Success Factors of Information Sharing in the Field of New Media Art

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Keywords: New Media Art, Networking, Communication, Collaboration, Creative Design, Information Sharing, Information Systems.

Abstract: This study attempts to answer the following research question: how can digital information systems be understood and improved in the field of new media art from the viewpoint collaboration, networking and impact. This case study describes factors determining the success of information sharing in new media art. In the context of this study, inventions are not always widely shared, unlike innovations, because new media art companies are typically small or run by private entrepreneurs. Moreover, communication between these companies is not effective and business networking is seen as a short-term solution. However, professionals in the field advocate that it is vital to collect information using an information system as a shared service for actors.

1 INTRODUCTION

This research asserts that the emergent field of new media art needs a common international information system which improves communication, networking, collaboration and information sharing.

It reveals that proper collaboration is necessary in new media art companies to help companies in other industries in their marketing efforts.

The case study draws on various studies and methodologies in the extant literature and review: triangulation (Campbell and Fiske, 1959), case research strategies for information systems (Benbasat et al., 1987), case study theories (Eisenhardt, 1989), qualitative data analysis (Miles and Huberman, 1994), arts of case study research (Stake, 1995), rigor in positivist case studies (Dubé and Paré, 2003), case studies and theory development in the social sciences (George and Bennett, 2005), real world research (Robson, 2002), integration of qualitative and quantitative research (Brannen, 2004), interpretive research (Walsham, 2006), case study principles and practice (Gerring, 2007), qualitative research and analysis (Corbin and Strauss, 2008), and case study research design and methods (Yin, 2009).

The research data for this study were collected from real-world projects in which the authors participated for a period of 1.5 years.

The data sources include management data (n = 18) (specifications, strategies and legislations), data from the development stage (n = 23) (data displays; notes; development proposals; and reports, including test reports), feedback from interviewees (n = 6) and a detailed literature review (n = 45).

2 ENVIRONMENT OF NEW MEDIA ART

New media art, which requires versatile technological skills from its artists, has developed alongside traditional art forms. However, it differs from traditional art forms, such as paintings, graphics, music or sculpturing, in its use of technology as a tool in work and performances.

New media art is a constantly evolving art form. Typically, the field seeks innovative ways to use technology in an effort to express art.

Artworks can comprise videos, sounds, music and interactive elements. It also includes lighting, landscapes, virtual reality, interactive performances, multimedia or a mix of some of these artworks.

Interactive installations, sensor technology, video art and electronic games are also considered related to the field of new media art. New media artworks often need large spaces and therefore, are suitable in

urban cities.

The understanding of electronics and video technology makes it possible to design and create marketing advertisements for large outdoor screens. Interactive art forms in which viewers can participate using their mobile phones are also increasing in popularity.

New media art is connecting art and technology, and in the best case scenario, are complementing each other by marketing each other's artworks.

2.1 New Media Artists

New media artists dealing with technology and music theory are often highly educated. They are also eager to experiment with new techniques. The artists are familiar with sound, music and lightning technology. Their art exhibitions include machines and robots with human-like habits. New media artists are often quite playful, but at the same time, their artwork can have deep meaning.

Many new media artists are willing to use their artwork as an inspiration or opening for public conversation. Some of the artwork topics are death, love, mental illness or forgiveness. The artists try to predict how their artwork could affect viewers' feelings, thoughts and reactions. They study a viewer's superstitions, feelings of loath and admiration or facial and body expressions in response to what they see in or feel as a result of the artwork.

These artists use both new media techniques and science in their projects. Their talents include common art, knowledge of human nature and the ability to use technology, which can be considered the interface of art and science.

New media artists generally utilize technology differently than scientists when creating new innovations for future use. Scientific innovations can open up new possibilities for art, and artistic visions can advance the demands and commercial use of scientific products.

New media artists want to be known as not only artists but also innovators of digital technology. They often plan and build small technology laboratories, where they are able to create and test their artworks.

2.2 New Media Art and Creative Industry Network

In this study, new media art is considered to be a part of 'creative industries'. Here, a creative industry is where creativity and imagination is related to the creation of products and services. The production and distribution of creative products and services can be long and demand skilled workers.

According to the United Nations Conference on Trade and Development (UNCTAD), creative industries are globally developing business sectors.

Therefore, many government programs aim at strengthening creative industry entrepreneurship and supporting networking among common stakeholders and with other industries' entrepreneurs (Ramboll Management Consulting, 2013, p.16).

The creative economy is supported by many government programs. For example, Denmark, the Netherlands, Great Britain, Sweden and Finland nationally support creative industries. These countries have founded creative networks whose purpose is to diversify and vitalize the national economic structure.

The term 'creative economy' is also mentioned in EU programs and is part of a larger entity. In context of this study, it is perceived as a network which includes companies that provide and distribute content and operators who benefit from such content generation. In other words, a creative economy refers to the possibility of various economic sectors benefiting from creative products and services.

2.3 Artist Residence

An artist residence is commonly called an atelier or studio. Such spaces allow possible art professionals, experts and workgroups from different fields to work inexpensively for a week or sometimes, even a year. Often artist residences provide accommodations, necessary working equipments and the opportunity to organize exhibitions. The residence's purpose is to create new international relationships and activate the art world in term of innovations.

The residents of international centres are generally selected on the basis of an application, and sometimes, talented operators are invited, for example, as researchers at the Art Research or Development Unit.

Many Finnish media artists, artist workgroups and media art organizations have collaborated with international art residence centres.

The Finnish Ministry of Education and Culture set up a professional agency called the Arts Promotion Centre Finland (TAIKE) in 2013. Taike accepts applications for national as well as international residences. In 2014, Taike residences were set up in Arenys de Mar (Spain), Berlin

(Germany), Edinburgh (Scotland), Genoa (Italy), Matera (Italy) and New York (United States of America).

Since 2015, the Australia Network for Art and Technology (ANAT) has come to be recognized as an exemplary contributor by new media artists and various scientists with long-term common projects. For research and seminars, artists and scientists can use the Fab Lab Adelaide workshop, which is equipped with modern computer-controlled machines such as printers, laser cutters and milling machine operators.

In 2014, ANAT organized the Synapse Art/Science Residency, where common research based on digital media art, technology, medicine, psychology and biology were presented. These research projects are expected to continue producing various new innovations (ANAT, 2014).

3 NETWORKING

The competition is expected to toughen in the future, and to succeed, it is essential to have creative ideas to generate wider networks. Exclusive collaborations between creative industries will add to commercial innovation in the fields of arts, society and business.

A network represents a relationship web with companies, organizations and individuals. The current global market economy obligates companies to specialize, and therefore, increasingly focus on domain-specific know-how.

Small- and medium-sized companies do not always have the necessary know-how to handle their marketing and customer relations. Hence, these companies, sometimes against their own will, are forced to form common networks aimed at creating new customer relationships and ways to better respond to current customer requirements.

Owing to developed technologies and limited and divided resources, it becomes difficult for new media artists and organizations to cope with international competition. Thus, a new approach is required to commercialize their art products. One way of achieving higher success in the future is by raising the value of their creative integrated art.

'Creative Europe', a project by the European Commission, supports creative industries networking and offers opportunities to learn and develop a common line of business, in theory as well as in practice.

In macro-level, this study was related with the contacts of European Union's Common Information Sharing research networking and research agenda targets related to the public authority in Finland.

Then, the macro-level target of study was addressed to the information sharing utilisation that foster cross-sectorial and cross-border collaboration among vary actors, the dissemination of the related EU initiative and steps along the EU information sharing roadmap.

4 RESEARCH FINDINGS

The study reveals that new media art is yet to receive its full recognition, although it is gradually gaining popularity.

In addition, there is a growing demand for new media artists to train art reviewers so that they can write stories that are backed by deeper knowledge.

Art operators often find it difficult to keep abreast with the ever-changing technologies and terminologies.

In fact, it is difficult to sell produced artworks of experimental media art, especially new media art. In comparison to paintings and sculptures, new media artworks need specific devices and showrooms.

Although new media artists are often equipped with sufficient knowledge to market their products, they lack the time to do so, and sometimes, even the confidence. They admit that they need marketing help.

The artists need sales-mental international organization gathered network, which could release their time for art producing, for the work that artists consider most important.

Currently, the new media art industry's business network is loose and short termed, which increases data disjointedness.

4.1 Information Systems Design

In all fields, including new media art, technology can help build wider networks of people and data.

However, at the same time, problem solving has become more complex because of distances and the lack of time. Therefore, new media art, as well as the entire creative industry needs a logical and computer-based technical solution to fulfil challenging entities. A carefully designed information system can be used to widen the reach of new media art and thereby, contribute towards increasing participation in interdisciplinary technology projects.

Following designs based on technology and human interactions, the utility of and user

satisfaction from information systems can affect system benefits.

According this study's data, each investor assumes that a new information system will increase productivity, efficiency and performance. Unfortunately, an incomplete information system can be subject to numerous limitations. Therefore, it is essential that everyone involved in new system planning familiarizes themselves with factors affecting the success of a digital system and understand requirements specific to procurement decisions.

The ability to anticipate potential problems allows us to better focus on essential subjects. This preoperational evaluation will help decrease the risk of failure.

The literature includes several research models to measure the success of information systems. The abovementioned measures are required to facilitate the successful collaboration of businesses and information systems.

The success of information systems depends on various other factors as well. For example, the increase of cloud services and continuous development of mobile devices can help distribute information to a wider user community. However, in this case, finding an appropriate model can become complicated.

Rapidly evolving technologies have also contributed to the situation; however, there are not sufficiently comprehensive and comparable between models used to measure factors determining the success of information systems.

4.2 Towards New Media Art

This study draws on a previous master study by the first author, "Information systems success factors for the creative new media art network" and revises the described factors in information systems relative to new media art.

The purpose of this study is to increase the extent to which new media art is recognized and the ability to participate in interdisciplinary technology projects.

Operators in the new media art field are mainly private entrepreneurs or members of small networks. However, even though they fundamentally differ in social background or thinking, art helps bring them together. Investigating previous conditions can help expose earlier practices of new media art operators as well as their needs, innovations and surrounding social system standards.

Therefore, to examine the factors determining

the success of an information system specific to new media art, the test model has to test environmental impacts and analyse unfamiliar users and their experiences, feelings, hopes and expectations.

In addition, an important criterion is that the model should not only highlight the economic benefits but also social influences.It was found in art thinking anthropocentrism, social influences are given higher emphasizes than economic benefits.

Intangible values were emphasized in the test model suitable to measure the factors influencing the success of art information systems. Hence, the test model should account for not only the technological and scientific perspective but also art-oriented thinking and viewpoints. This will help build a more comprehensive and relevant digital information system that can serve artists, producers, financiers, consumers and other stakeholders.

4.3 Benefits for New Media Art

The research reveals that the most important intangible benefit is to improve art-related information availability.

The interviewed persons hoped that they could have easy access to information about international events, exhibition venues and artistic residences.

More detailed information was also required for event equipments, facilities, organizers, assisting personnel, transport, accommodations and possible partners.

An information system must contain current information and exchange international companies and research institutes' experiences with innovation activities, new research ideas and product development. In addition, an information system must contain forward-looking information changes in the field and the types of revised products and technologies new to the market.

Specifically, an information system must comprise compartmentalized information about innovations financiers, networks, collaboration partners, cultural differences, rental housing, trainings and taxation structure for different countries.

An information system should also present new grant possibilities and way to improve competitive methods for art sales and marketing in new media art.

Governments funding targets significantly vary by industry, with the arts and cultural fields being most affected. For instance, often, the loan amounts were too large for small-scale art and cultural companies.
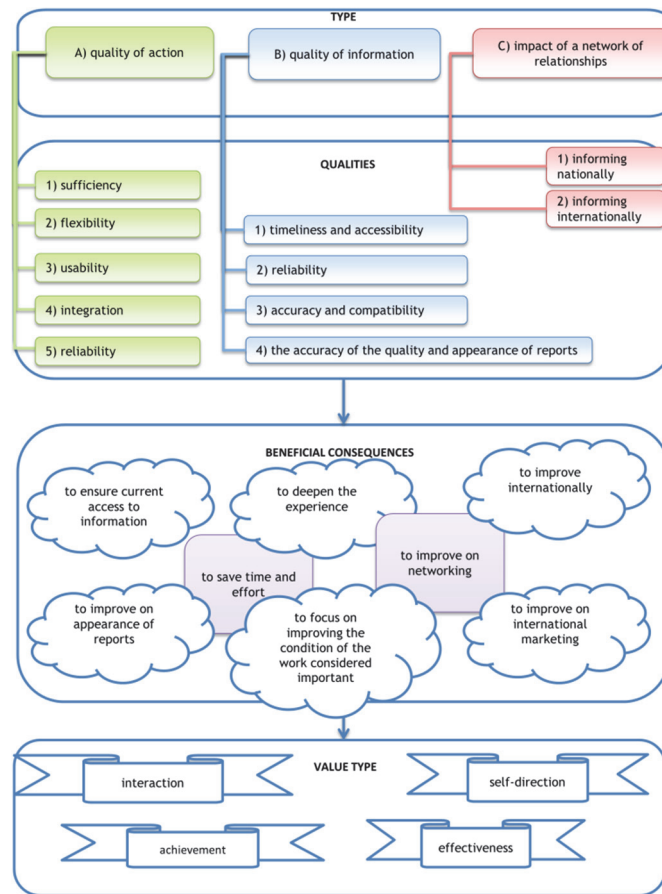
Figure 1: Success factors of an information system in new media arts.

In addition, grant applications and related administrative task demands far exceed resources of small companies.

Even small companies agree that global businesses require combining effort, which is an essential part of a successful operation. Collaboration offers more opportunities, faith and prospects for a better future.

Importantly, the achieved benefit is mutual. Companies can use collaborative services for the ever-changing and complex management of legislation.

Currently, the network for new media art operators is limited. An information system is expected to help companies create new network relationships and support creative industries' growth and internationalize.

It is expected to help networking between unknown art organizations and donors. Through networking, scientists and technology-oriented artists have the unique opportunity to produce commercial innovations.

On the other hand, there have been speculations

that a computer information system will not be able to maintain long-term networks without an active administrator. Technical solutions to maintain network relationships can be challenging and investing bare money into technology may not be enough. Moreover, network relationships are not simple or trouble-free.

New media art operators recognize problems in network relations and know-how. Hence, today, they are now more inclined towards networking.

A demand for well-working network relationship is interactivity including trust and staff's team spirit. The starting point of a successful network is good personal relations. A network does not work if the people are unable to work together, hindering any benefits from collaboration.

4.4 Success Factors

The study demonstrates the most critical issues concerning the realization of a digital information system in the field of new media art.

According this study, three main factors affect

the implementation: 1) quality of activities, 2) quality of knowledge, and 3) impact of the system on networking.

Figure 1, in the end of paper, comprises and describes the factors affecting the success of information systems in new media art.

4.5 Future Reasearch

An important topic for further research is the need for an international information system applicable to the entire creative sector. The study should explore digital information technologies and systems development as well as targets to produce a model and prototype for testing and development which could perhaps even apply for the European Union's Creative Europe program funding.

5 CONCLUSIONS

This study comprised a highlighting that the new media art field needs computer-based technical solutions for challenges in implementing entities: A properly planned and executed digital information system could bring about remarkable benefits for both art and business.

The observations were mostly made in the last couple of years in the Finnish capital region and abroad at public events, exhibitions, interviews and media art festivals. The research data are described in the Appendix.

ACKNOWLEDGEMENTS

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