fund manager, we used multi-cloud but we also had our own internal cloud. Some of it was issues as Scott says, through acquisition or history or things like that. But some of it was actually also very purposeful, which is that there were actually different environments that were better for different things. Not everything was good to do everything we needed to do. And so the recognition that you're going to be in a multi-cloud environment, I think was certainly for me, very strong. Just as you were never going to be in a single technology environment, it might be your dream as a manager that you could have everything in a single technology environment, it was never going to happen.

Scott Guthrie (14:48):

I think the business model transformations that are going to be enabled because of technology, I think are some of the most exciting things. I think we're going to see, continuing to see not just sort of incremental improvements that technology enables your website getting slightly better, but complete reinvention of supply chain in terms of customer relationships, financing, everything, I think is going to actually be open for at least a fairly serious evaluation of can we do it better? And that for me is kind of an exciting part of technology because I do think it's one thing to be kind of in the back office, helping deliver something that's incrementally different but I think technology increasingly is driving the business model and driving the whole way the company works. And I think that provides enormous opportunities for every organization to transform.

Adam Bass (15:45):

It can be very easy to get excited when you hear all of this but as Sandy put it earlier, it's not happiness for everyone. And to be fair, some of those who have not found this happiness with tech, they may want to but change is hard.

Sandy Rattray (16:02):

Fund management as an industry needs to be particularly careful because may not be as high margin as the tech industry but it's still a very high margin industry by comparison with most other industries. And so it's kind of easy to be lazy on this stuff and to not prepare yourself enough for these pretty radical transformations that will take place. And so I think what that means is that in fund management, you will continue to get bifurcation essentially, of those that get it, that manage to get ahead of the ongoing transformations that are happening in the industry and those that sort of think, well, I can get by without really embracing this. And it's the curse of being in a high margin industry.

Adam Bass (16:41):

It might go even deeper than that.

Sandy Rattray (16:43):

Now when I came out of university, so I studied physics 30 years ago and people in the UK were sort of proud to say that they weren't very good at numbers. That they were good at words and they were good at literature and things like that. Nobody says that anymore. That battle is gone. Nobody is proud to say that they're not good with numbers. But in the investment industry, there are definitely firms that are still quite happy to say, "Oh yeah, we're not much good at tech." And I think that will disappear just in the same way as in my working career, this kind of, I'm proud to be innumerate thing has just gone away. I think that'll change.

Sandy Rattray (17:23):

The users of technology, and this is really a generational thing, the users of technology becoming so much more sophisticated because it is part of their daily lives, especially the younger generations. You have more sophisticated users and easier to use technology. And the result of that is things like coding, for example. My view is that everybody should be able to code. It's just kind of a life skill. It's not something for special people that went and did something special. My view is that actually many, many more people will be able to code but also that it becomes much easier to implement code. That you don't need to be sort of an expert and it's for a special people. And that I think unleashes huge amounts of productivity. When you have many, many more people being able to interact with technology in a sophisticated way, rather than a kind of user, I need a GUI, whereas my mouse, where do I click type of way.

Adam Bass (18:17):

For those who may be resistant, whether willfully or otherwise, maybe the right way to come at this is with a live example, something like direct investing. Now broken down into its simplest form, we're talking about using the power of technology to build an index that reflects an individual investor's goals, beliefs and considers other factors.



Scott Guthrie (18:42):

Yeah, I don't plan to be an expert on exactly the financial system implications but I do think direct indexing does seem to provide a tremendous amount of flexibility for managing risk in a much more personalized way. And I think, to your point, which is how do we enable that at millions of assets or millions of individualized ways of looking at it, that's where we're going to need new systems and we're going to need to use technology, not the way we've done it in the past, but look for much more real time systems, much more high volume, high velocity of data changing. And then that's partly where I think cloud can be an enabler.

Scott Guthrie (19:21):

It's not that different when you think about, let's say a Super Bowl ad in terms of you suddenly have potentially hundreds of millions of people that click on a link and there's ad systems that are making realtime calculations and personalizing that experience and doing realtime analytics about what to show and how to tailor that experience for that particular consumer. It's a very different scenario but a lot of the core systems necessary on the data and AI side to make those very, very quick decisions to be able to scale petabytes of data that comes in suddenly and be able to do it accurately because at the end of the day, they're charging for that personalized experience, requires a different set of database systems than we had say, 5 or 10 years ago, managing traditional enterprise scenarios.

Sandy Rattray (20:12):

I think the mass customization of everyone has a different index, that's a good thing. There is of course a but. The big but is that who's actually in charge of these new indices? Or to put a legal hood about it, who's the fiduciary? Who's got responsibility? And especially when things change, the data changes something in our appreciation of what should go into this index changes, those should cause us to change the index. Let's take an index which reflects a degree of ESG preferences, then you may well have different preferences to me and that's perfectly normal and reasonable but if something changes in the data set, then somebody needs to reflect that in the benchmark. Somebody needs to be in charge.

Sandy Rattray (21:04):

And so the but in this, I think positive move to more customized indices, is you can't get away from the question of who's in charge. And it may actually accentuate that a little bit more. And I think that's not always been answered. Left to its own, a customized index just sort of carries on doing its thing in a somewhat automated way. And so that's the challenge. But what it does mean is that many solutions, which historically needed to be sort of expensively customized, no longer need to expensively customized. They can just be built cheaply and quickly and efficiently. And that's just a good thing.

Adam Bass (21:45):



Over the course of this conversation, we've brushed against the idea of AI or artificial intelligence quite a few times and we've been hearing for years about how AI could be a great way for the investment industry to consume data better. In fact, we've spoken about some of the steps forward on this program before but the promise has always seemed greater than the adoption. Is this still the case? Or is AI coming into its own?

Scott Guthrie (22:16):

There's obviously multiple types of AI that people are doing. I think there's sort of machine learning, which we've been doing for a while, which is often a data scientist hand creating a model or working with a data set to answer a very specific narrow question and that's been valuable and will continue to be done. I think that we're starting to see an emergence though of new types of AI where I'll call it very large models and very large model training, where it's at a scale that's multiple orders of magnitude from how traditional AI models were built. And in some cases there, you're taking very, very large sets of data, often of very unstructured data. Kind of going back to some of the comments that Sandy mentioned earlier, in terms of alternative data often not being super clean. But these model training approaches kind of allow you to actually, without a data scientist always having to handhold it, start to train models that can provide insights that us humans don't even know to ask.

Scott Guthrie (23:23):

And we're starting to see this in a bunch of areas, cybersecurity being one. The level at which hackers and security folks are trying to penetrate systems, means that you can't not use AI as your defense anymore. And so all of the security products that we sell and others do, are now all built on AI and they're constantly being updated. Sometimes hundreds of times a day as new signals kind emerge. And I think that model of this AI constantly improving, at just an exponential rate during the day, is going to apply in the financial services space. It's going to apply in retail, it's going to apply to supply chain and companies are really going to need to think about what is their strategy for embracing that? Because it's an enormous differentiator when you actually deliver on it.

Scott Guthrie (24:12):

And I think to Sandy's point earlier, the companies that are there first are going to have an enormously unfair advantage in the industries that they compete in, if they can apply it and use it to kind of unlock those insights. And cloud is the ultimate enabler for it because if you want to train models that have millions or billions of data points, you can't do that on 10 servers sitting inside your data center. Sometimes you need thousands or tens of thousands of servers and you need it quickly. I think we're just at the onset of these kind of large AI model training impact. I think it's true for every industry and I definitely would encourage everyone to lean and think about your strategy because I do think it's going to be an enormous game changer.

Adam Bass (25:02):

Regardless of where an investment firm or individuals at that firm are on their embrace technology, we are talking about a huge shift in terms of culture, change management and management, across many different generations, all with a wide variety of exposure and comfort with tech. What leadership lessons should we take from all this?

Scott Guthrie (25:30):

One thing I'd encourage is just, given the changes that are happening is recognize they're not one time changes but they're really continuous. And I think really kind of embracing and leaning into the fact that we need to be in a constant learning mode going forward, as opposed to kind of a one time process. I think we're all used to going to university and we learn and then we apply it in our jobs. And in some ways we kind of need to keep going back to university on a daily basis and learn something new because I do think the rate of technology and the rate of change is just accelerating and going to continue to accelerate.

Scott Guthrie (26:00):

And I think from a culture perspective, how do we also then kind of learn as leaders to listen, to be empathetic and to learn from our employees? Because I think in a lot of ways, people that are entering the industry today have different experiences and different perspectives than some of us that have been in the industry a while. And just creating that kind of model of rather than us sort of assuming we know it all but to rather try to have a model of learn it all I think can really build strength in the longterm way inside an organization and help make sure that we're ready, not just for the current technology change, but the one that's going to come next year and the one that's going to come the year after that.

Adam Bass (26:44):

That's all for this week. A big thank you from Joe and me, to Scott and Sandy and to all of you for listening. If you'd like to hear more about how technology is transforming the financial industry, you can view the entire MSCI Nexus conference, including demos of next generation investment solutions at [msci.com/on-demand](https://msci.com/on-demand). Type nexus into the search field to bring up the conference or you can check out related content on this episodes page on [msci.com](https://msci.com). Until next time, I'm your host, Adam Bass and this is MSCI Perspectives. Stay safe, everyone.

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