The IoT City – Using Smart Solutions to create a Sustainable Future

Jon-Ivar Nygård, Mayor, Fredrikstad

Your excellencies, ladies and gentlemen, thank you for inviting us from Fredrikstad to the lovely city of Ostrava. Even if Ostrava is a long way from Fredrikstad, we share some key characteristics:

* We are both river cities, with proud industrial traditions

* Both cities have old and beautiful cultural centres

* We both have great ice hockey teams! :-)

I assume most of the people in this audience have never been to Fredrikstad, so let me give you some brief facts:

Fredrikstad is the sixth largest city in Norway with 82.000 people - 140.000 if we count the surrounding urban areas. It was founded by royal charter in 1567 during the reign of King Frederik II, after King Olav II's ancient town of Sarpsborg had been burned to the ground by Swedish troops. Built on the estuary of Glomma river, Fredrikstad became the first post-mediaeval town in Norway.

Its prosperity began when the united kingdom of Denmark and Norway ceded its easterly province Bohuslän to Sweden in 1658, and thus moved the frontier close to Fredrikstad. The town became an important strategic point, and was fortified and garrisoned.

Geographically, Fredrikstad is situated about one hour by train southeast of Oslo. Some 2,5 hours further south by train you will find Gothenburg, the second Swedish city.

The river Glomma - Norway's largest river meets the ocean at Fredrikstad - and splits the city in three

The old city centre is one of Europe's best-kept fortified towns, and a magnet for tourists

The new city centre was elected Norway's best urban centre - and the municipality was elected best municipality to live in in Norway last year - of which we are quite proud

So - we feel we have many things to be proud about, as do you in Ostrava, I'm sure.

Still - clouds are on the horizon in Norway as anywhere also on the planet. The climate, the economy, and the demographic changes are challenging factors, especially when they coincide.

Clearly, we need to meet challenges head-on, and use the best tools we have, in order to leave our city to the next generations in good shape. As cities, we deal with sustainable development on a local level. At the same time, we are keys to shaping the solutions that will make the planet sustainable.

One particularly useful tool is digital technology. We are some 20 years into the digital revolution, so digitalisation has become mainstream. The new new thing these days is the Internet of Things - or IoT.

I am sure you are aware of the basics of IoT: Things can communicate data between sensors and computers using radio technology. We can measure things, accumulate data for learning and insight, which can give us insight and ability to control.

Historically Fredrikstad is an industrial city, and has had its problems adjusting to changes in global industry. Our unemployment rate is above the national average.

The city was previously home to gigantic shipbuilding docks and massive timber export operations. Today it is Norway's capital of circular economy involving chemical factories, a sizeable commercial harbour, several industrial recycling plants and even Norway's land-based salmon farm.

Fredrikstad is also home to a growing number of small and medium-sized ICT and electronics firms, some of which are powering functionalities in Samsung phones and make the software for electronic toll stations world-wide.

It is exactly here - in the intersection between electronics and ICT - that we find IoT. This is where we see a potential for growth. The global IoT market is expected to grow at least 25% every year from 2018 to 2024. The number of connected devices are set to triple by 2025.

You may well have bought your children a Kinder Egg or Kinder Surprise. That's how we think about IoT in Fredrikstad. Naturally, the municipality cannot stimulate an IoT industry by financial means. However, we can stimulate it in other ways. Our strategy is to create an IoT infrastructure and an IoT ecosystem. If there are innovation and research projects that can only be executed in Fredrikstad because we have advanced infrastructure, it means we will attract expertise to the city. If we attract know-how to the city, it means industry and start-ups will grow.

The goal is that get ahead of other cities and stay ahead.

So why is it a Kinder surprise? Well - we believe that when we invest in IoT, we are not only making it interesting for industry and academia to come and play - we also use our infrastructure to improve our own services.

Over time, we expect that IoT will make it possible for industry to invest services and business models that will even make some municipal services unnecessary - and will let us strengthen core services without raising taxes.

Even if we should not succeed becoming the "IoT capital of Norway", we still will benefit greatly from the ambition. Ambition will help us set focus. Moreover, indeed it is already happening:

In just a year, the municipality IT department has set up a IoT radio network that covers the whole municipality, as well as important parts of neighbouring municipalities.

The network is based on a technology called LoRaWAN. The benefits of this network is that sensors and antennas consume very little energy, so batteries can last for as long as ten years. In addition, there is no fee to be paid per device connected. The network also has high capacity, which means we can let businesses, researchers, and even citizen innovators use it for free.

The IT department also started testing sensors for measuring air quality, sea temperature, and humidity in public buildings. We have started counting where pedestrians and bicyclists move around in the city. We also put sensors in creeks and the sour system, removing the need for manual checking.

So - building an infrastructure is well under way. The next step will be share this infrastructure with parties who are not part local government and administration. A city of 80.000 inhabitants is not a big city, but it is not small either - by Norwegian standards. Perhaps it is just perfect? Perfect for projects that can scale up to larger cities, and perfect for projects that can scale down to smaller cities and towns.

In our day and age - and especially within the technology domain - trying and failing is the main method of development. We think a city of 80.000 is exactly the right size for a city to be a lab for trying and failing: Big enough for projects to scale, and small enough for investing and things that fail.

Ladies and gentlemen. You will find many people discussing smart city as if a focus on technology is the opposite of a focus on people. In Fredrikstad we don't believe it is. Roads and cars are made so people can get to where they are going - not in order to make roads and cars. Mobile phones are made so people can communicate efficiently - not in order to

make mobile phones. We are creating the IoT capital in order to reduce cost and use that money to create better services where IoT is not helpful.

Thank you for your attention, and welcome to visit Fredrikstad as tourist, a business. or a research partner. In any case as a guest.

Thank you very much.