

UPDATING INTERNATIONAL GENEVA TO THE DATA-DRIVEN ERA

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Summary

- This briefing paper builds on research conducted over the course of 2017 that examined the engagement of Geneva-based international organisations (IOs) with big data. 25 organisations were researched and 13 interviews conducted.
- IOs are part of the big data movement, where data is becoming more abundant and easily accessible. However, they are engaging with big data for different reasons and to varying extents.
- IOs are clearly part of the so-called 'big data revolution' but under particular conditions. Their engagement with big data is new for most of them. However, they do not necessarily see this as a revolutionary development. Rather, they are pragmatic and cost-benefit oriented.
- The research showed that organisations' mandates take priority over the hype-factor of using any new tool such as big data.
- There is doubtless potential for big data's use in IOs, but this potential will only be harnessed if they adopt clear policy and mandates.

Introduction

The motivation behind this briefing paper was to understand how international organisations (IOs) are dealing with the current and unprecedented boom of information in digital societies and economies. Big data is a trendy topic in business environments and in some national

government departments. Therefore, the main idea was to examine whether IOs are also following this trend and engaging with big data in their operations. For this briefing paper, only organisations with a presence in Geneva, Switzerland, were considered. These organisations were

analysed based on observable patterns and trends among the organisations' engagements with big data. These patterns are expressed in a Data Matrix that summarises the research conducted.

Representatives from the following organisations were interviewed: European Broadcasting Union (EBU); European Organization for Nuclear Research (CERN); International Committee of the Red Cross (ICRC); International Federation of Red Cross and Red Crescent

Societies (IFRC); International Organization for Migration (IOM); International Telecommunication Union (ITU); Joint United Nations Programme on HIV/AIDS (UNAIDS); Office of the United Nations High Commissioner for Human Rights (OHCHR); United Nations Economic Commission for Europe (UNECE); United Nations Institute for Training and Research (UNITAR); United Nations Office for the Coordination of Humanitarian Affairs (OCHA); World Meteorological Organization (WMO); and World Trade Organization (WTO).

Developing the Data Matrix as a mapping tool

In the following sections, the eight categories of the data matrix are described in more detail. In each case, we show how we arrived at the particular category and add examples from the various organisations we studied. Our Data Matrix is based on colour shades, so each colour represents a

'yes', a 'no', and an 'undetermined' answer to the criteria on the columns. Based on this principle, each organisation's relationship with data is captured thoroughly on a palette. We can observe that engagement is not a matter of yes/no, but instead takes different forms, different shades.

Table 1. Data Matrix

Name of organisation	Use of Big Data	Official Definition of Big Data	Understanding of Big Data	Regulations	Internal Data	External Data	Sensitive Data	Partnerships
European Broadcasting Union (EBU)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
European Organisation for Nuclear Research (CERN)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
International Committee of the Red Cross	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
International Committee of Red Cross and Red Crescent Societies (IFRC)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
International Organisation for Migrations (IOM)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
International Telecommunications Union (ITU)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Joint United Nations Programme on HIV/AIDS (UNAIDS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Office of the High Commissioner of Human Rights (OHCHR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
United Nations Economic Commission for Europe (UNECE)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
United Nations Institute for Training and Research (UNITAR)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
United Nations Office for the Coordination of Humanitarian Affairs (OCHA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
World Metreological Organisation (WMO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
World Trade Organisation (WTO)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Key:

Yes No Undetermined

Use of big data

The first column of the data matrix attempts to capture whether IOs use big data to fulfil their mandates. The criteria for deciding whether an IO uses big data was primarily based upon accrued interviewee responses. Based upon these responses, we were able to determine that the 'use' of big data was generally understood as the capacity to analyse and utilise the data in favour of a certain mission/project or goal. Mere access to large data sets was not considered to be an accurate definition of 'use'.

We found that 8 out of the 13 organisations interviewed are using big data in some form or other. However, the nature and extent of this engagement varies greatly: It was largely determined by their institutional mandate, and whether they had the resources to invest in its use at this stage.

IOs such as the ICRC, UNAIDS, and the IOM are using big data to fulfil their mandates for humanitarian action. UNAIDS for instance, is investigating the use of big data from social media sources, such as Facebook and Twitter, for their prevention campaigns. An example of their engagement is a pilot programme they launched in Brazil, in 2014/2015. Using Twitter, they managed to monitor discrimination patterns related to HIV and HIV testing in the country. UNAIDS could access the Twitter Firehose through the Datasift platform to filter out the relevant messages from approximately 228 billion public tweets posted during that period.

Big data is also used for research purposes by organisations such as CERN and UNITAR. UNOSAT, an operational and technology-intensive programme of UNITAR, has long relied on big data to develop high-resolution satellite images. UNOSAT products are used in response to humanitarian crises and for implementation of the sustainable development goals (SDGs).

A particular case was observed with the OHCHR. When asked if the Office uses big data for its mandate, the OHCHR representative responded that at the moment the organisation was not using any type of big data. However, they followed up by saying that they had just conducted a pilot in Kenya in the context of elections, where they had started to use big data, wherein data was sourced in real-time through mobile phone network monitoring, media, and social media in order to conduct a weekly analysis on the type of sentiments, events, and potential violations in geographical areas and groups of electoral violence. Putting this information into context, the claim that the Office is not engaging with big data might result from their lack of an institution-wide understanding, an official definition of it, and consequently an underestimation of the tool.

Of the 13 organisations we interviewed, the remaining 7 organisations indicated that they were not *directly* using big data for the fulfilment of their mandates. Organisations such as the EBU, the WTO, the UNECE, and the ITU indicated that they played the role of facilitators and advisors, rather than being data generators. A UNECE representative stated that they were not involved in the production of data, and did not make any data analysis. If anything, their job was to help other countries figure out how to use it. Similarly, the ITU representative stated: '[...] ITU Secretariat has its own internal databases, and I am not sure that this could be considered big data; it is more administrative records. We don't have big data.' The EBU, being a trade association, does not directly deal with big data because it is not a broadcaster, but its membership comprises national broadcasting organisations across Europe (such as the BBC in the UK, RAI in Italy, etc.), who in turn, use big data. According to the WTO's representative, the organisation does not have an official institutional definition of big data and does not currently use big data.

Official definition of big data

To lay the foundation of our research, we considered important that, regardless of the direct, indirect, or complete absence of the use of big data, it was important to investigate whether IOs had an understanding of big data; if they were aware of the subject, and if so, the extent of that awareness. This aspect was explored by looking for two things: official definitions of big data, and an expression of a general understanding of the concept.

Therefore, our second category in the matrix dealt with determining whether the organisation had officially defined big data, i.e., had a document giving an official explanation of what big data is, as referred to across the organisation.

When we carried this research out in 2017, only 1 of the 13 organisations we interviewed presented an official definition of big data. The ICRC engages with big data and has an official definition of it, too. This definition can be found in the *Handbook on Data Protection in Humanitarian Action*.¹ Thus, the ICRC has clearly laid out internal definitions and regulations for handling big data, which are also made publicly available to any other organisation willing to implement them. This is the case for the IFRC² as we highlight later in this briefing paper.

The remaining 12 organisations' representatives hesitated when it came to giving an official definition of big data. We

believe that this is due to the novelty of the subject and the diverse interpretations among different organisations. Most representatives referred to the *Four Vs* definition when formulating their individual explanations.³ However, there was a discrepancy in how these Four Vs were interpreted across the board, thereby a consistent definition was lacking. Nevertheless, organisations appear to be working under some general assumptions about big data which are either derived from an external source such as academia and existing literature, or generated internally through meetings and discussions.

It was evident that IOs are still in the process of formulating an official definition of big data for themselves. This task seems more complicated than usual because of the relativistic nature of what constitutes big data itself. Different organisations define big data differently, we therefore believe that arriving at one single cross-institutional

definition does not seem likely at the moment and should probably not be pursued. Nevertheless, creating a working definition within organisations themselves seems more achievable as a first step at this point.

It also became apparent that when there is a lack of an official definition, other interpretations surrounding the nature and extent of the use of big data become more complex. As we saw in the previous section (Use of big data), the absence of an official definition can lead to confusion over what exactly it means to be engaged with – or to formulate policies around – big data, as we will analyse further on.

It could be advantageous for organisations that engage with big data to take that next formal step and officially define what they mean by big data within their context, uses, and offices. This would give a more concrete and concerted trajectory to their future engagement with big data.

Understanding of big data

However, the fact that most of the organisations do not have an official definition, does not mean that they do not understand or are not aware of big data developments and concerns. As illustrated in the Data Matrix, all 13 organisations presented an understanding of the topic – meaning that no interviewee reported big data to be an alien concept to the organisation.

What the matrix does not capture fully is the extent of that understandings. The EBU, CERN, ICRC, IOM, UNECE, UNITAR, OCHA, WMO representatives reported that their organisations present a solid understanding of the subject and are

very much familiar with the concept. ITU, UNAIDS, WTO, IFRC, and OHCHR representatives pointed out that there is an understanding of the subject, but that the concept is not yet familiar to the overall organisation and that it is still an issue being explored. The ITU representative noted: 'People are [...] still exploring how disruptive big data will be compared to the traditional way of producing and collecting data.'

This parameter captured the reality that all the organisations researched possessed a conceptual understanding of big data despite the variation exhibited in the potential and extent of its use by them.

Regulations

We also investigated whether organisations have big data policies, meaning documents that regulate their use of big data within the organisation and/or documents that they develop to guide outsiders in their uses of big data. In the group of 13 organisations analysed, organisations have general data policies in place. The IOM, the ICRC, and UNAIDS appear to have data policies which take the use of big data into consideration, while the WTO has privacy and security policies in place which do not mention big data as the organisation does not use it.

Nine organisations do not have policies in place. However, we determined that this regulatory aspect presents much more complexity, depending on the nature and mandate of the organisations. If an organisation does not have a single document entitled 'Data policy', this does not mean that they do not use other types of regulations. In this sense,

two organisations work with ad hoc regulations (CERN and UNITAR), three depend on national regulations (EBU, UNECE, and ITU), and four are currently developing their future data regulations or specific big data policies (IFRC, OCHA, OHCHR, and WMO).

CERN and UNITAR work under memorandums of understanding (MoUs) and ad hoc (case-by-case) data protection policies, respectively. On the other hand, the ITU, EBU, and UNECE do not have their own regulations, because the data comes from countries at an aggregated level. The ITU representative explained that the organisation does not have a regulation because it uses external data; this depends on each country and on the data providers. In the case of the EBU, regulations can be found in the realm of states and at the level of the European Union. The EBU simply advises broadcasters to comply with these regulations.

Finally, the IFRC, OCHA, WMO, and OHCHR representatives pointed out that more specific policies are currently being developed. The IFRC has unofficially adopted the ICRC Handbook as a reference, as it does not have a data policy itself yet. Presently, OCHA is in the process of framing a detailed data policy which will apply to the entire organisation. They are also working with developing MoUs to set out responsibilities vis-à-vis them and other organisations who are willing to share data on their platform. They do not have a confidentiality policy, but instead have a terms of references. For the OHCHR, as the topic is very new, there is no regulation. The OHCHR is currently putting forward an information management strategy, where rules on how to use big data are being formulated to be presented soon.

Taking into consideration that our research revealed that at least four organisations are currently in the process of formulating official policies around big data and its use, we recommend that other organisations, who are currently not doing so, consider establishing a timeline and framework for developing similar policies. The rationale behind this recommendation is that creating data policies tailored to the use of big data could encourage more comprehensive data-sharing practices between actors from the public and private sectors. Having such data policies tailored to the responsible access and use of big data would ensure the responsible and accountable sharing and use of data between these actors, and therefore, establish more reliable relations. This would increase the potential engagement with big data for IOs.

External data and internal data

When considering setting the parameters for determining whether IOs internally produce their data or access it from external sources, we encountered a few complications in defining what external data means. Therefore, for any research project in the area of big data, it is imperative to clarify what is meant by external and internal data in that particular context.

For our purposes, internal data means that the organisation collects and produces big data. External data means that the organisation uses the big data or data from third party sources, be it private sector actors or national governments.

For organisations such as UNECE, ITU, EBU, OCHA, and WTO, there is no in-house production or handling of big data. Whatever data they do handle is already generated and aggregated from another source, especially from their members. The nature of using this data cannot be considered as using big data because the mandate of the organisation is more aligned with an advisory role; therefore, they store the original big data as preconsolidated data

and have their own administrative records, which are not considered big data.

Organisations which use, access, process, and analyse big data, do this to draw conclusions about their operations, and use those conclusions to formulate response policies. Usually, the source of this external data is a third party partner, often from the private sector or from government. Strong examples of this are offered by the ICRC, UNAIDS, OHCHR, IOM, and UNITAR.

Still, we observed a heavy reliance on external sources of data, especially from the private sector, among IOs using big data in Geneva. Multiple reasons have been attributed to this, the recurring one being that the private sector has developed a more enhanced capability to compute such large amounts of data due to the investments made in technological advancements. Given that the private sector has considerably more access to big data resources than the public sector, and that it depends on the former's willingness to collaborate with the latter, it might be in the best interest of IOs to consider enhancing the investment made in computing capabilities and technology in house.

Partnerships

In the course of our research, we observed that almost all the IOs in our primary research were relying on external sources to access big data, if they were using it. To elaborate on what these external sources were, we decided that it was important to ask these organisations how they accessed big data. Twelve out of 13 organisations responded by saying that they had partnered with other organisations, national agencies, and private actors (including companies) in order to gain access to big data. Thus, it was necessary to have a category in the matrix

to determine what kind of partnerships IOs have, but also how they access big data.

It was evident that IOs co-operate amongst themselves and other government and private-sector actors to gain access to big data. It is relevant to see this level of co-operation between various different actors at different levels and natures. Therefore, we envisage that to further extend their engagement with big data, at least at this stage, partnerships with external actors remain vital.

Sensitive data

Under the category of 'sensitive data', we explored whether IOs were using information that should be protected against unwarranted disclosure. Thus, we observed how what is considered sensitive data is related to how datasets are used – and for what purpose – by each organisation, depending on their institutional mandate and mission domain.

Our conclusion was that the sensitivity of information can be understood in different forms: to protect the privacy or security of an individual, but also to protect institutions. Most of the organisations researched understand sensitivity at the individual level, so that information should serve to ultimately preserve individuals and not to harm them. However, some organisations brought different understandings of sensitivity.

The ICRC, IFRC, IOM, UNAIDS, OHCHR, and OCHA representatives noted that data is considered very sensitive because of the threat to individual lives. In the ICRC, the organisation with the most developed understanding of this issue, data is treated sensitively so that 'its disclosure by unauthorized means [does not] lead to discrimination or oppression of an individual or community.' For UNAIDS, data is very sensitive

because 'it is about people's behaviour and it could be linked to their medical status or health records, which could also have political consequences.' In the case of OCHA, the organisation has an encrypted domain which operates in accordance with their terms of references.

For CERN, UNECE, and UNITAR data is not considered sensitive. Rather, the physical security of the laboratories is understood as the critical concern. For UNECE and the ITU, data is not sensitive because it is reported in aggregate at national level. For UNOSAT, on rare occasions, the data analysed can be considered sensitive.

For the EBU, most of the data is not sensitive, but some can be considered as delicate, according to the representative interviewed. For instance, data pertinent to television viewers' political behaviour during elections or data about their reaction to certain facts presented by news shows falls into the private sphere of individuals and could become politically sensitive data. The disclosure of this type of information could harm the political scenario of a country as a whole, if the material broadcasted is manipulated based on the data.

Conclusion

IOs are engaging with big data for different reasons and to varying extents. This engagement is new for most organisations, but they do not necessarily see it as a revolutionary development. The reason for this is that resoundingly, their mandates take priority over the hype-factor of using any new tool, which big data is. Evidently, these organisations are part of the big data movement where data is becoming more

abundant and more easily accessible. There is doubtless potential for big data's use in IOs, but this potential will only be harnessed if their mandates require such an engagement. Requests and generalisations of the need for IOs to become big-data-driven would be highly inaccurate and misleading. IOs are part of the so-called big data revolution but under particular conditions, different from business and governments.

Endnotes

- ¹ International Committee of the Red Cross [ICRC] (2017): Handbook on Data Protection in Humanitarian Action. Available at <https://www.icrc.org/en/publication/handbook-data-protection-humanitarian-action> [accessed October 2017].
- ² Note on the difference between the International Committee of the Red Cross (ICRC) and the The International Federation of Red Cross and Red Crescent Societies (IFRC): IFRC is a global humanitarian organisation, which coordinates and directs international assistance following natural and man-made disasters in non-conflict situations. On the other hand, the ICRC is an impartial, neutral and independent organisation whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence and to provide them with assistance.
- ³ There is an unwritten consensus that there are specific attributes that define big data. In most big data understandings, these are called the Four Vs: volume, variety, velocity, and veracity. One could also argue for a fifth V, value.

List of organisations interviewed

- European Broadcasting Union (EBU) (interview 10 October 2017)
- European Organization for Nuclear Research (CERN) (interview 25 October 2017)
- International Committee of the Red Cross (ICRC) (interview 1 November 2017)
- International Federation of Red Cross and Red Crescent Societies (IFRC) (interview 31 October 2017)
- International Organization for Migration (IOM) (interview 13 October 2017)
- International Telecommunication Union (ITU) (interview 27 October 2017)
- Joint United Nations Programme on HIV/AIDS (UNAIDS) (interview 25 October 2017)
- Office of the United Nations High Commissioner for Human Rights (OHCHR) (interview 9 October 2017)
- United Nations Economic Commission for Europe (UNECE) (interview 20 October 2017)
- United Nations Institute for Training and Research (UNITAR) (interview 27 October 2017)
- United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (interview 9 November 2017)
- World Meteorological Organization (WMO) (interview 27 October 2017)
- World Trade Organization (WTO) (interview 2 November 2017)

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