

Digital Utilities, Europe, 2017 took place in the Millennium Gloucester Hotel, London. This saw the collection of a group of innovative minds discussing the problems and opportunities, as well as experiences related to the digitalisation of the Energy Sector. Attending the first day I was exposed to a variety of topics ranging from digital transformation through to smart meter challenges and blockchain. Aiming to address several different themes, this writeup will have an overlying purpose of acknowledging both the positive and negative impacts these themes have on jobs within the Energy Sector.

Digitalisation is not a new concept. The dematerialisation of daily life has been happening since the creation of the apple smart phone in 2007. What is new, and worth acknowledging is the enormous rising speed this is now happening at.

Historically the utilities industry has been very slow, previously seeing customers as delivery points. However, there is now a realisation that they can sell more to a customer, with solutions such as Demand Side Response and Smart Homes. One of the speakers John Ander, CEO at Fortum Tingcore, explained; “utilities are starting to, and will continue to, become more like banks.” Having more to offer and making it harder for people to leave and thus instilling a sense of loyalty. Which leads us to the first main opportunity digitalisation has caused for employment – **customer satisfaction and engagement.**

Already an important area, this responsibility is by no means going to diminish. With customers committing to utilities for extended periods of times, and with the offering becoming more varied and comprehensive it is evident that there is a high demand for utilities to provide an embracing and supportive function for their clients. This is what will set the utilities apart from the digital superpowers: Apple, Google, Facebook and Amazon. There is a common fear that these superpowers will disrupt other industries, and utilities are now wondering if the infrastructure is safe; it would not be hard for Facebook to acquire their own infrastructure. The chance utilities have is to nurture the customer relationship and as digitalisation creates more exposure between utility and customer this will only become more important.

The old production chain of: Production -> Grid -> Sales has gone out of the window, replaced by Smart Energy, particularly related to Smart Homes where consumers have more control. Coal Power Stations are being decommissioned and electric vehicles are just around the corner, which means huge demand on the grid moving forward. So, we now have a new value chain where the focus is not just on the grid, but also on ‘way of life’. To accept and embrace the digital energy revolution customer engagement is fundamental. It’s no fallacy to claim that the everyday population do not hold a vivid interest in energy usage or energy efficiency.

This is a huge challenge for the utilities moving forward in the digital world. As James Johnston – CEO of Open Utility explained, “utilities aren’t liked but they are, to an extent, trusted.” There is a strong focus on improving this reputation moving forward as the market becomes more customer and data centric. A recent example of this being attempted can be seen through Engie aiming to restore trust in energy firms with a new tracker tariff. Visualisation leads to reduced consumption and it’s important for customers to embrace this concept within their homes.

It’s not unknown that the motor industry has always been quick to embrace new technology, Tesla is a great example here, however it is now time for the construction industry to do the same. The building industry is ready and software integration is key here with Smart Homes the solution. Job opportunities within this area are endless – with architectural firms benefiting as well. Smart homes create the opportunity for the construction and digital industry to work together. New, Smarter

Homes can adopt energy efficiency principles throughout their creation, and quite literally be built to be efficient. With the drive in customer engagement and awareness of energy usage on the rise the opportunities for consultants with these skill-sets is only going to increase.

Smart Homes can also lead to Smart Businesses where all Energy Management is automated and online. Although a while away it is important to acknowledge this, as the Energy Manager position evolves. One of the main concerns, with Smart Homes however, is the data. Smart buildings generate a lot of data that provides an insight into an individual's or a company's life, which they may not be completely comfortable sharing. The data can show routines, when holidays are taken and when businesses are empty, which clearly highlights the requirement for security, a topic which was addressed by nearly all speakers at the conference.

Data, largely collected from a Smart Meter, leads to opportunities for Bureau companies. With customers happy to share data (as long as security is guaranteed), and with personal disinterest still rife within the Energy Sector, it's now possible for Bureau Companies to offer services to individuals to reduce their energy costs. Data allows for analysis which allows for control. Control and transparency ensures the customer no longer has to accept everything they are told – they can now utilise support to make the choices themselves – this is, again, digitalisation improving customer engagement whilst creating job opportunities within the market. However, the **security of their data** is paramount.

Security, and improving the internal digital teams, is not the only hurdle for energy companies to jump over with the new digitalisation of the sector. Policy has also been a complicated area, particularly within the Smart Meter Rollout in Germany (discussed at the conference) but also more broadly within digitalisation in general. With the introduction of ISO 27001 in Germany – there is now a benchmark for the minimum protection standards each utility must adhere to – all 800 of them in Germany. On top of this the Smart Meters Operation Act released in 2016 set out a number of rules encompassing Smart Meters and Smart Meter Gateways. Now more than ever we are seeing the requirement for **policy and regulation professionals** to help the utilities navigate these waters - with requirements comes opportunity. This is an opportunity that can be seen world-wide; the energy sector has always been political, and with the sector changing, and policies changing, it's now more important than ever for the utilities to not lag behind the competition for political reasons.

When Fortum identified Smart Cities as an area to focus on, they sold their grids and hired a new CEO from Nokia. On top of this they also have a new Head of Customer Service coming from a large telecom and are looking to grow their digital team from 20 to about 60 in a year. Similar to this, Stadtwerke Konstanz have recently hired 3 new digital managers and have built up the I.T team to about 35 people consisting of programmers and network administrators. This is likely to increase with Big Data being inevitable and utilities launching their own data centres. These case-studies both demonstrate the inadequacy companies within the energy sector have when it comes to their **digital employees**. There is set to be a huge rise in job opportunities for digital professionals within energy and keeping your eye on this will reap rewards. Attracting this talent is difficult for the energy companies as they haven't previously had to, however with security leading to satisfaction, in order to keep customers committed this is a main focus for the utilities moving forward and was a common theme at the conference.

When I was offered the choice between day 1 and day 2 of the conference, Blockchain made my decision for me. Both days held extremely interesting topics of discussion, however I was determined to wrap my head around this “new” hype. And this is exactly what it is. At the moment Blockchain is at a peak of expectation however one must remember that Bitcoin, a form of Blockchain, has been

around for quite some time. What's new is the Smart Contract side of things. This involves you agreeing on a "code" (A Smart Automated Contract) which inevitably cuts out the middle man from transactions. This provides what is possibly the largest risk to jobs that digitalisation poses. It is important however, to understand that Blockchain is not going to be revolutionising the sector anytime soon – we are, as James Johnston claimed, in a "peak of hype", which feasibly can drop off. The biggest problem, and likeliest cause, is scalability. There is no platform to scale blockchain, and thus whilst there is hype over Smart Contracts, with some ventures raising millions within minutes, there is no longevity, yet.

With some of the greatest minds working on this, it is certainly likely to change – however for now its uses are restricted and its potential is still not completely known.

Overall it is clear that the digitalisation of the Energy Industry is happening at a rapid pace. Despite several obstacles, utilities are now being quick to respond and adapt and are fighting off the potential takeover of the digital superpowers such as Facebook. Customer engagement alongside trust and security are the main focuses moving forward, both of which are being addressed in a variety of ways.

As with every change, there are certainly some risk to jobs, particularly with Energy Managers and Product Teams within Utilities – which are becoming more obsolete due to a transition to a software service. There are, however, growing opportunities. Digital teams are expanding massively within our everyday suppliers, the construction industry is lined up to get involved and policy staff remain as important as ever, if not more so. Digital Utilities Europe 2017 was great opportunity to see so many creative minds on the same page, with the majority of people moving in the same direction - a rare occurrence for the energy sector.

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