**About ten years ago a British software design entrepreneur and environmentalist called Greg Jackson spent some time analysing the global energy supply sector to try to understand why it was moving so catastrophically slowly towards the green transition that we all nowadays understand to be crucial to our sustainable future on this planet.**

**What that analysis revealed was a group of lumbering incumbent behemoths with outdated technologies and monopolistic market mechanisms that effectively removed any urgency to innovate or improve.**

**So, Greg decided it was time to disrupt that comfortable status quo and shake things up a bit. He and his team used their enterprise software design expertise to create a digital platform that put end customers like you and me right at the heart of every decision made by its mind-blowingly sophisticated algorithms. The result was an ultra-efficient, extremely agile, customer-focused program called Kraken that seamlessly linked together every aspect of energy supply management, customer liaison and billing, and all the other operational functions that would be required by a green energy supplier of the future. Unsurprisingly, the incumbent operators weren’t all that interested in changing. So, Jackson co-founded a small company to demonstrate how Kraken could improve the operations of a typical energy business. That small company, called Octopus Energy, did quite well. In fact, in just eight years it’s grown into the UK’s largest electricity supplier with a valuation of over six billion pounds, and Kraken is now contracted for fifty-four million accounts across seventeen countries including the United States.**

**Not a bad start. Eh? But you should see what this business maverick plans to do next!**

**Hello and welcome to Just have a Think,**

**If you’re a UK resident, the chances are you already get your home energy from Octopus.**

**If you’re outside the UK, then you’ve probably never heard of the company, and you might be wondering why this video is relevant to you. But stay tuned, because although Octopus might not be providing your home energy in the future, the Kraken Platform may well become the backbone of your utility company’s operations sooner than you think. We’ll come back to that at the end of the video but, first of all, it’s probably worth taking a look at how Kraken works and why it’s apparently so superior to anything else currently available.**

**Essentially it’s a cloud-based operating system that uses machine learning, generative AI and data to automate the entire energy supply chain. Because all the information about each customer is held in a single data set within Kraken, you and I get a seamless customer experience all the way from registration and authentication, right through to billing, notifications and customer relations management.**

**Here’s Greg Jackson himself during a recent Podcast…**

**Kraken is designed to support almost any utility in almost any geography. And it’s especially good at handling the world of renewables…forecasting generation, forecasting energy needs in the batteries of each electric car, monitoring every heat pump and understanding the thermodynamics of the home it’s in so it can optimise the heat pump against renewables. Just for Octopus UK, Kraken processes billions of data points every day. What was really special was in Kraken we could do this far more completely than most because Kraken had the entire statement history, the meter reading history, the payment history. It had every email in and out, every phone transcribed both ways. It had the entire history all in one data set, for every customer. And so, when a customer writes in Kraken is able to produce a much more complete response, using generative AI.”**

**I visited the Octopus Head Office in central London recently, where Greg gave me a tour and touched on one or two of the key outputs of the Kraken platform…**

**I think when President Kennedy announced that America was going to send someone to the Moon by 1969, no-one knew how they'd achieve it, but by having that focus they delivered it. We do know how we can achieve 2030 Net Zero, or zero carbon electricity, but what it takes is focus. So, we know that through wind and solar, interconnectors, grid level storage, dramatically more EVs and heat pumps, we can create this system.**

**This is fan club where you get cheap electricity when its windy.**

**We run this thing called Fan Club - a limited number of turbines we have where if you live near the turbine you get cheap electricity when it's windy. 20% off when it's windy, 50% when it's very windy.**

**And the reason we did that was we wanted to see if we could encourage people to use electricity at the times the turbine was turning. Because that way you need less storage and less transmission - less grid getting used locally at that time. And we found that people do indeed like… you know, they do their washing or other discretionary tasks when it's windy. And it's not like you need to check it out, you can tell! You look out the window! But this is what’s really cool. So, when we announced the fan club – i.e. cheap electricity when its windy. 26,000 individuals and communities got in touch wanting turbines near them. And then adding on landowners. So, we’ve got all these landowners who want turbines. And then mapping where we think we can get grid connections quickly. So, we get the grid situation. So, the green means availability. So, click on that and you’ll there’s 11MW of headroom. So, you can think about what you can do there, yeah. So, you’ve a landowner, you’ve got a community and you’ve got grid.**

**And then there’s all this kerfuffle about them-there new-fangled electric vehicles isn’t there. Astonishingly, we’re still seeing some elements of the press and social media trying to suggest that a move to EVs is not the right direction for the automotive market, but on top of the obvious benefits of a vastly superior driving experience, far lower maintenance and running costs, AND a significant carbon reduction, even in countries still running coal dominant grids, electric vehicles are also already playing a key role in grid flexibility, as Jackson explained.**

**Using electric car batteries is an incredible way of balancing the grid. Because today Octopus alone has one-point-zero-six-six gigawatts, so over a gigawatt, of electric vehicles that we charge with a bespoke schedule for each vehicle every day, designed to do this exact job of balancing the grid. It allows us to grab the cheapest electricity, often when it’s windy or sunny or when the grid’s underutilised and charge the cars at those times. That gives us…the drivers on these products can do a hundred miles for £2.40. That’s seven times cheaper than petrol or diesel. But they’re also helping to bring down the cost of electricity for everyone else, because they’re helping balance the grid and soaking up this cheap electricity when it’s abundant, using less when it’s in tight supply, which that for everyone else that’s using it at those times, there’s less demand.**

**And even if you’re away from home, The Kraken platform co-ordinates hundreds of public charging networks into a single app to make sure you always have access to electrons when you’re on the road, and often at preferential rates.**

**Here’s all the charge points on Electroverse in the UK. So, you’ve got the real time availability and pricing of all the charge points.**

**Here we go. This is where you get special offers. Like loads of special offers. A bit like the time of use tariffs at home. With Electroverse we negotiate a time of use for out of home as well with some of the operators. So, when electricity is cheap your charging is cheap. And idea is, well we found that 40% of the charging shifted when we did that.”**

**That’s Electroverse. So, it’s not just the UK!**

**Not content with simply providing the electricity though, Jackson and his team are investing heavily in hardware as well. They’ve recognised the slow pace of heat pump adoption here in the UK and have set out to fix that problem too…**

**And the more we looked at heat pumps, the more it was clear they were the answer. This magical thing that they use one unit of electricity to create three or more units of heat is magic!**

**It's incredible.**

**The next thing was, Michael Dell - the guy behind Dell Computers? He was in his dorm room doing his MBA when he read that an IBM PC that costs $3,000 to buy only cost $1,000 to make. And that's when he created what he called the direct model. And they literally set up their own manufacturing and shipped direct, removing a lot of the cost in, you know, wholesale and distribution, stuff like that. And that's why we basically bought our own heat pump manufacturer. And then developed our own heat pumps. Because we want to get closer to the manufacturing cost. But within that it gave us the opportunity to, you know, move to higher temperature heat pumps. And so, the Octopus Cosy 6 will run at up to about 75 degrees C. Now in doing so it might be, I don’t know, 10% less efficient than a 40 degrees C heat pump or 45 degrees C heat pump. But it will mean that you don't need any new infrastructure in your home. If your gas boiler works, this can be a plug and play replacement. And therefore the upfront savings in you changing your home, avoiding changing your home, far outweigh the, sort of, 10% extra you might be paying on electricity.**

**Despite these very significant technological breakthroughs and market disruptions, a rapid transition is still being severely hampered by the same, familiar old road blocks of bureaucracy, regulation and legislation…**

**The main things we need to do are very rapidly reform our planning system so we can build infrastructure. It doesn't take long to build wind farms and solar. It takes a long time to get the permission. Then we need reform of the way you get a grid connection. The queue to get a grid connection is still often well over a decade long! You know, you can't hit a 2030 target if it's going to take 13 years to connect a solar farm, which is what we currently face one of our plans in in Durham.**

**And the third thing we're going to need is to reform the electricity market. Because if we're going to put all this renewable onto the system, we’ve got to make sure that it brings bills down. And in our current perverse market there's no guarantee of that.**

**One of the key elements of those reforms, in Greg Jackson’s view, will be the introduction of regional pricing to replace the current system we have today that was designed for a very small number of very large, centralised power producers…**

**So very precisely the way it works currently is every half hour National Grid holds an auction and anybody who wants to generate electricity and sell it into the grid states their price. National grid then looks at all of those bids and they cut off at the price which will give them enough electricity to fill the grid. And every generator gets that price.**

**So, what that means is that if you've got a, for example, a supply constraint in the southeast of England, that might set the entire national price for that a half hour, pushing it high. But if it's windy at that point in Scotland there'll be so much electricity that they turn off the wind farms and pay them to turn off. But the high national price means that, you know, for example people at the other end of an interconnector can make money by selling into the UK. And so, if we broke it up into regions, instead of the entire price being set every half hour nationally, each region will be set each half hour. So, you imagine that in each half hour the region that's currently the most expensive would still be that price, but every other region would be cheaper. And that's why we know that - the modelling shows that – if we did this, every region would be cheaper than it is today. Scotland would be the cheapest in Europe. Many other regions, Northern England, Wales, the West, the East would be dramatically cheaper.**

**And then of course all these new projects actually need to get connected up to the grid, which is another area desperately in need of reform…**

**It's not about National Grid themselves. It's the system of governance which is, you know, set in regulation and legislation and, you know, it's quite bureaucratic. It was defined at a time when we used to build one new power station every five years or something, right? And it didn't anticipate a world in which we were going to be building an entirely new electricity system and all that additional infrastructure. And so, the process for reviewing and then connecting was never designed to handle the volume we have today.**

**The problem is because each person's position in the queue is valuable, they don't like the queue jumping, and that means that you know a job that is… a project that might be fully funded, the money in the bank, all of the other paperwork's been done, it's ready to go, might be sitting way back in the queue behind projects where they don't have the finance or for whatever reason they're not ready to go. But if we were to try and help them jump the queue then you risk legal action from the ones in front. And so, it really does need some strong leadership.**

**So, with a new Labour government here in the UK, the hope is that these regulatory and legislative barriers will be overcome in the coming years. But what about across the pond in the good old US of A? If you’re watching this video on the day of publication, then there’s only two days to go until the US election. So, how’s that going to work out for a platform like Kraken?**

**I now spent a lot of time in America. There's incredible interest specifically in Kraken because I think… American utilities are run differently than energy is in the UK and Europe. In the UK and Europe, you choose your energy company and that creates this kind of competitive pressure for energy companies to use technology to bring people different ways of using electricity. Preferably ways which are cheaper. So, in the UK we've seen this explosion really in smart tariffs.**

**And so, but one of the challenges they face now is… a lot of them have got emissions goals - carbon goals - set by the state or others, and they've got to move to more renewables. A lot of them are facing moves to renewables because they're cheaper and so they'll have a competitive generation market. And so renewable generators will be springing up with cheap power. But of course, power that has a different characteristic. [] and then they'll also really face the pressure from things like AI data centres. Even more than you see in other geographies, because the US is really home to some of these ‘hyperscalers’. And so, a lot of those US utilities are now talking to me about how they can use Kraken to, you know, more intelligently manage this much more complex world that they've now got.**

**I think Bobby Kennedy summed up our current situation quite neatly way back in nineteen-sixty-six**

**"*There is a Chinese curse which says,***

***'May he live in interesting times.'***

***Like it or not, we live in interesting times...*"**

**Anyway, that’s it for this week. Thanks, as always to the amazing folks who support my work via Patreon. Don’t forget to jump over to Patreon dot com forward slash just have a think to have a look at all the exclusive perks you can enjoy there. And if you found this video useful and informative then you can hugely support me absolutely for free by hitting the like and subscribe buttons on YouTube and clicking on all notifications Doesn’t cost a penny to do that and it’s just a simple click away, either down there or on that icon there.**

**As always, thanks very much for watching! Have a great week, and remember to just have a think.**

**See you next week.**