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**Article abstract**

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# The Contribution of Digital Preservation as a Digital Transformation Mechanism within the Scope of the Sustainable Development Objectives of the 2030 Agenda

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This study reports how institutions in a contemporary context experiencing significant digital transformations face several challenges to keep their memory alive for the next generations. In this context, digital preservation becomes essential for institutions to preserve their history. Also noteworthy are the Sustainable Development Goals established in the United Nations 2030 Agenda, which focus on sustainable development directly related to digital preservation. This article aims to analyze how humanity should consider Objectives 9, 11, 12 and 13 of the 2030 Agenda, whose objectives are interrelated with the theme of this research work. The methodology used was a bibliographic survey on the Web of Science, Google Scholar and Brapci databases, with a qualitative approach and categorical analysis. It is concluded that the interrelationship of digital preservation through the tool of digital certification in documents in institutions can be used as a mechanism for digital transformation within the scope of the Sustainable Development Goals (SDGs) of the 2030 Agenda.

*Keywords:* digital transformation, digital preservation, sustainability, sustainable development goals, agenda 2030

## Introduction

Institutions in a contemporary context are experiencing significant digital transformations and face several challenges in keeping their memory alive for future generations. There has been a significant acceleration in the obsolescence of information and communication technologies in terms of hardware and software. In this context, digital preservation becomes essential for institutions to preserve their history. As a result, society in general has been transforming culturally, scientifically, economically and socially. Therefore, with the emergence of the Internet in the 1950s in the United States and its popularization in the 1990s, it began to integrate thousands of users, thus creating an information network worldwide (Belluzzo, 2019a). Currently, in the digital age, technologies have been advancing through their transformations, such as Information and Communication Technologies (ICT), to improve society, contribute to a country's agenda and also reflect on the guidelines and goals that the United Nations (UN) will offer us in the “2030 Agenda and the Sustainable Development Goals (SDGs)”.

With this argument, this article highlights the Sustainable Development Goals established in the United Nations 2030

Agenda, whose focus is on sustainable development, an issue directly interrelated to digital preservation, as a mechanism for digital transformation so that global institutions and organizations take part in planetary issues without harming the environment in which we live. As the hypothesis of this work, digital certification (digital signature) can contribute to environmental sustainability and reduce tree felling. To this end, the objective of this article is to analyze how humanity should consider Goals 9, 11, 12 and 13 of the Agenda, whose objects are interrelated with the subject of this research work, namely digital preservation and its relationship with the 2030 agenda and goals 9, 11, 12 and 13.

As a goal, the article was based on the reading of articles retrieved throughout the period up to the year 2023 in the Web of Science databases with two documents retrieved, Google Scholar (03) and Brapci (01), focusing on the themes of digital transformation, digital preservation, SDGs and Agenda 2030. Therefore, all research tasks were met and fulfilled in this work.

The research was based on the originality of the topic in question, extremely urgent and necessary for the present and future of planet Earth. It is observed that current institutions must consider urgent ways to reduce paper consumption to preserve forest lives and thus avoid the destruction of human actions in the world. Therefore, digital preservation, which has digital certification in institutions as one of its tools, can contribute to a better world in eradicating climate change imposed by man.

### **Digital preservation as a digital transformation mechanism: a literature review**

Digital preservation as a mechanism for digital transformation has solutions, including the digital certification tool for information recorded on digital media, which aims to guarantee the authenticity, confidentiality and integrity of documents inserted on digital media, ensuring that these digital objects will be recognized over time even in the face of changes and advances that may occur in the future. To this end, it is necessary to establish public policies, guidelines, specific programs and projects, legislation, methodologies, norms, standards and frequent protocols in institutions that can minimize the effects of fragility and obsolescence of hardware, software and formats and that ensure, over time, authenticity, confidentiality, integrity, continuous access and full use of digitally certified information for all segments of society (Dorneles & Corrêa, 2013). The authors argue that the strong support of public policies and efficient guidelines in the form of law in institutions can contribute to strengthening digital preservation combined with digital certification as an artifact of digital transformation, focusing on the predatory reduction of trees on the planet.

Digital certificates are digital files formed by a set of identification data for an individual or entity. They are intended to interconnect, uniquely and securely, the relationship between the private key and the public key of the individual or entity. Digital certification in an institution is a technology that guarantees the security of information exchanged in electronic relationships via the web, both online and offline, identifying the receiver of the information which the sender is in this system. With this relationship, you can ensure the authenticity, confidentiality, integrity and non-repudiation of information (Araujo & Vieira, 2015). Thus, this tool can effectively contribute to humanity, aiming to reduce paper and maintain institutional memory for the long term.

With this understanding, Virtual State (2023a), through the Brazilian Public Key Infrastructure (ICP-Brazil), defines digital certification as the recognition activity in electronic media that is characterized by the establishment of a unique, exclusive relationship that is non-transferable between an encryption key and an individual, legal entity, machine or application. This recognition is inserted into a digital certificate by a Certification Authority, which, in turn, is the entity subordinate to the public key infrastructure hierarchy responsible for issuing, distributing, renewing, revoking and managing digital certificates. With this activity in electronic media, the document in digital form can maintain reliability, integrity and authentic ties within the institution, whether governmental, private, or social, such as the Library.

Another example that contributes to digital transformation in documents is the IFLA-UNESCO Public Library Manifesto of 2022, which is a document that guides and supports the digital transformation journey of libraries in Johannesburg,

located in South Africa. From this point of view, digital technologies are fundamental to the digital transformation journey. The effective transformation of library services in the digital economy is largely influenced by the level of digital literacy among communities and library staff to make full use of technologies aimed at the Sustainable Development Goals (SDGs) and maintaining the relevance of library services. Therefore, the Librarian as a digital transformer in an institution such as the Library, for example, comes through a mechanism such as digital preservation, combined with digital certification, to keep the history and memory of the institution alive without the use of paper, thus collaborating with sustainability on the planet.

In the context of library services as a digital transformative, digital certification in the form of digital preservation can be defined as the exploration of the integration of digital technologies that enter digital objects into all areas of library work and is capable of resulting in a fundamental change in the way they operate and bring value to the academic, scientific, specialized and social communities, increasing their efficiency and productivity in extension, teaching and research at the Institution. How do I achieve this? To achieve digital transformation in the form of digital preservation, libraries need to understand the type of leadership and library team to be formed, which should be a multidisciplinary team that involves not only Librarians but also Archivists, Museologists, and information technologists, among others related, who will implement digital transformation programs in this institution. Leadership and the workforce must be dynamic and adaptable, open to new ideas, and willing to transform traditional ways of working within the institution. The library's multidisciplinary team must be ready to integrate different digital technologies and prepared for failures that may occur during the process, which correspond to hardware and software obsolescence. As a result, librarians who are open to learning and trying new things are more likely to adopt technological innovations for library operations that need to be agile and available for movement, with training and support from staff (IFLA-UNESCO Public Library Manifesto, 2023).

Another report that concerns digital preservation combined with digital transformation is the work carried out at the University of Melbourne, in which culture surpasses strategy. An example is the Digital Preservation Strategy at the University of Melbourne, which was built with culture as its first principle. The University of Melbourne has approximately 47,000 students, 6,500 employees, and more than 100 research centers/institutes; therefore, identifying and preserving valuable digital materials must be a distributed and cooperative effort, as no individual department has the resources to face the challenge alone. As a result, the Library already has significant digital collections of lasting value. Also, it has the experience to lead the preservation strategy. Still, it is known that across the university, teams and individuals manage ex-

cess research data digitally, university records, and locally collected collections, and most have little or no support for curation or preservation. So, the main challenge at this institution has been how to promote this cultural change so that staff and students recognize both the value of digital materials and their inherent fragility and participate in measures to preserve them (Digital Preservation Coalition, 2017a). This report is one of the great challenges of digital preservation currently in institutions, that is, overcoming technological obsolescence and ensuring that the organizational culture recognizes the importance of digital assets, specifically digital objects in the form of documents, images and data for the institution.

The organization must be aligned with its culture, infrastructure and policy for long-term digital preservation, constantly seeking efficient and effective ideas for maintaining digital objects and thinking above all about environmental, digital and social sustainability. In this regard, figure 1 shows the digital preservation ecosystem for the organization that has institutional maintenance as its contribution with the support of digital transformation as a digital preservation device.

**Figure 1**

*Digital Preservation Ecosystem (Digital Preservation Coalition, 2017b)*



Figure 1 presents the foundation of the digital preservation ecosystem for good digital preservation practices, which are not limited only to the success with which it preserves bits and access to them, as they must also consider the broader context, broad scope of work, and broader responsibilities we have towards society and the environment. There is no point in preserving bits if no one can read and understand them. As a community, we must, therefore, balance the risks to the digital content we own with the financial and environmental costs. Consider how we reduce our work’s environmental impact while maintaining our valuable digital content for fu-

ture generations. This is a challenging balancing act, and we must work together as a community to develop good digital preservation practices to minimize the environmental impact of our actions.

With this understanding, good digital preservation practices constituted in the form of digital transformation can positively impact the Institution. Figure 2 shows this impact.

**Figure 2**

*Impact of Digital Transformation on the Institution (JISC, 2023a)*



Figure 2 shows a diagram that illustrates how digital transformation impacts an organization, according to the Joint Information Systems Committee (JISC) (2023b).

- Top left: Strategic vision – leadership, values, planning, investment;
- Top right: People—expectations, activities, experiences, capabilities;
- Bottom left: Infrastructure – systems, data, networks, physical spaces; It is,
- Bottom right: Core business activities – operations, workflows, processes, and practices.

As an example of this impact, the UK higher education sector has had to respond to frequent disruptions with strong leadership and resilience within the institution. Long-term strategic approaches are needed to face challenges such as economic crises, resource constraints, climate change, cybersecurity and digital inequalities. Furthermore, agile responses were required to address short-term disruptions, such as pandemics, emerging technologies or localized events.

Complexities and variety of business activities in a supplier organization can result in reactive and fragmented responses to operational needs, often exacerbated by hierarchical structures and traditional ways of working. So, effective and appropriate digital investment allows one to address inefficient and ineffective systems that hinder people’s practices across the organization. Therefore, digital investment can stimulate organizational change that could bring efficiencies, support strategic missions and values, and improve employees’ and students’ work or learning experiences and well-being.

Therefore, digital transformation is a series of profound and coordinated changes in culture, workforce and technology that enable new educational and operational models and transform an institution's business model, strategic directions and value proposition (Brown et al., 2020).

Humanity has recognized that digital transformation offers a more holistic approach that addresses the need for organizational, cultural, operational and technical changes to transform business, change practices, and achieve strategic vision and missions. Although digital transformation strategies impact everyone in the organization, it is up to senior leaders, governors, managers, and change agents to create, lead and implement them. This will require coordination between several different functions and departments within organizational structures. Senior leadership teams must demonstrate and model effective digital leadership and engage stakeholders accordingly (JISC, 2023c).

To this end, there is no single way to achieve digital transformation; it depends on each organization's context. Digital transformation activities and approaches must be based on organizational goals and values, reflect business ambitions, and be implemented strategically. However, some common elements of the process need to be addressed, and some are already well-established. Figure 4 shows stages of digital transformation that can be implemented as an institutional strategy.

**Figure 3**

*Stages of Digital Transformation in the Institution (JISC, 2023d)*



Figure 4 illustrates the steps for institutional digital transformation, collaborating with the organization's structure, especially the digital preservation that it will implement, and taking digital sustainability as a prism in collaboration with the SDGs and Agenda 2030. Thus, the description of each stage of this approach is constituted as:

- **Aspiration:** horizon scanning, organizational principles, business goals and ambitions, benchmarking;
- **Assess readiness:** digital maturity, gather evidence, establish baselines, review skills, identify priorities;

- **Leadership:** digital vision, strategy alignment, investment, stakeholder engagement, organizational roadmap;
- **Implementation:** action plans, digital infrastructure, physical infrastructure, digital capacity plan, change of practices; It is,
- **Review:** evaluation, measurement of success, problem-solving, review of plans.

These steps can serve as support for policies already implemented and to be defined within the organization, reinforcing the institution's objectives as a strategy for the SDGs and Agenda 2030, which aims for digital preservation as a mechanism for digital transformation in institutions, and above all, treating transfer documents to digital media without using paper.

With this thought, the concern with the falsification of documents dates back to the Middle Ages, through the beginning of studies on Diplomacy and Paleography, that is, the verification that the document presented was true and authentic, following defined rules and supervised by medieval seals. Now focused on the digital medium. How do I understand certification and Digital Certificate? Over time, the role of seals was passed on to archives and bodies of the judiciary, such as courts and notary offices; however, with the advent of the internet and digital documents, checking the authenticity of documents made the process very bureaucratic and laborious. However, through the digital certificate, there is a tendency for documents to remain intact and processes to become less bureaucratic; after all, it has security mechanisms capable of guaranteeing the authenticity, confidentiality and integrity of information. Therefore, in a computerized environment, anyone interested in their consultation can mutually prove it using data about the person or company that carried out the digital signature. Therefore, the certificate indicates who holds the respective public and private keys, which makes it a document with legal and probative value, as the parties involved must present their credentials, proving their identities (Virtual State, 2023b).

Digital certification has brought benefits to citizens and institutions that have already adopted its use due to the accessibility of information through the Internet. It reduces costs associated with printing and transporting documents. After all, the document becomes unique through the encryption used for signature, adding legal and evidentiary value (ICP-Brazil, 2024).

But, for Certification to be well done and accepted, some standards are necessary, which, just as it was done in the Middle Ages, are monitored at the same time, such as the use of mandatory fields (name of the person or institution, CPF, CNPJ, among others), and the identification of the Certification Authority, which is linked to ICP-Brazil, and is primarily

responsible for issuing digital certificates in Brazil. At the international level, it cannot yet be concluded that there is a standardization regarding the use of Digital Certification, as several types of certificates are available around the world (in Brazil, the European standard is used). Thinking about this need, professors and researchers from several countries and the University of British Columbia in Canada started an international collaborative research project in 1999, the InterPARES Project (International Research on Permanent Authentic Documents in Electronic Systems), which aims to develop theoretical-methodological knowledge for the long-term preservation of authentic digital documents (Virtual State, 2023c).

As a result, there is a growing trend towards digital solutions in the business world regarding sustainability and the sustainable technology model that drives environmental, social and governance results. Gartner (2022) defines sustainable technology as a model of digital solutions that can enable environmental, social and governance (ESG) results for the company and its customers. In this regard, an organization that draws attention to digital transformation through digital certification, DocuSign – a global leader in electronic signature and cloud document management, reported that it contributes to helping more than 1.3 million customers and companies worldwide. Companies need to develop sustainable processes that reduce the need to use paper. Through electronic signatures, one of the company's main solutions, more than 73 billion sheets of paper have been replaced by digital processes since 2003, preserving more than 1 million tons of wood and, as a result, 7 million uncut trees. Twenty-nine billion litres of water were also saved through the use of technology. This company has stood out in the growth of digital transformation by helping organizations from various countries and different sizes automate how they prepare, sign, act and manage their documents, thus encouraging good environmental practices in companies through technology. An example of this is the non-emission of 2 million tons of CO<sub>2</sub> into the atmosphere, culminating in carbon neutrality in 2022, focusing on the Net Zero commitment (decarbonization) by 2050 (Sustainable News, 2023d).

In line with global socio-environmental responsibility, more than US\$2.6 million has been donated since 2019 to international environmental preservation organizations: The Jane Goodall Legacy Foundation, The Nature Conservancy, Friends of the Urban Forest, and Flore. The institution affirms its commitment to reducing its environmental impact, seeking to achieve 100% renewable energy in its operations and data center (Sustainable News, 2023e). This example from the aforementioned organization shows that digital transformation through digital certification is one of the great milestones for sustainability on the planet, reducing the deforestation of trees and contributing, above all, to carbon neutrality, confirming the commitment to the SDGs of the 2030 Agenda.

## Methodology

The research is characterized by a bibliographic and exploratory survey, seeking to identify studies regarding the importance of digital preservation as a mechanism for digital transformation in the context of the 2030 Agenda's SDGs. A categorical analysis was used, which served as a link to the interrelationship with the 2030 Agenda's SDGs, with a qualitative approach in this study.

The Web of Science (WoS), Google Scholar, and Brapci databases were the research sources used and adopted in the search strategies based on the keywords Digital Preservation, Digital Transformation, and Sustainable Development Goals of the 2030 Agenda. One thousand nine hundred and ten works on Google Scholar, six recovered from WoS and one on Brapci, respectively. The period researched was the entire period up to 2023, and all database fields were used to retrieve information.

From the results obtained, six articles were selected: 3 from Google Scholar, two from WoS and one from Brapci, according to their availability for download, adherence and relevance to the research objectives. The articles were read to analyze their content and provide a literature review for this work. In addition to the exploratory research, other sources, such as e-books and websites on sustainability topics through technologies, were consulted to build the central analysis of this study and discuss the interaction between the 2030 Agenda, the SDGs and digital preservation as a mechanism for digital transformation.

## Interrelationship of the 2030 Agenda, the SDGs and Digital Preservation

The 2030 Agenda and the SDGs aim for all countries, such as UN Member States, to focus on eradicating poverty, addressing climate change and developing populations, and observing quality of life, human rights, and socio-environmental issues. As the document highlights, the UN Agenda 2030 is a political and social commitment, which means that everyone, including governments, public and private institutions, libraries, schools and civil society, commits to the SDGs, which represent a plan for global action to eliminate extreme poverty and hunger, provide lifelong quality education for all, ensure environmental sustainability, develop a global partnership for development, protect the planet and promote peaceful and inclusive societies in its 2030 Agenda. Include new objectives and targets for protecting children and adolescents, providing early childhood education, and reducing inequalities. Furthermore, it recognizes that eradicating poverty in all its forms and dimensions, fighting against inequalities within and between countries, preserving the planet, creating sustained, inclusive and sustainable economic growth, and promoting social inclusion are reciprocally linked and interdependent. Sustainable development depends on overcoming

forest fires, considering what is set out in the 2030 Agenda.

Still, digital certification deserves attention, as it is one of the digital preservation tools. The focus of this study is the interrelationship of this digital preservation tool as a digital transformation mechanism to the SDGs of the 2030 Agenda for Institutions in the World, according to Table 1 below.

Table 1 points out the interrelationship of digital certification as a digital preservation apparatus, with a view to its digital transformation to the SDGs of the 2030 Agenda, whose focus demonstrated alignment with the SDGs of the 2030 Agenda, as demonstrated in objectives, 9, 11, 12 and 13, which highlight the interrelationship and can contribute through organizations, in a certain way, to sustainability on the planet.

Corroborating the idea of Belluzzo (2019b), about sustainability on the planet through technologies, the 2030 Agenda and the SDGs are considered, remembering and highlighting that digital transformation brings interesting perspectives such as:

- The implementation of the digital era can be one of the great vectors of change in the 21st century.
- Innovative technologies and models are transforming the way people, communities and organizations relate, produce and share. And it is precisely a structural transformation like this that the broad and ambitious agenda of the 2030 Agenda needs for its success.
- Two large social communities are confronted by digital transformation - education and business. Both are the cutting-edge engines for the development of countries that intend to adapt their future to the indicators of the 2030 Agenda and the SDGs.

With this understanding of the digital era, a great change can be seen in institutions with the introduction of digital transformation in the last two decades, especially with digital preservation through digital certification and innovating as part of technology in reflecting structural behavior with people, communities, and organizations. With this, it shows how it has been moving forward, together with successes and mistakes, to serve a better and sustainable world, without destroying the environment and with the SDGs of the 2030 Agenda as its foundation.

### Final considerations

Contemporary generations have flourished with the digital era, pioneering digital transformation through digital certification in institutional memory documents, thus contributing to their preservation. The degree of modernization of institutions depends on a set of technological, cultural and political factors, as well as technological overcoming, an efficient and effective multidisciplinary team, and a reliable information

system that will ensure that digital objects remain intact, reliable and authentic to maintain live your history and memory for future generations, contributing to digital and environmental sustainability over time. In the imminent future, to mitigate climate consequences, institutions must adhere to their full position with the adoption of digital preservation as a good part of their collection, thus composing a great heritage of their digital assets, from the perspective of all areas of their lives.

Digital preservation, combined with digital transformation with a focus on digital certification, can positively impact the organizational relationship with sustainable environmental development, reflecting less stress on life on the planet, such as tree felling, burning and CO2 emissions into the atmosphere. An example of this is the company mentioned in the text that works towards a better world without preying on planet Earth and helps other institutions with its good environmental practices through sustainable technology. Information from the perspective of technology can bring improvements to nature, reflecting the well-being of humanity. It is assumed that digital transformation, through the preservation of digital documents with digital certification, can transition, grow and improve both in human, institutional, educational, and socio-environmental interconnection and is put into practice at the right time, for the right people and institutions, to the appropriate extent to help them understand reality and solve specific issues, having as indicators the SDGs of the 2030 Agenda. A central point of the process of digital preservation and digital certification as digital transformation is the attention to education in values and the acquisition of information itself, in the construction of knowledge for its application in reality and in the search for innovation, growth and development aiming to achieve a sustainable and conscious society.

Therefore, it is advisable that digital preservation as a digital transformation mechanism be seen from perspectives that go far beyond the business aspects and technology itself in the organization; it needs to be seen as a guarantee of authenticity that allows institutions to guarantee not only the authenticity as well as evidence of their origin and provenance, in addition to guaranteeing the reliability and credibility of digital documents over time. Furthermore, on the socio-environmental side, it is necessary to observe the inequalities and flaws that a nation needs to overcome in its institutions, whether private or public. Furthermore, it is necessary to seek knowledge not just from one area of knowledge, but from several areas of knowledge to learn how to transform current opportunities into future successes. This will not only benefit the planet, but also the people who inhabit it. This is the role of Information Science, an interdisciplinary area that has the power to bring together all areas of scientific knowledge and transform them for humanity and its environment: nature.

**Table 1**

*Digital preservation certification as a digital transformation mechanism for the SDGs of the 2030 Agenda.*

Digital certification	Description	Scope of the SDGs of the 2030 Agenda
Accessibility	Ease of access to digital content at OCLC/RLG Institutions (2002); JISC (2024); InterPARES (2024).	Objective 9 targets the accessibility of support for technological development, research and national innovation in developing countries.
Authenticity	Guarantee the authenticity of digital data with precision and OCLC/RLG (2002) functionalities; JISC (2024); InterPARES (2024)	Objective 11 - Maintain the authenticity of information on the world's cultural and natural heritage, such as research data in Libraries, Museums and Archives.
Integrity	Guarantee the integrity of the flows of digital objects OCLC/RLG (2002); JISC (2024); InterPARES (2024)	Objective 11 - In addition to maintaining the integrity of the cultural and natural heritage, it is also important to maintain the integrity of the informational data of these places. In addition to documents, it is also the Culture of a people.
Interoperability	Identify the commitment to interoperability between systems so that file exports can be shared widely. JISC (2020).	Objective 9 - support technological development, research and innovation national technological development, research and innovation in developing countries. For example, cooperate and transfer knowledge of interoperability technology between systems to developing countries that can maintain the digital object in the long term.
Sustainability	Ability to keep digital information preserved over time. JISC (2024)	Objective 12 - sustainable practices and integrating sustainability information into your reporting cycle.
Reliability	Attests to the legal value of digital information. InterPARES (2024)	Objective 13 - Promote the reliability of mechanisms for creating capabilities for planning related to climate change. Example: effective management of digital information (documents) without using paper.

**References**

Araújo, WJ, & Vieira, RM (2012). Signature of electronic documents using digital certificates. *Biblionline*; 8(1). <https://periodicos.ufpb.br/ojs2/index.php/biblio/article/view/14204>

Belluzzo, R.B.B. (2019). Digital transformation and information literacy: reflections from the perspective of the 2030 agenda and sustainable development objectives. *Knowledge in action magazine*, 4(1). <https://doi.org/10.47681/rca.v4i1.26573>

Brown, M., Reinitz, B., & Wetzel, K. (2020, May). Digital transformation signals: is your institution on the journey? *EDUCAUSE Review*. <https://er.educause.edu/blogs/2019/10/digital-transformation-signals-is-your-institution-on-the-journey>

Certification and digital certificate. (2023, December 7). *Virtual State*. Retrieved on January 7, 2024, from <https://www.estadovirtual.com.br/certificacao-digital/>

Digital Preservation Coalition. (2017, August 2). *Planning for a digital preservation ecosystem: small steps and cultural change*. <https://www.dpconline.org/blog/planning-for-a-digipres-ecosystem>

Dorneles, SL & Correa, RF (2013). Digital document management in digital certification applications. *Archival information*, 2(2). <http://www.aerj.org.br/ojs/index.php/informacaoarquivistica/issue/view/3/3>

Gartner. (2022, September 27). *Are you thinking too small about sustainable technology?* <https://www.gartner.com.br/pt-br/artigos/voce-esta-pensando-pequeno-demais-sobre-tecnologia-sustentavel>



- InterPARES Trust. (2024, January 10). *Terminology*. <http://interparestrust.org/terminology>
- Joint Information Systems Committee (JISC). (2024, January 10). *Guides* <https://www.jisc.ac.uk/guides>
- Kelly, J. (2023, February 21). Accessibility regulations what you need to know. *Joint Information Systems Committee (JISC)*. <https://www.jisc.ac.uk/guides/accessibility-regulations-what-you-need-to-know>
- McGill, L. Joint Information Systems Committee (JISC). (2023, September 27). *Digital transformation in higher education*. <https://www.jisc.ac.uk/guides/digital-transformation-in-higher-education>
- National Institute of Information Technology. (2024, January 5). *ICP-BRAZIL*. Retrieved on January 5, 2024, from <https://www.gov.br/iti/pt-br>
- OCLC/RLG. (2002). *Preservation metadata for digital objects: a review of the state of the art - a white paper*. Retrieved January 10, 2024, from [https://www.oclc.org/content/dam/research/activities/pmwg/presmeta\\_wp.pdf](https://www.oclc.org/content/dam/research/activities/pmwg/presmeta_wp.pdf)
- SP Readings (Org.). (2023). IFLA-UNESCO Public Library Manifesto: why, how and for whom? *Secretariat of Culture, Economy and Creative Industry of the State of São Paulo, SP Leituras*. <https://spleituras.org.br/arquivos/sisebpublicacoesarquivos-1173-notas16versaopdffinal.pdf>
- United Nations (Brazil). (2024, January 17). *About our work to achieve the Sustainable Development Goals in Brazil*. <https://brasil.un.org/pt-br/sdgs>
- With digital transformation, company helps preserve 7 million trees. (2023, June 6, 2023). *Sustainable news*. Retrieved January 15, 2024, from <https://www.noticiasustentavel.com.br/transformacao-digital-preservar-arvores/>