

The Impact of Digital Transformation on the Sustainability of Grey Literature

Dobrica Savić, Nuclear Information Section, International Atomic Energy Agency, NIS-IAEA, United Nations

Abstract

Digital transformation makes an impact on organizations and businesses affecting many of their activities, either in a positive or a negative way. Once an organization starts on the road of digital transformation the impact is always considerable and long-lasting. Due to the specific nature of digital transformation to be able to impact whole industries, even if some organizations decide not to start with digital transformation, they may experience an indirect impact. The area of grey literature management is one of those activities that will have to deal with the indirect impact imposed by the digital transformation of host organizations and related activities. The nature of information work in general, the workforce, and the workplace are undergoing major changes. The same is the case with grey literature. Once it is severely impacted, its long-term sustainability might come into question. This paper deals with the sustainability of three main aspects of grey literature management — the nature of grey literature and the related work, the workforce, and the workplace. To provide sustainability of grey management some specific preconditions need to be met. For example, availability relates to long term preservation, and it includes physical and electronic storage. Also, efficient search and retrieval, together with format recognition, which is directly related to usability, are important preconditions of sustainability. All the preconditions mentioned are challenging tasks in the long run due to fast developments and frequent changes of IT systems, formats, standards, and protocols. All systems need to be fully operational and well maintained, which requires periodic updates, changes, and if needed, complete replacements. This is especially the case with outdated and propitiatory file formats that might become unusable over time. Despite all challenges, digital transformation provides the opportunity to enhance the management of grey literature, increase its value and importance, and improve its sustainability.

Keywords: digital transformation, grey literature, sustainability

Introduction

Our human nature makes us very curious about the world around us. However, whenever we face something new, like a new event, new gadget, new book or article, or a new topic such as this one, we immediately try to evaluate it to figure out what it is all about. More importantly, we view it from our own perspective and wonder why we should care about it or spend our time and energy on it.

The reasons why we should care about the impact of digital transformation on the sustainability of grey literature are numerous. Here are some of the more important ones:

- We are flooded with tons of information and documentation¹.
- It has become hard to keep track of various formats, in particular the grey literature formats. For example, the GreyNet website lists over 150 document types including databases, data sets, datasheets, data papers, satellite data, and product data².
- We are deeply immersed in the digital transformation of current business models.
- Digital transformation impacts the way we conduct our business.

1 The information overload phenomenon has been known by many different names, including: information overabundance, infobesity, infoglut, data smog, information pollution, information fatigue, social media fatigue, social media overload, information anxiety, library anxiety, infostress, infoxication, reading overload, communication overload, cognitive overload, information violence, and information assault (D. Bawden 2020).

2 <https://bit.ly/3naG2E1>

- Digital transformation impacts the grey literature work, the immediate workplace, and the workforce involved.
- Lack of proper care for grey literature brings loss of data and information and loss of knowledge.
- We need to ensure the long-term availability of grey literature, the possibility for its retrieval, use, continuous value, and operability.

This paper looks at the concept of digital transformation and sustainability. It continues with the impact of digital transformation on the grey literature, in particular on the nature of grey literature work, on the grey literature workforce, the leadership, and the impact on the grey literature workplace.

At its end, the paper lists some of the grey literature sustainability principles and offers some conclusions.

Digital transformation

The first concept that needs to be defined is digital transformation. We are all immersed in it, but hardly ever have enough time to define and comprehend it sufficiently enough either from a theoretical or practical aspect.

A brief definition regards digital transformation as a process that leverages modern information technology and brings a large-scale change to business models, processes, and customer experiences in order to create value (i-SCOOP 2019).

The main characteristics of digital transformation are:

- Creation of new business models using modern information technology (IT) and artificial intelligence (AI).
- Streamlining of production processes.
- Focus on customers' experience.
- Leveraging of existing knowledge.
- Change of organizational culture.
- Use of modern data and information management analytical tools.
- Emphasis on "values" and not "activities".

Sustainability

Our next concept that needs some clarification is sustainability.

It is the ability to continue at a particular level for a period of time. It also covers the present time by meeting the needs of the present without compromising the ability of future generations to meet theirs (Mollenkanp 2021).

Another, and probably the most well-known definition of sustainability is the result of four years' work by the Brundtland Commission. According to their report "Our Common Future", sustainable development is:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission 1987).

Sustainability has three main pillars: social, environmental, and economic. These three pillars are sometimes referred to as people, planet, and profits.

Sustainability helps meet the future needs of both people and businesses by maintaining the required resources. It deals with risk management, saves cost, and potentially drives innovation. It is usually associated with higher quality and in business, it refers to maintaining or sustaining profitability through the use of its assets.

Economic sustainability is a main concern regarding the grey literature sustainability. It is important to decide what sustainability goals will the organization implement, how will success be measured, what are the relevant standards for providing assurance on

sustainability, and how will they be implemented. Of great importance is also the role of leadership in sustainability and how governance will function in the long run.

Grey literature

For the readers, the term grey literature is well known and fully understood. Therefore, I will offer just a very short reminder definition.

Grey literature represents any recorded, referable and sustainable data or information resource of current or future value, made publicly available without a traditional peer-review process (Savic 2017).

This definition considers all major elements of the grey literature concept. Namely, long term preservation, sustainability, usability, and value, while acknowledging the lack of a traditional peer-review process of regular ‘white’ literature.

There are many new sources of data, such as the Internet of Things (IoT), Machine to Machine communication (M2M), self-driven cars, robots, sensors, security systems, surveillance cameras, and many other systems or apps using AI and machine learning.

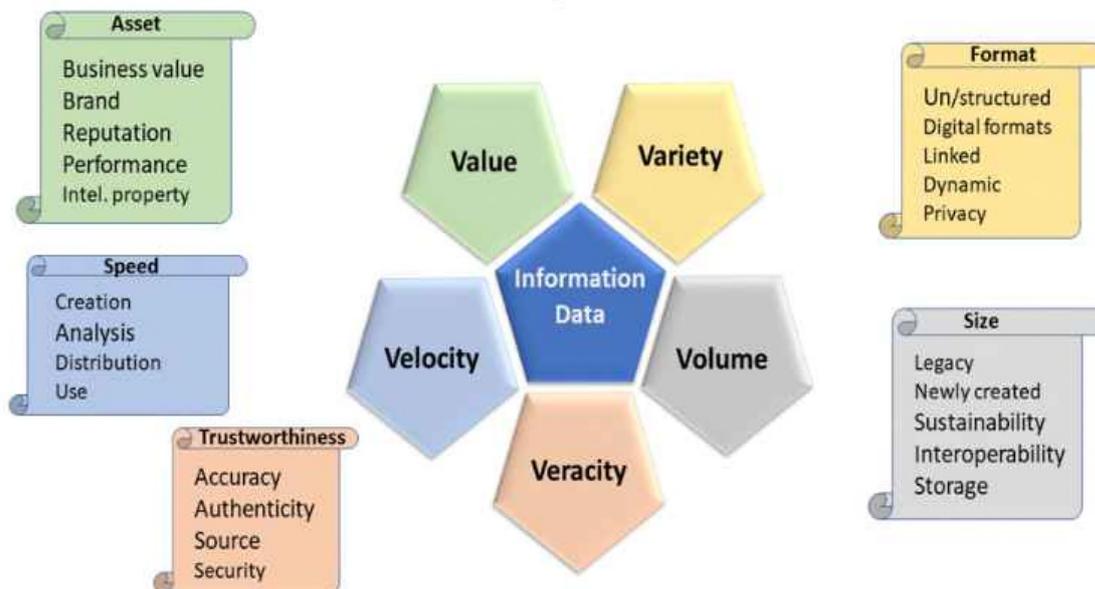
The estimated number of currently connected electronic devices creating specific data varies by billions. Data produced by these devices is highly contextual and software dependent, making it hard to collect and process, and even harder to make sense of and preserve for future use.

Impact of digital transformation on the nature of grey literature work

Digital transformation impacts grey literature sustainability by changing the nature of grey literature work, placing new demands on the grey literature workforce, and also by changing the workplace.

Let’s look at the changes brought to the nature of grey literature work. They are known as the **5 Vs** and are important in any analysis of information and data but also in knowledge analysis.

5 Vs of Data/Information



Drawing 1: Figure 1: 5 Vs of data/information

The 5 Vs represent the following data and information facets:

- **Variety** - new digital formats, unstructured, interlinked, dynamic, privacy issues.
- **Volume or size** - with legacy issues, interoperability, storage, possibility to manage it.
- **Veracity or trustworthiness** - including accuracy, authenticity, source control, and security.
- **Velocity or speed of creation** - analysis, distribution, use, and usefulness.
- **Value** - everyone's concern about information assets that cover business value, branding, reputation, performance, and intellectual property.

Impact of digital transformation on the grey literature workforce

Impact on the grey literature workforce and the roles of grey literature professionals is very sensitive. For example, some previous tasks and functions might be completely transformed, so functions such as search and identify could be replaced by a cognitive search, evaluation, and review by AI algorithms. Collection and processing might change into harvesting. Sharing and promotion might take a road of open access, while long-term maintenance and preservation might come against a stumbling block called organizational policies.

Requirements for new competences

To provide sustainable services and long-term access to scientific grey literature, professionals working on it will need a new set of competencies. Almost all the ones listed below are important. However, some might take more, while some might take less time and energy. Digital literacy and technical knowledge will become paramount, so lifelong microlearning and personal development become a must. Emotional intelligence, social skills, cultural and other diversity will need to be accompanied by a high level of digital ethics. It is assumed that this list of competency requirements will continue to grow.

Impact on leadership

As part of the general workforce, the impact on leadership is already substantial. Leaders are centre-stage for digital transformation. The very nature of leaders' responsibilities undergoes substantial changes because in their new roles they are expected to navigate through the multitude of opportunities, identify the right path for their business and drive adequate and timely change. To that end, digital transformation also brings a lot of uncertainty (Bongiorno 2018).

Traditional approaches for managing business and IT no longer apply. New approaches are required, but they are emerging slowly. Any digital transformation effort will not simply affect IT function alone. It will impact an entire organization, its customers and partners. Risk management is one of the characteristics a new breed of leaders will need to develop since radical changes bring a possibility of "getting it wrong" and paying a high price for it.

Customer focus, good strategy and excellent communication, team building, quick learners, agile management and employee empowerment are just some of the bigger roles leaders will have to assume.

Impact of digital transformation on the grey literature workplace

The impact of digital transformation on the grey literature workplace and long-term sustainability is especially complex. Some of the major stumbling blocks include the old style of management, strict hierarchy, lack of flexibility, complex structures, legacy solutions, and many others. The way out of this, and the road to sustainable scientific grey literature, is through the use of new IT tools, digital dexterity, strong digital culture, removal of information silos, agility, team building, and remote work.

Grey literature sustainability principles

In order for something to be regarded as sustainable, grey literature included, the following criteria need to be met. It needs to be available for a long period of time, be operational and retrievable in the future, and remain usable and valuable.

Conclusions

This paper covered several interrelated concepts, all of them important, and worthy of further analysis and review. However, the most imperative conclusions worth mentioning are the following:

Digital transformation is already with us, it impacts all aspects of our work and it changes the way we create, disseminate, use, and preserve grey literature.

The **changing nature of grey literature** is seen by the increase in GL types and volume, the speed of its creation, the trustworthiness, and its value.

Grey literature sustainability requires that the collections are easily available, retrievable, and usable, as well as remaining valuable and operational.

Grey literature professionals need to develop new digital mindsets so that they can continue to be contributing and respected staff members of future organizations.

Grey literature leaders should improve organization competitiveness and productivity to achieve better results and high-quality services by leveraging IT technology, focusing on customers, empowering employees, and using analytics.

The **grey literature workplace** has already experienced many changes with the introduction of a 'new normal' brought about by the need to adapt to the COVID-19 pandemic by working from home, and still much more change is to come.

At the end of the day, we should remember the famous quote by Charles Darwin, *"it is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change."*

References

- Bawden D., Robinson L., 2020. Information Overload: An Overview. Oxford University Press (OUP). <https://bit.ly/3n2Yvmc>
- Bongiorno G., Rizzo D., Vaia G., 2018. CIOs and the Digital Transformation: A New Leadership Role. Springer.
- Brundtland Commission, 1987. "Our Common Future: Report of the World Commission on Environment and Development". UN Documents. <http://www.un-documents.net/ocf-02.htm>
- i-SCOOP, 2019. Digitization, digitalization and digital transformation: the differences. <https://bit.ly/2r7YPpk>
- Mollenkamp D.T., 2021. Sustainability. Investopedia. <https://bit.ly/3HKAmZr>
- Savić, D., 2017. Rethinking the Role of GL in the Fourth Industrial Revolution. 10th Conference on GL and Repositories: proceedings [online]. Prague: National Library of Technology. <http://nrgl.techlib.cz/index.php/Proceedings>. ISSN 2336-5021. Also published by TGJ (The Grey Journal) Special Winter Issue, Volume 14, 2018.