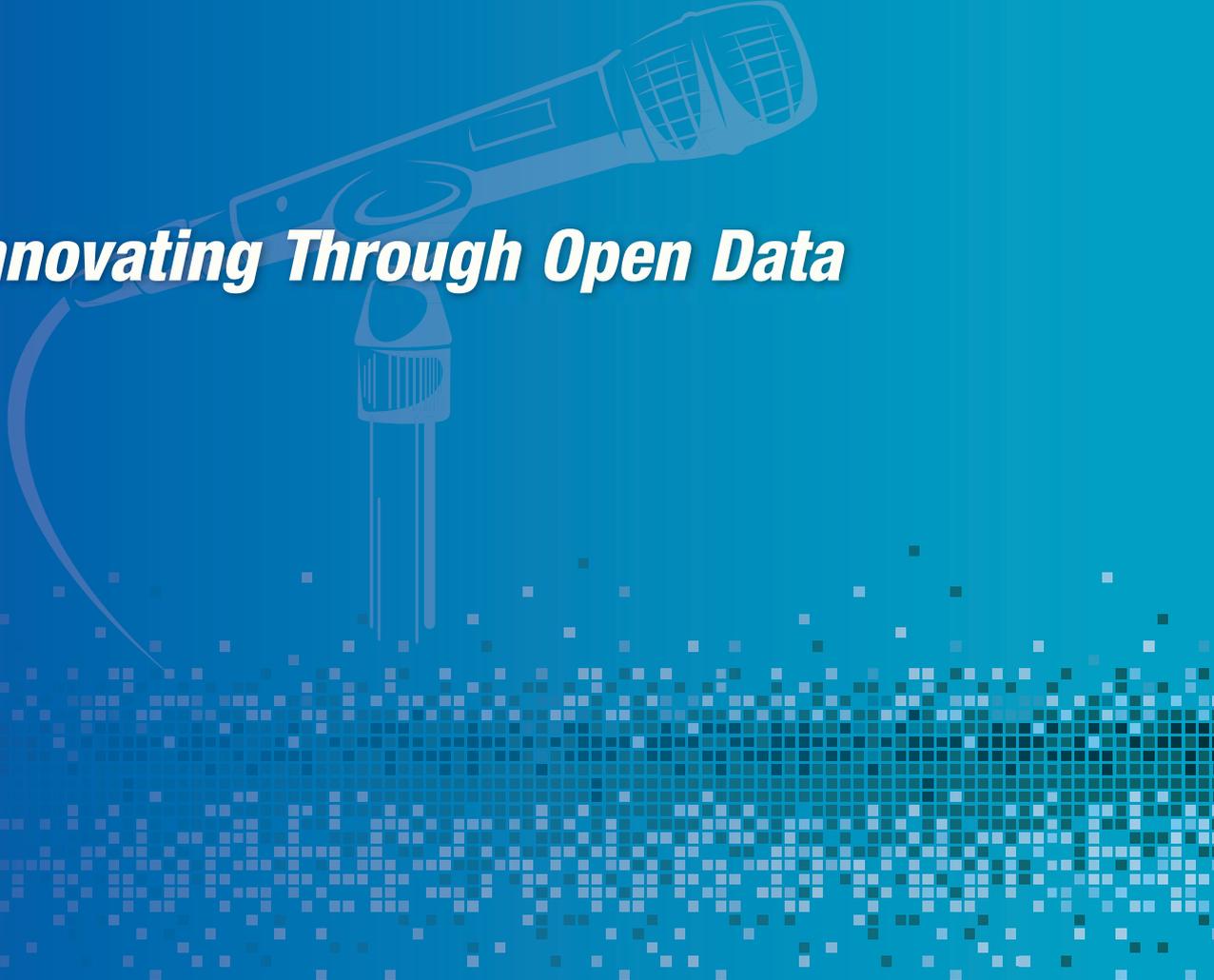# DIGITAL LEADERSHIP

An interview with

Gavin Starks

CEO of the Open Data Institute (ODI)

Innovating Through Open Data

Gavin Starks

CEO of the Open Data Institute (ODI)

Understanding Open Data

Can you define the concept of 'open data'?

It is important to look at the overall data spectrum in order to understand what we define as 'open data'. Open data is data that anyone can access, use, and share. The key difference between open data, shared data or closed data is the licensing conditions that accompany them. We define open data as data that is licensed openly.

> *Open data is data that anyone can access, use, and share.*

At one end of the spectrum, you have national security information that is rightly closed. Then we have shared information which refers to data that is shared between different organizations. Datasets in this category could be your health records that are shared between doctors and health services. And lastly you have open data which encompasses information such as bus schedules and prices.

> *Open data touches on every part of our lives. We now have an increasing amount of open data produced by the private sector.*

What kinds of open data are available?

Open data touches on every part of our lives. The current data available ranges from transport timetables and routes, weather data, pollution levels, to geospatial data, company and land registries or government accounts. We now have an increasing amount of open data produced by the private sector.

Open Data in Practice

What are some of the most exciting innovations you have seen that have been built on open data?

Let me give three examples from our startup community.

An interesting example is that of TransportAPI – a startup that seeks to create a single, comprehensive source of UK transport information. Transport data is scattered across lots of different providers and TransportAPI consolidates timetables, routes, live running and performance history information for a wide range of transport types, including cars, buses, trains and bicycles. They have already gathered 70% of UK's transport data from open sources – for example, data on 360,000 British bus stops and 2,500 rail stations. It's a perfect example of an emerging supply chain, where transport providers publish their data, TransportAPI picks it up, cleans it, and turns it into a better format, combines it with other data, and provides it as their API. Businesses can use TransportAPI's transport data for a range of commercial purposes, from advertising to journey planning. It has already fostered a network of over 1,100 developers and organizations that work with the data to create apps and other services. Their business model is based on the number of hits that the app receives every month.

> *Large organizations should think about releasing their data and rely on third parties to innovate on their behalf rather than trying to innovate internally.*

Another interesting startup is Open Utility. They have created a platform for energy trading – an "ebay" for electricity. The peer-to-peer trading service lets renewable generators set the price for their electricity and make it available to local commercial energy consumers to buy. This marketplace was made possible thanks to the availability of energy data as open data. Their business model is based on a transaction fee.

Finally, OpenSensors.io offers real-time data access, data security and storage, analytics and machine learning via its IoT platform. OpenSensors.io's real-time messaging engine can process millions of messages a second from any internet-connected device, such as a sensor or camera. Businesses can use the platform for many purposes – from automating networks of car parks through license plate recognition cameras and motion sensors to optimizing office spaces by configuring

devices such as thermostats, lights and locks to respond to the preferences of the people working in them. Anyone using the Opensensors.io platform to publish data can use it for free, providing their device publishes their work as open data. Paid plans are offered for private users. As a result, the platform provides access to valuable real-time and historical open data generated amongst thousands of projects and their connected devices. This enables other individuals and businesses to use the data to experiment, innovate, and incorporate it into their own products and services.

What is the role of private organizations in open data?

Large organizations should think about releasing their data and rely on third parties to innovate on their behalf rather than trying to innovate internally. Large organizations have a pivotal role to play in the innovation ecosystem by publishing their data as open data. Today, having an open innovation strategy without open data makes no sense.

Can you give us some examples of private organizations opening up their data?

Syngenta is a good example. They have released data collected on 3,600 farms in 41 countries across Europe, Africa, Latin America and Asia Pacific, representing about 200 crop-climate combinations. It is the first time information at a crop level, including resource efficiency, has been made public in this way by a commercial organization. The data will be very valuable to farmers, enabling them to increase productivity sustainably. This initiative is part of Syngenta's Good Growth Plan commitment to help improve the fertility of 10 million hectares of farmland.

> **Today, having an open innovation strategy without open data makes no sense.**

Arup – an engineering organization with 11,000 employees – is also a strong advocate of open data. They conduct large scale infrastructure projects around the world. In the course of such projects, they obtain huge amounts of information about the environment, from soil quality, designs and plans of cities to underground infrastructure such as water cables. The company releases most of this data as open data and they are collaborating with startups to build great insights and innovative solutions.

Syngenta and Arup are not isolated examples. Pharmaceutical companies, for instance, are starting to share information as open data and are working together to solve big questions, such as the next antibiotic.

> **[Syngenta] have released data collected on 3,600 farms in 41 countries across Europe, Africa, Latin America and Asia Pacific, representing about 200 crop-climate combinations.**

How about public organizations?

Even if large amounts of open data have already been published, public organizations need to be encouraged to release more open data, that is most needed by society. Geospatial data, address data, meteorological data or land valuations data all hold immense potential if released as open data. For instance, in Denmark, in 2002, the Government made the national address file available for free; since then it has calculated a 30 to 1 ratio of direct financial benefits to cost. Governments need to be more aware of the significant social, environmental and economic benefits of open data.

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At the ODI, we have worked extensively with the World Bank on international development in places such as Burkina Faso, helping them to map where schools are located and their proximity to services, transport and sanitation. Open data is being used across the world to help better target responses to disasters and wars. In Ukraine, for example, journalists collaborated to crowdsource locations of shelling to then geotag pictures of the damage. The local government joined in and started using the data to prioritize and mobilize the reconstruction process. In the aftermath of the Haiti earthquake, OpenStreetMap collated open mapping data and crowdsourced data about the physical damage caused, later becoming the default map for rescue organizations.

Innovating through Open Data

Open Data is Widening its Footprint and Value

The web of data will soon dwarf the web of documents.

The UK has published more than **15,000** government datasets as Open Data.

Open Data helped uncover **£200 million per year** in potential NHS[1] savings.

Open Data research has helped tube stations plan service delivery and staffing.

[1]NHS - UK National Health Service

Startups are increasingly innovating with Open Data in – healthcare, property, energy and agriculture.

Exciting Innovation Spawned by Open Data is Augmenting Social and Customer Value

TransportAPI – seeks to create a single, comprehensive source of UK transport information.

Open Utility – a platform for energy trading between people.

OpenSensors.io – offers real-time data access, data security and storage, analytics and machine learning via its IoT platform.

Organizations are Warming up to Open Data's Potential

Syngenta – released crops data from **3,600 farms** in **41 countries.**

ARUP

Arup – an engineering organization that conducts large-scale infrastructure projects around the world, releases most of the data it collects on **environment, design and plan of cities.**

Pharmaceutical companies are starting to share information as open data and working together to solve big questions, such as **the next antibiotic.**

> *Our key challenge is to make organizations realize that open data is actually core to their business, to innovation and not peripheral.*

Are more organizations aware of open data?

We have over 250 members of the Open Data Institute from the commercial world. We have trained over 2,000 people in the last 18 months including executive leadership teams, policymakers, procurement officers, and lawyers. We have reached over 900,000 people in the last two years since we started, but it is still a drop in the ocean from where the potential is. Our key challenge is to make organizations realize that open data is core to their business, to innovation and not peripheral. The major barrier for organizations to open up their data is cultural. This is valid for big and small organizations, universities, the public sector, local authorities and central government.

How do you convince large organizations that open data is a key building block for innovation?

We start with data literacy; we hold executive workshops and train different parts of the organization, such as the legal team or the CTO office. We then network the organization with startups or other large companies, which are generating significant benefits by releasing or leveraging open data. Most companies understand the importance and value of open data but they are overwhelmed by the volume of data they possess and are not sure how to start.

What kind of innovation would you like to see emerging from open data?

I would like open data to help solve some of the major challenges our society is facing. For example, in agriculture, how do we distribute the food we are producing more effectively or how do we double production and have the inputs in farming for livestock, so that we can meet growth and demand.

Ultimately, I would like to see a change in company mindsets in regard to open data. 'If we start sharing our information, we will benefit too' – this cultural shift is needed to innovate in the twenty-first century.

> *'If we start sharing our information, we will benefit too' – this cultural shift is needed to innovate in the twenty-first century.*

Gavin Starks

CEO of the Open Data Institute (ODI)

Gavin Starks is the CEO of the Open Data Institute (ODI). Founded by inventor of the Web Sir Tim Berners-Lee and Sir Nigel Shadbolt, the ODI is an independent non-profit, non-partisan organization partly funded by the UK Government working to unlock the value in open data. The Institute supports and promotes open data in business, governments and society, and convenes experts to collaborate and nurture innovation through open data. Capgemini Consulting spoke with Gavin to understand the role of open data and how it can drive innovation. Gavin is also a musician and a Fellow of the Royal Society of Arts.

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