Digital Transformation in the Arts

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Abstract: Since the beginning of 1990, with the increasing use of personal computers in the business world, software, different programs and applications running on computers have become increasingly important. Because of the convenience it brings to many points, computers have endeared themselves to the professional user.

In today's world, three-dimensional design programs have changed and developed all of their working principles. Thanks to these softwares and programs, products and collections meet with the customer in virtual reality, without the need for production. Future customer revision requests can be completed quickly. In this way, especially in many areas, time, material and personnel are saved. Since this infrastructure also provides the opportunity to work from home for many personnel (design, R&D, etc.), it also serves the continuity of the works in the current period.

The digitalization process has reached a certain point in many areas of art. Both the conditions we are in, the changing direction of customer demands and requests and the reshaped expectations have supported the development of this process. Whatever the conditions are, human beings do not want to break their connection with art. At this point, the digital world makes its existence felt with all its possibilities. Important exhibitions, fashion shows, workshops, theatrical shows are moved to the digital environment and meet with the audience. In this study, it is aimed to put forward the question of how the digitalization process works in different fields of art and what are the mechanisms that drive digital transformation in the fashion sector in the current period, and some suggestions have been made at this point.

Key-words: art; fashion design; exhibitions; digitalization; fine arts; visual arts

1. Introduction

Today, the development of technology has led to a rapid increase in the use of technology in different fields. The rapid increase in the use of technology has led to an increase in information sharing and making information, data and activities more accessible.

In the information age, where knowledge and technology deeply affect individuals and societies, rapid developments in information and communication technologies have shown themselves in art fields as well as in all areas of life. In this sense, the use of information and communication technologies in the field of art has become a necessity in the upbringing and development of individuals in today's information and technology society, and integration of technologies in many art fields has become inevitable.

Information and technology must be in a position to adapt to world standards in order to adapt to the rapid change and transformation experienced today.

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Although art, technology and science do not seem to belong together at first glance, they are intertwined with each other. Creative artistic minds have always sought new techniques and ways to master the material world as a channel of self-expression.

Recent advances in digital technology have influenced art and culture in many ways. Information and communication technologies have provided artists with tools to access new ways of expressing themselves and connecting and interacting with their audiences. These tools have revolutionized the perception of art and creation[3].

On the other hand, database programs developed on workstations and main computers have paved the way for real digitalization. Although it is more expensive and more difficult to operate, it has been possible to collect large and institutional data, calculate and make statistics. Digitalization, which brought partial solutions and required expensive investments in the 1990s, has made it possible to find more comprehensive, more reasonable investments and expert-local national-solutions today.

For example, it is no coincidence that companies that have grown in the textile and apparel industry, especially in the last decade, are leading companies in digitalization infrastructure investments. Similar to the investments made at this point, the reflections of these breakthroughs are also traced in the fashion and textile industry.

The electronic, networked and interactive nature of the digital world has a significant impact on the arts. Particular attention should be paid to the impact of networks and interaction as they open up new possibilities for artworks and public participation and dissemination.

The digital world is not static and continues to experience rapid development. At present, attention is focused on the impact of social media, which allows the creation and exchange of user-generated content and provides a structure for people to organize, exchange and collaborate. Social media can have an impact on art in at least three different ways: to help bring audiences to performances and works of art by pairing them with people seeking art, providing a platform for creating art and maintaining dialogue and discussion between communities, and providing organizations with tools to listen to the public and create art awareness.

Currently, most applications from artists and art organizations to art funders continue to be for artworks that are not largely influenced by digital technologies. However, interest in using these technologies has been increasing rapidly in recent years. In fact, according to a study conducted in the UK, surveys show that people who are most interested in art are most likely to discover art online.

Artistic disciplines and practices have different dimensions in their relationship with digital technology. There are art forms that exist due to technology (digital art applications and film, video) and art forms influenced by technology (such as new distribution tools for music, e-books in publishing, live performing arts).

The ways in which art is created, produced, distributed, marketed, protected and supported are changing in relation to the transition to a digital society - in some cases it is transformed (see Fig.1.)[4].

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[3] M. P. Schnass. 2019. "Arts in the Digital Era". *EPRS European Parliamentary Research Service*: 2-4, https://www.europarl.europa.eu/RegData/etudes, access: 01.02.2021, 12:25.
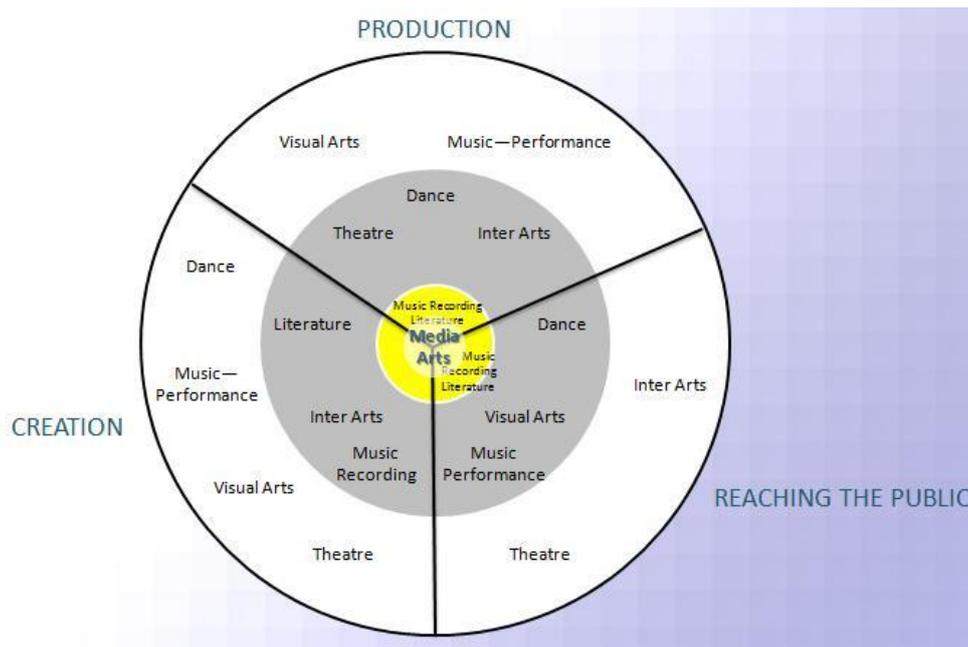[4] D. Poole, S. L. P. Ho. 2011. *Digital Transitions and the Impact of New Technology on the Arts*: 18, https://swsu.ru/sbornik-statey/pdf/DigitalTransitionsReport-FINAL-EN.pdf, access: 21.04.2021, 08:41.

Fig.1. *Impact of Digital Technologies: Low* ..... *Medium* ..... *High, source of image: https://swsu.ru/sbornik-statey/pdf/DigitalTransitionsReport-FINAL-EN.pdf*

The technological world we live in has reshaped the lives, ways of doing business and expectations of each of us. We all try to adapt to this new order we are in and which forces us to change. Especially with digitalization, many points such as the way of doing business, presentation and access in art fields have changed and artists and art fields have entered into another process. In this context, in this study, the question of how art fields are included in digital transformation and what are the mechanisms that direct digital transformation especially in the fashion sector are emphasized.

2. Digital Transformation in Arts

2.1. The Importance of Digital Transformation in Arts

Art and technology have always been interrelated. Artistic expression is facilitated by technological innovation, which allows artists to either adapt technologies for other purposes or to invent it as a way to encourage the creative process.

The past 30 years have witnessed the rapid development and spread of digital technology and the increasing use of information and communication technologies for all kinds of needs, including artistic expression. Even artificial intelligence, one of the latest innovations, has already entered the artists' studios and the creative process.

Digitalization also provides artists and creative people with new tools and means of expression. For example, special programs can assist architects and designers in their work. Artists experiment with photographic and film-making equipment, digital / electronic musical instruments, music composition programs and similarly use digital technologies to produce visual arts, 3D printed sculptures, and immersive or interactive artwork[5].

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[5] M. P. Schnass. *op.cit.:* 4.

Fig.2. *Example of Online Exhibition (S. Romanescu, L. R. Pirvan), source of image: https://www.youtube.com/watch?v=8czjLl7xZVk*

The world around art has undergone an incredible transformation. The promotion of new digital innovation in the form of services, platforms and tools continues unabated. Digital innovation has significant impacts on art spaces as it changes the way we live and how audiences relate to art[6].

Cultural organizations such as art museums, theater companies, and orchestras use the internet, social media and mobile apps to attract and engage audiences, provide deeper context around the arts, and spread their work beyond the stage and gallery[7].

From changing consumer relationships to demands for new experience, the arts are putting institutions under increasing pressure to adopt digital transformation. Technology also changes the way viewers relate to art in this context[8].

In particular, the European Union faces international competition not only in terms of technological progress and art markets, but also in terms of the use of new technologies for artistic expression. Therefore, in order to maintain their competitive superiority, all artists must acquire skills and competences in high-tech fields and be aware of developments.

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[6] R. Kushner, R, Cohen. 2013. *National Arts Index 2013: An Annual Measure of the Vitality of Arts and Culture in the United States: 2000-2011*. Washington, DC: Americans for the Arts: 2.

[7] K. Thomson, K. Purcell, L. Rainie. 2013. "Arts Organizations and Digital Technologies". *Pew Research Center's Internet & American Life Project*: 1, https://www.giarts.org/sites/default/files/Arts-Organizations-Digital-Technologies.pdf, access: 01.03.2021, 13:15.

[8] V. Ford, M. Mandviwalla. 2020. "Can Digital Engagement Transform the Performing Arts?". *Proceedings of the 53rd Hawaii International Conference on System Sciences*: 4296-4297, https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1501&context=hicss-53, access: 01.03.2021, 13:16.

As Golant Media Ventures Agency states in its work, effective strategies to adopt digital technology, instead of turning it into a silo, should try to include and integrate the digital as a whole within the organization.
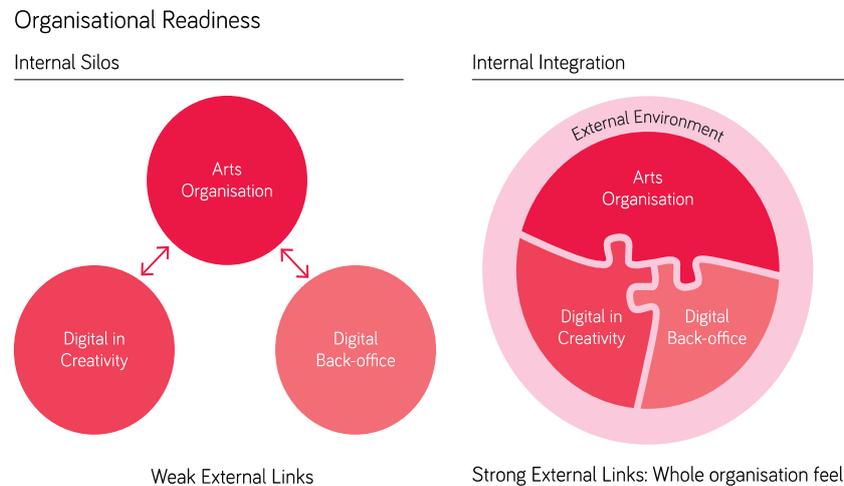
Organisational Readiness

Internal Silos

Arts Organisation

Digital in Creativity

Digital Back-office

Weak External Links

Internal Integration

External Environment

Arts Organisation

Digital in Creativity

Digital Back-office

Strong External Links: Whole organisation feel

Fig.3. *Organisational Readiness Source: Golant Media Ventures, source of image: https://media.nesta.org.uk/documents/difaw_gmv_e.pdf*

In this context, to briefly summarize the importance of digital transformation and the expectations from it:
- Effective time management can be provided. (As there is a fast data flow within the organization with correct digitalization, planned and coordinated management is provided. The time perception of the organization and the enterprise increases with digitalization.)
- Effective cost control can be achieved. (When a single-center management is provided with a lean digital transformation, the work of employees to enter the same data in more than one environment is eliminated. It allows instant comparison of costs and instant solutions to corporate errors and cost deficits.)
- Effective corporate structure can provide rapid profit and turnover increase. (Digitalization aims to make the firm more pro-active, react faster to market conditions, make flawless, low-cost production. While institutions invest up to millions of dollars in buildings, equipment and human resources, they should also increase the flexibility of the institution through digitalization.)
- Digital transformation has an impact on the total cost of ownership. (The system required for accurate digitalization has total cost of ownership, software license, consultancy, staffing, hardware, operational testing and development time costs. These should be ideal.)
- With digitalization, quality can increase. (In order to fully adapt to the needs of the institution in digitalization, a team of analysts who have gained experience in the field related to the expert staff should identify the problems and create a clear solution. Thanks to these processes, the quality of digitalization increases.)
- It can provide integration with a single system. (By covering all business processes such as digitalization studies for the institution, dealer order taking, e-commerce order taking (virtual store), integrated production planning, integrated material requirement planning, process planning and tracking, supply chain digitalization, accounting and

human resources management, it should enable complete management with a single digital system.)

2.2. Digitalization of The Fashion World

The ongoing transition of societies and economies towards diverse organizational paradigms deeply informed by digital technologies is at the center of current debates affecting a broad discipline context that extends to the arts.

Significant changes in the competitive scenario in which fashion companies operate, coupled with the profound transformation of end consumers' lifestyles, turn into a need to redefine business models. This transformation, as stated by Pine and Gilmore in 2007[9], is related to the existence of various conditions that pave the way for the possible transition of the fashion system to a new era.

Although the investments made in digital transformation are not sufficient, it continues to be a topic that has been on the agenda of many brands for many years, especially in the fashion sector, due to its gains and influence. At the point of digitalization, if we evaluate it specifically for enterprises, it is possible to say that there are still side problems such as incomplete digitalization investments, insufficient benefits and continuing dependence on human, machine integration, lack of digitalization of the supply chain. The slow operation of the digital transformation, which has been tried to be done with a more conscious management since the beginning of the 2000s, caused the sector to be caught unprepared for the pandemic that started in 2020. The obligation of employees to work from home, decrease in working hours, requires transition to corporate digital management systems to eliminate asynchronous work planning requirements.

As Teunissen and Bertola reported in their work in 2018[10], it clearly shows how digital transformation, carried out correctly, can make the fashion industry a more sustainable and truly customer-focused business. But at the same time in the study, the authors highlighted the criticality and slowness of adoption by traditional established brands and companies.

On the other hand, it is possible to say that there is a digital revolution in the world in the field of fashion. Especially after the epidemic affecting the whole world, the fashion world has come to the brink of a digital revolution. From now on, virtual fashion shows, 3D special showrooms, avatar models seem to be a part of life.

Leaders of the fashion industry anticipate that we will not want to try a product that has been handled by many people in a store for months or even years, that we will not go to shopping malls, and fashion weeks and advertising meetings will completely change shape. At this point, the fashion weeks have been the most vivid proof that fashion has started to change direction. Like Shanghai Fashion Week, for example, Mercedes-Benz Fashion Week Istanbul, which has been organized for the 15th time, has been held on digital platforms like many recent events. Here the purpose of moving the event to a digital platform, Turkey is the mission of promoting global scale through fashion. Fashion designers such as Özlem Kaya, Mehtap Elaidi and Niyazi Erdogan took part in the fashion weeks, where many designers made their fashion shows in the digital environment. These fashion designers took part in fashion weeks with a collection and fashion show, all produced digitally and presented with virtual models (see Fig. 4.).

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[9] B. J. Pine, J. H. Gilmore. 2007. *Authenticity, What Consumers Really Want.* Harvard Business School Press.
[10] J. Teunissen, P. Bertola. 2018. "Fashion 4.0. Innovating Fashion Industry Through Digital Transformation". *Research Journal of Textile and Apparel*, 22 (4): 352-369.

Fig.4. *Digital Fashion Show Examples (Özlem Kaya – Mehtap Elaidi 2020), source of images:*
   https://www.mehtapelaidi.com/tr
   https://vogue.com.tr/defile/ozlem-kaya-2019-20-sonbaharkis

One of the most beautiful aspects of the event that removes the physical boundaries is undoubtedly that all fashion lovers can watch the fashion shows and live chat programs broadcasted between them. So, this time everyone has the privilege of sitting in the front row. Another point that draws attention in these fashion shows is that VR glasses (virtual reality glasses-technological glasses) have entered our lives quickly. It is possible to say that these glasses have started to be used not only in special events but also in fashion shows, fashion houses' campaigns, fairs and even museums. Dior, which used these designed technological glasses for the first time, joined the game as one of the fashion houses that took the first step. With these glasses (Dior Eyes) developed by Digitas Labs Paris, brand followers were offered the experience of wandering around the fashion show backstage and watching make-up artists closely (see Fig. 5.). This experience is provided both visually and audibly.

Fig.5. *Virtual Reality Glasses, source of images: https://www.lvmh.com/news-documents/news/dior-creates-its-own-virtual-reality-headset/*

It is clear that technological developments, which are the result of the combination of

economic and ideological factors, are a necessity for all fields. As stated in Monaco[11], in order to talk about a work of art, artistic impulses must be expressed through technology.

Computing, which is the focal point of digital technologies, creates new forms of expression in art and artwork today. Like all art fields, fashion design emerges as an art space shaped by technology.

3. Conclusions

We are going through a period in which we have begun to observe the wide-ranging transformative effects of the concept of digitalization on business and art world as well as daily life. Especially in the current period, in the conjuncture where billions of people are closed to their homes, the wheels of many industries stop, and retail stores cannot meet consumers on the streets of global metropolises, *digital transformation* has emerged as an inevitable category in order to manage business processes. It seems that in the short term, businesses in many more fields and in many sectors will start to benefit from technological transformation instruments such as artificial intelligence, internet of things, assistant robots, cloud technologies and 5G. For many companies that fail to achieve this transformation, challenging scenarios will be on the agenda.

It seems that art fields will be seriously affected by the transformation experienced. Unfortunately, art fields that cannot be included in this digital transformation will also face bad scenarios.

It is a common perception that digital technologies are critical to the spread of art. This perception has revealed an extremely realistic picture in today's conditions, where digital technologies have upset much of the traditional art world.

Art fields and firms that will emerge from the global crises or situations with the least damage will be areas and firms that have undergone a sustainable digital transformation in an effective and simple way.

Digital transformation is essential for tools that can be used to raise awareness about their organizations, promote events and exhibitions, provide customized experiences for customers, sell tickets or products, streamline customer service needs, and expand access to the arts.

Digital transformation creates new alternatives in today's conditions, especially for the fashion industry, which is a dynamic field. In this context, it is seen that the digital fashion weeks held, for example, remove borders for both participants and viewers, offer a freer and creative platform, and provide the opportunity to appeal to a wider audience.

In this context, in order to take an active role in this transformation, a systematic approach, the curriculum from the basic education stage to the university should be prepared with a perspective based on increasing digital competencies in accordance with the needs of the business and art world. At the same time, universities are also required to work on programs targeting the education of candidates in the field of digitalization.

Art fields also need to adapt to today's technological and digital transformation and establish the necessary infrastructure for applications.

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[11] J. Monaco. 2001. *Bir Film Nasıl Okunur?* (Trans: E. Yılmaz). İstanbul: Oğlak Yayınları.

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