

DATA TALKS FEBRUARY 2019: *Data platforms and networks*

Networks are commonly understood as a framework for collaboration among stakeholders, either from the same group or across different stakeholder groups. At the same time, the typically digital platforms bring specific information and tools under one roof. The discussion on Data Platforms and Networks dealt with two specific cases of platforms and networks from two different perspectives (the weather on the one hand, and human trafficking on the other) in order to identify the challenges and commonalities of how these two organisations use data and tools to fulfil their mandates.

Data systems for weather forecast

Mr Abdoulaye Harou (Chief of the World Meteorological Organization's Data Processing and Forecasting System) explained that international co-operation is crucial for the achievement of the World Meteorological Organization's (WMO) mission.

To predict the weather, modern meteorology depends on near instantaneous exchange of weather information across the entire globe. The World Weather Watch (WWW) combines observing systems, telecommunications facilities, and data-processing and forecasting centres operated by members in order to make meteorological and related environmental information available.

Mr Harou explained that in order to function, the WWW relies on three interconnected core components: the **Global Observing Systems (GOS)**, the **Global Telecommunication System (GTS)**, and the **Global Data-Processing and Forecasting System (GDPFS)**. The **GOS** consists of facilities that make meteorological observations (including climatological observations) and other related environmental observations from terrestrial, aerial, and spatial stations. The **GTS** is a network of telecommunications facilities and services for the rapid, reliable collection and distribution of observational data and processed information. Finally, the **GDPFS** is comprised of World Meteorological Centres (WMCs), Regional Specialized Meteorological Centres (RSMCs) and National Meteorological Centres (NMCs) that provide quality-assured, processed data and analyses.

Given that the WMO is provided with data from 192 Member states which, under Resolution 40, are required to share weather-related information with the organization, Mr. Harou noted that the GTS was upgraded to the WMO's

World Information System (WIS). The WIS was designed to extend the WMO members' ability to collect and disseminate data and products. This system is owned and operated by the members themselves, and provides linkages for all WMO supported programmes associated with weather, climate, water, and other related natural disasters.

The reason for the shift from the GTS to the WIS is three-fold. First, the volume of gathered data is increasing considerably. Second, there is a proliferation of the number of applications by members states. Third, there is a need for a new web service for better interoperability of the various existing systems. He concluded by stressing that the goal of these systems, however, remains 'to bring the user to the data and not the data to the user'.

Data to tackle human trafficking

Ms Sherrie Caltagirone (Executive Director of the **Global Emancipation Network (GEN)**) stated that GEN approaches **human trafficking as a data problem**, thus, they fight human trafficking with data analytics. She explained the difficulty of working with reliable data in the field of human trafficking and pointed to the often large discrepancies between the analytics provided by different organisations. She explained that the GEN works with governments, non-profit organisations and the public, including private businesses, and Internet service providers (ISPs) across the world. After introducing the 'Human Trafficking Kill Chain' which categorises the different steps that trafficking victims usually go through - ranging from their recruitment to their exploitation - Caltagirone explained that law enforcement agencies are usually only able to intervene at the exploitation level, whereas the data about the journeys of trafficking victims emerges at much earlier stages. In some instances, data can also be retrieved as early as during their abduction or transportation to exploitation sites.

To support the data gathering and to help combat human trafficking, the Global Emancipation Network created a system called **Minerva** which allows for the collection of data from different organisations and stakeholders, uploading it to a crowd-based storage system. The **Minerva** architecture provides a very strict, tier-based system regarding the attributed access rights. Many security provisions are installed in the system which runs on a 'deny-

by-default' posture. This means that anyone wishing to access certain content must produce a good argument as to why access should be granted. As an additional fail-safe, the system uses user-behaviour analytics in order to ensure that the data is accessed and used for its intended purpose only.

During the general discussion, questions regarding the co-ordination of the data coming from different sources, as well as the existence of standards applicable to the members of the network, were raised. In the case of the WMO, states are obliged to share the information through the GTS to which all national centres have access. The data that is shared has to comply with the WMO's **manual on standards for the collection of data** and provides assistance in case instruments need to be recalibrated. Whenever the given data is flagged by the global centres, the information is sent back to the national centre for further consideration and correction.

The system also requires national centres to store meta-data, in case the results need to be consulted later in time and in case certain measurements need to be explained. Furthermore, in order to flag unwarranted discrepancies in information, global centres conduct data assimilation and comparison with the data gathered from the regional centres.

Harou also mentioned the challenges faced by national centres located in the least developed countries, not only in terms of connectivity, but also in regards to satellite imagery and the centres' data storage capacity. The WMO

has recently launched capacity building programmes to tackle this issue.

Caltagirone explained that the *Minerva* platform operates with inputs from a vast network of contributors and that they are still working on standardising communication and providing common definitions for trafficking. However, she pointed out that the technology and the *Minerva* system have helped to bring the networks closer together. Difficulties sometimes stem from the understanding of what constitutes a breach of privacy and how far certain searches can and should go. This is also linked to the fact that human trafficking is often a cross-border issue, therefore different jurisdictions and regulatory frameworks are concerned.

Another challenge stems from the fact that data is collected in many different forms and is sometimes difficult to process. For this reason, data verification is carried out both by technological applications (such as web crawlers or update alerts in Spunk, which can do up to 80% of data collection) and by human supervision for further verification steps.

The moderator, **Ms Stephanie Borg Psaila**, Interim head of the [Geneva Internet Platform](https://www.giplatform.org/), closed the event by pointing out the convergences in the context of data gathering, storage and analysis presented by the two organisations. She also mentioned the common challenges originating from the varying quality of data, the (un)organised nature of data as well as the necessity of capacity building programmes.

