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**‘VISIBILITY OF GREY LITERATURE IN THE DIGITAL AGE’**

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## Digital Transformation and Grey Literature Professionals\*

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### Abstract

*Digital transformation changes the way we do business and disrupts industries and work processes, while challenging existing management practices and, in some instances, the nature of the work itself. While much attention is devoted to various digital tools such as AI, cloud computing, big data, and mobility, digital transformation is much more than information technology. The brunt of the digital transformation impact will be on the workforce itself, and it is the workforce that will determine its success or failure. Information management professionals, including managers of grey literature, represent a small, but important, part of the workforce that will be impacted by this digital disruption of the way information is managed. This paper looks at some characteristics of digital transformation and their impact on the workforce, particularly on information management professionals working in the field of grey literature. After presenting some basic terminological definitions of digital transformation, grey literature, and grey literature professionals, the major portion will review the changing nature of grey literature work, the changes required on a personal level, the impact on work organizations, and the redefined role of leadership. It is assumed that although challenging, digital transformation also provides an important opportunity for grey literature professionals.*

**Keywords:** *Grey literature, digital transformation, information management, information management profession, information technology*

### Introduction

Throughout history, the invention and development of new tools has brought about the need for new professions, while eliminating some of the previous ones. This has been especially evident throughout the past two hundred years, from the first to the most current industrial revolution, from the introduction of steam engines, through the use of powerful and smart information technology.

Digital transformation has changed the way we do business and has disrupted industries and work processes. It has challenged existing management and organizational practices, the nature of work, the workforce itself, and the role of leadership. Although much attention is devoted to various digital tools such as artificial intelligence, robotics, quantum computing, nanotechnologies, cloud computing, big data, and mobility, digital transformation is much more than information technology.

The brunt of the digital transformation impact will be on the workforce itself, and it is the workforce that will determine its success or failure. OECD (2019) estimates that 14% of jobs are at high risk of automation, while an additional 32% of jobs could undergo a radical transformation in the next 15 - 20 years. Combined, 46% of currently existing jobs on the market will undergo some type of change.

Information management professionals, including managers of grey literature, represent a small but important part of the workforce that will be impacted by digital disruption and the

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way information is being managed. This paper looks at some characteristics of digital transformation and their impact on the workforce, particularly on information management professionals working in the field of grey literature. After presenting some basic terminological definitions of digital transformation, grey literature, and grey literature professionals, the major portion will review the changing nature of grey literature work, the changes required on a personal level, the impact on work organizations, and the redefined role of leadership.

Brief conclusions will be offered on the increased dependency on IT tools, the changing nature of grey literature, new grey literature requirements and ways to strengthen the grey literature profession through training, and personal and professional development.

It is assumed that although challenging, digital transformation provides an important opportunity for grey literature professionals.

### **Digital Transformation**

There are many ways to understand, define, and implement digital transformation within organizations. The main characteristic of digital transformation is that it brings about major change and introduces new ways of running a business. "Customers and employees expect a paradigm shift in their respective experiences" (Solis & Littleton 2017). Digital transformation, according to many practitioners, is a major paradigm shift where we start doing things differently.

This business change is generally based on the smart use of newly available information and technologies. They include maximized use of mobile applications, artificial intelligence (AI), machine learning (ML), cloud computing, the existence of large data sets, powerful analytics, chatbots, the internet of things (IoT), virtual and augmented reality, and many other new digital tools and services.

However, the existence and use of modern and powerful IT tools is not enough. Organizations need solid vision and forward-looking leadership. New business models need to be created using available IT solutions, leveraging existing knowledge and profoundly changing the essence of organizations - their culture, management strategies, technological mixes, and operational setups. All this is geared towards pursuing new revenue streams, creating new products and inventing new services.

Another major characteristic of digital transformation is its focus on customers (von Leipzig et al. 2017). It is regarded as a customer-centric approach, where the customer is in the centre of all decisions and actions. Focus is on customers' needs and their overall satisfaction. With such an approach, business, and particularly financial benefits follow. By implementing some form of digital transformation, businesses manage their processes and procedures better through streamlining, profitability is increased, and new business opportunities created.

### **Grey Literature Professionals**

In order to review grey literature professionals as a category, we need to first define the field of grey literature, and then review the terms 'profession' and 'professionals'.

One of the more popular and more comprehensive definitions states that "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" (Savić 2017).

At the same time, a professional is a person formally certified by a professional body or belonging to a specific profession by virtue of having completed a required course of studies and/or practice, and whose competence can be measured against an established set of standards. In other words, a professional is a person who has achieved an acclaimed level of proficiency in a calling or trade<sup>1</sup>. The Merriam-Webster dictionary defines a professional as a person or calling requiring specialized knowledge and often long and intensive academic preparation.

Taking all this into account, a grey literature professional can be defined as someone who has completed study or certification in this area, possesses specialized knowledge and skills, follows established standards, possesses the required work competencies, and regularly maintains and further develops his or her professional expertise.

In order to empirically check the above statements and do a reality check, ten major job search engines were queried using the term 'grey literature'.

Job search engines	
Search engine	Hits
Indeed.com	7
CareerBuilder.com	0
Dice.com	0
Glassdoor.com	10
Jobisjob.com	10
Idealist.com	2
LinkedIn.com	40
LinkUp.com	6
Monster.com	22
US.jobs	0

Around 100 job postings were found mentioning grey literature in the job description. The largest number was found at LinkedIn.com, a social networking site designed specifically for a wide spectrum of professionals (see fig. 1<sup>2</sup>).

Job openings were found in health, research, academia, and intelligence, with the following job titles:

- Analyst
- Researcher
- Librarian
- Consultant
- Linguist

Figure 1: Job search engine results

Analysis of the roles listed in the descriptions of the job openings indicated an interesting set of functions expected from the incumbents (see fig. 2., author is the creator of the picture). They included general knowledge of grey literature, work experience in the field, and general skills such as critical evaluation, analysis, and interpretation. However, the most interesting finding was that almost all of the jobs required some kind of search or retrieval skill, and relevant knowledge. This is an alarming finding, since according to the World Economic Forum (2018), by 2022 augmentation of existing jobs through technology may *free up* workers from the majority of data processing and information search tasks! In other words, there is a direct threat to all these jobs that are predominantly oriented towards information retrieval, searching and providing information.

Roles
▪ identify, collect and interpret
▪ critically evaluate
▪ search for
▪ review
▪ experience locating sources
▪ create records
▪ knowledge of GL
▪ translate

Figure 2: Job roles

<sup>1</sup> [www.businessdictionary.com](http://www.businessdictionary.com)

<sup>2</sup> The author is the creator of all figures.

**Impact of Digital Transformation on Grey Literature**

The impact of digital transformation on grey literature is determined by the existing operational IT infrastructure, as well the decisions made by the organization’s leadership on future development and investments made in new IT tools and services. Different stakeholders need to play a role in the process of digital transformation, but the main factor is ultimately the customers and users. During the decision-making process, and especially during implementation, a multitude of targets will undergo some level of change. As Figure 3 illustrates, the expected changes will be on the nature of grey literature work, on the role of leadership, the workforce itself, and on the work organization.

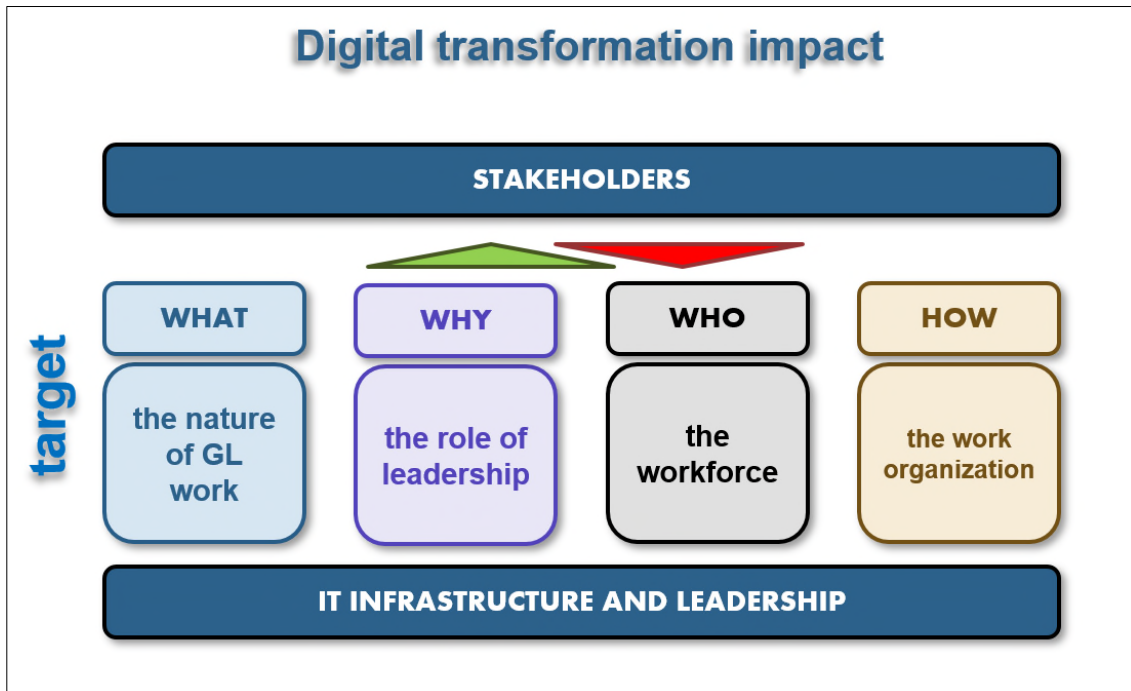


Figure 3: Digital transformation impact

**A. Impact on the nature of grey literature work**

There are different ways of looking at the nature of information or data management work. As Figure 4 demonstrates, one way of looking at it is through the 5 V’s. Namely, the variety, volume, veracity, velocity, and value of information.

## 5 Vs of Data/Information

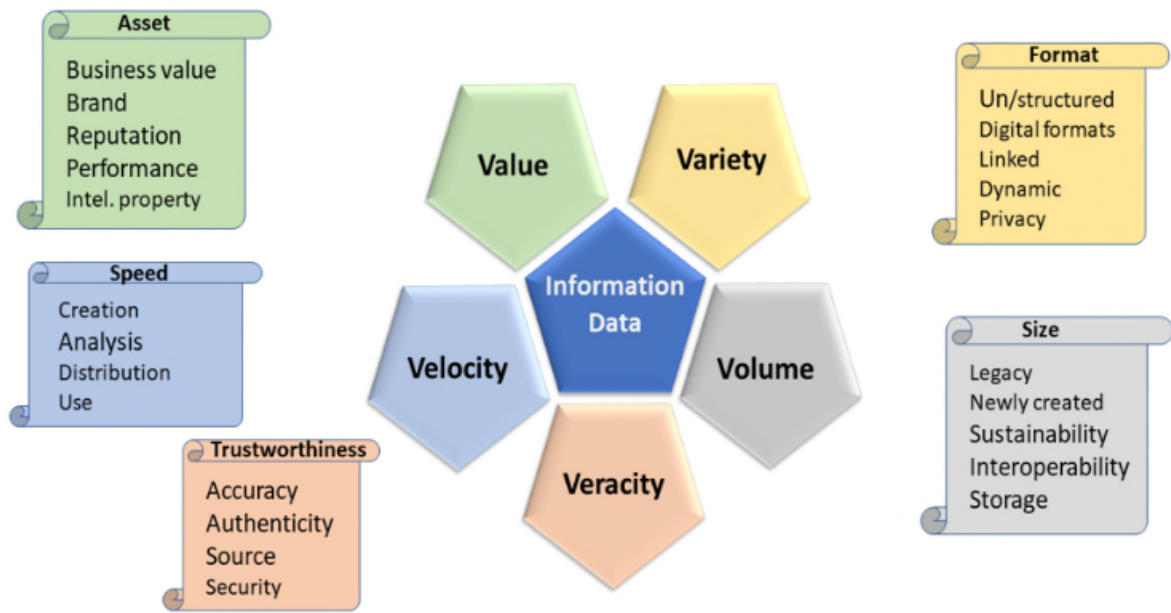


Figure 4: 5 V's of data/information management

**Variety** - The GreyNet website lists over 150 document types specific to grey literature, including data management. Multiple sources of grey literature include the IoT, AI, Machine to Machine communication (M2M), self-driven cars, robots, sensors, security systems, and surveillance cameras. There are also billions of connected devices creating specific formats, all within the scope of grey literature. It is obvious that a common approach to handling such a great variety of formats, resources, and types of information is not feasible through the existing grey literature scope of methods and principles.

**Volume** - The huge amount of data generated, and its speed of growth are detrimental factors. It is estimated that there are 38 Zettabytes of data today, out of which 90% has been generated over the last two years. 2.5 exabytes of data are produced every day, which is equivalent to 250,000 Libraries of Congress. It's a number very difficult to comprehend and even more difficult to manage. There are over 5.1 billion unique mobile users, 4.4 billion Internet users, and 3.5 billion active social media users in the world, and it is expected that these numbers will grow. There were almost 200 billion apps downloaded in 2018 and 3 billion eCommerce users, with numbers expected to grow. In addition, there are 130 million published books worldwide, with over 800,000 new titles added annually. In other words, a very large volume of data and information to be properly and efficiently managed.

**Veracity** - Trustworthiness and reliability of information is another huge problem which is expected to increase even further with digital transformation. Examples are numerous. They include spam email, fake news, computer bots, botnets, Web spiders, crawlers, viruses, trojans, disinformation, misinformation and many others that make veracity a real problem.

**Velocity** - Currently it takes 13 minutes to download the content of a DVD (4.7 GB) over a DSL line with a bandwidth of 50 Mbit/s. A 5G-enabled smartphone or laptop could download the content of an entire DVD in just 4 seconds. 5G technology involves more than just the transfer speed. Availability and reliability are other decisive factors that make the role of grey literature professionals hard to carry out in an acceptable time frame with the required quality.

**Value** - Data is being widely commercialized, sold and resold, bringing a whole new spectrum of issues, required skills and organizational changes. With the change of the originally intended purpose in information and data comes the change in the role grey literature professionals should play. The notion that the value of information and data is not being depleted after consumption requires a strategic approach to long-term preservation, interoperability, and reusability.

### **B. Impact on the workforce**

Digital transformation is more than just implementation of a new technology. It requires the adoption of a “digital workforce mindset”. A digital mindset requires a deep understanding that the power of technology can democratize, scale and speed up every form of interaction and action. The main characteristics of a digital mindset are: abundance, growth, agility, comfort with ambiguity, explorer’s mind, collaboration, and embracing diversity (Chattopadhyay 2016).

The impact on the workforce is expected to be multiple, including:

- Digital literacy, technical knowledge
- Lifelong micro learning and personal development
- Engagement
- Mobile force and remote work
- Generation gap
- Digital ethics

The World Economic Forum (2018) estimates that by 2022 over 50% of all employees will require significant reskilling and upskilling. This will be a huge task for HR and other managers, especially since 85% of 2030 jobs don’t exist yet (Dell Technologies 2018).

### **C. Impact on the workplace**

The major challenge brought by digital transformation regarding the workplace, is that the advance of technology almost always outpaces existing workplace structures. Still, there are some useful approaches that can mitigate this organizational challenge. They include:

- Use new IT tools - to enhance communication, collaboration and knowledge-sharing across disparate teams. Create strong IT infrastructure and IT literacy.
- Insure digital dexterity - to fluidly and dynamically reconfigure and deploy both human and digital resources at the speed of rapidly changing technological and market conditions.
- Foster digital culture - to move away from ‘paper culture’ to digitally born, user-generated content collaboratively created. Increase use of social media, virtual and augmented reality tools.
- Remove information silos - to create open access data lakes, warehouses, and repositories as the basis for new intelligence, idea generation, and more effective decisions.
- Implement agile, fluid, and flexible teams - to deliver quicker and higher quality results, decrease waste of time and effort, better use resources, make staff more involved.
- Introduce remote work - to offer communication, collaboration, and learning at any time and any place.

### **D. Impact on the role of leadership**

It is already known that digital transformation needs leaders. “Transformation leadership skills are essential and require the active involvement of the different stakeholders affected by the

transformation” (Matt, Hess, & Benlian 2015). It is a people issue, not a technology one. Leadership widely differs from management. It is the art of influencing others to achieve their maximum performance and to accomplish any task. Leadership needs to offer a clear answer to WHY there is a need for change, and what the purpose or problem is that needs to be resolved.

The goal of implementing digital transformation should not be to add new technology for its own sake, but to improve competitiveness and productivity, and achieve better results and high-quality services.

Skills required from a new breed of leaders should encompass:

- Forward thinking/Visionaries/Strategists
- Customer focus
- Open communication, partnerships and collaboration
- Data-driven decision making (KPIs, value measurement, analytics)
- Tech savvy/Agile/Risk taker
- Employee empowerment/Talent promotion
- Support for creativity, innovation, experimentation
- Continuous improvement/Quick learner
- Leading by example/Role modelling

### DX impact on roles of GL professionals

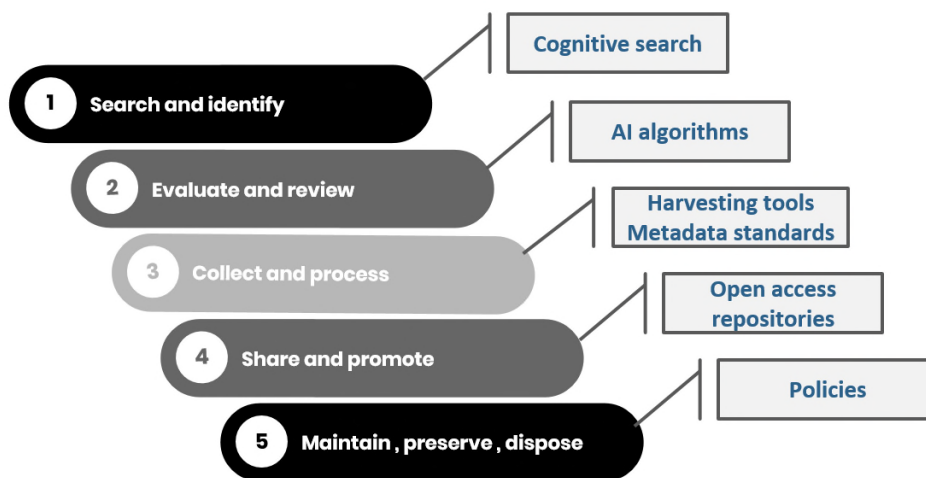


Figure 5: Roles of grey literature professionals

#### D. Impact on roles of grey literature professionals

Figure 5 lists five specific roles grey literature professionals currently perform and some of the major IT tools that might be beneficial in making their work more efficient and more relevant. The roles include information searching, evaluation and review, processing and sharing, maintenance, preservation, and disposal. Some of the existing IT tools already offer huge benefits in more quality and precisely performing these functions. However, continued automation efforts might completely replace human involvement and intervention. As long as there is no fear of using these tools, their existence and operational deployment can be beneficial for grey literature professionals, as well as for end-users. Open mindedness, quality education and well-planned training can make this transition less painful and more useful for everyone involved.



## Conclusion

In the last few decades, developments in information technology have had an immense impact on the way we manage information in general, and particularly on the way we create, disseminate, use, and preserve grey literature. Many things have already been substantially changed and even bigger changes are imminent. As wisely stated by Charles Darwin long ago - *It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change*. Grey literature professionals will be faced with the following major changes, making it necessary to change and adapt to new realities.

**Dependence on IT tools** is already considerable, but it will continue to grow with new developments, the implementation of new solutions, and new, sometimes competing, requirements. The impact of digital transformation will be felt by industries and all types of work, including information and grey literature management.

**Changing nature of grey literature** can be easily seen by the increase in grey literature types, the volume, the speed of its creation, the trustworthiness and its value. Grey literature professional **need to develop a new digital mindset** so that they can survive as valuable and respected staff members of future organizations. Besides directly impacting the workforce, **the role of leadership** needs to change, as well as the adaptability to the increased complexity of the workplace.

And finally, major work needs to be done on strengthening the grey literature profession through organized **training**, acquisition of new skills, professional certification, standardization, cooperation with related disciplines, and hard work of professional associations.

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