Episode 113 | AI's Power Problem
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DR: [00:00] As a data center expert, what are your thoughts around the telcos' ability to execute on an idea like this?

Roy Illsley: [00:06] This AI inferencing at the edge and sovereignty piece is another massive opportunity for telcos. Telcos have been here before. In 2010, the cloud was an opportunity for telcos that they missed.

DR: [00:21] I think there's three things they need to really think about. It's so much more than just the chips and the power, but the software chops to really technically manage these workloads. And I'm not sure that they have that expertise internally to execute on an idea like this.

Announcer: [00:38] This is “Telco in 20,” a podcast that helps telco execs achieve a competitive advantage with AI in the public cloud. It is hosted by Danielle Rios, also known as DR. Today we're talking to Roy Illsley, a chief analyst at Omdia.

DR: [00:53] Hi guys. I'm DR. Earth Day is coming up, which means it's the perfect time to talk about the ginormous energy demands of artificial intelligence. Last year at the World Economic Forum in Davos, Sam Altman, CEO of OpenAI said that the world needs an energy breakthrough to fuel AI's future and the urgency grows daily. The power needs of AI are skyrocketing. Data centers are already consuming about 1-2% of the world's electricity. And with AI workloads doubling every three to four months, that number is set to explode.

[01:27] Altman believes that climate-friendly sources are the way forward, but currently renewable energy isn't predictable or consistent enough to meet AI's demands. So, what's a solution? Today I'm talking with Roy Illsley, a chief analyst at Omdia. He's an expert on cloud and data center technologies and has his eyes trained on AI's powerful energy appetite. We're going to dig into AI's rapidly growing energy demands, whether nuclear energy may be able to fill the power gap and if telcos have a prayer at making money from AI inferencing at the edge. So, let's take 20. Roy Illsley is a chief analyst at Omdia. Hi Roy, welcome to “Telco in 20.”

Roy Illsley: [02:09] Thank you very much, DR. And it's nice to be here.

DR: [02:12] So great to have you on the podcast and we always do an Earth Day topic, and I think there's nothing hotter, pun intended, about the energy demands that AI and cloud really drive. And at Omdia, you've been focusing primarily on cloud and data center technologies, and you've been weighing in on the energy challenges of AI lately. In 2024, OpenAI CEO Sam Altman said that the biggest challenge for the future of AI is meeting its increasing energy demands to power workloads. And so, I wanted to get your take on this.

Roy Illsley: [02:45] Yep. Power is the new gold. If you look around the world, most of the grid infrastructure in the western economy is aging. It's 40, it's 50 years old. And I know in America there is plenty of renewable energy in parts of the country where the wind blows or the sun shines, but the grid isn't good enough to get that power to where the data centers have been built. So, that's one problem. And then in other parts of the world, they just don't have the capability or the generated energy. This is a recurring theme, shall we say, around the world.

DR: [03:23] The world's biggest data center owners, the hyperscalers, Amazon Web Services, Google Cloud, and Microsoft Azure, they're growing leaps and bounds. We always are covering their financial growth. How are they responding to meeting these power demands?

Roy Illsley: [03:38] Well, all three of them have been very, very heavily invested in sustainable energy and renewable energy use for years. But they've all had the challenge of the sun doesn't shine all the time, so how do you store that energy and reuse that energy? That's managed to keep them going where they are today but going forward, you've got the likes of Microsoft looking at reopening Three Mile Island. You've certainly got small nuclear reactors being looked at by AWS and Google and others because there is this short-term power gap and you are building what are increasingly becoming very, very large data centers.

[04:21] If anybody was at GTC, they would've heard Jensen saying, "It won't be long before we have a 660 kilowatt rack, and then we'll have a megawatt rack." Heathrow Airport is a 31 megawatt draw, and that's a very busy airport. And now what you're saying is that could be 31 racks in the data center, and that's not many racks. You are looking at data centers being a

gigawatt, and when you start trying to pull a gigawatt from any grid, it's just not going to be sustainable. That's the size of a city.

[04:58] That is where the big problem is. And what we're seeing increasingly is the data centers are now going to where the power is, so old industrial sites in the Midwest that have got the power there, that's where they're building data centers, not because the communications are there or because it's in the right place for anything else, but it's got the power. Years ago, it used to be all these data centers have to be close to the really fast pipes and connections because latency is a mega issue. Now that's considered important, but it's something that we can solve once we've got the data center up and running, but we can't get it up and running if we haven't got any power.

DR: [05:41] When you start to think about Europe especially, which has many countries, smaller countries, and you kind of look at it from their strict data laws combined with what energy they have in the country, are you seeing them start to open up their borders on data transfers so they can get access to the power that they need?

Roy Illsley: [06:01] No. In fact, they're going the opposite. And I think the opposite reason is because AI is the big thing.

DR: [06:08] Sure.

Roy Illsley: [06:08] Everybody not just wants sovereign cloud, they want sovereign AI.

DR: [06:12] Sovereign AI.

Roy Illsley: [06:13] They want to develop and own the IP of that in their own country. I was with Oracle last week for example, and they're investing five billion dollars over five years in the UK. And I was speaking to Volta the other day and they're investing in the UK because of AI. Now, countries like the UK, we've got lots of wind, we've got lots of renewable, but it's just not consistent. Our struggle is how we can store the energy when it's produced and release it. France on the other hand, they're laughing.

[06:48] 90% of the power in France comes from nuclear. They are probably the only country in the world that's going, "We

don't have a power problem. You lot have because you went down coal-fired or gas-fired power stations." It is very variable, but what they're doing is they're staying true to that data. It needs to be here, it needs to be protected, it needs to be sovereign, and that is causing them a real big challenge. I was talking to a German data center provider the other week, and they were saying because the grid in Germany is old and fragmented, they haven't got the power to build these AI data centers that they want. So, a lot of the AI work in Germany is being done up in the Nordics because obviously it's cooler and it was a frustration for the Germans. They want to be able to do it in Germany, but they just-

DR: [07:36] Just not in position.

Roy Illsley: [07:37] And they can't build a big enough data center with enough power being delivered currently to do that.

DR: [07:43] Well, I would imagine that to get in a position on the power, this is a multi-year, maybe even decade investment. It's not something you can necessarily turn on a dime. And so, I don't know that anyone could have predicted that we were going to need all of this energy in 2025, and it's only growing. I guess that's why France is laughing because they're in position and some of these other countries are not. They've been caught flat-footed on this.

Roy Illsley: [08:06] Certainly in the west, we've grown up on the assumption that this electrical stuff is infinite. We can just use it as we want. It's always available. Now, the transition to carbon free, there's plenty to generate that, but it's so variable. Getting it from where it can be generated, finding a way you can store it and then release it across grids that really aren't designed for countrywide use.

DR: [08:36] Well, that elastic capacity that you need. They weren't really built for high elasticity of being able to shift the energy where it's needed, when it's needed dynamically.

Roy Illsley: [08:45] Yep, and that's always been a challenge, but it's never proved to be too difficult for them to get round until we started getting the power hungry data centers. These data centers can be built up and running within 12 months and AI coming along requiring even more powerful computers. We are seeing this-

DR: [09:06] Exponential growth and need. Absolutely.

Roy Illsley: [09:09] But ultimately we've got to get to a point where the power can be generated and shipped around and used where it's needed rather than-

DR: [09:17] Where it is today.

Roy Illsley: [09:18] Yeah.

DR: [09:18] Well, I spent a lot of time with the telecom industry and they have data centers. Verizon has indicated that it has the power, space, and cooling necessary to run AI applications at the edge, and telcos are constantly looking for new ways to generate revenue, new ways to use their existing assets, repurpose them, and generate new revenue for them. And so, there's certainly other telcos that are talking about offering enterprise AI workloads at the edge as well. And as a data center expert, what are your thoughts around the telco's ability to execute on an idea like this?

Roy Illsley: [09:51] Well, the telcos have got two big advantages. Lots of the telcos are country specific. In the UK you've got BT, you've got Deutsche Telekom in Germany, you've got Telecom Italia, Orange.

DR: [10:05] A high national focus.

Roy Illsley: [10:06] Yes, a very high national focus. The telcos win on the front of if you want to be sovereign, an entity that's based in your country, that's on your stock exchange, that's staffed by your staff, they're in a brilliant position for that. And they've also got the last mile connection to the customers. So, for AI inferencing, they're in a very, very strong position. But as we spoke about earlier, telcos have been here before. In 2010, the cloud was an opportunity for telcos that they missed. This AI inferencing at the edge and sovereignty piece is another massive opportunity for telcos.

[10:47] If they can get it right, it will breathe new life into their business models. It will be able to use the assets they've got. But if they don't get it right, there'll be plenty of others that can pop a small containerized data center, drop it into a car park somewhere, if there's power available, power it up, and make

an edge location available very, very quickly. I was with Siemens and Snyder in the last couple of weeks, and they've both got those sorts of capabilities and ship these things out. They're factory built, they drop them down and basically they're ready to go. And there you've got an instant, not very big data center that should be big enough to run edge locations for running a retail mall, for example. That is something that is a big competition to them. But if the telcos get it right, yes, this is an opportunity.

DR: [11:44] I think there's three things they need to really think about, which is they need to get these specialized chips, and I'm not sure that their Edge data centers are equipped today and those chips are scarce. The line for the NVDIA H200s, there's some big important people with deep, deep pockets that are scooping that up. I think as we've been discussing, getting their hands on a lot of power and electricity maybe in the neighborhood of gigawatts, maybe not at the edge, but they need probably more than what they have provisioned. And I think a key thing that they constantly forget, and they miss this on the cloud as well, was that they thought it was more of a hardware or infrastructure play.

[12:22] And I think what made the hyperscalers win the cloud race was that they realized the software needed to orchestrate and manage workloads at scale was a key component that needed to be built. And Amazon and Microsoft and Google had it because they were using it for their own businesses. And so, it was pretty easy to extend that out to customers. But the telcos don't really have this ability to at scale manage enterprise workloads. And it's so much more than just the chips and the power and even the location, but the software chops to really technically manage these workloads. And I'm not sure that they have that expertise internally to execute on an idea like this.

Roy Illsley: [13:03] No. And the other part of the telco business, which I have always found not as good as the cloud providers, is the customer service and support aspect of it.

DR: [13:13] It's a whole other podcast.

Roy Illsley: [13:14] I remember I was working with a telco a few years ago because one of the technologies I used to cover was IT service management and the telco wanted to understand about service

management, and I spent a good half day talking to them about it, but they were using a completely different language to describe it. And they were going, "Yeah, we've got to translate that into this." Why don't you just adopt service management as it is in the IT sector and change your language rather than trying to do this cross mapping?

DR: [13:42] No, they're so insular. They're so my way, you know, and not really open to new ideas. Again, that's a whole other podcast on that one, right? But they like to take these big risks and these big gambles with these big capital intensive ideas. And we'll see if AI workloads at the edge gets traction and takes off. But one thing that I heard about you is you have been to Vegas about 70 times speaking about gambling. And I used to go to Vegas a ton in my twenties. I too have probably been in Vegas about 70 times. But when you're not attending a conference, what do you like to do for fun when you're visiting Las Vegas?

Roy Illsley: [14:22] I've gambled once in those 70 visits.

DR: [14:25] Oh my gosh.

Roy Illsley: [14:26] I used the slot machine for about half an hour and got bored, so I don't gamble. And unfortunately I don't get the time because I fly in, I get to the hotel, I have meetings, and then two days later I go back to the airport and fly home.

DR: [14:39] Oh my gosh.

Roy Illsley: [14:41] And normally I fly back with the air crew, so the air crew fly out and go, "What are you doing on the same flight?"

DR: [14:45] The same people?

Roy Illsley: [14:45] Yeah. It's bizarre.

DR: [14:47] That's funny. Well, if I had to give my guide to Vegas, I like to do four things. They have the best stores there, excellent spas. Almost every Michelin-starred restaurant is there. And then I actually do like to gamble. I'm a craps girl because it's super social and really fun and slots has got to be the most boring thing. But Roy, if you're ever there and we're together, I love teaching people how to play craps, and this was such a really engaging conversation around power and data centers

and AI. And so, I want to just say thank you so much for coming onto the podcast.

Roy Illsley: [15:23] Thank you for having me. And yes, that's the one game I do not understand, craps.

DR: [15:27] It's super easy. I'll explain it.

Roy Illsley: [15:28] Yes.

DR: [15:28] Awesome. Stick around. We end each podcast with a "Telco in 20" takeaway. I've got two minutes to tell you something you need to know. Roy just said that back in 2010, the cloud market was telcos to lose and they lost it. But I'm not sure operators really understand why they couldn't capitalize on the cloud opportunity. They went off course because they approached the cloud as an infrastructure play, when it was really about making infrastructure programmable through software.

[16:06] Hyperscalers succeeded with the cloud by hiding complexity behind software layers. They let customers build with simple API calls while telcos kept selling raw capacity. This meant hyperscalers evolved at software speed while telcos moved at hardware speed. And now we're seeing history repeat itself. Telcos are building a case that AI inferencing at the edge is their next big revenue opportunity by saying, "We have the real estate, we have the networks." But as Charles Fitzgerald and I talked about in episode 110, just because you can operate network technology doesn't make you a tech company. The key insight telcos are missing is that AI workloads need orchestration software that decides where models run, how they scale, and how to balance costs versus latency.

[16:52] Amazon, Microsoft, and Google have spent decades perfecting these capabilities for cloud workloads and are already extending them to the edge. The value in edge AI isn't in the distributed infrastructure. It's in the intelligence layer that makes the infrastructure invisible to developers. Without this software capability, telcos risk becoming the dumb pipes of AI computing. In the very first episode of this podcast, leadership guru, Jim Abolt said, "A compelling vision without the ability to execute is just a hallucination." It's time for telcos to be brutally honest about their ability to execute on this idea. It's one thing

to have physical assets and another to understand that making money from AI inferencing hinges on having sophisticated software capabilities. So, instead of chasing pipe dreams, let's talk about how telcos can actually grow their revenue. DM me on LinkedIn or X @TelcoDR, and we'll set up a time to talk. Until then, tune into more “Telco in 20” episodes, like and follow, and leave us a five-star review. Don't forget to sign up for my rockstar email newsletter on TelcoDR.com and check out our totally awesome YouTube channel. Later nerds.