**Topic 1c - Part 3: Supporting enterprise and innovative solutions - Other examples**

[MUSIC PLAYING] If you were to turn all the satellites off around the earth, many of the services that we take for granted would suddenly disappear. So the services around the weather forecast, the services around timing. So we really do live in a satellite-enabled society.

I think in the atmosphere, what we're going to see is more and more services driving cleaner air quality. So actually, now people can respond, because the satellites are giving the equivalent of an air quality weather forecast, and people who suffer from asthma can get alerts to their phone to make sure that they take their medicine with them. So actually, really, satellites pervade our life in a myriad of different ways.

Universities are working a lot with businesses to see how they can use that data to create financial outcomes. How do we do that? We use incubation. We bring the businesses, we put them alongside the academics, and we respond to business problems. We're proactive rather than reactive, in terms of being challenged by business to come up with new ideas to solve the problems that they have.

Businesses are interested for what we call intelligent traffic management. How can we route cars around cities to minimize air pollution? And motor manufacturers are thinking about incorporating that into their future products in their cars to give that real-time information into the cabin of a car about the air pollution and how to avoid it.

So does that mean, for example, that there might be a school where there's only children at certain times of day, and you could perhaps route traffic away from that when there's a particular physically vulnerable group, and then the traffic can go where it wants? Is it that sort of thing?

Yeah, absolutely. It's having a dynamic system. And actually, it's all about using the traffic lights as the control mechanism, but actually using the prediction from the satellites to think about how to reroute traffic around a complex urban infrastructure.

Air quality affects health outcomes. So you can also use that data to alert people to hazardous air quality conditions. That means that they take their medicine with them. That has a direct financial benefit to the hospital systems, because it's proven to reduce hospital admissions. So really, it's satellite data to action to financial savings, which will be huge in the health sector.

And phone apps are great for that kind of thing, aren't they? Tell me a little bit about phone apps and how you could use those.

So the important thing that we've talked about in this conversation is visualizing data, and people, particularly the younger generation, really find apps bring it to life for them. And actually, you're asking people to change their behavior. Apps can help inform them to make those informed choices.

One of the key things about trying to shift to a more sustainable method of transport in cities is giving people choices. So, for example, it's difficult to tell people to stop driving without offering them credible alternatives, whether this is through investment in public infrastructure for public transport, car-sharing schemes, encouraging bicycling. It's important to give people options to move away from their cars so that they can still access mobility services that they need.

Having better information on air quality, particularly in urban areas, helps local decision makers put in place effective solutions. This can, for example, mean investing in bicycling infrastructure, which we see in Copenhagen has really been effective. In cities such as Copenhagen, putting in place a number of different transport options for the citizens that live there.

This includes, for example, investing in electric mobility, and this includes not only both support to start-ups for electric car-sharing schemes, but also, for example, recent policy options to invest in electric harbor buses. So the boats that transported commuters along the harbor front traditionally were running on diesel. Nowadays, they're going to be shifting to electric.

Copenhagen regularly undertake surveys to see why so many people prefer to cycle in the city. It's quite interesting, however, that environment is not one of the main factors why people choose to cycle. It's actually convenience and quickness of transport through the city. So taking your bicycle to and from work gets you to a place easier and quicker than if people had chosen to drive.

And how about the effect of regulation? So as people realize we need to take collective action on these pollution problems, the rules are coming in. But a rule is no good if you can't enforce it. So tell me a little bit about how satellite measurements help people keep to the rules, and how do the rules influence the way people behave?

Yeah, this is very important, because typically, how you, for example, report emission estimates is made so that the different countries report their emissions, and that's what is called a bottom-up emission estimation. So you have to have different countries reporting, companies reporting, and then collect this information. And this is also a very long process. So you might have information on a certain year three years after it happened. So it's not really timely information, while you can actually verify those reported information with those derived from satellites that are much more fast to get.

And I do think it should-- We are in the position now that we trust the satellite data so much that we could put it, somehow, in the regulation, while it's not so. So there's not, at the moment, any rule that says, OK, yeah, you can use satellite data to verify that your emission reductions are actually happening.

Maybe there should be more attention by the politicians to this development, because it goes much slower than actually the development in science is going. On the other hand, companies have also duties, because they have to report on their sustainability, on their environmental effects of their activities. So it's in the interest of everybody to be compliant to the rules.

So it works both ways, that if it's the government making the regulation, they can use the data to say, we have a problem, we think we can do better, here's a rule. And then everyone has to pay attention, because there's a rule. But then you also have an incentive to improve your own behavior and do something-- And you can see--

Yourself, yeah.

--immediately that this works.

Yeah. Yeah, it is. It is exactly that. After the first company got interested, and a lot of others also got interested, because these maps that I showed you here were showed also in conferences, in the company website, and their sustainability reports and press releases and so on, so it got attention from other companies, like another company that is working in the oil refineries in Finland, and also other technological companies that can use the data as an asset to produce further product to sell forward. So there's a lot of potential, still, in the data.

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