

Sustainability Now Podcast

“Sustainable Finance Summit, Part 4: Rheia Khalaf and Harlan Tufford”

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Mike Disabato

Hello everyone. Welcome to sustainability now, where we cover how the environment, our society and corporate governance affects and are affected by our economy. I'm your host, Mike Disabato, and this is part four of four of our series of recordings from the Sustainable Finance Summit in Montreal that was put on, of course, by Finance Montreal. And this is the last one, and obviously it's on AI, because what else would it be on? And in order to meet our daily AI quota, I have for you today a conversation that I recorded with Ray Khalaf, who leads the financial sector collaborations at Mila, which is Quebec's AI institute. And Ray talked about what she sees when these big traditional companies, those that are like a massive tanker. And so when you want to make a new thing, it's like turning a tanker, decide to bring AI into their systems. The gap, she says, is rarely just the technology. It's also the governance that the company that may not be able to actually keep up with the systems that it's beginning to use when everyone is just vibe coding products and not really paying attention to it. How do you build governance safety nets around those products and around the company itself? And she also gets into the other side of it, the less risky side. There's the opportunities like drug discovery and predicting climate events better with AI. And the good that can come with disruption at a company. The question for Reya isn't whether AI reshapes these companies. It's whether we can build and run the systems that they're going to start to use AI systems, LLMs, Agentic systems without them eating us and all of our resources along the way. Then at the end, the final part of this whole series on sustainability, which was put on by Finance Montreal, we have a conversation I recorded with Harlan Tufford, who is my colleague and who was a host at one of the panels at the summit that Ray was on, and Harlan discussed a new model that he and his colleagues are building to assess which industries are most likely to be impacted by AI impacted, meaning both the good and the bad. The disturbance and the support. And the question for Harlan was not whether or not AI is going to change companies, it's where it will be most acute and who it will impact the most. And then armed with that information, investors can adjust their portfolios and their exposure as they see fit. Now remember this is part four. So if you enjoyed this conversation and want to hear more, there are three more parts that you can go listen to. It's an exciting prospect, I know. And now, without further ado, let's get to my conversation with Ray Khalaf, who leads the Québec's AI Institute's financial sector collaborations. So welcome back to the Sustainable Finance Summit put on by Finance Montreal. I'm Mike Disabato with sustainability now and MCI. And today I have a real collapse of the AI Research Institute of Quebec with me. Thank you so much for joining me.

Rheia Khalaf

Thank you. Thank you for having me here today.

Mike Disabato

So you just got done with a panel and, uh, it was great. By the way, it was nice to see you. Uh, but I kind of wanted to start off with talking about what the AI Research Institute of Quebec sees when a long standing, uh, traditional enterprise comes in and it says, okay, we want we want to adopt AI. And, and I'm wondering where the gap tends to be the widest. Is it the technology ability, the talent, the data that they're sitting on or something much more cultural that has to change for them to be able to do that?

Rheia Khalaf

Yes, of course, it's a very good question. And Mila is the research Institutes of Quebec really, you know, as you mentioned, sits at the intersection of frontier AI research and real world deployment. So we have around more than fourteen hundred researchers that are affiliated to Mila working on different topics around AI. I have a background in actuarial and financial risk management. So I lead the collaborations at Mila with the financial sector. And it's also a space where we can gather different players, different industry players, regulators and researchers to talk about the different challenges, also the opportunities that we see, but also how these companies are adopting AI and what are they doing to put some measures in place as well, or to even train their employees also to be able to sustain these new developments. So we do have different types of partners that come to Mila. They are more the research partners that come to us to fund directly research, to work with our researchers, with our professors, and to co-publish as well, certain papers that will be in, you know, leading conferences on AI. We have some companies that, you know, are interested in research, but are also more interested in how that research becomes usable. So how can they deploy it directly within their businesses and the AI adoption seekers? So those that are not AI first necessarily. So I think that's the category of companies you're mentioning that come to us as well to um, ask us what are other companies doing? What works today? What can we deploy? Where can we use AI that would benefit most in certain processes, for example, so we can do some process mapping and discover that with them as well, and then identify certain use cases and opportunities. So I wouldn't say necessarily that some companies succeed or some don't. Um, I think we're still in a phase where AI, you know, is still being discovered in certain ways as well, especially where it's more useful, but also what are the challenges? And I think a lot of companies still have challenges or will also have new challenges that they probably don't even know yet today. Um, before I go into challenges, it's good to mention that there are, you know, extraordinary opportunities also in the use of AI. And we sometimes tend to forget that as well. We see more about operational efficiency, about automation and about, you know, replacing certain jobs that are more repetitive. But beyond that, there's also an opportunity, yes, in repetitive tasks to give employees more time to work on other things, but also on topics like health care, drug discovery, climate change, um, climate predictions, climate risk predictions, for example, or some other use cases, even within a more corporate and investment or financial setting, that can be very beneficial as well. But in terms of challenges, I'll mention governance, of course. So governance is, you know, deployed as a framework within a lot of companies, but it's also evolving at a pace that technology is faster. Um, so it's not necessarily keeping up to the technological speed. Data challenges remain after even, you know, obviously years of using data, but there's still challenges

around that third party reliance. So a lot of companies do rely on the major AI providers like the open AI, the anthropic Microsoft. And there is a concentration risk around these providers. But there's also more use of these non-major AI providers, actually, a use that has increased more than fifty percent over the last few years. So using third party vendors and assessing the risk of these vendors as well, there's what we call two shadow AI. So where some companies also limit the usage of certain vendors. So what happens is that other employees then use these more performant models, maybe on their personal computers, and that creates even more compliance risk or also more risks around confidentiality and a lot of research. And, you know, a lot of, let's say, risks also, and challenges in terms of evaluation of these models and reliability. So ensuring that, you know, we can rely on their answers, that the answers are correct and do not hallucinate, but also evaluating them even beyond the time that we actually deploy them. And you mentioned people and culture. And I think, I mean, we can do a whole podcast on that for a few hours. Um, of course, yes. It's a, it's a challenge.

Mike Disabato

Have you seen companies actually put out formal policies that ring fence those risks? I mean, with the opportunities you, you obviously wouldn't put out a policy around it or you wouldn't have an internal policy around an opportunity because you just want those to build. Yeah. But in terms of how they need to structure their governance systems around their AI tools that they're using, how to ring, face them, you know, how you ensure both flexibility, but, you know, cybersecurity oversight. Have you seen that at companies?

Rheia Khalaf

Yes, of course. I mean, there are frameworks that are put in place. There are frameworks that companies use as well. Some are also embedded into legislations like for example, data privacy. I mean, there's legislation around data privacy that has been adapted with the use of AI, but that relies on that legislation, so to say. Um, there are also, you know, guidelines that are published by the authority of, by the Autorité des marchés financiers. It's easier in French by the IMF. Um, and, you know, other international jurisdictions as well and international frameworks and guidelines that are published and that companies are using. Um, the problem is, yeah, in terms of the governance framework, is that it doesn't keep up as easily with the technology changes and with the new risks, also that new technologies or that even new releases of existing technologies are creating as well.

Mike Disabato

Is there a conflict that you have to deal with when the sustainability side, uh, where there's obviously the massive environmental damages of data centers, the energy use the water, use everything on that line. Uh, and then there is this desire to sort of try and use those systems to make breakthroughs around environmental problems. Um, obviously those two things can happen at once. You can have a system that is quite destructive and quite helpful at the same time. But how do you kind of talk with, with companies that might be focused on here's all the negative impacts we see. What should we do about that? How do you coach them through it?

Rheia Khalaf

Um, no you're right. I mean this is a reality that the more data centers also that are being built, the more that we'll see these impacts and, you know, these

environmental impact, but also impacts on the communities, for example, that maybe live in certain areas, the impact on water use as well. Um, you know, the impact on biodiversity also that might be present in certain areas too, that the new data centers can maybe uncover as well. Um, it's something that companies are starting to be more sensible about because they are deploying AI more largely and more at scale. And I, I'd say, I mean, it's a question of, you know, maybe trying to use renewable energy also for these data centers, but I think I'll bring it down to more at a moral level. And that's where we see research that is starting to also happen among our researchers at Mila as well. So more in terms of optimizing the models themselves and having them more efficient, obviously, but also more resource, um, effective as well. And it is some research. I mean, a few of our researchers are working on that topic. Um, there's a professor at McGill who has a program that trains engineering students on environmentally aware development of AI. Um, there are companies that are also starting to look to come to us to ask us questions about how can they optimize the use of their models in terms of GPU usage, but also in terms of using models that perhaps are pre-trained and they don't have to retrain them, um, models that continually learn so they don't have to learn from scratch. So some adjustments like that, that, you know, research can help, but that can also help the models themselves be more efficient. Sometimes the objective is for cost as well, but if ultimately it also helps in reducing energy consumption, then we'll take that.

Mike Disabato

I mean, I would assume there would have to be a push toward that, especially if communities continue to sort of push back on data centers. There would have to be some sort of connection between especially building practices of data centers and sustainability. And it's such an interesting look at the community relations. Um, key issue that we look at at MSCI where that's really come into conflict with the growth, uh, proposals of these, these AI companies.

Rheia Khalaf

Yeah. And I think we'll see that even more as well there, there's more investments also that are going into data centers. So these are topics that have to be top of line to make sure that we are building more sustainable data centers as well, and that we are also using them in the most optimal way.

Mike Disabato

Do you think this. So this this is the thing I'll end on. Do you think where that you'll see actually, things change will be just in the resources required to run something like a data center, to run something like an AI model. If you see a kind of where we saw leveling off of the emissions curve, you'll see a leveling off of the resource requirement for running an AI model. Is that something maybe you'll pay attention to?

Rheia Khalaf

I would hope so. I would hope that with the research and with also more companies also using AI, which is very expensive, that there'll be more of a push to reduce the costs, but also reduce the resources needed to use them. So I think it all ties into each other. And you know, you mentioned Mike infrastructure. You mentioned also the, the materials that are being I mean, that's also maybe something I didn't

mention before. But, you know, we also have to think of the sustainability of the materials that are being used to build some of these cement.

Mike Disabato

Steel.

Rheia Khalaf

Yes, exactly. Or the microchips as well. So I think it all comes ties into each other. Um, but yes, I would hope that the curve flattens at some point and that um, you know, resource is minimized. Um, or at least research is being done to try and minimize the resources needed to deploy these models.

Mike Disabato

Well, great. Thank you so much, Raya. Thanks for answering the questions and taking the time to talk with us today.

Rheia Khalaf

Well, thank you for having me. And, uh, have a nice end of event. You too.

Mike Disabato

Thank you.

Mike Disabato

So, Harlan, I wanted to end this series out with you. You were a panelist at the Finance Summit in Montreal, and you were able to hear a lot of the panelists discuss. But I kind of wanted to get your opinion on, on AI and governance because you're doing this work currently for us. And so the first question is, is around the methodology you're building. You want to look at AI competency, um, which you move from the competency of the AI down to what the AI is doing. Then you go from that to how it's impacting companies. And so I'm curious where the gap tends to be the widest, where the modeling gets the hardest. Is it defining the competencies themselves, classifying a task as automatable or not? What I mean there, or is it judging whether an occupation can realistically be automated or the jump, you know, just modeling the whole workforce overall is that you don't even it doesn't even matter about the taxonomy. It's just, you know, actually figuring that out.

Harlan Tufford

I mean, that's all pretty complicated. I don't I don't know that there's one element that stands out as being astonishingly, uh, difficult relative to all the others. Each one presents challenges. But the good news is that, um, we do, you know, to an extent, stand on the shoulders of a lot of academic researchers, um, and policy makers who've come before us. Um, the, the kind of overall approach that we're taking here is really well grounded in academic research, the, uh, definitions of AI competencies we use to kind of evaluate which specific tasks, which specific occupations could be most affected by AI. Those competencies are based on Taxonomies that have been put out by the OECD. Um, and the, uh, the NIST in the United States. Um, so the framework is not, uh, you know, it's something that's, uh, just kind of come out of thin air. Um, there's, there's a lot of research backing it. Um, and similarly, when we kind of apply these and use it to scale up thinking not just about how AI could affect an occupation, but how it could affect an entire

workforce. Um, we're relying on, uh, a lot of different, uh, data sets to kind of model the composition of each company's workforce, looking at, uh, average industry composition. Um, and, and looking at companies segments in order to get a sense of, uh, you know, realistically, what are the kinds of occupations, uh, within this company and how could they be affected by AI given a set of assumptions about its capabilities? Um.

Mike Disabato

What do you what do you do about. You know, I think when everybody hears affected by AI, their mind immediately goes to job loss. And like the problems of job loss, like affected by I, I can't get a job and I'm out on the street. But then there's also the, you know, you are talking to investors here and the market cares most about efficiency gains, it seems at times. So how do you, when you discuss this with clients, how do you deal with that tension between increased efficiency and, you know, the the realistic possibility of job loss?

Harlan Tufford

Yeah, it's a really good question. It does come up right, especially like when you look at some of these companies and some of these industries and start to see like the, you know, potential for sixty percent of, um, labor being potentially automated already under our current conditions. That's a startling figure. Um, and the three things I think that I would say is, first of all, that, um, you know, we're showing kind of a maximum potential automation. A lot of companies, a lot of industries may never realize this. We're not factoring in the cost of implementing that automation and implementing that technology. Right. We're not discounting this for the cost of automation. That's just looking at the hypothetical maximum percentage of labor that could be automated. Um, and when you think about that, even assuming that it is automated, um, to the maximum possible extent, that doesn't always lead to job loss in every context and every occupation, right? There's, there's two ways that AI, um, potentially benefits a company. One is by, uh, margin expansion through labor cost reduction. Uh, but the other is, um, margin expansion through increased productivity. Uh, your human workers are retained, but they're, uh, reallocated, retooled to focus specifically on the areas that AI cannot automate. And so, the benefits will accrue to the company and its investors. But the channel is through increased productivity of existing human workers rather than through fewer human workers. And which one ends up, um, kind of being the direction, uh, of the moment is probably going to depend on a lot of different factors, like the nature of the occupation, uh, the education level, the costs of maintaining the occupation, the industry, many different factors.

Mike Disabato

The risk of not having a human in the loop, maybe. I think I've seen that software engineers actually are not losing the amount of jobs that they thought they would initially. And I assume that's just because you do need someone that knows the systems actually watching them, or they could go completely rogue and, you know, torpedo the entire business, let alone the the internet itself.

Harlan Tufford

Mhm. Have you I think I agree, I agree, I think that's an area where you're going to see, um, like not all software developers are made equal, right? There's different, there's different kinds of software, different kinds of responsibility. I think, um, it

may be an area where, uh, the verdict's not necessarily in yet on the full scale of potential, um, disruption to the number of workers. But I think you will, you will never see a situation in which there are like that, that role becomes extinct, I don't think, because there is always going to be a need for human oversight of, um, the strategy, the decision making behind, um, the software, the fundamental purpose of it rather than the tactical implementation.

Mike Disabato

Have you ever gone to a industry that you project as having a heavy losses and talk to them about this methodology and product? Have they ever said anything like you think there's going to be sixty percent of our jobs lost? I'm like, wow, that's that's pretty intense.

Harlan Tufford

I mean, I mean, to an extent, every time I talk to a company in finance, um, which is the vast majority of our clients, right. There's, there's a significant potential for, uh, human labor automation in the finance industry. Right. Um, the, the key thing to contextualize that though is, um, how that automation potential is going to, uh, affect the company's overall strategic positioning. And, uh, ultimately, whether or not that automation is a good thing or a bad thing. It may look like we just discussed, it may not lead to, um, job losses. It may lead to increased productivity of existing workers. And for the company as a whole, it can translate into significant benefits. Um, depending on the competitive positioning of the company overall.

Mike Disabato

Can you take me through kind of the technical details of how you think about that, the benefits, like how do you actually look at, okay, this is the possible automation to quote. And then do you have a benefit and and loss in your model? Or is it just looking at purely there's risk for job restructuring due to AI? And here's the percentage of that.

Harlan Tufford

So, so maybe half of the model overall is looking at, uh, what is the potential for, uh, disruption in the sense of automation to the company's existing workforce and translating that into, um, potential labor cost savings. The other kind of hemisphere of the model is looking at how could AI significantly, um, affect or hinder the company's competitive positioning? Basically, if you've got a significant amount of automation potential in a company, how can you tell if that's a good thing or a bad thing? You have a signal of magnitude, but not direction. And our thinking is based around kind of the idea of the economic mode that accompanies competitive positioning will determine whether the benefits of automation accrue to the company itself and its investors, or to potential competitors who are taking advantage of the same automation to scale up or just customers themselves self-serving through, um, uh, generalized AI tools. And so we're looking at things like, um, you know, at a basic level, does the company exist in the real world or could it be coded into existence? And then also looking at factors like regulatory insulation, uh, the presence of a network, um, that would present a cold start problem for competitors, uh, looking at potential switching costs, um, for example, whether or not the company produces products that are used in regulated workflows downstream that would require recertification or requalification, uh, if a customer

were to, um, switch providers, uh, which should be well familiar with in the aerospace industry.

Mike Disabato

Okay. So last thing that is true, I am, I am well familiar with that, but not to give my voice any more leverage on this thing than it deserves. There's so to that point, you know, can you be vibe coded? Do you operate in the real world that I kind of want to end with the robotics question because there are some, you know, I'm obviously no expert, but but I've read some things where it's like, look, these LLMs aren't the thing that's going to shape the economy. It's AI into robotics. Yeah. That's where the actual changes are. Which do you think is going to get priced in first as to how companies look at, uh, how investors look at companies, the possibility that they will be able to build out their robotics or the possibility that they will be able to, let's say, automate their humans with a, a genetic model.

Harlan Tufford

I, I think that's a, a very important. Question. My sense would be that, uh, the.

Mike Disabato

I guess to streamline the streamline that it's like, is the upside priced in first or the downside? The downside is that the Agentic workflow takes over from the humans. The upside is that you have these factories which rely on, you know, a lot of robots and then them becoming much more efficient and coordinated and whatnot.

Harlan Tufford

Our, our goal in building this model has not been to, uh, decide what's been priced in ourselves, but to give clients the ability to choose themselves and say, we think that at this point in time, with our investment time horizon, it's time to start thinking less about, uh, chatbots and more about robots. Um, and so the, that was one of the core decisions when we started looking through all the academic literature underneath this, is that some of the most seminal papers were written like six years ago, like before ChatGPT existed. And like, you know, we can't really base any products today off of this. So we had to think about how to make our work future forward. And so that's where the whole, um, scenario framework we've developed comes from where we're looking, not just at how AI could transform workforces with its current capabilities, but what will it look like when I can engage in real time monitoring the real world, which is something that LLMs will struggle with, but more futuristic, more advanced forms of AI may not. And then going all the way to full autonomous robotics, automated factories. Um, that's that's when you start to see those real, uh.

Mike Disabato

Stunning the meshing, the meshing of human and robot as one. Yes, fifty to forty percent human versus robot. That that's the future that we could see one day. Um, well, Harlan, thank you so much for joining me. I really appreciate it. Thanks for hosting the panels there at Summit Finance Montreal. And thanks for ending us and part four of this podcast series.

Harlan Tufford

Yeah, no worries, but thanks for having me.

Mike Disabato

And that's it for the week. I want to thank Finance Montreal for their wonderful idea of having us record guests at their Sustainable Finance Summit for twenty twenty six. It was a lot of fun. It was really good. You should go next year. Definitely. I learned a lot and had a good time doing it as well. I want to thank Ray and Harlan for talking to me specifically about the news with a sustainability twist, and I want to thank you so much for listening. Don't forget, if you like what you heard, subscribe so you can hear myself or any of the other hosts of sustainability now each week. And don't forget to rate and review us. That always helps with people discovering us. Thanks again and talk to you soon.

Announcer

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