Leeds Doctoral College
University of Leeds

Title: {The Impact of Digital Transformation on Performance and the Cultural Industry: Challenges and Opportunities}

PhD research proposal

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June 20, 2024

Supervisor(s): ----

Submitted for the Faculty of Art Humanities and Cultures

Keywords: Digital Transformation, Cultural Industry, Operational Efficiency, Performance Metrics, Cultural Heritage, Digital Technologies, Artificial Intelligence, Big Data, Internet of Things (IoT), New Business Models, Revenue Generation, Audience Engagement, Digital Literacy, Data Interoperability, Strategic Policies, Ethical Implications, Preservation, Accessibility, User Experience (UX), Collaboration, Thematic Analysis

Introduction

This document is enhanced to better reflect the detailed research process, methodology, and significance of digital transformation in the cultural industry. It emphasizes the need for comprehensive analysis and offers a clear structure to guide the reader through the study's objectives, challenges, and expected outcomes.

The cultural industry, encompassing arts, entertainment, and heritage sectors, has undergone significant changes due to digital transformation. The infusion of digital technologies such as artificial intelligence (AI), big data, and the Internet of Things (IoT) has reshaped how cultural products are created, distributed, and consumed. This study focuses on evaluating the impact of digital transformation on performance within the cultural industry, identifying associated challenges, and exploring emerging opportunities.

Problem Statement

While the potential benefits of digital transformation in the cultural industry are substantial, understanding its full impact on performance remains underexplored. This research addresses the problem of assessing how digital technologies affect the efficiency, effectiveness, and overall performance of cultural organizations. The challenge lies in quantifying these impacts and understanding the nuanced ways in which digital transformation influences cultural production and consumption.

Research questions

Research questions for the title "The Impact of Digital Transformation on Performance and the Cultural Industry: Challenges and Opportunities" could include:

RQ1: Performance

- What digital transformation factors enhance the efficiency and effectiveness of cultural institutions?
- What types of performance are impacted by digital transformation in the cultural industry?

RQ2: Challenges:

- What are the key challenges faced by cultural institutions in adopting digital transformation?

RQ3: Opportunities:

- What digital transformation factors enhance diversity and equal opportunity in the cultural industry?

These research questions aim to explore how digital transformation is reshaping the cultural industry, focusing on performance metrics, challenges, and opportunities arising from technological advancements. Our study will include well-known companies like YouTube, Flickr, Pinterest, and Twitter, as well as prominent universities.

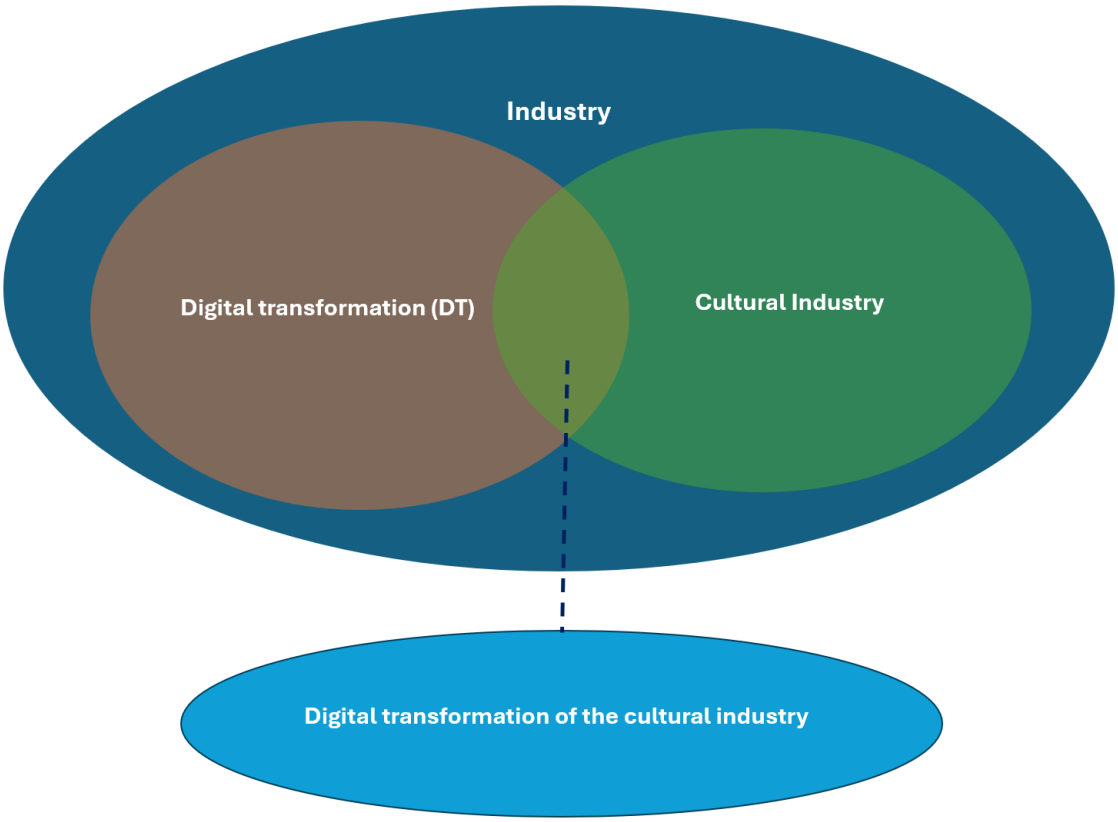
To address these research questions, we employed a systematic research process. We developed a comprehensive model and utilized gray literature to gather online materials as secondary data. This approach will enable us to analyze key performance indicators, identify challenges, and uncover opportunities that impact digital transformation within the cultural industries.

Review of the Related Work

What is Digital transformation?

- **The cultural industry:** also known as the creative industry, encompasses businesses and activities that produce, create, distribute, and commercialize creative content and cultural products (Gershuny *et al.*, 2011) (European Commission, 2010) (Hesmondhalgh and Pratt, 2005).
- **Digital transformation (DT):** is the process by which an organization adopts and implements digital technology to create new or modify existing products, services, and operations by converting business processes into a digital format (Reischauer, 2022) (Vial, 2019) (Warner and Wäger, 2019).

Figure 1 Diagram for the digital transformation of the cultural industry



- T**he digital transformation of the cultural industry** is cultural industry involves the process by which organizations in this sector adopt and implement digital technology to create new or modify existing products, services, and operations by converting business processes into a digital format [J. Heider 2024]. We will use this definition in our qualitative data analysis to identify cases relevant to the study.

Previous Studies on Digital Transformation

Digital transformation has become a significant topic of interest across various industries, including the financial service industry, oil and gas sector, automotive industry, and food retail industry.

- Study 1: (Dehnert, 2020) highlights the importance of understanding how digital transformation dimensions are connected to firm performance, with contradictory findings in existing research.

- Study 2: (Affonso *et al.*, 2020) emphasize the need for innovation in the oil and gas industry, pointing out the risk-averse approach of traditional project management as a hindrance to progress.

- Study 3: (Llopis-Albert, Rubio and Valero, 2021) utilize fuzzy-set qualitative comparative analysis to analyze the impact of digital transformation on business performance models in the automotive industry.

- Study 4: In the context of the banking sector, (Naimi-Sadigh, Asgari and Rabiei, 2022) discuss the implementation of digital transformation to respond to disruptions and drive innovation in banking services.

- Study 5: (Manjula, Balaji and Deepa, 2021) focus on digital technologies in the food retail industry, identifying challenges and opportunities in the digital transformation process.

- Study 6: (Imran *et al.*, 2021) explore digital transformation in industrial organizations, aiming to identify key enablers and performance outcomes through data collected from leading industrial organizations.

- Study 7: (Kumar *et al.*, 2022) propose a framework for assessing the social acceptability of Industry 4.0 technologies in digital manufacturing, highlighting the importance of considering social dimensions in technological advancements.

- Study 8: (Ren, Li and Liang, 2023) shed light on the impact of digital transformation on renewable energy companies' performance in China, emphasizing the role of digital transformation in advancing the development of renewable energy enterprises.

- Study 9: (Zhao *et al.*, 2023) analyze the relationship between digital transformation strategy and ESG performance in large manufacturing enterprises, focusing on the mediating role of green innovation and sustainable development goals.

- Study 10: (Sartal *et al.*, 2020). Overall, the literature review indicates a growing interest in understanding the impact of digital transformation on performance across various industries, highlighting both challenges and opportunities that come with embracing digital technologies.

The need for innovation, strategic alignment, and the identification of key enablers in the digital transformation process are recurring themes in the literature, emphasizing the importance of leveraging digital technologies to drive organizational success.

Gap in Literature

The current literature lacks a holistic analysis of the relationship between digital transformation and performance metrics in the cultural industry. Most studies focus on individual aspects such as technology adoption or economic impacts, but few provide an integrated view that includes challenges and opportunities across the sector.

Significance

Addressing this gap is crucial for policymakers, cultural managers, and stakeholders to make informed decisions that foster sustainable growth in the cultural sector. Understanding the impact of digital transformation on performance can guide strategic investments, enhance cultural policy frameworks, and support the development of adaptive strategies for cultural organizations.

Methodology Preview

This research utilizes a mixed-methods approach, integrating quantitative analysis of performance data from cultural organizations with qualitative case studies and expert interviews. Data will be sourced from industry reports, financial records, and surveys, drawing on gray literature to offer a comprehensive overview.

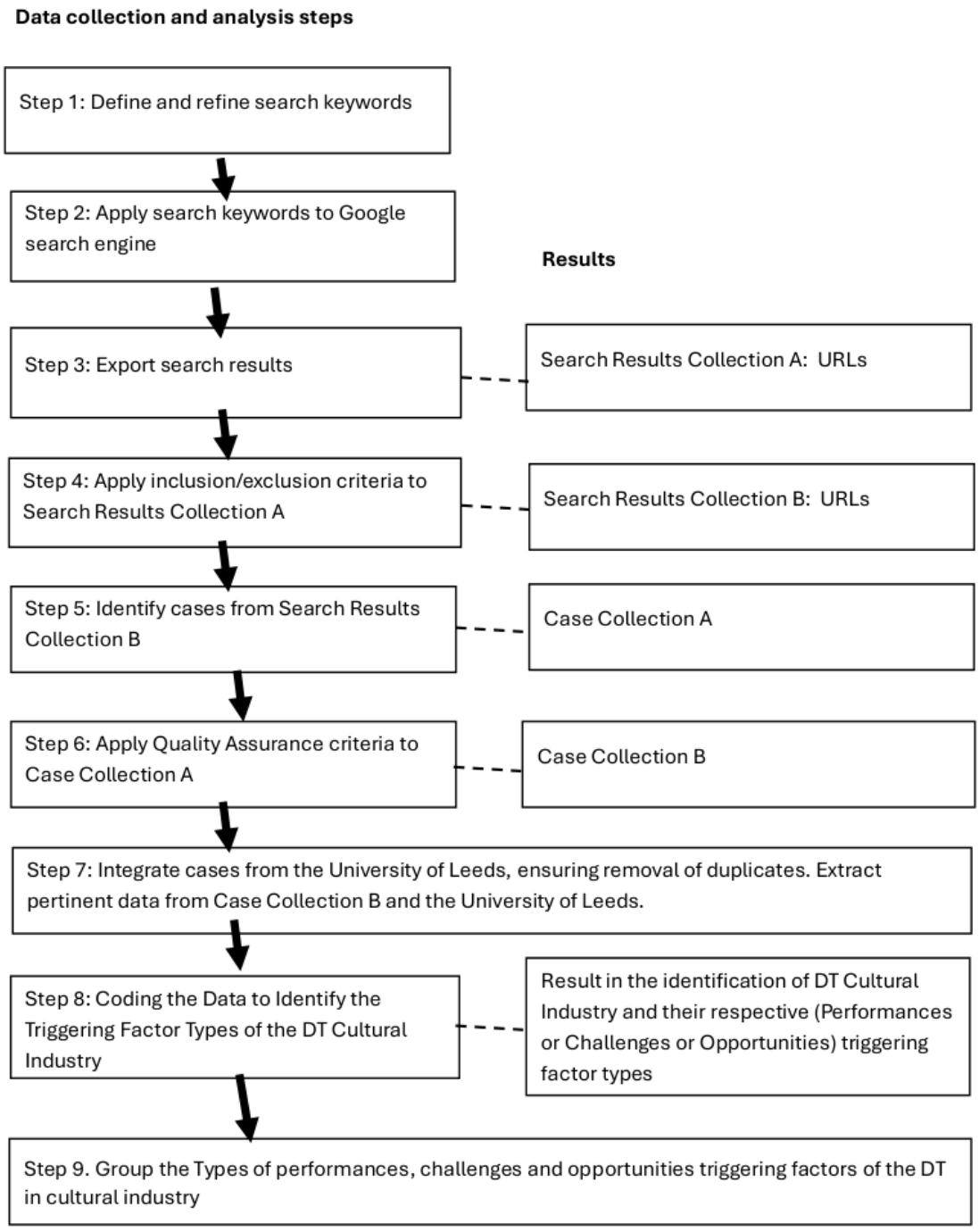
In this research, we utilize gray literature for data collection, and we can integrate data from the University of Leeds into our development process.

We will use Thematic analysis and Atlas ti software to implement the research methodology.

We created a repository on GitHub serve as official site for this study, where all the research materials are stored.

This study is designed to be exploratory. The overall data collection and analysis process is illustrated in the following UML diagram and explained in detail in the subsequent text.

Figure 2 UML Diagram data collection and analysis



Data Collection Steps

Step 1. Define and refine search keywords

The initial phase of data collection involved defining the search keywords for retrieving secondary data. We brainstormed an initial set of keywords based on our primary objectives and research questions. The search string was structured according to the guidelines provided by (Kitchenham, B & Charters, 2007).

To ensure comprehensive coverage of keywords related to {The Impact of Digital Transformation on Performance and the Cultural Industry: Challenges and Opportunities}, I will review the search string from a systematic mapping in digital transformation cultural industry.

After conducting several trial searches, observing the results, and refining the search string, I developed the following final search string:

{[“performance” OR “successful” OR “success” OR “fail” OR “failure”] AND [“digital transformation”] AND [“cultural”] AND [“industry” OR “organization”]}

I selected the terms: "digital transformation” “cultural” “industry” “organization” due to their prevalent usage in online discourse regarding cultural organizations adopting digital technology.

When discussing "challenges or opportunities," we acknowledge that some sources may not explicitly use these terms. To address this, I utilized synonymous terms such as "fail" or "failure" to identify the challenges of the DT in cultural industry, and "successful" or "success" to identify the opportunities of the DT in cultural industry. This approach helps us capture the intended concepts more comprehensively.

I use the term “performance” to identify the performance of the DT in cultural industry.

I use the terms: {[“cultural”] AND [“industry” OR “organization”]} for identifying cultural Industry.

This strategic combination alongside "digital transformation" and "cultural industry" enhances search precision and ensures the quality of our findings in subsequent stages.

Step 2. Applying search keywords using the Google search engine

To search online sources, the Google search engine was accessed through the Chrome browser. To minimize the influence of geographical location on the search results, www.google.com was used.

Prior to starting the search, I deleted the search history in Chrome, cleared the browser cache, logged out of my personal Google account, and removed all Chrome extensions.

These steps were taken to ensure that my personal and historical data had minimal impact on the search results. In the Google search settings, I turned off Google Instant predictions and enabled 100 results per page.

Step 3. Export Search Results

To facilitate analysis by multiple researchers at the University of Leeds, the search results need to be exported. I will export the search results (in the form of URLs) from the Chrome browser on my laptop into a Word file (DOCX format). This step resulted in the Search Results Collection A; URLs webpages converted into Word file (DOCX format).

Step 4. Apply Inclusion/Exclusion Criteria to Search Results Collection A

To identify webpages with relevant and reliable content for this study, we applied a set of inclusion and exclusion criteria to Search Results Collection A.

Inclusion criteria:

- The URL is working and freely accessible.
- The topic of the webpage pertains to pivoting within the context of (Digital Transformation and Cultural Industry).
- The webpage contains examples related to (Digital Transformation and Cultural Industry).
- The examples are specifically from (Digital Transformation and Cultural Industry).
- The webpage is in English.

Exclusion criteria:

- The webpage contains duplicated content from a previously examined webpage.
- The webpage is non-text-based (e.g., videos, audios, or images).
- The webpage is hosted on Slideshare, Quora, LinkedIn, or personal/company blogs.
- The webpage is not in English.

This step resulted in the Search Results Collection B which contains URLs and represents webpages.

Step 5. Identify Cases from Search Results Collection B

I will review the content of the webpages, focusing on information regarding Digital Transformation and the Cultural Industry during their DT processes.

Each mention of (Digital Transformation and the Cultural Industry) will be considered a potential case for further analysis.

This step was relatively objective and straightforward, primarily conducted by me and the researchers at the University of Leeds who are collaborating on this project.

In cases of uncertainty, my supervisor(s) at the University of Leeds will be consulted.

This step resulted in the creation of Case Collection A, which includes the identified cases. The webpages will be reorganized according to these cases.

Step 6. Apply Quality Assurance Criteria to Case Collection A

To ensure that we possess sufficient and adequate data for further analysis, we will assess the quality of the data in Case Collection A using the following criteria:

- Can the data regarding a case involving (Digital Transformation Cultural Industry) enable researchers to reconstruct the narrative of the performance, challenges, or opportunities factors concerning what the Cultural Industry focused on before and after the Digital Transformation, and why the Cultural Industry underwent this transformation?
- Do researchers need to engage in excessive speculation to understand the nature of the Digital Transformation in the Cultural Industry and the performance, challenges, or opportunities factors that triggered it?

Cases meeting a positive response to the first criterion and a negative response to the second criterion will be included. Those not meeting these criteria will be excluded. This process has resulted in Case Collection B, which comprises cases selected for use in the data analysis.

Data Analysis Steps

Step 7. Integrate cases from the University of Leeds, ensuring removal of duplicates. Extract the relevant data from Case Collection B and the University of Leeds

We will inquire with the University of Leeds about relevant data for our study, this data will be integrated with Case Collection B, and duplicates will be removed accordingly.

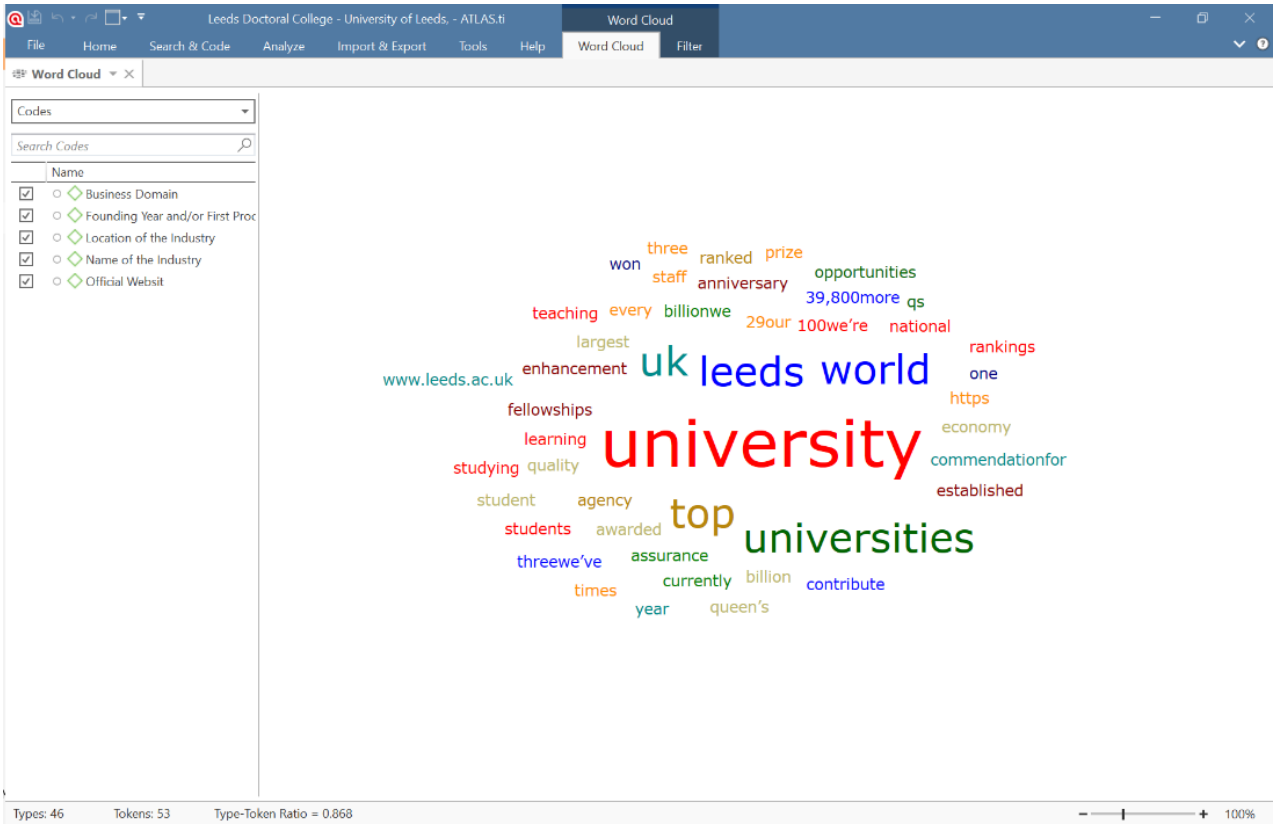
For each case contained in Case Collection B and the University of Leeds, we were looking for the following information:

Background Information:

- Name of the Industry
- Location of the Industry
- Founding Year and/or First Product Release Date
- Business Domain

We will use the thematic analysis and Atlas Ti software to implement this step.

Figure 2 Demo shows using Atlas ti software to extract the relevant data from the University of Leeds



Step 8. Coding the Data to Identify the Triggering Factor Types of the DT Cultural Industry

We will extract and analyze the data for each case qualitatively using Atlas ti software to identify the types of Digital Transformation (DT) Cultural Industry and the performances, challenges, and opportunities factors that triggered these transformations. The explanations provided in the case materials will be used to pinpoint the triggering factors of DT Cultural Industry.

Our case selection process ensures that the performances, challenges, and opportunities triggering factors leading to the DT cultural industry are well-documented. We will use a completely open coding process to allow the emergence of the performances, challenges, and opportunities triggering factors.

This step will result in Result in the identification of the DT Cultural Industry and their respective (Performances, Challenges, and Opportunities) triggering factor types

Step 9. Group the Types of performances, challenges, and opportunities triggering factors of the DT cultural industry

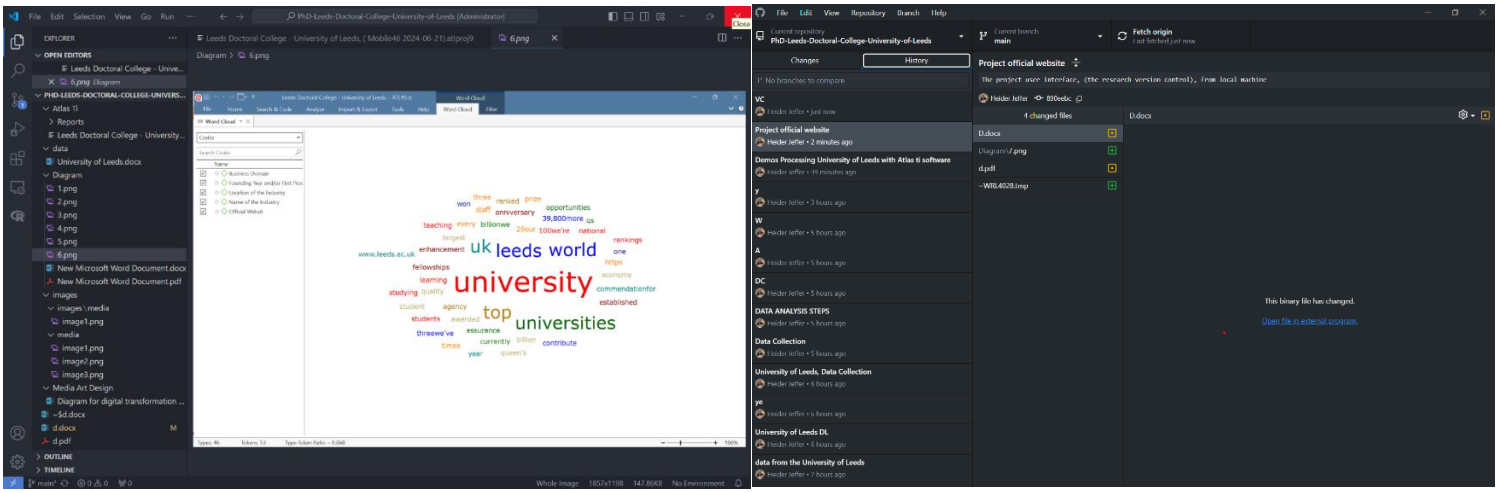
We will categorize the performances, challenges, and opportunities triggering factor types of the digital transformation in the cultural industry, based on their similarities, grouping them into common categories to where they belong.

These categorized triggering factors of the DT cultural industry will address the research questions (RQ1, RQ2 and RQ3) posed in this project.

Official website

We created a repository on GitHub (providing the distributed version control), which serves as the official site for this study, storing all the research materials.

Figure 3 The project user interface during activities, (the research version control), from local machine



Expected outcomes

Outline of Contribution

This study aims to provide a detailed analysis of how digital transformation affects performance in the cultural industry. It will offer insights into specific challenges faced by cultural organizations and highlight the performance and opportunities for leveraging digital technologies.

The findings will inform policy recommendations and strategic planning for enhancing the sustainability and resilience of the cultural sector in the digital age.

The Major Factors Impact the Digital Transformation Cultural Industry

In this section, we will discuss the major performances, challenges and opportunities triggering factors influencing digital transformation in the cultural industry, derived from our case studies. We will categorize these factors based on their commonalities, grouping them into identical categories. These factors will serve as the answers to the research questions posed in this project.

Performances Challenges and Opportunities Factors Explained with Exemplar Cases

In this section, we will describe each performance challenges and opportunities factor and present multiple case studies that illustrate these factors. By providing at least one exemplar case for each factor, we will demonstrate in greater detail how these factors impact digital transformation in terms of performance and the cultural industry.

Challenges Opportunities and Strategies for Success

Challenges

1. **Digital Divide**: The digital divide can hinder access to digital technologies and platforms, creating barriers for those who are less tech-savvy or have limited resources (Koshelieva *et al.*, 2023) (European Commission, 2022).

2. **Copyright and Intellectual Property**: The use of digital technologies raises concerns about copyright and intellectual property, particularly in the context of digital assets and data management (valantic, 2024) (European Commission, 2022).

3. **Preservation of Cultural Heritage**: The digitization of cultural heritage poses challenges related to preservation, conservation, and the long-term accessibility of digital artifacts (Koshelieva *et al.*, 2023) (Massi, Vecco and Lin, 2020).

4. **Organizational Barriers**: The adoption of digital tools and processes can be hindered by organizational silos and a lack of understanding of the value of data (valantic, 2024).

Opportunities

1. **New Forms of Cultural Expression**: Digital technologies have enabled new forms of artistic expression, such as AR/VR, and have opened up new channels for cultural consumption and engagement (Koshelieva *et al.*, 2023) (valantic, 2024).

2. **Increased Accessibility**: Digital platforms have increased access to art and culture, making it more inclusive and global (Koshelieva *et al.*, 2023) .

3. **Collaboration and Networking**: Digital tools facilitate global collaboration and networking among artists, institutions, and audiences (valantic, 2024) (Massi, Vecco and Lin, 2020).

4. **Efficient Processes**: Digital transformation can streamline administrative processes, reducing errors and improving employee satisfaction (valantic, 2024).

Strategies for Success

1. **Data Interoperability**: Ensuring data interoperability is crucial for seamless end-to-end processes and for addressing copyright and intellectual property concerns (European Commission, 2022).

2. **Digital Literacy**: Developing digital literacy among artists, institutions, and audiences is essential for effective adoption and utilization of digital technologies (valantic, 2024) (European Commission, 2022).

3. **Collaborative Ecosystems**: Fostering collaborative ecosystems between tech startups and creative sectors can facilitate knowledge exchange and innovation (European Commission, 2022).

4. **Digital Sovereignty**: Establishing digital sovereignty through strategic policies and regulations can ensure the long-term sustainability and accessibility of digital cultural assets (Massi, Vecco and Lin, 2020).

Overall, the impact of digital transformation on the cultural and creative industries is complex, presenting both challenges and opportunities. By understanding these dynamics and implementing effective strategies, the industry can harness the potential of digital technologies to enhance cultural expression, accessibility, and collaboration.

Limitations

Identifying the limitations of your research on the impact of digital transformation on the cultural industry is crucial for understanding the boundaries of this study and for contextualizing the findings. Here are some potential limitations:

1. **Data Availability and Quality**

- **Access to Comprehensive Data:** Gaining access to detailed financial and operational data from cultural organizations may be challenging due to confidentiality concerns.
- **Data Completeness:** There may be gaps or inconsistencies in the available data, especially in secondary sources.
- **Bias in Data Collection:** Data collected from surveys and interviews may be subject to response bias, where participants provide socially desirable answers.

2. **Scope and Generalizability**

- **Sample Size and Diversity:** The number and diversity of cultural organizations included in the study may limit the generalizability of the findings to the entire cultural industry.
- **Geographical Limitations:** The study may focus on cultural organizations in specific regions, which may not represent global trends.

3. **Methodological Constraints**

- **Mixed-Methods Challenges:** Integrating quantitative and qualitative data can be complex and may lead to challenges in synthesizing findings.
- **Temporal Limitations:** The research may not fully capture the long-term impacts of digital transformation, focusing instead on more immediate effects.

4. **Technological Evolution**

- **Rapid Technological Changes:** The fast pace of technological advancement means that the findings may quickly become outdated as new technologies emerge.
- **Variation in Technology Adoption:** Different cultural organizations may adopt digital technologies at varying rates, leading to a wide range of impacts that are difficult to standardize.

5. **Organizational and Cultural Differences**

- **Heterogeneity of Cultural Organizations:** The cultural industry is diverse, encompassing various sectors (e.g., museums, performing arts, literature), which may experience digital transformation differently.
- **Resistance to Change:** Some organizations may resist digital transformation due to cultural or organizational inertia, impacting the study's findings.

6. **External Factors**

- **Regulatory Environment:** Changes in regulatory frameworks, intellectual property laws, and government policies can influence the impact of digital transformation on the cultural industry.
- **Economic Conditions:** Economic downturns or financial constraints may affect the ability of cultural organizations to invest in digital technologies.

7. **Ethical Considerations**

- **Privacy and Confidentiality:** Ensuring the confidentiality and ethical use of data collected from cultural organizations and individuals can limit the scope of data available for analysis.
- **Bias in Case Studies:** Selecting case studies may introduce selection bias, affecting the generalizability of the findings.

8. **Conceptual and Theoretical Limitations**

- **Defining Digital Transformation:** The concept of digital transformation is broad and may be interpreted differently by various stakeholders, leading to challenges in defining and measuring its impact consistently.
- **Performance Metrics:** Identifying and measuring the right performance metrics that accurately reflect the impact of digital transformation can be challenging.

Summary of Limitations

- **Data Availability and Quality:** Challenges in accessing comprehensive, high-quality data and potential biases in data collection.
- **Scope and Generalizability:** Limitations due to sample size, geographical focus, and diversity of cultural organizations.
- **Methodological Constraints:** Complexities in integrating mixed methods and capturing long-term impacts.
- **Technological Evolution:** Rapid changes in technology and varying rates of adoption among organizations.
- **Organizational and Cultural Differences:** Diversity in the cultural sector and potential resistance to change.

- **External Factors:** Influence of regulatory, economic, and policy changes.
- **Ethical Considerations:** Ensuring data privacy and avoiding bias in case study selection.
- **Conceptual and Theoretical Limitations:** Broad interpretations of digital transformation and challenges in defining performance metrics.

Timescale for Research Project

This timescale ensures a structured approach to this research, with clear milestones and strategies to overcome potential challenges, demonstrating to supervisors that the project is both achievable and well-planned.

Year 1: Literature Review and Initial Data Collection

Milestones:

Months 1-3: Project Planning and Setup
- Finalize research proposal and get approval from supervisors.
- Develop detailed project plan and schedule.
- Identify and obtain necessary resources (software, access to databases, etc.).

Months 4-6: Comprehensive Literature Review
- Review existing literature on digital transformation and its impact on various industries.
- Focus on the cultural industry, identifying key themes, gaps, and methodologies used in previous studies.
- Write and submit a literature review chapter.

Months 7-9: Research Design and Methodology
- Develop research framework and choose appropriate research methods (quantitative, qualitative, or mixed-methods).
- Design data collection tools (surveys, interview guides).
- Pilot test data collection tools and refine them based on feedback.

Months 10-12: Initial Data Collection
- Begin collecting primary data from selected cultural organizations.
- Gather secondary data from industry reports, financial records, and gray literature.
- Conduct initial analysis to ensure data quality and relevance.

Challenges and Mitigation:
- **Access to Data:** Ensure agreements with cultural organizations for data access.
- **Literature Scope:** Use comprehensive databases and consult with supervisors regularly.

Year 2: Data Collection and Preliminary Analysis

Milestones:

Months 13-18: Extensive Data Collection
- Continue collecting primary data through surveys and interviews.
- Collect detailed case studies from cultural organizations.
- Ensure data is categorized and stored systematically for analysis.

Months 19-24: Data Analysis
- Perform quantitative analysis on performance metrics.
- Conduct qualitative analysis on case studies and interview transcripts.
- Identify key factors influencing digital transformation in the cultural industry.

Challenges and Mitigation:
- **Data Consistency:** Regularly validate and cross-check data.
- **Analytical Tools:** Use reliable statistical software and qualitative analysis tools, with training as needed.

Year 3: Integration and Synthesis of Findings

Milestones:

Months 25-30: Integrative Analysis
- Synthesize quantitative and qualitative findings.
- Identify patterns, correlations, and causal relationships.
- Develop a theoretical model explaining the impact of digital transformation on the cultural industry.

Months 31-36: Drafting and Refinement
- Write chapters on data analysis and findings.
- Integrate findings into a coherent narrative.
- Seek feedback from supervisors and revise accordingly.

Challenges and Mitigation:
- **Complexity in Integration:** Break down findings into manageable sections for analysis and synthesis.
- **Iterative Feedback:** Schedule regular meetings with supervisors for feedback.

Year 4: Finalization and Dissemination

Milestones:

Months 37-42: Final Draft Preparation
- Complete writing of all chapters, including introduction, methodology, findings, and conclusions.
- Ensure all references and citations are correctly formatted.
- Submit drafts for supervisor review and make necessary revisions.

Months 43-48: Review and Submission
- Conduct final proofreading and editing.
- Prepare for thesis defense by summarizing key findings and contributions.
- Submit final thesis and schedule defense.

Months 49-54: Dissemination of Research
- Publish research findings in academic journals and conferences.
- Create summary reports for cultural organizations and policymakers.
- Develop presentations and attend industry conferences to share insights.

Challenges and Mitigation:
- **Publication Delays:** Start the publication process early and submit to multiple journals.
- **Defense Preparation:** Engage in mock defenses and seek feedback from peers and supervisors.

Summary of Yearly Achievements

- **Year 1:** Establish a strong foundation through literature review and initial data collection.
- **Year 2:** Gather comprehensive data and perform preliminary analyses.
- **Year 3:** Integrate findings and develop theoretical models.
- **Year 4:** Finalize and disseminate research, ensuring practical and academic contributions.

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