Like using a hammer to put on your shoes: energy leaders must learn how to use technology

Future of energy | The Internet of Energy is set to provide flexible, sustainable and affordable power for all. But we must not get complacent. Gianluca Mauro, Co-founder and CEO at AI Academy, argues that for this future to be realised, energy leaders need to develop a digital mindset

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There is a lot of talk about the future of energy. We hear that we will soon be living in a paradise, where flexible power systems maximise efficiency to provide us all with clean, sustainable energy at a price we can afford.

It sounds fantastic, but let us not get too complacent. We are not in the future yet, after all. And we might never arrive unless those in senior positions within the industry truly understand the complex technologies that come together to form what I like to call the Internet of Energy.

What is the Internet of Energy?

What is the internet, at its most basic? It is a network, on which people and machines exchange information.

The energy industry is following suit. The aim is to move away from a system in which the big utilities pump power downhill towards a group of passive consumers. Instead, the sector is working to build a network in the truest sense, where people produce, consume and exchange energy, peer-to-peer.

The significance of this move cannot be overstated. It could completely change people's relationships with power – shifting the balance in favour of the consumer and a new generation of innovators. And it could boost the economy, paving the way for innovative new businesses to disrupt the established order in the same way Airbnb has shaken up the hotel industry.

Enabling this shift are three key technologies: blockchain, big data and artificial intelligence. And, while we are talking about the energy landscape of tomorrow, these technologies are available today. There is nothing standing in our way. Except, perhaps, our mindset.

Developing a digital mindset

There is a lot of talk about a shortage of technological talent in the energy sector. But I do not think that that is the case. We have an abundance of hugely talented engineers, innovating to solve just about any problem you can imagine.

But there is no benefit in having all of these amazing workers and solutions at your disposal if the leadership is unsure of how to use them. Just as it would be no good having a hammer if you were not sure whether to use it to put up some shelves or to put on your shoes.

This is the big problem that the industry faces at the moment. Indeed, it is the only barrier left in the way of the wonderful energy future we can see before us: C-suite executives and senior operational people such as senior engineers and business development managers must develop a digital mindset. At the moment, they know that these technologies exist, and they know that they have tremendous value – but too many do not know how to use them.

And this represents a real problem. Because these technologies are so fundamental that they necessitate a change in the dynamics of the companies using them. Take AI, for example. It is no good writing an amazing machine learning algorithm or building a state-of-the-art neural network if it is not then applied to solving the business's problems.

If placed at the centre of the business, with a vision for its application to the firm's challenges, AI can analyse all of the data that the company has about customers' energy needs and the power available on the network. It can decide the most efficient series of transactions to ensure that everyone gets the power they need, cheaply and with limited waste. And it can do this all in real-time.

That's just one of the many, many ways in which AI can add real and tangible value. But this can only happen if companies

become technology companies, rather than legacy companies in possession of technology that they do not understand.

Fundamentally, this is why Amazon is so successful. Built with technology at its heart, it is an internet business, not a shop. And while it is possible for companies to pivot to technology, it is not easy. This explains why there are loads of failing ecommerce ventures: a shop with a website cannot truly compete with a scalable digital-first retailer.

And technology firms like Amazon represent a threat even to those with whom they are not competing. While the energy sector is currently awash with promising tech talent, they need to be given the opportunities to build the solutions they know they are capable of, they will move to Apple, Google or another company that is structured to give them that chance. For energy leaders, adaptation is a matter of life and death.

Learning to survive

The solution is, of course, education. But I do not mean deep, technical courses. Europe's universities already do an exceptional job of providing us with a skilled workforce that knows the technology inside and out. That is how we ended up with all of these talented engineers in the first place.

Rather, we need courses geared towards helping those in senior positions to understand the underlying dynamics behind these technologies. They do not need to be able to use the tools, but they do need to know what they are used for and how to build a business to support their use.

This is the thinking behind a new course on the Internet of Energy, which I have been developing in conjunction with InnoEnergy. Taking the form of a summer bootcamp, we aim to quickly get energy leaders up-to-speed so that they understand the basic principles underpinning the technologies shaping the future of their sector – and can steer their respective ships in the right direction.

Because you can put your shoes on with your hands. But when you have a hammer, you can build something beautiful. ■

InnoEnergy is the innovation engine for sustainable energy across Europe. Its Internet of Energy Bootcamp runs from 3-7 September and can be attended online or in person

Meet InnoEnergy

InnoEnergy runs a series of programmes to promote sustainable energy in Europe. Its support ranges from on-the-job training to start-up incubation, higher education and entrepreneur coaching. Its shareholders include businesses Total, ABB, Schneider Electric and EDF plus universities and research institutes including France's CEA and the Karlsruhe Institute of Technology. It has supported solar startups across a range of areas including BIPV, thin-film technology and kerfless wafer development.

Author

Gianluca Mauro is founder of AI Academy, a consultancy covering the strategic, organisational, and technical aspects of AI's implementation. He has moved from energy engineering to data science via entrepreneurship and lived in Silicon Valley as a Fulbright BEST scholar. AI Academy is running the Internet of Energy Bootcamp with InnoEnergy, the European incubator for innovation in energy.