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Implementation of the Digital Transformation of Museum Collection Management Processes in the City of Yaounde – Cameroon

Maguia Momo Danielle Prudencienne[1*], Bela Cyrille[2], Atsa Etoundi Roger[3]

[1]PhD, History of Art, University of Yaoundé 1
[2]Professor of Art History, University of Yaoundé 1
[3]Professor of Computer Science, University of Yaoundé 1

Abstract: ***Objective:*** the aim of this article is to present the contributions of digital transformation to the process of managing museum collections. ***Methodology:*** this study is descriptive and analytical. It focuses on the "implementation of digital transformation in the management of museum collections in the city of Yaoundé, Cameroon". The research itself, along with direct and participant observations, took place from 1 February to 30 March 2022. The qualitative research made it possible to take stock of the conservation of collections in the museums of Blackitude, the Fondation Salomon Tandeng Muna (FSTM) in the district of Yaoundé 1, and the Bénédictins - in the district of Yaoundé 2, the political capital of Cameroon, which is also the experimental zone. The collection and analysis of non-quantifiable data led to the following results. ***Results:*** Digitised collections, websites, virtual spaces... these are just a few examples of the multitude and variety of systems that have gradually become part of the museum world. However, museums in general, and those in sub-Saharan Africa in particular, still face challenges that cannot be managed manually. These include the organisational and technical changes brought about by the use of digital technology, and the financial problems that arise when museums have to manage themselves. Digital technology is bringing new business models to the fore. Lastly, there is the problem of employability for young people, because according to the experts, 80% of digital jobs are still unknown to the public. ***Conclusion:*** The use of digital technology in the management of museum collections is leading to organisational changes in both the conservation and display of collections, new working methods, a new economic model, new professions (IT security, digital hanging, digital labelling, etc.) and those that will remain unchanged (cleaning, disinsectisation).
Keywords: Organisational change, museum management processes, business model, new professions, digital transformation.

INTRODUCTION

The Statistics Canada report on cultural indicators (2010-2014) states that the direct economic impact of cultural industries, particularly in the arts, culture and heritage sectors, amounted to $61.7 billion in Canada in 2014, or 3.3% of the country's GDP; 700,100 jobs were directly linked to this. Between 2010 and 2014, the GDP of the cultural industries grew by 16%, compared with a 12% increase for the economy as a whole. In a recent study, the French government highlighted the fundamental role of culture in the economy, pointing out that the added value of this sector represents 3.2% of GDP and 670,000 jobs, 7 times more than the automotive sector. The Musée de la civilisation's recent report notes that the presentation of a major exhibition generated 12 million visitors. The Agence Française de Développement (AFD) describes the contribution of CCIs to the economy: "CCIs generated $818 billion in revenue in the Asia-Pacific region (3% of GDP), compared with $124 billion in Latin America (2.2% of GDP) and $49 billion (1.1% of GDP) in Africa. 4 million jobs are directly linked to these sectors in Asia-Pacific, 2 million in Africa and 1.9 million in Latin America". Charles Houdart (2018: 8). The eighteenth century marked the evolution of museums insofar as not only were collections opened up to the public for their enjoyment, but also collections of curiosities became a set of systematic objects whose

presentation was more reasoned. In sub-Saharan Africa, the concept of a museum is not part of everyday vocabulary. The collections of objects found in the storerooms of traditional chieftaincies are kept for collective use during political, social or religious events (Abbia 1964). The names given to these storage areas vary according to language and religion. "With the globalisation of museums, most of the collections of priests, pagans and chiefdoms have been turned into museums. In Cameroon, the very first private museum was created in 1920 by His Majesty Ibrahim Njoya, King of the Bamoun. The first public museum dates from 1953 with the creation of the Cameroon Museum in Douala (Ondobo, 2014: 3). This led to the creation of museums in almost every town in Cameroon.

From the end of the twentieth century, and more precisely in the 1990s, we have witnessed a new global revolution known as the digital revolution. According to researchers such as Atsa (2019) and Fouda (2022), this digital revolution is characterised by four fundamental factors: digital information, hyper connectivity (connecting objects together), artificial intelligence (replacing humans with specialised machines) and cyber space, which is a new living space just like land and water. These key factors are contributing to the transformation of people and their way of life in society. In an age of technological innovation, Information and Communication Technologies (ICTs) are being introduced in almost every sector of activity. Today, digital technology plays an important role in the growth and emergence of all sectors of the global economy. Industrialised countries have shown that the digital economy in general and ICTs in particular contribute directly to 5.9% of GDP in Europe and 7.5% in the United States. In countries such as Kenya and Nigeria, the digital economy contributes 8% (Mutegi 2016) and 11% (Adepetun 2016) respectively. In Cameroon, for example, digital transformation has integrated the education and banking systems. In 2015, Cameroon's GDP grew by around 5.77% compared with 2014. What's more, according to estimates by the International Monetary Fund, Cameroon's GDP is set to grow by around 5.3% between 2021 and 2022. The authorities also believe that the sector can make a significant contribution to improving the country's revenues. According to the Ministry of Posts and Telecommunications, the digital sector's contribution to Cameroon's GDP should double from 5% in 2016 to 10% in 2020. Beyond its economic contribution, ICTs are stimulating innovation and job creation, leading to an explosion of new professions. According to expert forecasts, 80% of ICT occupations are still unknown to the general public. What's more, by 2022, the adoption of ICTs will generate $300 million worldwide. Faced with this opportunity, museologists cannot afford to stand on the sidelines. The oil of the 21st century will generate new sources of income and new jobs to transform our untapped subsoil and unprocessed raw materials (Atsa, 2019).

Faced with all these changes, museum specialists are looking ahead to the management of these institutions in the digital age. Digitised collections, websites, virtual spaces... these are just a few examples of the multitude and variety of devices that have gradually become part of the museum sphere. However, museums, especially those in sub-Saharan Africa, are faced with difficulties related to manual management. These include: organisational and technical changes brought about by the use of digital technology; financial problems, as museums have to manage themselves through digital technology by implementing new economic models; and finally, the problem of employability of young people, given that, according to the World Bank (2022), in sub-Saharan Africa, 11 million young people enter the job market every year.

METHODOLOGY

This study is descriptive and analytical. The descriptive method consists of describing, naming or characterising a phenomenon, situation or event so that it appears familiar. Qualitative research involves collecting and analysing non-quantifiable data. This work, which focuses on "implementing the digital transformation of museum collection management processes in the city of Yaoundé - Cameroon", was carried out in the city of Yaoundé, the political capital of Cameroon, mainly in the Blackitude museums, Fondation Salomon Tandeng Muna (FSTM) - Yaoundé 1 district, and the Benedictines - Yaoundé 2 district. The research itself took place between 1 February and 30 May 2020. Based on scientific observation, it provided an overview of the state of conservation of the collections. The descriptive method is also used when it is not possible to measure and test a large number of samples. This qualitative approach enabled us to assess the state of museums in Cameroon, specifically in the city of Yaoundé, the political capital, which is also the experimental zone. However, the results of descriptive research can never be used as a definitive answer, hence the need to combine it with the analytical method. This consists of breaking down the object of study from the most complex to the simplest. This method looks for the smallest possible component, the basic unit of phenomena. It also highlights the changes that occur during a transformation.

This method is defined as a systematic analysis of all the information gathered. To achieve this, the various means used to collect data are: Documentary research. We have secondary data available on the management of collections in museums in the city of Yaoundé. This information was collected in the following documentation centres: the national archives, the Institut Français du Cameroun, the libraries of the Musée des Bénédictins and the Blackitude, the library of the Faculty of Arts Lettres et Sciences Humaines, not forgetting Internet research. The aim was to gather information by means of comparison, in order to

eliminate the less prominent and study the relevant ones in depth. Several field visits were carried out. The data collection techniques used were: discussions with teachers, fellow students, museum professionals, direct observation and participant observation. The discussions enabled new directions to be taken and new avenues of research to be explored. Direct observation called on our own sense of analysis during field trips to the targeted museums. Participatory observation came into play during our collaboration with museum managers. In addition, we used techniques for collecting iconographic documentation that are recognised as important data-gathering tools. These include images taken from books, websites and museum institutions. Webographic sources: This refers to information obtained via the Internet.

RESULTS

The results were analysed with the help of the directors and managers of the Museums and the Department of Arts and Archaeology. The digital revolution is bringing about a paradigm shift in the museum world. It is stimulating innovation, economic growth and job creation. Digital technology is driving the digitisation of museum collection management processes in a highly agile way, with new tools and new ways of working. Faced with all these changes, museum specialists are looking ahead to the management of these institutions in the digital age.

Strategies for the digital transformation of museum collection management processes

For a digital transformation of museum collection management processes in the Yaoundé 1 and Yaoundé 2 districts, most museums begin their digital transformation by focusing on purely operational technologies, whereas they should take a step back and define a strategy. The strategy proposed in this article takes into account: the vision of the project, the strategic objectives, the redefinition of the business model, the financial resources and the technologies used.

A physical and cybernetic vision of the museum

The vision is the starting point for any digital transformation. By analysing the market, it provides the direction to follow in line with the objectives that have been set. It also highlights strengths, weaknesses and threats. The physical vision enables the type of digital strategy to be defined. To successfully carry out the digital transformation of museums, we strongly recommend using the modular strategy of investing for the long term and keeping in mind the dynamic pace of technological change. As a result, updates need to be up to date. Digital technology must be given a prominent place in the performance of museum functions (conservation, communication, research and animation). In the digital age, the cybernetic vision enables us to project ourselves onto the key elements: digital information, hyper connectivity, artificial intelligence and cyber space. It makes it easier to understand each element on the basis of the physical or real component of the object and the cybernetic or digital component. This makes the collection management process a ubiquitous activity, i.e. one that will be carried out face-to-face, because physical museums will always exist, and remotely, because of digitised management. In addition, digital transformation will be used to highlight the components of the collections management process in order to: facilitate remote access to collections; establish a proof of property through the always unique identity of an object; locating a specific object; knowing the total number of objects making up a collection; linking information to an object by highlighting the role played by the object in its society of origin, dimension; conservation/restoration interventions to which objects have been subjected; contributing to the security of collections ; insurance assessment; the interest of collections for the public and researchers; analysis of collections with a view to collecting; preventive conservation planning, organisation of reserves; intervention in the event of the destruction of works; building public loyalty; reducing access to original works in order to ensure their survival.

Redefining business: Business model

The business model is the way in which a company generates or will generate profitability. It is a description or coherent representation of the means of generating income from an activity. Several business models can be envisaged for managing museums in the digital age. Websites, platforms, start-ups and mobile applications can all be set up to put the museum online. 3D printing: once the museum is online, visitors can take home a souvenir of the museum and generate income at the same time. Advertising: the museum can offer advertising space on its site to earn money. Remuneration methods can take into account the number of visitors, likes or the number of visitors who interact. In You Tube, for example, the museum is paid through advertising on its site: ads placed before, during or after videos (which may or may not be deactivated); superimposed ads: banners appearing at the bottom of videos; ads located on the right-hand side of the screen; commercials located on the right-hand side of videos. The calculation depends on a number of parameters (length, theme, video content, etc.). The estimated remuneration is around €1 per 1,000 views (or even less), i.e. €1,000 per 1 million views. For videos published by its partners (You tubers recognised as such by the platform), You tube pays them a percentage of the revenue generated by the advertising. To be considered as a partner, your channel must reach 10,000 views in public mode to be examined by Youtube and join the "Partner Programme". You will need to sign a charter, create a Google Adsense account to collect your revenue, choose your monetisation preferences (ad placement), and wait for acceptance from You tube.

Digital ticketing

More and more museums are equipping themselves with a digital ticketing system available on an online website. This is a great way for tourists to make reservations.

Collaboration, experimentation, continuous evolution and agile work organisation

There are several ways of working. Collaboration, which enables all the museum's staff to be involved in the transformation in order to facilitate the cultural revolution that we want to implement. Experimentation, to test transformations in certain aspects of the museum before reproducing them in the entire structure. Continuous evolution, which is used to reshape the changes already made if the need arises. Agile Work Organisation, which advocates ease and speed in the way we work. It not only emphasises the hand-in-hand technique, self-managed teams, iterative rather than cascading procedures, but is also based on three closely interlinked pillars: transparency, inspection and adaptation. Their application requires the use of an empirical method that explores the sensitive world through experimentation and observation. The same applies to the evaluation process, which makes it possible to sort through the scientific knowledge produced while retaining, over time, what remains valid. The advantages of this form of work organisation are: quality production; customer satisfaction; better control of the market; improved project predictability; reduced risks; continuous improvement, etc.

Promoter or museum website

It is important to identify the issues facing future customers by creating a fictitious representation of the ideal customer. In order to attract the attention of Internet users and get them to visit the museum's or promoter's website, certain aspects need to be taken into account: creation of quality content; optimisation of pages and content for natural referencing, also known as SEO (Search Engine Optimisation); use of social networks to promote content. Once visitors have been attracted, it is essential to capture their attention and convert them into leads. At this stage, you need to offer specific content to prospects, depending on how far along they are in the decision-making process.

New marketing techniques: inbound marketing and outbound marketing

Marketing is a human activity aimed at satisfying needs and desires through exchange (Kotler P. 1997). In other words, it is the set of methods used by a museum to market its products and services to a target market. Marketing techniques can be grouped into two main categories. The first, "outbound marketing", incorporates traditional online and offline marketing techniques. It involves going out to find the customer. Mass emailing, telephone canvassing and door-to-door canvassing, billboard advertising, Adwords campaigns, TV and radio ads, sponsored links... all these methods are ideal for imposing a product or service on a customer. "You didn't choose to see this message, but it was dropped in while your attention was focused on something else". Without being obsolete, Outbound Marketing is showing its limits in the age of Inbound marketing, which literally translates as "inbound marketing", refers to a marketing strategy that aims to attract consumers to a brand by carrying out a number of specific actions. This strategy adopts a precise methodology involving four stages: inbound marketing aims for long-term results, unlike outbound marketing. This strategy, which allows customers to deliberately choose a brand, is widely used in digital marketing. The promoter does not force them to do so, but instead favours quality content to arouse their interest.

The advice given is that if you want to attract targets to your products, services or whatever, don't prospect them directly and abruptly. Attract them to your website with quality content that is likely to interest them. Also work on your SEO if you want your content to appear in the first results of search engines when your targets enter keywords. Once your prospects are attracted by your products/services and try to contact you. Use outbound marketing to speed up the process and close the deal. Generally speaking, the two marketing strategies can be combined: Inbound marketing to attract customers and Outbound marketing to retain them by sending messages that present new products and services every time. Unlike inbound marketing, which is based on permission marketing, outbound marketing is interruptive marketing. The following diagram sets out the four stages involved in setting up a successful inbound marketing campaign.

Figure 1: Inbound marketing stages
Source: Jimmy Hoareau (2016)

It should be noted that the success of this marketing approach cannot be achieved by choosing between inbound and outbound marketing. These two strategies are complementary. Using them separately would reduce the effectiveness of the marketing approach.

Financial resources and technologies used

Digital transformation requires enormous financial resources. Museums are classified as cultural and creative industries. No company can commit to an investment if it is not sure of making a profit. So they need to generate the revenue streams to run themselves. Digital transformation should take into account the financial resources available. However, subsidies from the state or certain international bodies such as UNESCO can enable institutions to take such an initiative. To achieve this digital transformation, a range of software, communications and network equipment will be used to meet the technological challenges and digitization requirements. These include: Collaborative suites: we can use Google's Gsuite, which offers tools for sharing information in real time and facilitating communication, e.g. Gmail, Docs, Drive, Agenda, etc. Using the Microsoft Office 365 collaborative suite enables you to use tools for communicating, writing and storing information, e.g. Word, Excel, etc. Communication platforms: There are several, including online video on You Tube, mobile applications, professional Ges on Facebook, etc.; new-generation intranet platforms; CMR (Content Management System) tools; project management tools; online storage tools; 3D modelling software will be highlighted to enable images to be processed and edited. Schematic operationalisation of the digital transformation of management processes new activities linked to the use of ICTs museum collections. The digital transformation of museum collection management processes exemplifies the activity theory on which we have based our work, because it allows us to highlight activities. Activity is what a subject develops in the course of carrying out a task: not only his or her externalized actions, but also the inferences and hypotheses he or she makes, the decisions he or she takes, what he or she does and what he or she refrains from doing. Activity also includes the way in which the subject manages his time and his personal state: workload, fatigue, stress, enjoyment of work, as well as his interactions with others in the work situation. We will apply the strategy of modularity, which consists of investing for the long term and bearing in mind that the pace of technological change is evolutionary, so updates must be up to date.

Critical analysis of the summary table defining the new activities linked to the use of ICTs

Table 1: summary of new activities linked to the use of ICTs

Domaine/ processus	Sous-processus	Activité ancienne/ description du processus	Activité liée au TIC/ analyse du processus (activités mutées et crées)	Nouveaux métiers
	Acquisition des collections	Diagnostique	Diagnostique numérique	Diagnostique num.
		Documentation	Documentation num.	Documentation num.
		Nettoyage	Nettoyage numérique	Nettoyage numérique
		Etiquetage	Etiquetage numérique	Etiquetage numérique
		Isolement	Isolement	/
		Contrôle	Contrôle Numérique	Contrôle Numérique
		/	Conservation digitale dans l'acquisition	Conservation digitale dans l'acquisition
	Stockage des collections/ conservation	Manutention	Manutention	/
		Entreposage	Entreposage numérique	Entreposage num.
		Soclage	Soclage virtuel	Soclage virtuel
		Emballage	Emballage	/
		Réglage de la luminosité	Réglage de la luminosité Numérique	Réglage de la luminosité numérique
		Réglage de la climatisation	Réglage de la climatisation numérique	Réglage de la climatisation num.
		Nettoyage	Nettoyage numérique	Nettoyage numérique
		Désinsectisation	Désinsectisation	/
		Gardiennage	Sécurité informatique	Sécurité informatique
		Vidéosurveillance	Sécurité informatique	Sécurité informatique
		Contrôle	Contrôle numérique	Contrôle numérique
		/	Conservation digitale dans le stockage	Conservation digitale dans le stockage
		Manutention	Manutention	/
		Scénographie	Scénographie numérique	Scénographie num.
		Accrochage	Accrochage numérique	Accrochage numérique

Domaine/ processus	Sous- processus	Activité ancienne/ description du processus	Activité liée au TIC/ analyse du processus (activités mutées et créés)	Nouveaux métiers
	Exposition des collections	Soclage	Soclage virtuel	Soclage virtuel
		Réglage de la luminosité	Réglage de la luminosité Numérique	Réglage de la luminosité numérique
		Réglage de la climatisation	Réglage de la climatisation numérique	Réglage de la climatisation num.
		Nettoyage	Nettoyage numérique	Nettoyage numérique
		Gardiennage	Sécurité informatique	Sécurité informatique
		Vidéosurveillance	Sécurité informatique	Sécurité informatique
		visite	Visite numérique	Visite numérique
		/	Communicateur web	Communicateur web
		/	Billetterie numérique	Billetterie numérique
		/	Modeleur 3D	Modeleur 3D
		/	Conservation digitale dans l'exposition	Conservation digitale dans l'exposition

This summary table presents the new activities linked to the use of ICTs in a sample of tasks taken from the management of museum collections. Looking at the table above, we can conclude that with digital technology, the old activities will remain because the physical museum will remain. This is the case for activities such as diagnosis, manual documentation, cleaning, labelling, isolation, control, handling, storage, pedestalling, packing, adjusting the lighting, adjusting the air conditioning, disinsectisation, caretaking, scenography, hanging, etc. However, with digital technology, some of the old activities will change. Others will be created, giving rise to new professions. Others, on the other hand, will disappear. Some of the activities that will change include: digital diagnostics, digital documentation, digital cleaning, digital labelling, digital warehousing, digital control, virtual docking, digital brightness control, IT security, digital scenography, digital tours, etc. Other activities include: digital conservation in acquisition, digital conservation in storage, web communicator, digital ticketing, 3D modelling, digital conservation in exhibition. Digital technology is a solution for digitising and preserving museum collections and related information. It will make it easier to restore objects and reproduce them in the event of loss or destruction by natural disaster. To solve the problems of theft, damage when touched and access to information, a digital platform is welcome to limit contact between people and collections. Deterioration caused by touch will also be resolved by 3D modelling, which will enable an object to be presented from all angles. 3D printing is a solution that will allow visitors to take home a souvenir of the museum, and is also a source of revenue.

Pitfalls to be overcome before the digital transformation of museum collection management processes can be put into practice

Digital transformation is far from a smooth ride. Its implementation presents organisational, communication and technological challenges. The organisational challenges are: the lack of experience in change that the organisation has to overcome, the limited budget, the non-existent specialised human resources that the organisation has to recruit and the resistance to change within the organisation.

Lack of change experience and limited budget

Lack of experience of change can mean that digital transformation is something new. As a result, managers are less acculturated to digital issues. To successfully complete a digital transformation project, it is necessary to combine talent with technology. Digital transformation is overturning the old methods on which the museum is based. These good old methods are still favoured by managers because they continue to be perceived as the most effective. For the most sceptical managers, it is above all difficult to accept the irremediable break with the old "we've always done it this way" model. Yet most of them use a smartphone and social networks. The delay in digital transformation is due to a lack of knowledge of the various digital tools, which employers and employees recognise as being too complex to implement. If employee training has been neglected, and their knowledge has not been properly passed on, they may not be ready to take part in the innovation process. The same applies to the technology used by the museum on a day-to-day basis. Some systems no longer meet the museum's current needs. The promoter will need to be aware of the tools that may be needed to encourage the museum to adapt to the digital world. To remedy this, they could call on consultants, chartered accountants or agencies specialising in digital transformation processes to help them move forward safely and avoid mistakes or delays. An external digital strategy consultancy can have a real positive impact. If employees have the necessary knowledge, a human resources manager can recruit additional staff for the team.

Resistance to change

The benefits of digitisation for a business are clear: greater efficiency, faster processing times, fewer errors, lower process costs, better customer service - the

list goes on. However, managing the human resources involved in the transition remains a major challenge for museum promoters. At a fundamental level, digital transformation in a museum means a change in professional roles. So, even if not everyone is necessarily affected, a certain percentage of employees will be faced with a change in the way they work on a daily basis as a result of digitisation. It is this expectation of change that very often provokes underlying resistance. The benefits of digital transformation for employees and teams are not always so clear and the uncertainty surrounding the future often leads to fear among those involved. The main factors of resistance to change are: fear of changes in their work; fear of a change of role, fear of losing their job; fear of having to learn new skills, new technologies or new ways of working; uncertainty about future steps and actions; lack of information about the ins and outs of the project (objective, constraints, impact...); lack of confidence and fear of not being up to the job; the impression that someone new is trying to impose a new way of working on them.

According to Rosabeth Moss Kanter, a Harvard business management lecturer, the factors that resist change lead to different forms of resistance, in particular: Indifference or inertia: the employee does not protest, but neither does he or she participate in the progress of the project; this is in fact an absence of reaction to change. Argumentation: the employee discusses the decisions taken, negotiates, argues and expresses their opinion with conviction. This is the most common form of resistance. Rebellion: if the individual feels they have no other recourse, they may express their resistance by actively protesting (union action, strikes, resignation, etc.). Sabotage: through apparent submission and excessive zeal and commitment, the individual will resort to manipulation and stratagems designed to compromise the success of the project. Resistance to change can therefore have very different causes and modes of expression, depending on the individual or the group, hence the importance of providing individualised and collective responses and solutions. Although some people like change, the most common position in the business world is to stick with the way things have always been done. Digital transformation implies a profound change in mentality and, ideally, it should be encouraged by management. To overcome this problem of resistance to change, companies need to: focus on honesty by being transparent: every individual will tend to want to challenge a decision that is suddenly imposed on them, without them having been able to prepare for it or express their opinion. This is why any change must be accompanied by transparent, clear and explicit communication upstream of the project; be clearer about expectations by explaining the new vision and objectives:

Museum decision-makers and operational managers will be able to detail every aspect of the change process: the reasons for the transformation, why it is essential, what is at stake, the benefits and impacts at individual and collective level, the expected contribution, the actions to be deployed, the planned deadlines, etc. Whatever the type of transformation to be carried out, it will be essential to convey to the teams the need for and the benefits of the project, through a strong, motivating and meaningful vision. This will necessarily involve a clear, coherent and convincing message, highlighting the benefits of the project at collective, organisational and individual levels. Managers and directors will also have to set an example to inspire their staff, by sincerely demonstrating their enthusiasm, optimism and enthusiasm; Rewarding employees: Rewarding is a stimulus that encourages employees to adapt to change; Involving employees in change: As well as communicating closely, you need to ensure that employees are actively involved in implementing the transformation. Local managers will be able to mobilise teams, gather their opinions and suggestions, involve them in the decision-making process, call on their collective intelligence, etc.; Giving employees a voice: To counter resistance to change within the company, it is essential to give employees a voice, through individual interviews, group meetings, intranet tools, etc. With a reassuring forum where everyone can express themselves in complete confidence, employees will feel freer to share their fears, doubts and apprehensions about the change. The role of the manager and the human resources team is therefore to open a benevolent dialogue, without judgement, and to demonstrate active listening and open-mindedness in order to create a bond of trust and closeness. The next step is to find personalised, tailored solutions, with concrete actions to address each person's concerns.

These discussions will also be an opportunity to highlight the benefits and advantages of the change for employees (better pay, more optimal working conditions, increased skills, improved quality of life at work, etc.). However, while it is important to convey the benefits of the change, the potential risks associated with the project should not be downplayed either. Here again, transparency is the key to winning the trust and support of your teams: Throughout the transformation, regular communication will be needed to keep the teams informed of the progress of the project, the actions taken and the objectives and results achieved. This will also be an opportunity to thank and reward the various people involved in the project; Show patience and understanding: It's normal to want to speed up the change to achieve the objectives set as quickly as possible. But we mustn't forget that it takes a long process to move from a position of resistance to one of complete acceptance.

Specialised human resources recruitment challenges

From the dematerialisation of data to the use of new digital tools such as business applications, digital transformation is clearly about more than simply updating technologies or business processes. It's a far-reaching cultural change, and one that companies need to prepare for in order to provide the best possible support for their employees. Training, coaching and consulting are some of the essential tools for supporting employees through the digital transformation. It has become a major challenge for human resources, putting people at the heart of the digitalisation of businesses. Digital technology is changing our personal and professional lives, bringing with it obvious behavioural changes to which we need to adapt. To make a success of its digital transformation, every company needs to be able to count on the full support of its employees and the enlistment of specialist human resources. Change must be driven upstream by digital specialists, but also co-constructed with employees. Specialised human resources can be recruited, consulted or partnered with specialist agencies.

Communication problems: reaching a wider audience

Digital technology is an opportunity to establish a direct, personalised relationship with consumers. One of the communication challenges is that of customer culture: with the digitalisation of the economy, the customer is making a dramatic entry into industrial thinking, leading companies to question a model in which it was essentially the product that was king. Most managers are now thinking first and foremost about their customers, their uses and their expectations, before imagining new collections of art objects, solutions or purchasing paths. Digitalisation is therefore shifting the focus from collections to the customer. The visitor or customer base is no longer stable. The number of enthusiasts or the curious is no longer a given. We need to renew, surprise, open up, establish dialogues, collaborations and partnerships. So many avenues to explore in the short and long term. Reaching a wider audience also means addressing categories that were previously not part of a natural target. These categories can be: Children: once neglected, except on traditional school outings, young visitors have become a major challenge for museums. Exposed to digital technology at an even earlier age than their elders, they demand above all a fun, interactive approach. A young audience that demands a major rethink of the way it is presented, the way it engages in dialogue and communicates in ways that are unique to them. Disabled people: people with reduced mobility (who may also be elderly) or those with sensory impairments are demanding better accessibility. These requirements often involve work and improvements to establishments. But in Cameroon, mainly in the Yaoundé 2 and Yaoundé 3 districts, the infrastructure of museums and other businesses often fails to take account of the difficulties faced by people with reduced mobility. However, digital technology offers an excellent alternative means of discovering or rediscovering a cultural establishment or other business. Foreigners: how do you make yourself known? How can we arouse the curiosity of people whose culture is sometimes totally foreign to us? How do we address them? These are all questions that can be answered by making better use of digital tools.

Building customer loyalty

Building customer loyalty is the most important step. Keeping a customer costs less than acquiring a new one. The museum needs to have a number of marketing levers at its disposal in order to achieve customer satisfaction: customer service, loyalty programmes, surprises, questionnaires and satisfaction surveys. all these methods are designed to continually improve the customer experience. It all boils down to new marketing techniques. Building customer loyalty also involves deploying a marketing and sales process and actions to build a lasting relationship with customers, encouraging them to repeat their purchases over a more or less long period of time. Building customer loyalty means developing a long-term attachment to a particular audience through an appropriate policy. To do this, the museum must make itself available to the general public in order to establish a special relationship with them, a relationship that must be maintained. There are several types of loyalty: Induced or suffered loyalty: this is the type of loyalty that the customer or consumer feels towards a collection or an art object, because this loyalty is not the result of a relationship of attraction between the brand and the customer. This type of loyalty is seen in cases where the museum or art object in question has a monopoly on the market. Geographical proximity to the customer can also explain this type of loyalty. This type of loyalty is involuntary, as it is not the result of a choice. Targeted loyalty: this is a way of attracting customers by implementing various marketing actions and specific strategies.

Museums, especially those in sub-Saharan Africa, face challenges that are still beyond the reach of manual management. Among the challenges that can be met by digitisation are the organisational and technical changes brought about by the use of digital technology. Financial problems, because museums have to manage themselves and digital technology is revealing new business models. Finally, the problem of employability for young people. Since the revision of the ICOM Code of Ethics in 2007, the notion of collection has encompassed both tangible and intangible works. It includes a wide range of items and objects, specimens, works of art, documents and artefacts, representing natural, cultural and scientific heritage. All the operations involved in acquiring, documenting, presenting and securing a collection constitute what is known as a collection management process. The management of museum collections can be defined as

the entry of works into the collections until they are exhibited to the public, studying the conditions of conservation of the works in the museum reserves, the methods of their circulation in particular, through loans or deposits, but also the question of their restoration. Digitising the collection and putting the results online would increase the availability of works. Visitors and professionals no longer have to travel to find out about the contents of a museum's collections. We can assume that, in the medium term, this digitisation will increase the recognition of works in the collection. Researchers would then be more likely to be interested in the objects in the collection, and museums would tend to ask for more loans and collaborations. Generally speaking, management describes the guidelines for developing collections. It makes it possible to specify how acquisitions should be made, how they should be recorded and documented, and defines the actions to be prioritised in terms of their maintenance or disposal. These will be all the easier to integrate into the running of the institution because of their clarity, simplicity, accessibility, knowledge, support, respect, acceptability to all and, finally, their adaptability to the changing context of administrative structures. Collections management is a guide, or rather a reference, that looks at the preservation and use of collections and the conservation of data, as well as the way in which collections support the museum's mission and objectives.

Collections management comprises the following elements: registration or acquisition of collections, conservation and control of access to collections. Acquisition is the activity by which an object or group of objects legally becomes the property of a museum institution and is incorporated into its collections. The selection criteria can be based on the following elements: relevance to the mandate: the proposed object must fit within the museum's collecting scope. It must be significant enough to be included in the collections; the historical, aesthetic, material and financial aspects of the objects must be taken into account; the importance of the creator or manufacturer and information about him or her must not be overlooked; the state of conservation of the object as well as legal and ethical considerations must also be taken into account. Each collection must be properly documented. With regard to documentation, ICOM believes that it is an important professional responsibility to ensure that all objects accepted temporarily or permanently by the museum have detailed documentation to facilitate their provenance, identification, condition and treatment. The purpose of documentation is to ensure the understanding, security and easy management of the collections, as well as the establishment and control of the inventory. As documentation is a scientific process, it should be set up in a number of stages: registration, numbering, cataloguing, photography and computerisation of data. Conservation is the second important and active aspect

of collections management highlighted by ICOM. It is therefore a mandatory activity for all museum institutions that are concerned with preserving their tangible and intangible heritage for future generations. The museum itself is the first line of protection between the outside world and the collections. Most objects remain in storage for a long time, where they are protected against external aggression, accidents, disasters and theft, while at the same time being preserved for posterity.

This is why, far from being a dead space where nothing happens, it is a place where collections are actively preserved. However, atmospheric conditions, climatic variations, the environment, lighting and the action of harmful insects should be controlled in order to protect the collections against parasites, mould, rust, cracks, etc. Collections are kept in storage for long periods, so it is essential to choose stable, non-reactive contact materials for packing and storing objects. Suitable furniture includes cabinets with galvanised or enamelled steel shelves. Before being placed in storage, small, stable objects should be wrapped and bagged or placed in boxes to protect them from external damage. Large or fragile items that cannot be wrapped should preferably be stored in cupboards or on shelves. Objects should be spaced out so that they can be handled and grasped. They should not be piled up on shelves or in drawers, as this will make it more difficult to move them without damaging them. A fire-fighting system is also a possibility. The final part of collections management as envisaged by ICOM is based on access to the collections. Access to the collections is organised around temporary or permanent exhibitions from the museum's own collections or those on loan from other institutions. This way of presenting collections to the public enables the museum to fulfil one of its basic functions. Unfortunately, the reserves, where almost all of a museum's collections are kept, are not open to the public. However, museum staff and certain researchers may have the privilege of accessing them.

A survey of the city of Yaoundé, the political capital of Cameroon, reveals a number of museums. These include the National Museum, the Benedictine Museum, the Blackitude Museum and the Salomon Tandeng Muna Foundation Museum. In terms of their state of the art, it has been noted that these museums are implementing the collections management process as prescribed by ICOM. However, these institutions have not yet carried out an effective digital transformation of their institution. There are organisational problems, such as the remote monitoring of collections and the management of reserves. These days, it is no longer possible to function without digital technology. This new revolution is present in all sectors of activity, including the museum sector. The digital revolution implies a paradigm shift in the world of work. Digital technology advocates a highly agile way of organising work, with new tools, new ways of working and the

need to acquire new skills, leading to the emergence of new professions and the disappearance of others. This lack of organisational overhaul of our museums in Cameroon was recently felt during the Covid19 health pandemic that hit the whole world. The museums remained closed and non-functional during the period of confinement. In addition to this health problem, the flow of visitors often leads to the loss of documentation on the objects on display. As a result, we find ourselves with a documentation problem, as some objects are presented as bouquets of flowers, objects for contemplation, without any information to help us understand them. The flow of visitors also exposes the collections to damage caused by touch, as many visitors want to touch the works on display up close. These multiple touches contribute in the long term to the gradual deterioration of the works, which are sometimes unique pieces. What's more, the way the collections are presented to the public is also a threat, insofar as the public may turn out to be too numerous, clumsy or undisciplined, exposing the objects to total destruction. As well as the organisational problem, there is also the problem of financial resources, as museums have to manage themselves, and finally the problem of employability of young people.

Generally speaking, digital transformation is an essential lever for development these days. Implementing it in the various sectors in Africa, which are still vast worksites with traditional habits, is an opportunity for the continent to catch up. Particularly with its considerable human resources, which according to experts are more than 60% of the young population aged under 30. The digital transformation aims to take advantage of the new data introduced by the widespread use of the Internet, such as: the concept of real time, which reduces temporal barriers to nothing; the concept of space, which favours the disappearance of spatial barriers; the concept of mobility, which enables each individual to connect to any location. This is one of the most compelling symbols of digital transformation; outperforming the competition; improving customer satisfaction; boosting turnover; increasing visibility and brand awareness, both online and in the real world; recruiting more effectively; attracting, training and retaining talent; the concept of the Internet of Things, which applies digital functionalities to physical hardware; the use of new technologies as part of a marketing strategy. Digital transformation is also affecting human resources, changing the way people work together and encouraging the emergence of new professions: teleworking is now possible thanks to video-conferencing tools and other collaborative platforms; hierarchies no longer have a place in the era of digital transformation, in favour of cross-functional management that carries less hierarchical weight. The most important challenge of digital transformation is to enable people to develop, wherever they are, in a more collaborative way.

In particular, as far as museums are concerned, digital transformation makes it easier to visit museums remotely, reconstitute collections that have disappeared or deteriorated, bring out the details of an object on display, document visitors after their visit, take account of visitors' opinions, preserve archives, enhance collections, provide access to information and share culture. There are different strategies for digitizing a structure: Upgrades or improvements are strategies generally reserved for companies that have already begun the digitization process throughout the business, and already have digital know-how in all or almost all departments (from the manufacturing process to customer support and corporate culture). Experimentation, on the other hand, is a digital transformation strategy that enables the company to set up an innovation laboratory tailored to its customers. Creativity, security and modularity. In general terms, whatever type of digital strategy is put in place, the following elements need to be taken into account. Analysis of the market situation: this provides an understanding of the market's strengths and weaknesses, the opportunities targeted and any threats that could affect the project; definition of the objectives of the digital strategy, which must comply with the SMART acronym; analyzing your competitors' digital strategy; defining your target audience in terms of age, needs, motivation, social networks used, etc. Define your communication strategy (social networks, online video on YouTube, launching a newsletter by email, website, blog, creating a mobile application, etc.) Implement a content creation strategy (outbound marketing or inbound marketing) Measure your web performance using views, likes, etc.

There are many issues involved in defining a digital strategy. The change of mindset, which refers to the ability to unlearn in order to relearn. Taking business risks and supporting jobs that take them from start to finish, managers need to make it clear that risk is not only accepted but actively encouraged and rewarded, and that employees will not be punished for (initially) unsuccessful attempts at innovation. In order to achieve such far-reaching changes, the company had to accept all this change. Creating skills to achieve objectives. If a company is about to fundamentally transform the way it operates, it needs to invest in employee training. And those employees must be willing to change the way they work. Employees and employers must all embark on developing new skills and new habits. Companies that succeed in establishing a digital transformation strategy see a significantly higher rate of attraction and retention of better employees. They save money through more efficient processes and deliver a superior customer experience. And finally, transformation thrives in a collaborative and socially engaged work environment, but falters in a workplace that prioritises access to information. Companies that succeed in implementing a digital transformation strategy value the ideas of their

employees and encourage collaboration among them. As a business rebuilds itself, staff need to trust, be inspired by and motivate each other to inspire their colleagues. Transforming the way a business operates opens new doors, offers exciting new perspectives and attracts new customers.

The vision of the digital transformation strategy for museums that we have set up is to use the strategy of modularity, which consists of investing for the long term and keeping in mind that the pace of technological change is evolutionary, so updates must be up to date. The aim is to give digital technology an important place in the performance of museum functions (conservation, communication, research and animation). The strategic objectives are as follows: To redefine the organisational and technical structure of museums as a result of the use of digital technology; to develop new economic models; to solve the problem of employability of young people through the creation of new professions. The business model is based on advertising, as the museum can offer advertising space on its site to earn money. Remuneration methods can take into account the number of visitors, likes or the number of visitors who interact. 3D printing, which allows visitors to take home a souvenir of the museum while generating revenue. The principle is to position the link in the descriptions and encourage your visitors to click on it. Digital ticketing: more and more museums are equipping themselves with a digital ticketing system available on an online website. This is a great way for tourists to make reservations. However, organisational, communication, financial and technological challenges can hamper the implementation of digital transformation. As far as organisational challenges are concerned, they are characterised by a lack of experience of change, a limited budget, resistance to change and the challenges of recruiting specialised human resources. As for the communication challenges, these relate to reaching a wider audience (children, young people, adults, people with reduced mobility) and building audience loyalty. As for the technological and spatial challenges, these are based on adapting to technological innovations and cyber-space.

Digital transformation is a solution for redefining the organisational and technical structure of museums brought about by the use of digital technology. To achieve this, it will promote collaborative and remote working by museum staff in order to highlight the new activities linked to the use of digital technology in the management of museum collections. The presentation of collections to the general public through online exhibitions; remote access to collections; the restoration of objects; their reproduction in the event of loss or destruction by natural disaster. Reducing the problem of objects being stolen, because with digital technology, inventory becomes easier and access to collections is reduced;

Reducing the deterioration caused by touching works that are sometimes unique, because contact with the public is reduced; Presenting collections from all angles; Searching for information relating to collections; Preserving museum collections and related information. Secondly, TG will make it possible to solve the problem of the financial resources that museums often need to meet their needs. In addition to the subsidies sometimes granted by the state, the initiatives of private museum promoters, as is the case in most of Cameroon's museums, donations and income from the management of physical museums (exhibitions, sales, conferences, etc.), new economic models resulting from the use of digital transformation will be added. These include The production of souvenirs for visitors who want them thanks to 3D printing, the creation of sources of income thanks to advertising, the number of visitors, online purchases, online conferences, etc. Finally, the TG of the management processes of museum collections will make it possible to solve the problem of employability of young people through the creation of new professions. TG has created a number of activities that did not previously exist in the management of physical museums. Digital conservation in acquisition, digital conservation in storage, web communicator. The use of digital technology in the management of museums is contributing to the emergence of new professions thanks to the transformation of old professions (IT security, digital hanging, digital labelling, etc.) and professions that will remain unchanged (cleaning, disinsectisation). These new professions are the result of the introduction of new working methods and new technological tools.

Digital technology is turning museology upside down, with its contribution at the socio-economic, socio-cultural, spatio-temporal and human levels. Generally speaking, the impact of digital technology on the transformation of museum collection management processes can be seen as positive, although there are certain limitations. Digital transformation has certain limits, namely the disappearance of other professions on the web, cybercrime and the dispersion of attention. This work ended with the application of the Digital Transformation of museum collections management processes through the creation of a professional page in an ordinary Facebook account. On this Facebook page, we published a number of collections for sale. We have also created an account for professional online sales and purchasing (payPal) and online banking (Keecash) platforms, showing all the steps involved. As formidable as the opportunities provided by the digital transformation of museums, and consequently of works of art, are, they raise a number of questions, particularly ethical and legal ones. The digitisation of images and texts aims to produce a dematerialised copy of the works, which can be circulated on the networks because they are encrypted. In artistic circles, this has given rise to violent debates

about the rivalry between photography, painting and engraving. In this fast-changing world, where it is no longer possible to live without digital technology, we are called upon to show that the decline of the aura through digital technology also has positive values.

Surprises

They are also catalysts for building customer or audience loyalty. A surprise can be a discount for customers and new buyers. It's a good way of getting customers to buy something else. It's every buyer's dream to treat themselves without spending more. By encouraging a new buyer to make another purchase with a discount, you get them used to coming back to your brand regularly. In addition to the discount, there is also the surprise gift, which can be a complementary product to the purchase or simply a free sample tailored to the customer's tastes. As long as the customer isn't expecting it and the surprise has value for them, they are likely to be delighted and feel valued. Whatever loyalty strategy they adopt, companies need to reach out to customers through outbound marketing (mass emailing, telephone canvassing and door-to-door canvassing, billboard advertising, TV and radio commercials, sponsored links, etc.). Similarly, they must use inbound marketing, which is designed to attract the customer's attention. Opening up to other art forms. News no longer comes exclusively from radio or television. It can now be found on a wide range of specialised sites, whether paid or free, or on the news pages of search engines. Every question, every doubt and every query can now be answered on the web, whether it's about homework for the younger generation, a recipe or the name of an author we've missed. Social networks are a powerful ally in this. Other tools, such as the website and newsletters, can be used to highlight current events and open up a channel for exchange. On social networks, the site needs to be updated frequently to keep abreast of the latest news and to avoid being overtaken by the competition. Posts, photos, videos and shares must all be consistent.

Adapting to technological innovations

Companies need to support their employees with appropriate tools. There are tools that no longer meet the needs of today's businesses. To achieve this, workspaces need to be redesigned to provide employees with a working environment that is adapted to the digital world. New technologies are not at the heart of digital transformation. But it is impossible to implement the transformation without involving them. Implementing digital transformation in a company is a gradual process. Consequently, adapting to innovative technologies must also be done gradually. It is advisable to consult specialists to find out which types of technology to use, according to the degree of TG, and to avoid unnecessary expenditure.

Adapting to cyberspace

Cyber space, just like land or air space, has its own way of operating that must be respected. For those who use the Facebook social network, there are the commercial rules for sellers, which cover product advertising and the use of merchant and commercial functions in section 1, payments in the second section, refunds in section 3 and, finally, in section 4, the general conditions specific to the country and to the seller's function (see appendix II). There are also Facebook's advertising rules, which cover the presentation of advertising, the ad review process, measures to be taken in the event of refusal, prohibited content and general information (see appendix III). The museum itself is the first line of protection between the outside world and the collections. Most objects spend a long time in the storerooms, which protect them against external aggression, accidents, disasters and theft, while safeguarding them for posterity. This is why, far from being a dead space where nothing happens, it is a place where collections are actively preserved. However, atmospheric conditions, climatic variations, the environment, lighting and the action of harmful insects should be controlled to protect the collections against parasites, mould, rust, cracks, etc. Collections spend a long time in storage, which is why it is important to choose stable, non-reactive contact materials for packing and storing objects. Suitable furniture includes cabinets with galvanised or enamelled steel shelves. Before being placed in storage, small, stable items should be wrapped and bagged or placed in boxes to protect them from external damage. Large or fragile items that cannot be wrapped should preferably be stored in cupboards or on shelves. It is advisable to space objects apart so that they can be handled and grasped. They should not be piled up on shelves or in drawers, as this will make it more difficult to move them without damaging them. A fire-fighting system is also a possibility. The final part of collections management as envisaged by ICOM is based on access to the collections. Access to the collections is organised around temporary or permanent exhibitions from the museum's own collections or those on loan from other institutions. This way of presenting collections to the public enables the museum to fulfil one of its basic functions. Unfortunately, the reserves, where almost all of a museum's collections are kept, are not open to the public. However, museum staff and certain researchers may have the privilege of accessing them.

The vision of the digital transformation strategy for the museums that have been set up is to use the strategy of modularity, which consists of investing for the long term and bearing in mind that the pace of technological change is evolutionary, and updates must therefore be up to date. The aim is to give digital an important place in the performance of museum functions (conservation, communication, research and animation). The strategic objectives are to redefine the organisational and technical structure of museums as a

result of the use of digital technology; to develop new economic models; to solve the problem of employability of young people through the creation of new professions. The organisational challenges are characterised by a lack of experience of change, a limited budget, resistance to change and the challenges of recruiting specialised human resources. As for the communication challenges, these relate to reaching a wider audience (children, young people, adults, people with reduced mobility) and building audience loyalty. As for the technological and spatial challenges, they are based on adapting to technological innovations and cyber-space. Firstly, the digital transformation of the museum collections management process itself; secondly, new forms of working (agile, self-regulated, etc.); and thirdly, the emergence of new professions. Digital transformation is first and foremost a solution for redefining the organisational and technical structure of museums as a result of the use of digital technology. To achieve this, it will promote collaborative and remote working by museum staff in order to highlight the new activities linked to the use of digital technology in the management of museum collections.

CONCLUSION

Museums in Africa, especially those in sub-Saharan Africa, face challenges that are still beyond the reach of manual management. Among the challenges that can be met by digitisation are the organisational and technical changes brought about by the use of digital technology. Financial problems, because museums have to manage themselves and digital technology is revealing new business models. Finally, the problem of employability for young people. Digitising the collection and putting the results online would increase the availability of works. Visitors and professionals no longer have to travel to find out about the contents of a museum's collections. We can assume that, in the medium term, digitisation will increase recognition of works in the collection. Researchers would then be more likely to be interested in the objects in the collection, and museums would tend to ask for more loans and collaborations. Management describes the guidelines for developing collections. It makes it possible to specify how acquisitions should be made, how they should be recorded and documented, and defines the actions to be prioritised in terms of their maintenance or disposal. These will be all the easier to integrate into the running of the institution because of their clarity, simplicity, accessibility, knowledge, support, respect, acceptability to all and, finally, their adaptability to the changing context of administrative structures. Collections management is a guide, or rather a reference, that looks at the preservation and use of collections and the conservation of data, as well as the way in which collections support the museum's mission and objectives.

Collections management comprises the following elements: registration or acquisition of collections, conservation and control of access to collections. Acquisition is the activity by which an object or group of objects legally becomes the property of a museum institution and is incorporated into its collections. The selection criteria can be based on the following elements: relevance to the mandate: the proposed object must fit within the museum's collecting scope. It must be significant enough to be included in the collections; the historical, aesthetic, material and financial aspects of the objects must be taken into account; the importance of the creator or manufacturer and information about him or her must not be overlooked; the state of conservation of the object as well as legal and ethical considerations must also be taken into account. Each collection must be properly documented. With regard to documentation, ICOM believes that an important professional responsibility is to ensure that all objects accepted by the museum on a temporary or permanent basis should have detailed documentation to facilitate their identification. provenance, identification, condition and treatment. The purpose of documenting collections is to make them easier to understand, secure and manage, and to set up and control inventories. As documentation is a scientific process, it should be carried out in the following stages: registration, numbering, cataloguing, photography and computerisation. Conservation is the second important and active aspect of collections management highlighted by ICOM. It is therefore a compulsory activity for all museum institutions concerned with preserving their tangible and intangible heritage for future generations. As formidable as the opportunities provided by the digital transformation of museums, and consequently of works of art, are, they raise a number of questions, particularly ethical and legal ones. The digitisation of images and texts aims to produce a dematerialised copy of the works, which can be circulated on the networks because they are encrypted. In artistic circles, this has given rise to violent debates about the rivalry between photography, painting and engraving. In this fast-changing world, where it is no longer possible to live without digital technology, we are called upon to show that the decline of the aura through digital technology also has positive values.

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