

Developing a Virtual Showcase for the Cibachrome Association



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Developing a Virtual Showcase for the Cibachrome Association

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CIBACHROME
ASSOCIATION

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Abstract

The Cibachrome Association was founded to preserve the history and heritage of the companies responsible for the Cibachrome process. This unique process is used to print detailed images with remarkable qualities. We worked with the Cibachrome Association to create a virtual showcase for their archive, which contains photographs and research materials that relate to the production and development of Cibachrome prints. To create the showcase, we surveyed our target audience of young adults and interviewed experts from the fields of photography and conservation. We were able to curate elements to showcase, design the showcase, and create a promotional plan. The showcase provides an invaluable resource in promoting the archive and the important history and heritage that it exists to preserve.

Acknowledgements

We would like to start off by thanking Dr. Rita Hofmann and Mr. Jean-Marc Métrailler, our amazing Cibachrome Association sponsor liaisons. Without their ongoing support and guidance, this project would not be possible. Rita's flexibility, especially with working in a different time zone and continent, was essential to the success of our project. Rita worked with us to provide us materials from the archive when we were working on the project remotely. We would also like to thank both Rita and Jean-Marc for the insight and feedback they provided us through the entire project. The hospitality and kindness of Rita and Jean-Marc, as well as everyone else that we worked with during our trip to Switzerland, was greatly appreciated!

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Finally, we would like to thank our project advisors, Professor Francesca Bernardi, Ph.D. and Professor Nancy Burnham, Ph.D. for their support, feedback, and overall dedication to the success of our project.

Executive Summary

This project was sponsored by the Switzerland based Cibachrome Association. The Cibachrome Association was founded in 2014 to preserve the history and technology of ILFORD Imaging Switzerland and the numerous companies that came before it. Before it closed, ILFORD Imaging Switzerland produced a variety of photographic printing materials, the most well-known of which was the Cibachrome printing materials. The Cibachrome material and the process used to develop it were important technological advances in photography due to the long-lasting, colour stable print that they produced. These Cibachrome photograph prints are able to maintain their luminosity, colour, and detail for much longer than the average colour photograph of the time. As such, the Cibachrome material lends itself to being much more suitable for archival purposes than any other colour photography technique.

The Cibachrome Association is interested in sharing their archived work and materials relating to this historic technique with a younger and more dispersed audience than they have been able to thus far. The Cibachrome Association faces a lack of awareness outside of Marly, Switzerland. A successful virtual showcase, coupled with a well-formulated promotional plan, would help increase the Cibachrome Association's web presence and make their wealth of information more accessible to the public across the globe.

Goals and Objectives

The goal of our project was to create a prototype virtual showcase and a promotional plan for the Cibachrome Association. The existence of this showcase will make the world's young adults, ages 15 to 33, more aware of the history and technology that the Cibachrome Association has archived. To help accomplish this goal, we analyzed data collected through field research, surveys, and interviews. Using this data, we completed three main objectives, listed below:

1. Determine which elements of the Cibachrome archive to showcase,
2. Find the ideal implementation for the prototype virtual showcase, and
3. Develop a plan to promote the virtual showcase.

Methodology

To complete our three objectives, we used a series of survey questions and interviews to obtain valuable information from the public and from people within the photography, archival, and curatorial professions.

To complete our first objective and curate elements for the showcase, we surveyed our young adult target audience. In this survey, we asked what topics (such as history, art, and photography) our target audience engaged with most online. We also asked our target audience questions such as how important is learning new things to them and if the conservation of photographs was important to them. From there, we interviewed archivists, curators, and photographers to see a different perspective of how best to curate engaging elements. The expertise of these three groups were critical in helping us select the elements and overall theme for our showcase. Their interviews gave us insight into audience engagement as well as the importance of clarity, consistency, and theming to the success of a digital showcase.

For our second objective, finding the ideal implementation of the prototype showcase, we conducted a review of existing digital showcases and interviewed museum curators. Doing the showcase review allowed us to get a sense for how other institutions balanced the combination of text, videos, and photographs to create an engaging digital showcase. The showcase review also showed us a variety of different organizational methods and gave a general sense of common themes that virtual showcases use. Following the showcase review, we interviewed museum curators to learn about their firsthand experience in creating a digital showcase. In these interviews, we were able to confirm the knowledge gained during the showcase review, as well as get some advice regarding working with digital showcases and creating online engagement. Finally, we surveyed young adults to figure out which devices they browse the internet on and what type of content (text, photographs, and videos) they interact with the most.

Our third objective, developing a promotional plan, was completed with the help of young-adult surveys and interviews with a photographer. In our surveys, we asked young adults about their social media habits. Specifically, we inquired about how many times a day they used social media and what their top three social media platforms were. Our

photographer interview was focused on engagement with their work, themes that attracted the most people, as well as when they have gotten the most engagement with their work.

Results

For our first objective, we surveyed young adults and interviewed archivists and curators. With the help of this research, our team decided that the uniqueness of Cibachrome would be the theme of our showcase. From there, we broke up the showcase into eight main categories:

1. What is a Cibachrome Print?
2. What Makes Cibachromes Unique?
3. Producing Cibachrome Materials,
4. The Cibachrome Development Process,
5. Longevity,
6. Contrast,
7. Colour, and
8. Detail.

From our surveys we found that our target audience was particularly interested in history, photography, and art. Another topic that we discovered young adults were interested in was how things are made. This helped us in the selection of the eight categories for our showcase and allowed us to focus our curating of the elements in the archive. The archivists we interviewed gave us information on how to properly store, handle, and display photographic materials to prolong their lifespan. These tips included flat, dark storage with limited excursions into light, and ensuring the proper climate conditions, which can vary between materials. This was helpful in informing our Longevity section in the showcase. Our curator interviewees suggested starting off with a framing point as this would help facilitate a well-organized and properly categorized showcase. This advice is what led us to choosing our showcase theme of uniqueness.

The second objective focused on the accessibility, format, and organization of the showcase. Our review of other showcases yielded a template that flowed well visually while allowing viewers to decide what they want to learn more about. This template consists of a simple main page that has pictures (as seen in Figure 1) which the audience can click on to be redirected (Figure 2) to a separate page with more in-depth information (Figure 3). In

analyzing survey responses, we found that our target audience prefers to visit a website rather than download an app, so we decided to make a website. We found young adults use both mobile phones and computers equally for browsing social media, so the digital showcase was made to be compatible with both mobile and desktop browsers. When analyzing the survey responses on which content format types are most liked by our target audience, we decided to make a collection of images and videos with short captions providing insight into each section.



Figure 1: Simple main cover page of the prototype showcase.

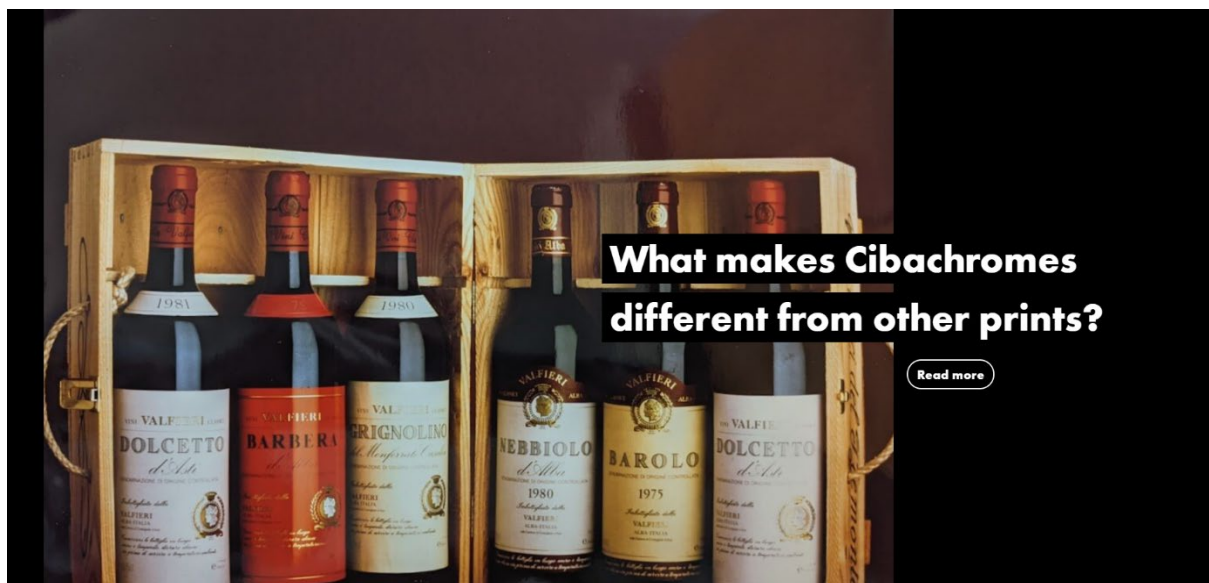
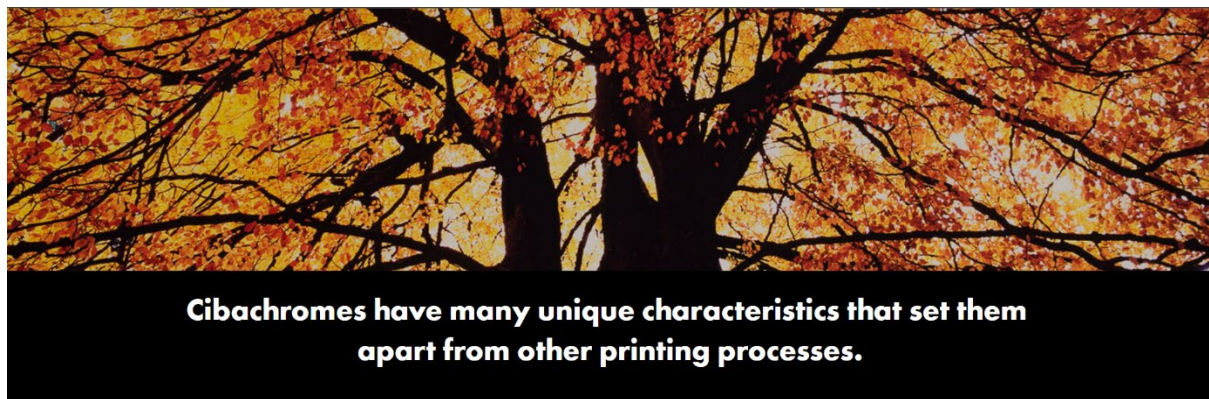


Figure 2: Example of directing the showcase audience to a page with more detailed information.



Properties of a Cibachrome

-Do not require cold storage such as Chromogenic prints do.

Traditional chromogenic processes created photographs by the reaction of two chemicals on the print material. Cibachromes are based on the silver dye bleach, where the dyes are all incorporated in the paper and they are bleached to reveal colors. If one were to scratch a Cibachrome paper they would be able to see the three layers of dyes (colors). These prints were always renowned for their color saturation and great storage stability, especially when compared to chromogenic processes.

Figure 3: Example of the pages with in-depth information for the showcase audience to read or view.

To accomplish our third objective, creating a promotional plan, we surveyed young adults and interviewed photographers. Based on the high frequency of daily social media usage among the target audience, advertisements and promotions should be circulated on social media platforms. According to our survey analysis, promotional posts and advertisements on the social media platforms Instagram and YouTube should yield the highest engagement with the showcase. This was determined in two ways:

1. Survey respondents indicated that Instagram and YouTube were amongst their most used day-to-day social media platforms, and
2. Survey respondents said they engaged most with a combination of images and videos, each with text captions.

The photographer we interviewed confirmed this information and said that videos with a high production quality tend to have the most engagement, both on a website and in promoting work. Though, they did mention that high quality videos are difficult and time consuming to make. Because of this hurdle, we suggest that the Cibachrome Association use videos that already exist or make a narrated slideshow of images. Additionally, the photographer said they have found promoting work is less necessary if it has value or contains themes people can relate to or desire. Based on this advice, we recommend that the promotional posts and advertisements focus on the uniqueness of Cibachrome, following the overall framing theme of the showcase.

Conclusions and Recommendations

In conclusion, our project was to build a prototype digital showcase and a promotional plan for the Cibachrome Association. We completed this goal by surveying a population of young adults, aged 15 to 33, while simultaneously interviewing people within the photography, curatorial, and archival professions. The data we collected was then used to develop a digital showcase as well as a promotional plan for it. We decided that our prototype should have a scrollable main page where different topics are represented by captioned images and each of these images links to a separate page where more detailed information is provided.

If anyone would like to replicate or expand upon this project, there are a few recommendations that our team believes should be thought out. The most important of these is establishing a plan on how to reach the target audience for data collection. For our group, we used Reddit, Instagram, and email to share our survey. This gave us a decent response rate from the United States, but very few responses from Europe. Having back up plans for data collection will help in getting a larger response rate from the European people. We also recommended that whoever is performing digital upkeep on the showcase is well informed on what it will entail. Potential upkeep may include updates, copyright confirmation, translation, and other technical problems that may arise. Finally, it is important to post on social media frequently to advertise the showcase (Our sponsor has been advised to do this weekly as that is what our data showed. See Appendix F for a detailed promotional plan.) and monitor the engagement level of various posts and of the showcase itself.

Authorship

Throughout the course of this project, our team tried its best to equally divide the work required to complete this project. All members of the team participated in interviews, distributing the survey, and the writing of this report. Team members chose which aspects of the project to work on and assisted each other, when possible, to accomplish this project's goal. For a full breakdown of each team member's contributions to this project, please refer to the table below.

Authorship Table		
Section	Author(s)	Editor(s)/Reviewer(s)
<i>Abstract</i>		
Abstract	Drew Sullivan, Eduardo Morel, Kaylie Lunderville	All
<i>Executive Summary</i>		
Introduction	Eduardo Morel	Drew Sullivan
Goals and Objectives	Drew Sullivan	Eduardo Morel, Erica Bonelli, Kaylie Lunderville
Methodology	Kaylie Lunderville, Drew Sullivan	Eduardo Morel, Erica Bonelli
Results	Erica Bonelli	Drew Sullivan, Kaylie Lunderville
Conclusions and Recommendations	Kaylie Lunderville	Drew Sullivan
<i>Introduction</i>		
Introduction	All	All
<i>Background</i>		
Introduction	Drew Sullivan, Erica Bonelli, Kaylie Lunderville	Eduardo Morel
Photography, Swiss Values, and Tradition	Drew Sullivan, Erica Bonelli	Kaylie Lunderville
Importance of Landscape and Photography	Kaylie Lunderville	Drew Sullivan
Sponsor Background	Eduardo Morel	Drew Sullivan
The Importance of Promotion to the Success of the Virtual Showcase	Drew Sullivan	Kaylie Lunderville
Conclusion	Drew Sullivan, Eduardo Morel, Kaylie Lunderville	Drew Sullivan
<i>Methodology</i>		
Introduction	All	Drew Sullivan
<i>Objective 1 – Determining Which Elements of the Cibachrome Archive to Showcase</i>		
Introduction Paragraph	All	Drew Sullivan
Young Adults and Thematic Preference	Drew Sullivan, Erica Bonelli, Kaylie Lunderville	Eduardo Morel

Archivists and Their Success	Drew Sullivan, Eduardo Morel, Kaylie Lunderville	Erica Bonelli
Museum Curators and Their Experience	Eduardo Morel, Erica Bonelli, Kaylie Lunderville	Drew Sullivan
<i>Objective 2 – Finding the Ideal Implementation for the Prototype Virtual Showcase</i>		
Introduction Paragraph	Eduardo Morel	Drew Sullivan, Kaylie Lunderville
Showcase Review	Eduardo Morel	Drew Sullivan
Survey Analysis	Drew Sullivan, Eduardo Morel, Erica Bonelli	Kaylie Lunderville
<i>Objective 3 – Developing a Plan to Promote the Virtual Showcase</i>		
Introduction Paragraph	Drew Sullivan	Kaylie Lunderville
Young Adult Survey	Drew Sullivan	Kaylie Lunderville
Photographer and Artist Interviews	Kaylie Lunderville	Drew Sullivan
<i>Problems, Limitations, and Challenges</i>		
General Problems, Limitations, and Challenges	All	All
COVID-19 Specific Problems, Limitations, and Challenges	All	All
<i>Results</i>		
Introduction Paragraph	Eduardo Morel	Drew Sullivan
<i>Objective 1 – Elements to Showcase</i>		
Introduction Paragraph	Kaylie Lunderville	Drew Sullivan
Thematic Preference of Young Adults	Erica Bonelli	Drew Sullivan
Archivist Advice	Erica Bonelli	Drew Sullivan, Kaylie Lunderville
Museum Curator Advice	Drew Sullivan	Kaylie Lunderville
<i>Objective 2 – Ideal Implementation</i>		
Introduction Paragraph	Eduardo Morel	Drew Sullivan
Showcase Review	Eduardo Morel	Drew Sullivan
Survey Analysis	Erica Bonelli	Drew Sullivan, Eduardo Morel
<i>Objective 3 – Promotional Plan</i>		
Introduction Paragraph	Drew Sullivan	Kaylie Lunderville
Survey Results	Erica Bonelli	Drew Sullivan
Photographer and Artist Interviews	Kaylie Lunderville	Drew Sullivan, Erica Bonelli
<i>Promotional Plan Decisions</i>		
Promotional Plan Decisions	Drew Sullivan	
<i>Conclusions and Recommendations</i>		
<i>Conclusions</i>		
Conclusions	Kaylie Lunderville	Drew Sullivan, Eduardo Morel

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For the Cibachrome Association	Erica Bonelli	Drew Sullivan, Eduardo Morel
Summary and Impacts	Kaylie Lunderville	Drew Sullivan, Eduardo Morel
<i>References</i>		
References	All	All
<i>Appendix A – Project Timeline</i>		
Project Timeline	All	All
<i>Appendix B – Data Collection Approaches</i>		
Survey Approach	Drew Sullivan	Kaylie Lunderville
Interview Approach	Drew Sullivan	Kaylie Lunderville
<i>Appendix C – Consent Statements</i>		
Introduction Paragraph	Drew Sullivan	All
Survey Consent Statement	Drew Sullivan	All
Interview Consent Statement	Kaylie Lunderville	All
<i>Appendix D – Survey Questions</i>		
Survey Questions Chart	Drew Sullivan, Eduardo Morel, Kaylie Lunderville	All
<i>Appendix E – Virtual Showcase Prototype</i>		
Virtual Showcase Prototype	Eduardo Morel, Erica Bonelli	Drew Sullivan
<i>Appendix F – Promotional Plan</i>		
Promotional Plan	Drew Sullivan	Kaylie Lunderville
<i>Miscellaneous/Other Tasks</i>		
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Data Analysis	Erica Bonelli	All
Survey Creation	Drew Sullivan	N/A
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Report Creation and Formatting	Drew Sullivan	N/A

Table of Contents

Table of Contents

Abstract.....	i
Acknowledgements	ii
Executive Summary.....	iii
Goals and Objectives	iii
Methodology	iv
Results.....	v
Conclusions and Recommendations	viii
Authorship	ix
Table of Contents	xii
List of Figures.....	xv
1. Introduction.....	1
2. Background	4
2.1. Introduction	4
2.2. Photography, Swiss Values, and Tradition	4
2.3. Importance of Landscape and Photography	5
2.4. Sponsor Background	7
2.5. The Importance of Promotion to the Success of the Virtual Showcase	9
2.6. Conclusion.....	12
3. Methodology	13
3.1. Introduction	13
3.2. <i>Objective 1 – Determining Which Elements of the Cibachrome Archive to Showcase</i>	14
3.2.1. Young Adults and Thematic Preference	14
3.2.2. Archivists and Their Success	14
3.2.3. Museum Curators and Their Experience	16
3.3. <i>Objective 2 – Finding the Ideal Implementation for the Prototype Virtual Showcase .</i>	17
3.3.1. Showcase Review	17
3.3.2. Survey Analysis	18
3.4. <i>Objective 3 – Developing a Plan to Promote the Virtual Showcase.....</i>	18
3.4.1. Young Adult Survey	19
3.4.2. Photographer and Artist Interviews	19
3.5. <i>Problems, Limitations, and Challenges</i>	20
3.5.1. General Problems, Limitations, and Challenges.....	20
3.5.2. COVID-19 Specific Problems, Limitations, and Challenges	21
4. Results	22
4.1. Objective 1 – Elements to Showcase	22

4.1.1.	Thematic Preference of Young Adults	23
4.1.2.	Archivist Advice	24
4.1.3.	Museum Curator Advice.....	25
4.2.	Objective 2 – Ideal Implementation.....	26
4.2.1.	Showcase Review	26
4.2.2.	Survey Analysis	27
4.3.	Objective 3 – Promotional Plan	29
4.3.1.	Survey Results	29
4.3.2.	Photographers and Artist Interviews.....	31
4.3.3.	Promotional Plan Decisions	33
5.	Conclusions and Recommendations.....	35
5.1.	Conclusions	35
5.2.	Recommendations	36
5.2.1.	For Future Projects.....	36
5.2.2.	For the Cibachrome Association.....	37
5.2.3.	Summary and Impacts.....	38
6.	References.....	39
7.	Appendices.....	43
	Appendix A – Project Timeline	43
	Appendix B – Data Collection Approaches.....	44
	B.1. Survey Approach.....	44
	B.2. Interview Approach.....	44
	Appendix C – Consent Statements	45
	C.1. Survey Consent Statement	45
	C.2. Interview Consent Statement	46
	Appendix D – Survey Questions.....	47
	Appendix E – Virtual Showcase Prototype	49
	E.1. Showcase Outline	49
	E.2. Main Page (Scroll Down Format) Screenshots:	52
	E.3. What is a Cibachrome Section Screenshots:	53
	E.4. Unique Section Screenshots:	54
	E.5. Producing Cibachrome Prints Section Screenshots:.....	55
	E.6. The Art of Developing a Cibachrome Print Section Screenshots:	56
	E.7. Longevity Section:	57
	E.8. Contrast Section Screenshots:	58
	E.9. Colour Section:.....	59

E.7. Detail Section Screenshots:	60
Appendix F – Promotional Plan.....	61
F.1. Instagram	61
F.2. YouTube	63
F.3. Management Platforms.....	64

List of Figures

Figure 1: Simple main cover page of the prototype showcase.	vi
Figure 2: Example of directing the showcase audience to a page with more detailed information.	vi
Figure 3: Example of the pages with in-depth information for the showcase audience to read or view.	vii
Figure 4: A timeline overview of ILFORD Imaging Switzerland and its predecessors.	8
Figure 5: Chart representing the main languages of the Swiss permanent resident population. Survey participants could indicate up to three main languages. This graph was independently generated using data obtained from a Swiss Federal Statistical Office survey (Pratiques linguistiques en Suisse, 2021).	11
Figure 6: Overview of Project Plan with numbered objectives.	13
Figure 7: This figure contains several sample questions for our archivist interviews.	15
Figure 8: This figure contains sample questions for our museum curator interviews.	16
Figure 9: Figure representing sample questions and areas of focus for our interviews with a photographer and several artists.	20
Figure 10: Figure depicting the professions and locations of our interviewees.	22
Figure 11: Bar chart of subjects most interesting to respondents ages 15 to 33, where N=97.	23
Figure 12: Bar graph showing the importance of learning how things are made to respondents ages 15 to 33, where N=97.	24
Figure 13: Bar graph showing preferred internet browsing device of respondents ages 15 to 33, where N=97.	27
Figure 14: Bar graph showing preference towards apps vs. websites of respondents ages 15 to 33, where N=97.	28
Figure 15: Bar graph showing media content preferences for a digital archive of respondents ages 15 to 33, where N=97.	28
Figure 16: Bar graph showing advertisement placements most seen by respondents ages 15 to 33, where N=97.	29
Figure 17: Bar graph showing social media usage frequency of respondents ages 15 to 33, where N=97.	30
Figure 18: Stacked Bar graph showing preferred social media platforms of respondents 15-33, where N=97.	30
Figure 19: Bar graph showing preferred content type of respondents ages 15 to 33, where N=97.	31
Figure 20: Collage of Cibachrome prints included in our prototype digital showcase.	34

1. Introduction

The Cibachrome Association was founded in 2014 to preserve the history and technology of ILFORD Imaging Switzerland and the companies that came before it. ILFORD was a company that produced an assortment of photographic printing materials. The information and technology from ILFORD, its subsidiaries, and its predecessors are currently being preserved in an industrial archive at the former production plant in Marly, Switzerland. ILFORD's most well-known product was the Cibachrome printing material, a unique paper with layers of dye contained within it. Along with the paper material, ILFORD and its predecessors refined the process, known as the Cibachrome (or Ilfochrome) process, to develop the material into photograph prints. These papers, and the chemicals used to develop them, were produced from 1963 to 2011 (Araujo, 2020). The Cibachrome chemical process was an important technological advance in photography because it provided a long-lasting, colour-stable print suitable for archival purposes. Now, the Cibachrome Association would like to share this work with a wider and younger audience. When starting this project, there was a lack of awareness regarding the archive, as well as an inability to host physical site visits due to the ongoing COVID-19 pandemic. To combat this, the Cibachrome Association would like to share this archived work with a wider and younger audience.

The Cibachrome Association has sponsored two Worcester Polytechnic Institute (WPI) Interactive Qualifying Project (IQP) teams in the past. The first team in 2018 developed procedures to archive the Cibachrome Association's collection of notebooks, binders, reports, and photographs. They determined these procedures through interviews with experts. The following team in 2019 found a lack of public awareness surrounding the archive. They realized that while the information is archived, it is kept inside a manufacturing plant, which limits public access to it, and does not have a web presence. They determined that an increased web presence would be useful, and they created an online wiki to allow more access to the archive. Although many of the team's suggested improvements were implemented on the Cibachrome Association's website, they had intended for more to be done. Ultimately, they were not able to get their article published on Wikipedia due to needing a verified Wikipedia editor to review it (Berthiaume et al., 2019). This left the Cibachrome Association looking for more ways to reach an online audience.

Facing similar issues as the Cibachrome Association regarding the need for a web presence and ways to increase ease of access, many museums have adapted their experiences

to an online format. An example of this is MIT's interactive digital archive displaying work from their Advanced Visual Studies (Center for Advanced Visual Studies, 2018; School of Architecture and Planning, 2018), which combines web development and art to create a new type of experience. MIT's digital showcase provides a good example of a showcase as it is interesting for a large audience, effective at displaying the curated content, and accessible globally. More than 200 internationally recognized artist-fellows have made their work accessible on this showcase. MIT's Advanced Visual Studies showcase shows how an organization can improve their online presence and accessibility with a virtual showcase.

Our goal was to create a prototype virtual showcase for the existing Cibachrome Association archive. This goal had three main logistical hurdles within it that needed to be solved. The first hurdle was determining the actual digital medium in which the prototype showcase should exist. Second was selecting which elements of the archive were best to include in the showcase to properly highlight the rich, vibrant history of Cibachrome and its technologies. Finally, the third hurdle was promoting the archive and showcase to our sponsor's target audience: young adults worldwide, between the ages of 15 and 33. As such, we needed to determine the best way to tailor the format, content, and promotion of the virtual showcase to this diverse demographic.

While the two previous IQP teams made considerable progress on the promotional framework for promoting the Cibachrome Association and its archive, there were still a few gaps that need to be filled. Mainly, the Cibachrome Association still faced a lack of web presence and engagement with the archive. A successful virtual showcase would help increase the Cibachrome Association's web presence and make their wealth of information more accessible to the public.

To complete a successful prototype for the virtual showcase, there are four aspects we considered. The first was assessing the engagement of young adults with social media and advertisements. Once we were aware of the best way to engage young adults, we addressed the second aspect: considering the importance of understanding and assessing the characteristics and cultural traditions of the target audience. Specifically, we considered how those characteristics of the public, and their cultural traditions related to the arts, the photography industry, and the importance of conservation. From there, we moved on to our third objective of identifying which elements within the archive were best for the digital showcase and would be most appealing to our target audience. With this information we

selected pieces from the Cibachrome Association's archive that we felt had the best chance of effectively engaging young adults. Lastly, we were able to identify techniques for creating a virtual showcase in terms of the technology and the design.

2. Background

2.1. Introduction

Before we explored methods of creating and implementing the virtual showcase, it was important to consider existing information that could assist in our decision-making process. In this chapter, we begin with an overview of the intersection of photography, Swiss values, and tradition. Next, we introduce our sponsor (The Cibachrome Association) and the general problem of reaching a wider audience. We will then discuss the relevance of photography and art in Switzerland and conclude with an overview of the role of promotion on the success of a virtual showcase.

2.2. Photography, Swiss Values, and Tradition

Switzerland is made up of four main cultural regions which correspond to the official languages of Switzerland: German, French, Italian, and Romansh. There is no single Swiss culture as the different regions have remained distinct in their identities. There is influence of each of the cultures throughout the country (Hunter, 2021, pp. 41–52). One common value is a sense of responsibility to the environment, and the society that inhabits it. This is because the country is heavily influenced by the original Germanic cantons that first formed Switzerland, as well as the prevalence of the Alps and tourism (Hunter, 2021, Chapter 2). This sense of responsibility is a large contributor to the reduced volume of visitors to the museum during the ongoing COVID-19 pandemic, as people are trying to protect the health of their communities by limiting exposure. If they do not have an established online presence, museums are unable to share their preserved knowledge with as large a group of people as they would before the pandemic.

The preservation of traditions in Switzerland is an important part of Swiss society among all four regions. In a true reflection of the country's diversity, each region of Switzerland has their own unique variations of the same traditions (Encyclopedia Britannica, n.d.). Many revolve around cultural history and are reflected in the festivals and customs that are celebrated throughout the country. A common theme throughout these festivals is food, music, and all forms of art (*The Very Rich Cultural Life of Switzerland* | *Switzerland Tour*,

n.d.). Costumes and traditional clothing are also popular in festivals and are often used to celebrate the changing of seasons along with significant historical events.

Museums are another popular way for the Swiss people to preserve and highlight their history and cultures. There are over 900 museums located throughout the country, providing a wide variety of options to learn about and preserve Swiss culture. The arts are highly appreciated in Swiss culture, partly due to the country's status as a refuge for artists during the World Wars (Hunter, 2021, pp. 90–100). Switzerland became the birthplace of post-war artistic and literary movements, such as Dadaism, as well as a host of several prestigious art institutions and film festivals (Encyclopedia Britannica, n.d.; Hunter, 2021).

Photography, as an art form and a technological tool, has been important in developing an understanding of history and working to preserve it. This can be seen as early as the Camera Obscura, which created an accurate inverted image of a landscape using light, in the photographs of the Wright brothers' plane, and even the high-resolution images of distant galaxies (Claunch, 2020; Davis, 2020). Photographs record important moments in history as they happen, thus giving future historians a unique form of a primary source, which quite literally gives them a chance to see the world through our eyes.

Archives are a method of collecting these historically significant photographs and documents that aid in the preservation of culture, traditions, and technological advances. One issue with traditional archives is that access to them and their contents is often limited due to the need to protect the archival materials from damage (Claunch, 2020). Digital archives provide an alternative method of accessing the materials in a way that reduces risk of damage, while increasing the reach of the material and allowing more people to access it. Not only that, but digital archives make searching for specific content much easier. For example, you can use search engines like Archives Portal Europe (*HOME - Archives Portal Europe*, n.d.) to instantly find information rather than manually searching through shelves to find it. Overall, the importance of culture and preservation of history in Switzerland will be useful in understanding more about the significance of our project with the Cibachrome Association.

2.3. Importance of Landscape and Photography

Art can come in all shapes and sizes; it can be digital or analog and presents itself in countless forms throughout everyday life. Our group has been tasked to make a digital

showcase of the Cibachrome Association's archive about ILFORD's technology. Since we have been presented with this mission, it gives our group the ability to design the archive as our research guides us. Therefore, we aimed to determine the best fit for the showcase that coincides with the important goals of the archive. This gave us the ability to expand our viewpoint and meet local creative outlets such as museum curators and local archivists as we consider our design. The sponsor's target audience is the young adult population, thus making them the most important audience for our project. As such, we hope they will obtain some educational knowledge about the Cibachrome process from this showcase.

Switzerland has a large and culturally significant art community. With a community of this size comes a variety of different artforms, from contemporary prints to paper cutting (Nessi & Murgia, 2012; Yang, 2012), which have allowed the art community in Switzerland to flourish. Landscape appreciation has propelled the Swiss culture both economically and sociologically. Landscape and land itself have been critical to the marketing of Swiss products, and to the surge in tourism (Stotten, 2016). In general terms, landscape art has an amazing way of teleporting the viewer to the location that the piece represents. The ideas of tranquility and stillness tend to wash over the viewer, which in turn only deepens their appreciation for art and nature. Rike Stotten, a prominent researcher on cultural landscapes in Switzerland, continues to say, "Moreover, the present landscape is relevant for members of the local population: They affect or even shape it by their way of life and at the same time they identify with it" (Stotten, 2016).

In virtually every society, nature has always impacted the community in some way. Often, people look to nature for guidance and inspiration or even as something dangerous to perhaps fear. Nature is relevant to everyone and affects each person in some way. In Switzerland, nature is critical to society in agriculture as well as financially. Stotten writes about how Swiss people identify with nature, and how it influenced their art in so many ways (Stotten, 2016). The rest of the world also has important ties to nature, much like the Swiss population does. Poetry is another form of art that immerses the reader, but into literature instead of nature. Much of Swiss poetry is also based on landscape characteristics, as well as many other poets such as American, Italian, and French poets. Philippe Jaccottet was a Swiss poet who authored many poems and works of literature regarding art and its place in nature, much of which is read by local artists and the young adults of Switzerland (Acquisto, 2010).

Switzerland has a large population of young adults, many of whom go abroad. This creates a variety of people seeing and viewing various arts around the world (Swiss Embassy, n.d.). The Swiss diaspora all around the world has the potential of promoting the showcase as there is a chance that Swiss folks abroad will show their friends or peers.

Photography is something that is relatable amongst all areas of the world. The world is more interconnected than it seems, and this is at the very essence of photography (ZUIDERVAART, 2017). Freezing time and capturing these moments is of the upmost importance, and that is why the digital showcase will be most effective for the association if it is promoted across the globe.

Photography is a way to preserve and capture life's moments in an inexpensive way. In today's culture, much of what people do involves a technological device of some sorts, most of which have a camera. Jesús Vassallo, Spanish architect and writer, notes:

“Photography too is often considered in terms of its use value as an automatic record of what is in front of the camera, from mug shots to scientific photographs. At other times, depending largely on who is behind the camera, a photograph is regarded as a visual construct worthy of consideration as high art.”

This record may build a family's history, and as traditional as Switzerland is, history is a key part of their society (Vassallo, 2017). Thus, Cibachrome's technology is critical in preserving not just Swiss history, but the world's history. Art and nature are reflected not only in literature, but also by artists and photographers in any culture.

2.4. Sponsor Background

Our sponsor (the Cibachrome Association) was formed after the closure of ILFORD Imaging Switzerland in 2014. The Cibachrome Association took over the extensive industrial archive of ILFORD and its predecessors. This includes the Marly manufacturing facilities that all these companies used, which is where the archive is now located.

The history of ILFORD Imaging Switzerland is convoluted, but important to understanding the history of the archive and the extent of its contents. The CIBA group first started working with ILFORD Imaging in 1963, when they approached ILFORD with a buyout offer (Araujo, 2020). The CIBA group was comprised of CIBA AG, CIBA Photochemie (Tellko AG at the time), Lumiere SA, and Gretag GmbH, which were all

companies involved in the making of photographic film (Araujo, 2020). The buyout was not finalized until six years later in 1969, but the cooperation between these companies had already started. In 1969, the CIBA group acquired all the shares of ILFORD and became the sole stakeholder. The next year, CIBA merged with JR Geigy and became Ciba-Geigy. ILFORD stopped producing cameras and switched its focus to their new product: Cibachrome, developed by Swiss Ciba Photochemie. Eventually, in 1989, Ciba-Geigy sold the rights to ILFORD to the American company International Paper. International Paper merged ILFORD with another manufacturer they owned, creating ILFORD Anitec in 1990. Therefore, Cibachrome prints had to be renamed to their contemporary name: ILFOCHROME Classic, which was announced in 1992 at the Photo Marketing Association (PMA) show, Las Vegas (Kilpatrick, n.d., pp. 58–59). From 2004 to 2011, ILFORD dealt with various issues while attempting to remain economically viable such as mass layoffs, and some successes such as a management buyout in 2005. Eventually, in 2011 the company ceased all production of Cibachrome prints (TI Media, 2014, p. 7) and then three years later shut down their manufacturing site in Marly. A timeline of the company's history can be seen below in Figure 4.

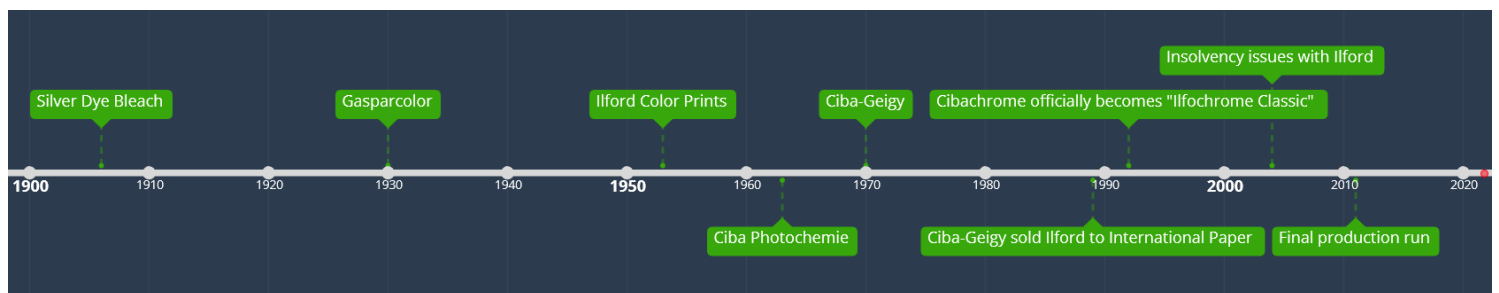


Figure 4: A timeline overview of ILFORD Imaging Switzerland and its predecessors.

The technical side of photography before the invention of the digital camera was mostly chemical in nature. In order to produce more vibrant photographs different techniques were developed since the invention of photography (Davis, 2020). Therefore, ILFORD had performed a vast amount of chemical research before it ceased production and eventually shut down. In fact, part of the reason that the company shut down was due to a stronger focus on research, rather than product development (Agudelo et al., 2018). This lack of awareness is mostly due to a general lack of exposure and promotion of the archive.

The information regarding the chemical composition of different photographic printing materials and their behavior over time is of importance to photographers, conservators, and anyone who keeps prints for an extended period. The work done to research

better printing methods can, and has been, applied to other industries, including automotive, solar power, printing, and many more industries (Agudelo et al., 2018). Uses for the information about chemical composition contained in the archive range from long-term storage methods to methods for improving light emitting diodes (LEDs).

On behalf of our sponsor, our team aimed to change this and worked to allow the Cibachrome Association and its archive to have a stronger online presence. Archives have many features that are useful to researchers combing through literature, but this requires a considerable amount of effort from the archivers as all the metadata must be uploaded alongside the document. Digital showcases are different than archives in the sense that showcases usually guide the user through the content that is shown, generally in a linear fashion, while archives require the user to search through all the information. In short, showcases are curated while archives preserve all types of knowledge (Claunch, 2020).

The rich and complex history of the Cibachrome process represents over a century of innovation. The technique has been associated with various individuals, companies, and groups throughout history. Each member of these groups made alterations to the Cibachrome product and technique, which in turn affected its prevalence in the photography community. Understanding this history helps convey the extent and importance of the Cibachrome Association's archive.

2.5. The Importance of Promotion to the Success of the Virtual Showcase

One of the key objectives of this project was to develop a promotional strategy for the virtual showcase. The purpose of promotion is to reach the target audience and recommend an idea or product to them. To increase the reach and audience of a product, such as a virtual showcase, promotion is a vital tool (Familmaleki et al., 2015). Given the necessity of promotion to the success of a product, there are a variety of ways in which this can and has been done successfully. These promotional methods can range from newspaper advertisements, to billboards, to promotions on social media, and pretty much anything in between. Recently, mobile-based social media applications have become more popular as a means for such efforts (Tankovska, 2021). This is because smartphones and other devices like tablets, have become increasingly common in everyday life throughout the past decade (Wang et al., 2016).

One important industry to involve for achieving maximum impact from promotion is tourism. Tourism, as defined by Encyclopedia Britannica, is “the act and process of spending time ... in pursuit of recreation” (Walton, 2020). In terms of this project, tourism can mean both foreign travelers and local Swiss residents who are visiting or interacting with the Cibachrome Association’s archive for recreation or just out of interest. Tourism companies have found that the promotional content they publish tends to be very “information-intensive” and is used as a main factor in people’s decision making regarding their travels. Furthermore, the content that includes personal recommendations from other travelers tends to be much more influential when promoting ideas and products (Hays et al., 2013). This network of connections also opens new avenues of promotion — once content has been published, the promotion of an idea no longer just flows from the company to the tourist. It can now flow from individual tourist to individual tourist, tourist to company, or even many different tourists to other individuals (Buhalis, 2003). This effect provides broad opportunity to increase the audience with a single well-developed promotional post.

One challenge we encountered is that most of these travel companies’ studies have been based, or have a target audience, in the United States, whereas we have a worldwide target audience. According to a 2012 study of travel marketing companies in Switzerland and the United States, Swiss travel companies are several stages behind the United States in their social media and web marketing efforts (Milwood et al., 2013). Part of this could be due to skepticism from marketing executives surrounding the significance of social media and its effects. A study done on Swiss political campaigns around the same time showed that the campaigns were a bit hesitant to use social media as a main channel of communication, and after the completion of the election, continued to view it as a low impact means of communication. However, they did expect it to become more relevant in the future (Klinger & Russmann, 2017), and this seems to be confirmed by the recent popularity of social media as a means of promotion.

That same study yielded insightful information in terms of the most popular social media platforms in Switzerland. As of 2015, 88% of the Swiss public were internet users, and of that 17% used Twitter, 52% used Facebook, and 62% used video platforms like YouTube (Klinger & Russmann, 2017). The data provided by this survey serves as valuable insight into the best ways to reach the Swiss public to promote the showcase. The information from the 2015 study, combined with data from a user analysis report published in early 2021, shows that Facebook is still the most popular form of social media in Switzerland, with YouTube

and WhatsApp as close follow-ups (Kemp, 2021). From this evidence, it is reasonable to infer that photo and video-based content, such as that found on YouTube, tends to attract more attention than text-focused content from platforms like Twitter. A 2013 study of tourism companies also concluded that video-based content will do better with Swiss audiences, because it allows the content consumers to receive personal recommendations for the idea or product directly from the mouth of the creator who is promoting it (Hays et al., 2013). Further, this allows for the target audience to connect on a more personal level instead of having to take the word of the organization for it.

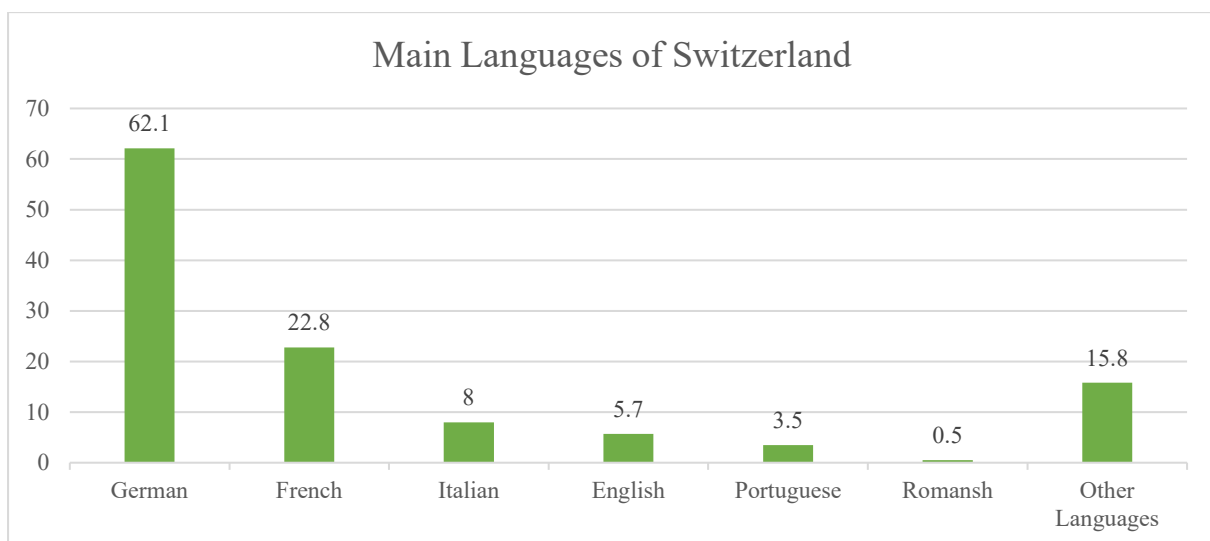


Figure 5: Chart representing the main languages of the Swiss permanent resident population. Survey participants could indicate up to three main languages. This graph was independently generated using data obtained from a Swiss Federal Statistical Office survey (Pratiques linguistiques en Suisse, 2021).

The large influence of personal recommendations, especially in a video content format, poses a unique challenge. According to data collected by the Swiss Federal Statistical Office since 1970, Swiss citizens speak a variety of languages. However, most of the population indicated that German was the most commonly spoken language, followed by French, Italian, English, Portuguese, and a multitude of other languages (*Pratiques linguistiques en Suisse*, 2021). This information is reflected in Figure 5 on the previous page.

Speaking multiple languages is an important part of Swiss culture, and there are laws governing the nation's official languages that also help to promote multilingualism (Federal Department of Foreign Affairs, 2020) by encouraging equal treatment of the nation's official languages in government and by requiring students be taught a second language (Palmer,

2010). The challenge we faced was tailoring the content in a language that was widely understood by our target audience, especially given the intention of video content being included and that there are a multitude of languages spoken within just Switzerland alone.

Based on the positive effects that promotion has on archives, museums, and other related recreational activities in Switzerland and world-wide, it is clear how important promotion will be for the archive. Regardless of how remarkable a virtual showcase may be, without the proper promotion the showcase will wind up having little engagement or use, defeating the goal of this project to improve awareness of the Cibachrome Association, its technology, and its history. Based on our preliminary research into the impact of promotion on the tourism industry, establishing an outline of best practices for a promotional campaign would help increase engagement with the showcase and could be used to improve the actual content of the showcase itself.

2.6. Conclusion

The Cibachrome Association's collective knowledge and physical archive regarding ILFORD Imaging Switzerland and its predecessor's research is extremely important to the conservation efforts of our project. Archiving the information digitally ensures its longevity. However, unless this digital archive can reach a large audience, it does not serve the mission of the Cibachrome Association. Currently, there is a general lack of awareness surrounding Cibachrome prints, technology, and their rich history. Our preliminary research showed that social media would be an effective tool to give more exposure to the archive, especially if it includes peer-to-peer recommendations rather than from large organizations. We hope that by presenting the archive in an engaging fashion and making it more accessible, it will gain traction among the Swiss public, specifically the younger generations, helping us achieve our goal of getting exposure for ILFORD's history. The curated pieces from the archive to be showcased were carefully selected to generate a high level of engagement from our target audience. Photographers and artists who have worked on Cibachrome prints can also be of help both with spreading the word and to provide content for the showcase. All the interest in the showcase, the technologies ILFORD left behind, and the actual Cibachrome (Ilfochrome) process can serve to bolster the effort of preserving their history.

3. Methodology

3.1. Introduction

The goal of our project was to create a prototype virtual showcase and a promotional plan for the Cibachrome Association. This will make the world's young adults more aware of the history and technology that the Cibachrome Association archived. For this project, young adults are defined as individuals between the ages of 15 and 33. To help accomplish this goal, we analyzed data collected through field research, surveys, and interviews. Using this data, we completed three main objectives, listed below:

- Determine which elements of the Cibachrome archive to showcase,
- Find the ideal implementation for the prototype virtual showcase, and
- Develop a plan to promote the virtual showcase.

The general timeline we followed to accomplish these objectives can be found in Appendix A, and a flowchart displaying how our project components fit together can be seen in Figure 6 below.



Figure 6: Overview of Project Plan with numbered objectives.

3.2. Objective 1 – Determining Which Elements of the Cibachrome Archive to Showcase

We gathered and analyzed data from several populations of interest using interviews and an online survey. These populations consisted of young adults, archivists, photographers, and museum curators. We interviewed archivists, curators, and a photographer from Switzerland and the United States, as well as surveyed young adults from around the world. In this section, we describe our approach to collecting and analyzing data from these populations, how it helped us to pick elements from the Cibachrome Association's archive for our prototype, and the survey's role in the overall achievement of our project.

3.2.1. Young Adults and Thematic Preference

First, we considered the young adult population and gauged what topics interest them. We conducted a survey during the first three weeks of our project. This survey was created using Qualtrics and distributed as outlined in Appendix B. The intention of our survey was to find out what the themes young adults want to see, how comfortable they are with new technology, and how important our project is to them. Appendix D contains a table of the questions we asked and the possible answers.

The data analysis of the survey was critical to our understanding of young adult engagement. During Week 3, we analyzed the data based on responses to individual questions. This allowed us to effectively pick out elements from the archive that fit with the interests and preferences of our target audience during our trip to Switzerland. The data analysis helped us plan our prototype design and promotional plan.

3.2.2. Archivists and Their Success

We interviewed archivists in Switzerland and the United States. Understanding the development and maintenance of an archive provided valuable insight into how photographs and other works of art are preserved. With that, we were able to develop a better idea of how to engage the audience effectively on how proper restoration and preservation of these works takes place.

We interviewed two archivists who had experience in conserving and storing art. To find these archivists, we investigated archives in Switzerland and the United States, and

asked our sponsors to help us through their personal connections. We set up and conducted these interviews during the first three weeks of our project.

We used Zoom to conduct approximately one-hour interviews during the first three weeks of our project. Our general approach to these Zoom interviews is described in Appendix B, and the consent script that we read at the start of the interview can be found in Appendix C. The consent script as well as an agenda with the general topics we were planning to discuss were also sent to the interviewee prior to the interview. Our questions to the archivists were focused on effective methods of maintenance and promotion of an archive. Some samples of these questions are included below in Figure 7. To analyze the data from these interviews, we compared common themes and evaluated suggestions.

<i>Archivist Interviews</i>	
Focus Areas	Example Questions
Maintenance	How do you maintain your archive? Is there advice for how things should be preserved?
Hurdles Encountered	What are some setbacks you faced while developing your archive?
General Advice	Is there any general advice that you are comfortable disclosing to us? Is there a common theme, or representation in your archive that brings in a lot of people?
Elements in Archive	What information do you display, and how relevant is it to the people? What is your intended audience's age group? How do you choose what to showcase?

Figure 7: This figure contains several sample questions for our archivist interviews.

3.2.3. Museum Curators and Their Experience

The final population we interviewed was museum curators. To find these curators, we looked to museums in Switzerland and the United States that had a large display or collection of photographs and prints. We chose to interview people from this group because museums are focused on engaging the public and making it fun for guests, which is what we aimed to do with our prototype showcase.

We modelled the development of our prototype on the information we got from our interviews. The general process for interviewing curators is detailed in Appendix B and is nearly identical to the interview process described above in Section 4.2.2. We conducted our interviews during the first two weeks of our project, and during those interviews we discussed engagement and selection of museum displays. Samples of our questions are included on the next page in Figure 8.

<i>Museum Curator Interviews</i>	
Focus Areas	Example Questions
Starting an Archive for Engagement	What are some ways you engage the public with the museum material? How do you go about starting a new exhibit? In your experience, what is the most exciting topic to the public? What are some hurdles you face when engaging the public?
Museum Aspects	Is there a certain time where the museum is more busy than other times, and why is this? Do people tend to gravitate towards one exhibit, if so which one?

Figure 8: This figure contains sample questions for our museum curator interviews.

The information we gathered from this set of interviews was analyzed during Weeks 2 and 3. This analysis was similar to the archivist interviews, as we used the information from these interviews to systematically identify common responses and themes.

We used this data to pick elements of our digital showcase, as well as to make the showcase engaging. The idea was not to copy the museums, but to use this new knowledge to inspire our own prototype plan. Given the complexity of this objective, communication between the various stakeholders involved was critical to our project's success.

3.3. Objective 2 – Finding the Ideal Implementation for the Prototype Virtual Showcase

We explored the following research questions to plan how the prototype virtual showcase looked, how it was organized, and what technologies it used:

- How can we maximize exposure and accessibility of the digital showcase for our target audience?
- What types of devices should we build our showcase for?
- What is the best way to organize the showcase for our audience?

To build our prototype, we first had to learn how the target audience interacts with virtual media and the internet. Particularly, we had to figure out which platforms provide the most accessibility for the target audience to increase awareness of the archive.

3.3.1. Showcase Review

To determine the ideal way to present elements from the Cibachrome Association's archive, we researched current virtual showcases. We conducted a showcase review, using the research questions posed below as an analysis framework.

- How are digital showcases typically organized?
 - How are showcases of a historical nature organized?
 - How can we implement the showcase so other people can contribute to it after we complete our project?
- How do young adults typically consume digital showcases?
 - Do different age groups have different media consumption preferences?
- How can we assure the longevity of the showcase on the internet?

This objective was accomplished through a combination of reading research articles, exploring and documenting the features of existing virtual showcases, and investigating what was contained in the Cibachrome Association's archive. We focused on accessibility as we

wanted this archive to be available to the global public and appeal to the world's young adults both in terms of organization and presentation. We researched what organizational methods digital showcases tend to follow, and what the differences among these are in terms of their success.

3.3.2. Survey Analysis

We gathered information about young adults, their internet usage, and their media content consumption. We contacted and surveyed over 160 individuals using the methods outlined in Appendix B. Since the survey was hosted on Qualtrics, it was easy to share the survey while recording the results in an anonymous and ethical manner. While analyzing the data, we were able to see what type of devices our audience prefers when browsing the internet, and what type of content was most engaging to them. Our analysis consisted of finding correlations among the different demographics of respondents and the information gathered in interviews. This allowed us to find the best platform and format for our prototype showcase. The survey questions were closed-ended, prompting the respondents to select from a range of options. The questions for this survey can be found in the table contained in Appendix D.

3.4. *Objective 3 – Developing a Plan to Promote the Virtual Showcase*

To create a promotional plan for this virtual showcase, our team had to answer the following questions through a survey and interviews:

- What is the ideal platform or medium to reach our target audience?
- What are effective ways to promote the showcase within that platform or medium?

Answering the first question allowed our team to determine the best way to reach our sponsor's target audience. This meant narrowing down the large variety of promotional techniques to one smaller body of targeted options, which in turn allowed us to better target our promotional plan. Additionally, it gave us a good sense of what other mediums to incorporate into the promotion plan, if any. The answer to the second question gave us a better idea of what content to create and how to distribute it. It was pivotal to ensuring that the sponsor's target audience engages and interacts with promotional content and the virtual showcase. For this objective, we collected data from two groups of stakeholders: young adults, via a survey, and photographers and artists, via interviews.

3.4.1. Young Adult Survey

This survey was distributed before and during Week 1 and closed by the end of Week 3. An outline of how we distributed the survey and collected data is reported in Appendix B. We surveyed over 160 individuals to get a large sample size and ensure an accurate representation of our target audience. Out of these 160 respondents, 97 fell into our target audience of ages 15 to 33. In the survey, we asked participants some closed-ended questions, and one open-ended question regarding the age of the participant. These questions are contained in Appendix D. During the analysis of our survey data, we broke the data down into several sub-groups based on age, country, and other commonalities. This allowed us to determine what the best medium and content type was for promotion, and if it varied based on demographic information.

3.4.2. Photographer and Artist Interviews

The second group of stakeholders for Objective 3 was made up of a photographer and several artists. This was especially important since these stakeholders are involved in the same industry as ILFORD Switzerland, and there are quite a few of them who still use the Cibachrome process today. These stakeholders were able to provide us with information about which forms of promotional content performed well for them.

These interviews were scheduled during the first two weeks of our project and were conducted in the second and third weeks. We worked with our project sponsors to find two photographers to interview. We used the interview practices outlined in Appendix B for these interviews. The questions and topics we discussed were intentionally similar to what was covered on the survey we sent out. We tried to gather the same information from two points of view: that of the people who create and put out the promotional content and that of the people who consume the content. We chose to employ interviews for data collection because we did not need to engage with a large population of artists and photographers. Some examples of the interview questions and focus areas for our artist/photographer interviews are included on the next page in Figure 9.

<i>Artist/Photographer Interviews</i>	
Focus Areas	Example Questions
General Information	<p>What sort of artwork/photography do you do?</p> <p>Which part of the world do you work in?</p> <p>What age range would you classify your target audience to be?</p>
Where Promotional Content is Seen	<p>Where do you typically promote and advertise your work?</p> <p>Where do you feel is the best place to put an advertisement for an art showcase so young adults will see and interact with it?</p>
Social Media	<p>Please rank the social media platforms you use to promote your work in terms of engagement.</p> <p>How often do you use social media to promote your artwork/photography?</p> <p>Which type of content do you get the most engagement with on social media (text, photos, videos, combination, etc.)?</p>

Figure 9: Figure representing sample questions and areas of focus for our interviews with a photographer and several artists.

3.5. Problems, Limitations, and Challenges

3.5.1. General Problems, Limitations, and Challenges

Our research had several limitations that affected the conclusions we came to. One challenge was that our collected data underrepresents some members of the target audience. Most of our responses were from the United States, whereas we had aimed to gather an equal number from the United States and Switzerland. The main cause of this was our posts on social media were flagged as spam since the account posting them was new. Regarding the interviews, participants who opted not to allow us to record the interviews led to us missing some details

in our interview notes. Technical difficulties during our Zoom interviews lead to disconnections and audio issues, which in turn caused a loss of some information. There were also several individuals who did not reply to our emails, which meant we lost access to valuable sources of information. We also had to take into consideration the various privacy laws of the different states and countries that interviewees were based.

3.5.2. COVID-19 Specific Problems, Limitations, and Challenges

There are numerous COVID-19 limitations that our team had to consider and work through to successfully complete this project. Due to the COVID-19 pandemic, foreign travel was limited during our project term, and we had to plan for the possibility of not going to Switzerland and wound up only going for ten days. With this limitation on travel, we had to communicate with our sponsors early to ensure we had access to the archive documents and materials for the prototype showcase. While conducting interviews, we had to consider the six-hour time difference between us and the stakeholders in Switzerland.

Another issue that we faced was the possibility that individual stakeholders involved with the project could fall ill or be unable to participate in the project for other reasons. Planning for this inevitability played into how we organized our meetings. The team had to find a physical space on campus to meet while also keeping an online option available. This was difficult due the lack of academic space available on campus, a situation exacerbated by the pandemic and ongoing construction on campus.

4. Results

The goal of our project was to design a prototype showcase for the Cibachrome Association. To achieve this, we curated elements from the Cibachrome Association's archive, determined which implementation was preferred by our audience, and devised a promotional plan for the showcase. We contacted young adults through a survey and interviewed various individuals from fields related to Cibachrome. Through our data collection, we narrowed down which themes interest our target demographic, and how we could display them to maximize promotional potential.

4.1. Objective 1 – Elements to Showcase

Objective 1 of our project was to effectively determine what themes young adults found interesting and use that information to choose elements of interest from the Association's archive. To do this, we worked with our sponsor the Cibachrome Association. We picked the archived elements by colour and material. Our goal was to pick photographs that showed the uniqueness of a Cibachrome print, specifically looking for prints that show longevity and contrast. Our sponsor had so much knowledge about what elements were in the archive that this task was easier than we originally thought.

<i>Interviewees</i>	
Profession	Location
Curator	United States of America
Curator	United States of America
Archivist	Switzerland
Archivist	United States of America
Photographer/Artist	United States of America

Figure 10: Figure depicting the professions and locations of our interviewees.

The results found below were gathered from the analysis of survey data and various interviews with professionals in the field of curating, photography, and archival conservation. A figure depicting our interviewees and their locations can be seen above in Figure 10. We used the thematic preferences chosen by our respondents, coupled with the expertise of our interviewees, to select a theme of uniqueness. This theme showcases the unique historic,

artistic, and scientific aspects of Cibachrome prints in an engaging way. Using this theme, our team went through the Cibachrome Association’s archive to select pieces that best fit.

4.1.1. Thematic Preference of Young Adults

For the digital showcase our team decided to go with the theme of uniqueness because we feel this would be the most engaging for the target audience. This theme includes the history, photographic techniques, artistic results, and technology behind the prints. This decision was based on the response trends from our target age range for two of our survey questions. Survey responses to Question 7 (see Appendix D) demonstrated an equal preference towards both history and photography, followed closely by art, as shown in Figure 11 below. This was helpful in narrowing our search of the archive because we were able to prioritize finding historical documents and documents pertaining to the photography technique itself during our limited visit of three days.

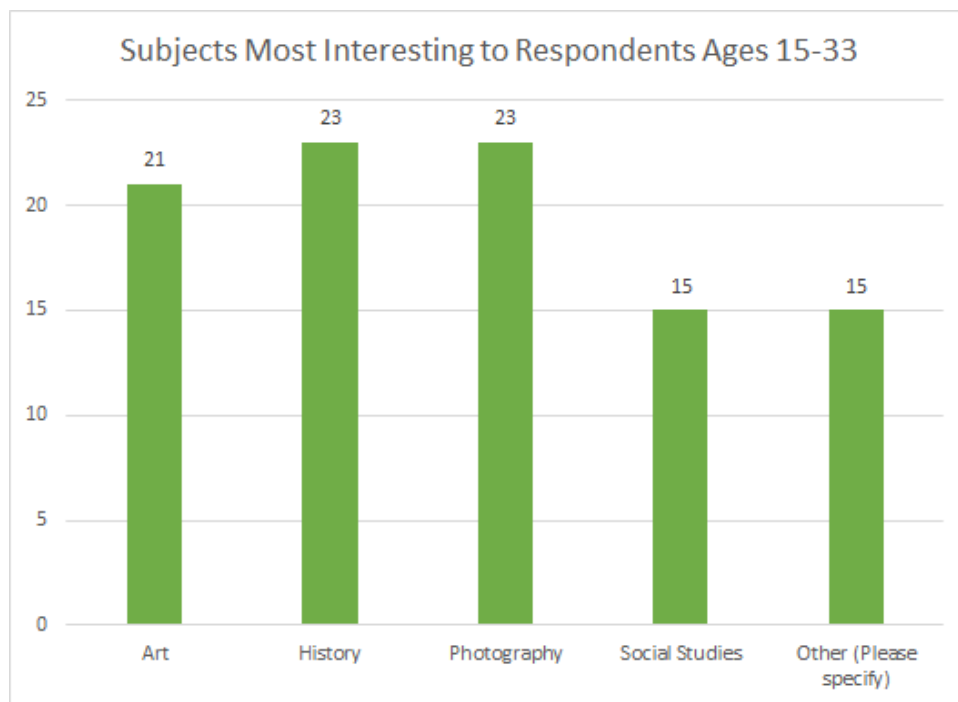


Figure 11: Bar chart of subjects most interesting to respondents ages 15 to 33, where N=97.

Survey responses to Question 9 in Appendix D, helped us determine how much information we should include in the showcase prototype about the technology of Cibachrome. As seen on the next page in Figure 12, learning about new technology or how things are made is very important to our target audience. Therefore, we decided to include

both how the Cibachrome raw materials are made as well as how the prints themselves are processed. These survey responses were also helpful in determining how to promote the showcase to our target audience because we can choose images to promote in advertisements that highlight history, photography, or the technology behind the Cibachrome print making process.

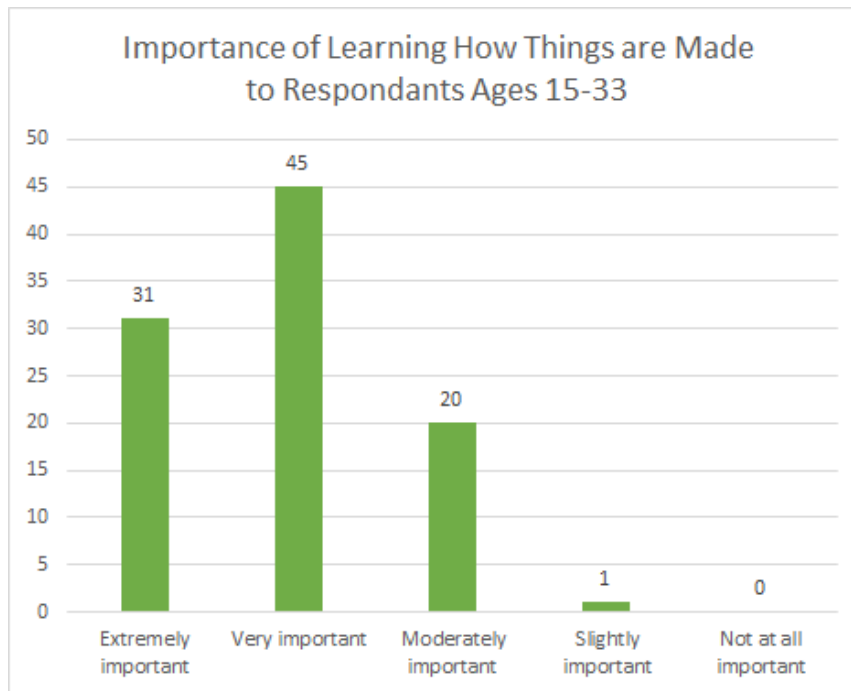


Figure 12: Bar graph showing the importance of learning how things are made to respondents ages 15 to 33, where N=97.

4.1.2. Archivist Advice

Speaking with two archivists provided us with valuable information on conservation and storage techniques of paper items and photographic prints. We learned that proper storage conditions are essential to prevent damage to prints, reducing the need for repairs. These storage conditions include minimal light exposure, low humidity, and sturdy, flat folders with protective film. Both archivists agreed that storing prints in the dark is the best way to protect them from light. Exact humidity and atmospheric conditions vary between materials, but generally lower humidity is better. This research helped us to outline the longevity section of the prototype showcase by delving into the ideal conditions needed to help a Cibachrome print last as long as possible.

4.1.3. Museum Curator Advice

Talking with curators provided us with valuable insight into selecting elements from the Cibachrome Association archive to showcase. According to the curators we interviewed, the most important aspect of designing a showcase is to have a framing-piece that ties everything together. Their advice on how to select this piece was to choose one piece already contained in the archive and start building the showcase and its theme from that. This way, everything in the showcase is connected.

The curators we interviewed also gave us a good idea of how to organize our showcase. The suggestion was to arrange the showcase such that there were a few photographs on the main page, and the visitor could click on them to be taken to an article. This article would include a combination of images, video, and text that provided more information on the topic of the main photograph. These smaller sections are where more detailed pieces, such as lab notebooks, are displayed and discussed. Combining this with the first piece of advice we received, the main photographs of our prototype are connected to each other with the theme of uniqueness. Meanwhile, each of the smaller articles focuses on a specific aspect of what makes the prints so unique.

While this idea of connecting pieces with a common theme is employed in physical and digital showcases alike, the digital format was described by the curators we interviewed as the low maintenance option. When displaying prints of Cibachromes and other photographs, there are numerous climate factors, in addition to the security factors, to consider for the physical display. There is a certain temperature the prints have to be kept at, certain lighting levels, and very specific ways to mount the photographs for display. Furthermore, all these factors are different depending on the material of the print and if they are black-and-white or colour. Digital showcases eliminate these factors, saving time and money, and allowing for pieces to be displayed for longer. Digital showcases also allow for the addition of more pieces about once a month, something that the interviewed curators said is vital to keeping people engaged.

The downside to this is putting the materials on the digital showcase. They need to either be scanned, photographed, or digitally recreated in some other means. This can be difficult depending on the material and its fragility and light sensitivity. Also difficult is if there are copyright issues, such as in our case where the Cibachrome Association owns the

rights to photographs on Cibachrome, but not digitally. In cases like this, one must contact to the copyright holders and ask them if using a photograph or digital recreation of the work is acceptable. Regardless of these issues, the digital format will allow the final version of this showcase to evolve over time and make the important history of ILFORD accessible to people of all ages.

4.2. Objective 2 – Ideal Implementation

When planning how the showcase should be designed, we posed the following research questions:

- How can we maximize exposure and accessibility of the digital showcase for our target audience?
- What types of devices should we build our showcase for?
- What is the best way to organize the showcase for our audience?

These questions were answered by surveying our target audience and by conducting a review of other digital showcases. The review suggested taking advantage of social media platforms. Our survey data, as discussed in the Survey Analysis section below, confirmed that social media would be helpful. The survey also showed which platforms the target audience used the most and helped narrow down which devices the prototype showcase should support. For the time being, the implemented prototype will be in English, but there are plans to translate the showcase into other languages as well.

4.2.1. Showcase Review

We conducted a showcase review of previously published virtual showcases and common themes among these. We focused on showcases such as the Worcester Art Museum's Kimono exhibit (Worcester Art Museum, 2021) and MIT's Department of Visual Arts (Center for Advanced Visual Studies, 2018; School of Architecture and Planning, 2018) exhibits as they organized their information in a similar way. These two examples had a simple main interface with images that one can scroll through, when these images are clicked more in-depth information is presented. We want to utilize this same type of format as it aligns both with the preferences of our target audience according to our survey data and with the suggestions we received from our interviewees. Additionally, this format echoes the

advice of the curators we interviewed and contained a combination of video, images, and text – just as our target audience wanted.

4.2.2. Survey Analysis

Results from our survey provided us with information on each of our three questions posed for Objective 2.

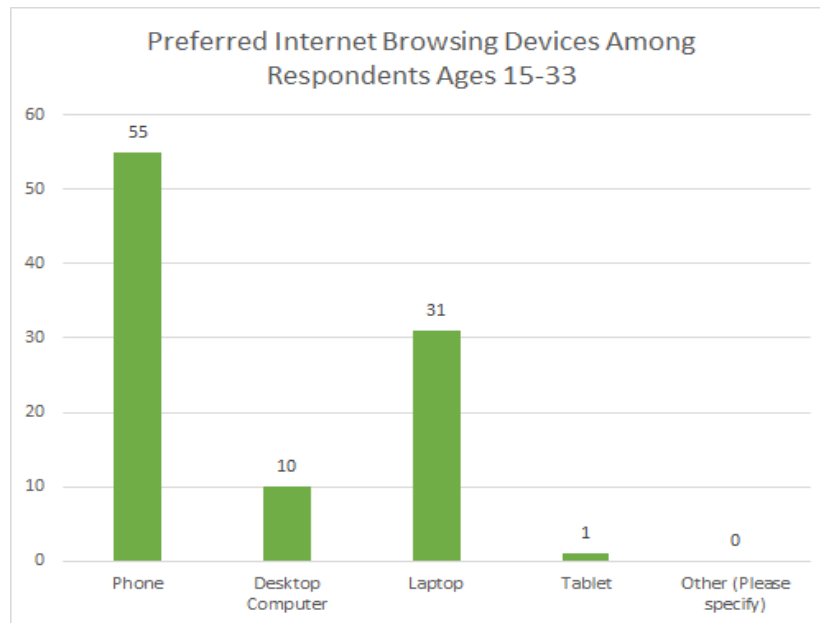


Figure 13: Bar graph showing preferred internet browsing device of respondents ages 15 to 33, where N=97.

As seen in Figure 13 above, Question 11 (Appendix D) showed that young adults browse the internet nearly as much on their computers as on their phones. As such, the prototype showcase was designed to be easily accessible to individuals regardless of what device they are on. According to responses to survey Question 12 (Appendix D), the target audience is far more likely to visit a website rather than download an app, as shown on the next page in Figure 14. This led us to decide the prototype showcase would be a website to maximize the exposure and accessibility for all users.

In Question 19 (Appendix D) we asked respondents to choose which types of content format in a digital archive would appeal to them. As seen in Figure 15 on the next page, image galleries and collections of videos were the favorite among respondents, followed by text entries with images. This analysis was in line with our showcase review as well as the

curator advice from Objective 1. The high preference for an image gallery and interest in text entries with images confirmed our decision to make the Showcase image based with short captions to guide the viewer through each topic. Because of the high preference for a collection of videos we decided to add YouTube videos in sections such as Developing a Cibachrome Print.

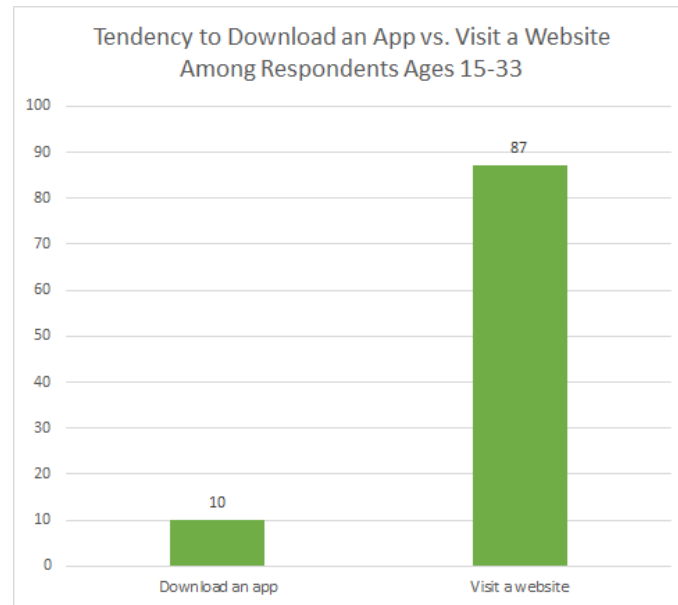


Figure 14: Bar graph showing preference towards apps vs. websites of respondents ages 15 to 33, where $N=97$.

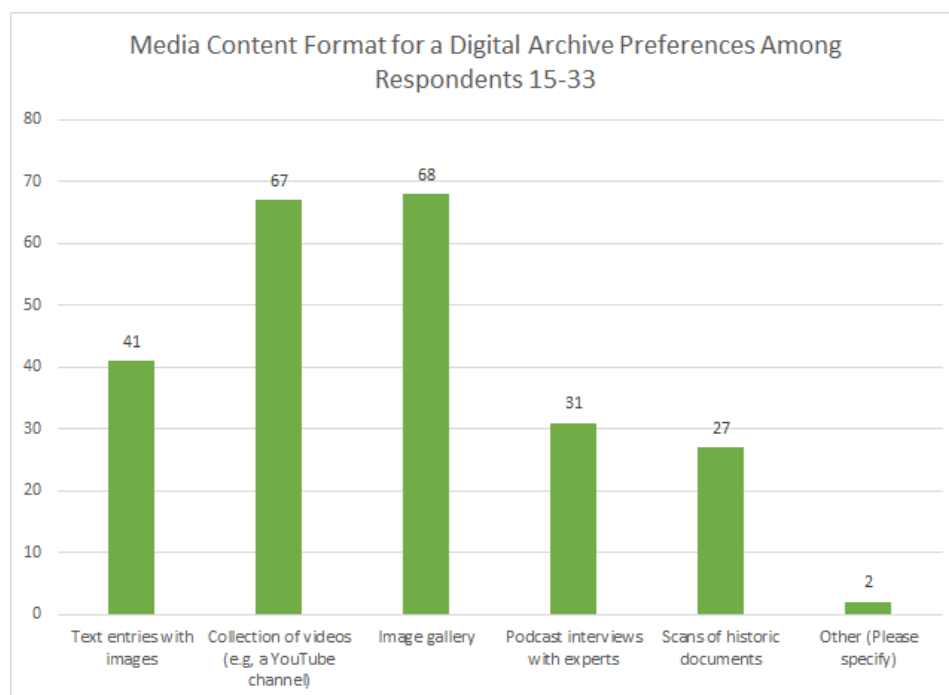


Figure 15: Bar graph showing media content preferences for a digital archive of respondents ages 15 to 33, where $N=97$.

4.3. Objective 3 – Promotional Plan

As referenced in previous sections of this chapter, we used survey data to determine the best way to promote the showcase once the Cibachrome Association completes it. From that data we were able to determine the ideal means and content types for advertising. As the survey data confirmed that social media was the best way of reaching young adults, we determined the best social media platform to use for promotion.

4.3.1. Survey Results

The survey responses gave us valuable information on how to promote a showcase to our target audience. Survey Question 17 (Appendix D) shows that social media is the most common place the target audience sees advertisements. In Question 13 (Appendix D), most respondents selected their social media usage to be multiple times a day. From the results of these two questions, which are represented on the following page in Figures 16 and 17, we decided that social media was the best place to promote the showcase to young adults.

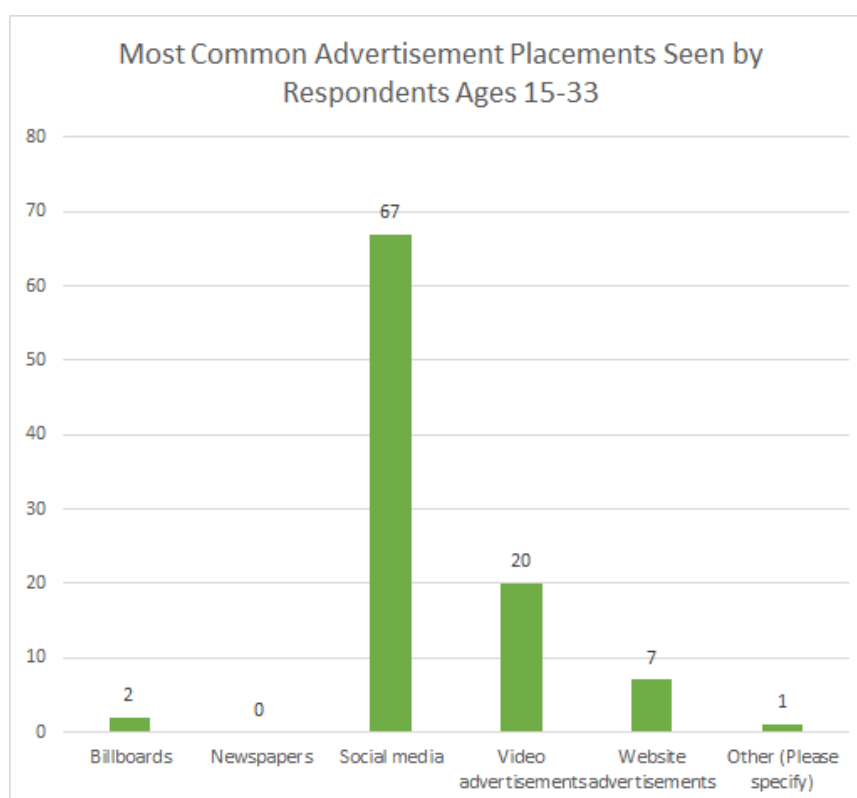


Figure 16: Bar graph showing advertisement placements most seen by respondents ages 15 to 33, where $N=97$.

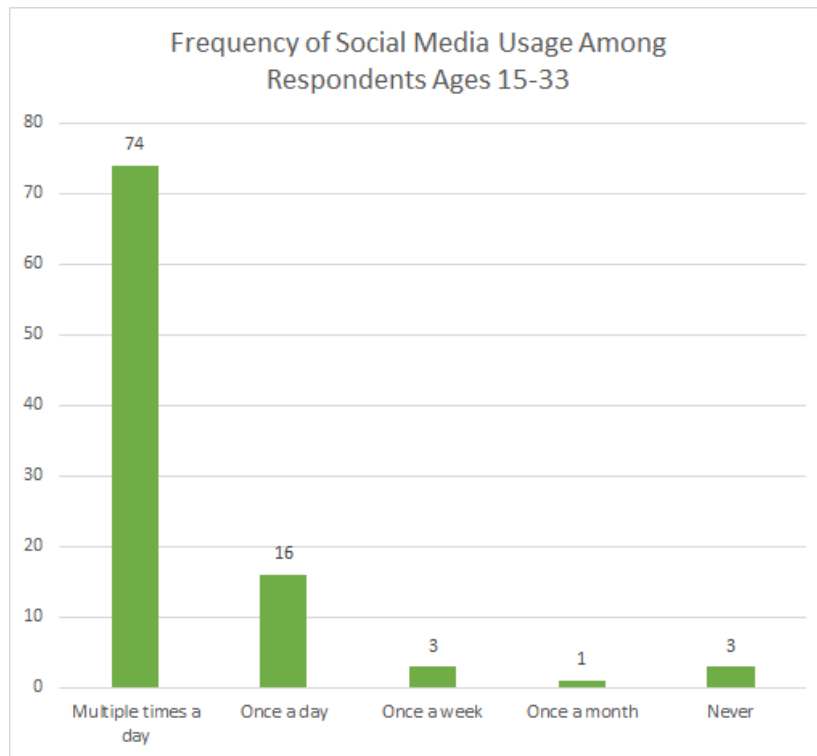


Figure 17: Bar graph showing social media usage frequency of respondents ages 15 to 33, where $N=97$.

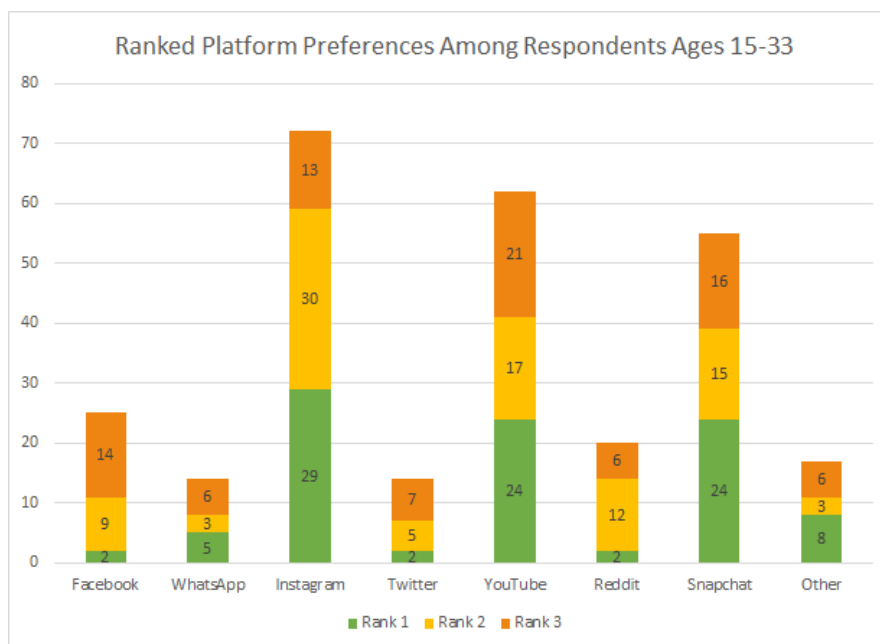


Figure 18: Stacked Bar graph showing preferred social media platforms of respondents 15-33, where $N=97$.

In terms of social media, Instagram, YouTube, and Snapchat were ranked the highest for frequency of use across our target age group before considering geography, see Figure 18

on the previous page and Question 14 in Appendix D. Upon separating our survey responses based on geographic location, we found that WhatsApp took the place of Snapchat in popularity for Europeans. This means that when buying advertisement placements, Instagram and YouTube are ubiquitous among North American and European audiences.

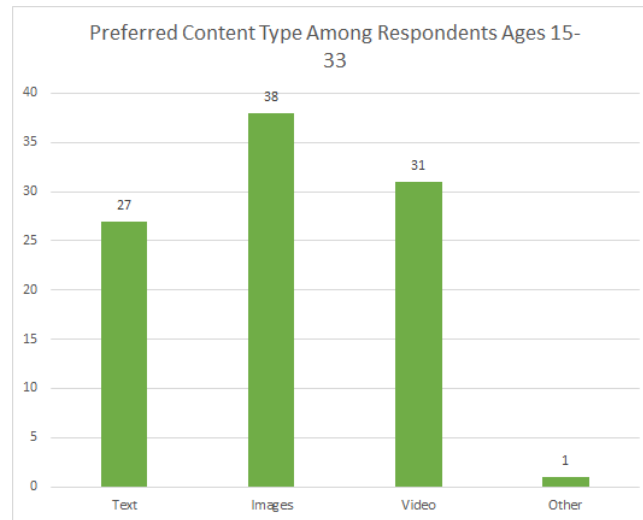


Figure 19: Bar graph showing preferred content type of respondents ages 15 to 33, where $N=97$.

Survey responses to Question 15 (Appendix D) show that our target audience primarily interacts with images closely followed by videos while on social media. This data, which is represented on the previous page in Figure 19, led us to selecting images and occasional videos as promotional posts for the digital showcase in order to engage the most with the target audience.

4.3.2. Photographers and Artist Interviews

Our team talked to one photographer/artist whom we asked about promotion, thematic preferences, and the uniqueness of Cibachrome products.

We had asked the photographer what themes tend to engage and draw in public more when it comes to their individual work. One response we received, which confirmed one of our original ideas, was images of nature. The other ones were topics such as animals, hair styles, or really anything that individuals can relate to or desire.

Further on in our interview, we also found that videos typically get the highest engagement but are the most difficult to make. This was made clear when our interviewee said they are actively trying to produce additional professional video content about their art.

A professional TV appearance that the interviewee did to promote their work was viewed over a million times across different platforms and drastically increased engagement with their work. Interestingly, they also mentioned that if the topic of their work is important enough, they find promotion to be less necessary, because people will naturally engage with it. This photographer believed that their art was worthwhile and found that many people needed to find their work rather than vice versa. This theme seems to be echoed from Cibachrome itself and is something we built into our prototype showcase in terms of the content and theme.

The interviewee talked quite a bit about the uniqueness of the Cibachrome process. Specifically, they focused on the versatility, as well as the luminosity of the picture Cibachrome can make. This gave us some things to think about and many potential themes we could do. The first being a colour digital showcase. We would pick a group of photos that highlight one colour and talk about how vibrant Cibachrome film can make things seem. Another potential theme was to highlight the luminosity and contrast in Cibachrome prints. Ultimately, each of these unique items were highlighted in their own section of the prototype showcase. These combine to show off the overarching theme of the uniqueness of Cibachrome prints.

This opened the gate to a more serious conversation as to why Cibachrome prints need to be preserved. Not only the unique process of developing the prints, but the vibrant colour it can make, the level of detail, the contrast, and the longevity of the prints. As there is nothing like it on the market, many of the interviewees we talked to, whether they were photographers or curators, believed that highlighting what makes Cibachrome prints so different was of the utmost importance. Therefore, we focus on these characteristics of Cibachrome that are so different from every other technology available. Our interviewees felt that doing this showcase could potentially save these vital parts of history.

We had to look through the Cibachrome Associations archive to see which pieces fit our theme the best. The archive had a plethora of pieces that our team could use, and that the Cibachrome Association had the rights to. This made our task of curating elements easier, as there were multiple prints and elements to choose from. Understanding that colour was what many of our interviewees, especially the photographer, enjoyed most in a Cibachrome print, our team decided to select items of vibrant colours. This included items such as the first promotional piece ILFORD used, a coloured sand, and a print of cologne bottles. These are

just a few examples of the vibrant pieces they have. Other prints like a frog image were used in the materials section because of the transparent paper they were on. The photoshoot of Marilyn Monroe was put in the longevity section to show how much time has gone past, and that the condition of the print still looks like new. Some of these photos can be seen in Figure 20 on the next page.

4.3.3. Promotional Plan Decisions

From our survey data and various interviews, we developed a promotional plan, which can be found in Appendix F. This plan outlines the use of Instagram and YouTube to promote the virtual showcase, and details how a mix of video, image, and text appeals to the most people. We also identified mealtimes and commute times as the optimal time to post the promotions as those are typically when young adults use social media. Providing the advertisements in a variety of languages will be beneficial to reaching the largest audience, and most social media platforms automatically translate, or at least offer the user the option to have the content translated.



Figure 20: Collage of Cibachrome prints included in our prototype digital showcase.

5. Conclusions and Recommendations

5.1. Conclusions

We obtained a handful of important concepts and findings through our survey and interviews. In our survey, we asked nineteen questions about a range of topics. Our final response count was 161 responses total, with 97 being within our target audience. If we filter by responses that fell within our target age range of 15-33, the key findings were that participants:

- Used Instagram and YouTube the most,
- Used their phones and laptops more frequently,
- Preferred a website over an app,
- Preferred images and videos over text,
- Used social media more than once a day, and
- Preferred a gallery of images.

Using the information above, we decided that our prototype digital showcase would be a phone friendly website full of images and videos. Our prototype would also be promoted on YouTube and Instagram during common mealtime hours.

From our interviews, we learned a couple of key ideas. Firstly, people gravitate towards important concepts, and secondly, if one wants to draw in a lot of people, make the topic important. This gave us the idea of using the theme of uniqueness for our prototype digital showcase. The importance of the Cibachrome Association's technology is what we believed would draw in the most people. Longevity, contrast, and detail are all elements of what makes a Cibachrome print so amazing. This made curating pieces from the archive significantly easier as most of the prints fell into the theme of uniqueness.

We also learned from a couple of our interviews that there is nothing like a Cibachrome red. Because this was said more than once, our team believed that adding this element would be beneficial to our digital showcase. The colour a Cibachrome print has is like no other, as its vibrancy is unique. There is nothing else on the market like it. We used this colour uniqueness in our digital showcase to attract people to the material.

Lastly, one of our interviews talked about the importance of history in a digital showing. With some help from our sponsors, we decided to add some items with historical

significance to our prototype as what our interviewee said made sense. The main point was that many people like to know about the start-up of a company, or how things are made. Telling the story of how art or items/products started or how they are made makes the audience appreciate the work far more. As a result, this helps people stay engaged in the material they are viewing.

The final prototype, screenshots of which can be viewed in Appendix E, was built based on the findings of the showcase review we conducted. Our prototype has a scrollable main page where different topics are represented by captioned images; each of these images links to a page where more detailed information is provided. The prototype's design was inspired by previous showcases such as the Worcester Art Museum's (WAM) Kimono Couture (Worcester Art Museum, 2021). WAM's exhibit features different articles released weekly which are all shown on a main page with images. A museum curator we interviewed also suggested utilizing a similar approach with clearly defined "topics" linked by a directory. The content on the prototype showcase adheres to our surveyed audience's preferred media type: a focus on images and videos accompanied by text.

Building on our key findings from interviews and surveys, we prepared a plan to help the Cibachrome Association promote the showcase. This plan outlines the use of Instagram and YouTube to promote the virtual showcase, and details how a mix of video, image, and text appeals to the most people. We also identified mealtimes and commute times as the optimal time to post the advertisements as those are typically when young adults use social media. Providing the advertisements in a variety of languages will be beneficial to reaching the largest audience, and most social media platforms automatically translate from foreign languages, or at least offer the user the option to. Following this plan will allow the Cibachrome Association to alert their target audience to the existence of the showcase. Additionally, it creates another means of distributing information so that the Cibachrome Association can promote other events or highlight history.

5.2. Recommendations

5.2.1. For Future Projects

For future projects that aim to create a digital showcase for a museum or archive, we recommend speaking to industry professionals such as relevant artists and museum curators,

as well as the target audience for the digital showcase, whoever that may be. The target audience is more effectively reached by surveys because a large quantity of information will be needed to see general trends during analysis. Interviewing industry professionals allows more personalized advice for different showcases and can also provide feedback on working ideas for the showcase. Website maintenance will be important to consider when making a digital showcase to ensure any problems that arise can be fixed easily. Additionally, if a digital showcase is being made on behalf of a sponsor, work with their webmaster to determine the host platform so ownership of the digital showcase can be easily transferred.

A recommendation that our group would have for anyone trying to replicate this part of our project is planning ahead how to distribute the survey to people that are not within the U.S. Our group received a lot of responses from people within the U.S, but we did not get a good response from people within other countries. This made our data a little skewed to one population. To get more accurate data, we suggest making sure to obtain an even distribution of responses from a geographical perspective. Lastly, we note how once a survey is sent out into the world, researchers cannot control who fills it out. As such, not every response is going to be what was expected, but that does not mean that the data are not valuable. We recommend being prepared to filter the data collected to focus on the agreed-upon demographic. Using the additional data for other parts of the project such as general themes may still be very useful.

5.2.2. For the Cibachrome Association

Following the conclusion of our project, the Cibachrome Association will have a few things to do before the Showcase is published online. Due to time constraints of the project, we were not able to finish filling in all the image captions within the eight sections of our showcase, so the Cibachrome Association will need to finish the captions we left outlined. Most of the images from the archive included in the showcase were pictures of actual Cibachrome prints, rather than scans of the prints. The Cibachrome Association's Webmaster should determine the status of the digital rights for each of the images we included. Any images the Association has the digital rights for should be replaced with high quality scans of said images to improve the overall quality of the digital showcase. Once the captions are filled in and the pictures are higher quality files, there is one more thing to do before the showcase is ready to publish online. If the showcase remains on Squarespace, there is a paid language

translation plug-in that should be bought to increase accessibility. If the showcase is transferred to WordPress to match the current Cibachrome Association website, there is a free language translation plug-in available. These translation options are necessary as the showcase has been built in English, however, it is intended for an international audience.

The Cibachrome Association should follow the promotional plan we provided once the showcase is live. To ensure effective outreach, engagement on the website should be monitored. If engagement trends slow, more advertisements should be posted. If engagement increases significantly after a new promotional post or advertisement, we suggest using that same post format for future advertisements.

5.2.3. Summary and Impacts

Our team gave the Cibachrome Association a prototype digital showcase. This showcase displays various items from their archive, as well as several supplemental photographs and videos by Cibachrome artists. In addition to this showcase prototype, our team developed a method to promote the showcase and organization across social media. The prototype showcase we created, as well as the plan to promote it, will have numerous positive impacts on the Cibachrome Association and the project's target audience, young adults ages 15 to 33. The showcase will be a medium by which the Cibachrome Association can promote itself and inform the world about the Cibachrome Printmaking technique.

Due to the accessible and easy to share nature of the showcase, our hope is that the showcase will be shared with educational institutions and museums that the Cibachrome Association may work with in the future. This would allow even more people to have access to this valuable knowledge about the Cibachrome Printmaking process, an important part of photographic history, and the companies behind it.

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7. Appendices

Appendix A – Project Timeline

Below is a Gantt chart that depicts the general timeline of our project.

	Pre-Week 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
<i>Set Up Interviews</i>								
<i>Surveys</i>								
<i>Survey Analysis</i>								
<i>Interviews</i>								
<i>Analyze Interviews</i>								
<i>Rough Prototype of Showcase</i>								
<i>Develop Promotion Plan</i>								
<i>Refine Prototype and Plan</i>								

Appendix B – Data Collection Approaches

B.1. Survey Approach

We gathered survey data through Qualtrics, an online survey tool. As the data collected must be stored on WPI servers, we used the WPI hosted Qualtrics. Using this online survey tool allowed us to cast a wider net and collect responses from a wider variety of individuals. The survey we sent out allowed us to gather the data regardless of where the participants were located and on their own timeframe. After we closed the survey, the data was transferred to a OneDrive folder on the WPI sever that only the team has access to.

To distribute the survey, we used social media platforms like Reddit and Instagram and worked with our sponsor to reach out to individuals in Switzerland and Europe. In the United States, we distributed the survey via peer-to-peer chat platforms such as Slack, Discord, and texting, as well as using social media platforms like Instagram and Reddit. This helped increase our chances of getting a variety of responses from young adults of all education levels, races and ethnicities, genders, national origins, and occupations.

B.2. Interview Approach

We conducted interviews via Zoom. These interviews consisted of two team members taking notes, and two team members asking questions. When setting up the interview, we sent the interviewee an email with the agenda for the meeting and a consent survey. At the start of the meeting, we asked if they consented to having an audio recording of the meeting being created, making note that it was entirely voluntary. We also informed them that the audio recording would be saved to a OneDrive that is only accessible to the student members of our team and that it would be deleted after being transcribed. If they consented to this, we recorded the interview audio and transcribed it later. Either way, we had notes of what was discussed in the meeting to analyze. If the interview participant was unable to meet via Zoom, we sent them an email with questions and asked them to respond at their convenience. The information from these email interviews was also stored on our OneDrive.

Appendix C – Consent Statements

Prior to participating in our data collection, all individuals were asked to consent to one of the statements below, dependent on their upcoming participation plan. Survey participants were shown the statement in Section B.1 and asked to check a box to indicate that they consented to their responses being collected and used in our project. Interview participants had the consent statement in Section B.2 emailed to them and read aloud, and then were asked to verbally agree to it.

C.1. Survey Consent Statement

Thank you for taking time to complete the following survey. We are a team of four American university students from Worcester Polytechnic Institute and we are working with the Cibachrome Association in Marly, Switzerland for the next few weeks. We intend to help the Cibachrome Association increase awareness about the archive they currently manage, which contains documents, photos, and technology relating to the history of Cibachrome and ILFORD Imaging Switzerland. We aim to do this through the development of a virtual showcase and a promotional plan for that showcase.

Your participation in this survey is completely voluntary. If you come across any questions, you wish to not answer, you may skip to the next one. If you start the survey and wish to terminate it without having the data collected, please close out the survey without clicking submit. If you click submit, the data you enter will be recorded and collected. Once collected it will be saved to the WPI Qualtrics servers, and then pulled down and stored in a OneDrive. Throughout this entire process, only the four members of this team can access the data. This survey will be used as background information and will not be made public in any way. If you have any questions about this survey or about the work we are doing, you may contact us via email at gr-ciba-a21@wpi.edu.

If you understand this statement and consent to starting the survey, please check this box and hit next.

C.2. Interview Consent Statement

Thank you for taking time to talk with us today. We are a team of four American university students from Worcester Polytechnic Institute and we are working with the Cibachrome Association in Marly, Switzerland for the next few weeks. We intend to help the Cibachrome Association increase awareness about the archive they currently manage, which contains documents, photos, and technology relating to the history of Cibachrome and ILFORD Imaging Switzerland. We aim to do this through the development of a virtual showcase and a promotional plan for that showcase.

Your participation in this interview is completely voluntary. As such, you may stop participating at any point in time, and are free to decline to answer any question we ask. If you previously agreed to having the audio of this interview recorded, you may ask us to stop that at any point in time as well. We will not collect any personal information that you do not volunteer. Any identifiable information that you volunteer to us will not be published, and all published information will be anonymized. Any notes that we take, as well as the audio recording and transcript, if you agreed to that previously, will be stored on a OneDrive that only our team members can access. If you have any questions about this interview later, or have questions regarding our work, you may contact us via email at gr-ciba-a21@wpi.edu.

If you understand this statement and consent to starting the interview, please verbally acknowledge that now.

Appendix D – Survey Questions

The table below contains the focus areas, questions, and response options for the survey that we conducted.

Question Number	Questions	Response Options
1/2	Consent Statement	*Checkbox indicating consent to data collection*
3	Please indicate your age.	*Insert age*
4	What country do you live in?	*Dropdown of countries*
5	Which language(s) do you speak most often? Please limit your response to a maximum of three (3) languages.	*Open response*
6	Have you ever heard of the Cibachrome Association?	Yes
7	Which of the following subjects interests you the most?	Art History Photography Social Studies Other (please specify)
8	How important is conservation of photographs to you?	Extremely important Very important
9	How important is learning how things are made to you?	Moderately important Slightly important
10	How comfortable are you with using new technology?	Extremely comfortable Somewhat comfortable Neither comfortable not uncomfortable Somewhat uncomfortable Extremely uncomfortable
11	What type of device do you browse the internet with the most?	Phone Desktop Computer Laptop Tablet Other (Please specify)
12	Are you more likely to download an app or visit a website?	Download an app Visit a website
13	How often do you use social media?	Multiple times a day Once a day Once a week Once a month Never
14	Please rank your top three social media platforms.	Facebook WhatsApp Instagram YouTube Reddit

		Snapchat Other (Please specify)
15	Which type of content are you most engaged with on social media?	Text Images Videos Combination Other (Please specify)
16	What type of content do you typically share online?	Text/Articles Images Videos Websites Other (Please specify)
17	Where do you typically see promotions and advertisements?	Social Media Website Advertisements Video Advertisements Newspapers Billboards Other (Please specify)
18	A digital showcase is an online representation of real-world museums and archives, knowing that in mind, have you ever viewed a digital showcase?	Yes No
19	What media content would you find appealing for a digital archive? (Pick any that apply)	Text entries with images Collection of videos (e.g., a YouTube channel) Image gallery Podcast interviews with experts Scans of historic documents Other (Please specify)

Appendix E – Virtual Showcase Prototype

E.1. Showcase Outline

Here is the outline used to create the prototype showcase. It can also be used to fill in any sections that were not finished.

- Intro
 - Product timeline.
 - Historical use of Cibachrome.
 - <https://douglasvincent.com/ilfochrome/history.html>
 - Why it's interesting.
 - Introduction to next sections.
- How Cibachrome is Unique/How to Identify One
 - Mention longevity, contrast, colour, detail.
 - How to identify using destructive and non-destructive methods.
 - Refence thesis on this.
 - Definite identifiers.
 - “Ilfochrome was, and still is (for those very few of us who still have paper) the only process for producing photographic prints directly from color transparency film. It is a unique direct-positive, chromolytic process that can produce analog-based photographic prints of exceptional depth, luminosity, and color.” – Douglas Vincent.
 - <https://www.photomemorabilia.co.uk/Ilford/Cibachrome.html>
 - <https://douglasvincent.com/ilfochrome/>
- Cibachrome Materials
 - How the paper is made.
 - Dyes, emulsions, coating.
 - Pictures of factory.
 - Maybe a brief history of the materials?
 - Cross section pictures.
 - Silver Dye Bleach.
- Process
 - <https://douglasvincent.com/ilfochrome/darkroom-printing.html>
 - Christopher Burkett's video on developing a Cibachrome.

- Simpler step-by-step explanation or poster graphic.
- Select Image: choose a colour-positive original transparency film.
 - Picture = request a picture of colour positive films.
- Contrast Masking: how to make one and what it does.
 - Picture = request picture of contrast masks next to OG transparency or of set up for making one.
- Exposure: methods of exposing the Cibachrome material and what it does.
 - Picture = request picture of the exposing process or take screenshot from C.B.'s video.
- Development: silver compounds and image formed through layers (?).
 - Picture = from poster or entrance to processing machine.
- Bleaching: bleach activated proportional to silver formed, erodes (?) silver and dye layers to form picture.
 - Picture = exit of machine or picture from an info poster.
- Rinse and Drying: bleaching is halted and print is water rinsed to remove excess. Dry by hand or hung with clips, then allow to cure at least 24 hours.
 - Picture = find a Cibachrome print or a picture of one hang drying.
- Longevity
 - Stability tests and some explanations about what they are.
 - “Fading in the Dark”
 - No time prediction available for any density loss in dark at room temp and 40% or 60% Relative Humidity.
 - Cibachrome materials altered by High temps and High humidity can be partially regenerated/fixed with a chemical process – because “even at high temp and high humidity, irreversible oxidation is very slow”
 - Complaint print – ask if this complaint was before or after the stability tests
 - “Light Fading”
 - Light stability test preformed at 40 Celsius, 35% RH – far superior to other chromogenic papers.
 - Ciba dye density loss after 160 days = 1/3 of loss in other chromogenic papers. Ciba dye density loss after 360 days = 75% of loss after 160 days for other chromogenic papers.
 - High humidity and High Temp increase light fading.

- Talk about Cibachrome's archival properties.
- Cibachrome Micrographic Film – high archival stability and high resistance to light fading (similar to all Cibachrome products).
- Due to resistance to light fading as well as dark storage fading, very good for archival use.
- Include photos of:
 - Promo pamphlet pictures for archival use.
 - ID photo booth.
- Contrast
 - Since it's an analogue printing process one can manually alter the exposure, leading to great contrast.
 - Since it's a positive process the contrast is also great.
 - Mention how some find the prints too "contrasty."
- Colour
 - Mention dyes already in emulsion layer, and how these colours are more organic?
- Detail
 - More organic than digital prints?
 - Prints are very sharp, the high image resolution, a result of the anti-light scattering characteristics of the dyes themselves.
 - "The paper has a resolution higher than that of the human eye lies. The depth of color and the brilliance of Ilfochromes are unparalleled." - Heino Heimann.
 - <https://www.heinoheimann.de/Information.html>

E.2. Main Page (Scroll Down Format) Screenshots:



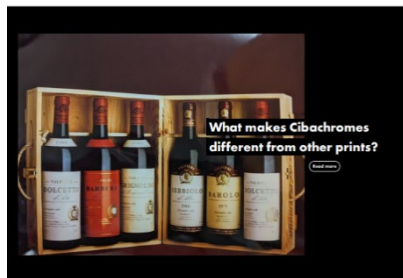
What is a Cibachrome?

[Read more](#)



The art of developing a Cibachrome print

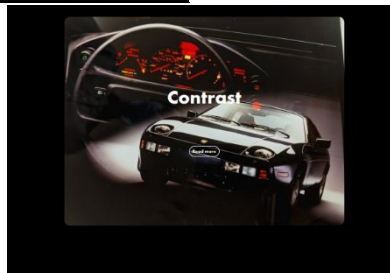
[Read more](#)



Longevity

Want to make it last? Make it Cibachrome.

[Read more](#)

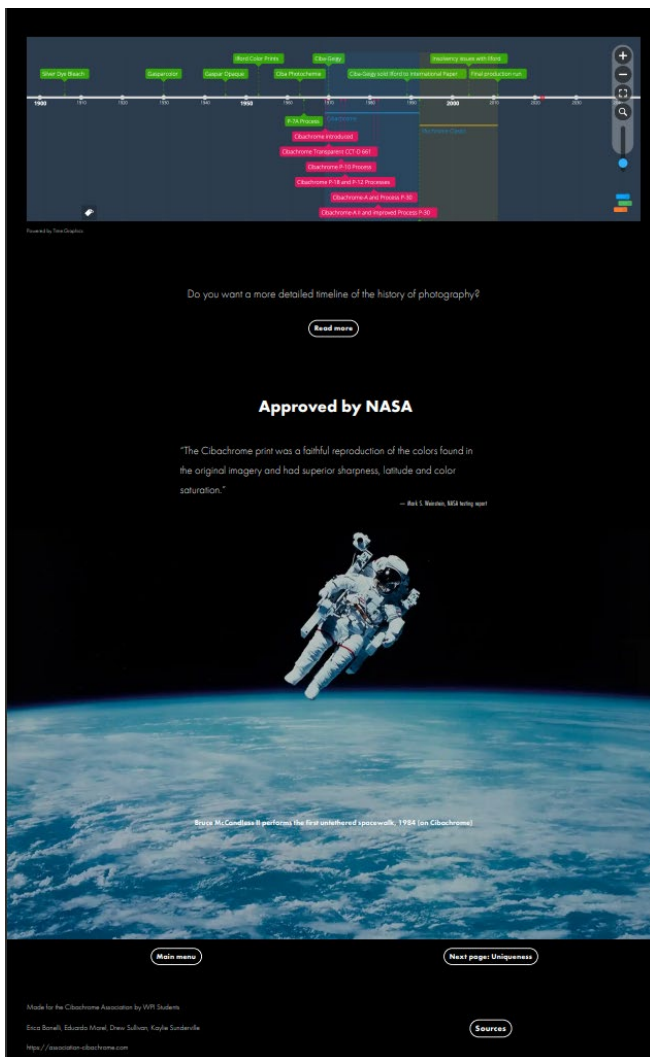


Colour

[Read more](#)



E.3. What is a Cibachrome Section Screenshots:



Do you want a more detailed timeline of the history of photography?

[Read more](#)

Approved by NASA

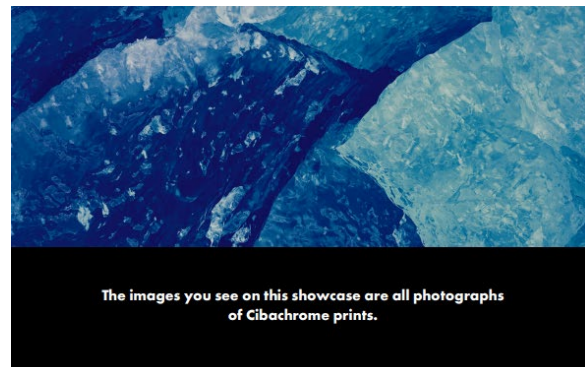
"The Cibachrome print was a faithful reproduction of the colors found in the original imagery and had superior sharpness, latitude and color saturation."

— Neil L. Armstrong, NASA being sent

Bruce McCandless II performs the first untethered spacewalk, 1984 (in Cibachrome)

[Main menu](#) [Next page: Uniqueness](#)

Made for the Cibachrome Association by VPP Studios
Erica Bonelli, Eduardo Moral, Drew Sullivan, Kayla Sunderville
<http://association-cibachrome.com> [Sources](#)



What is a Cibachrome?



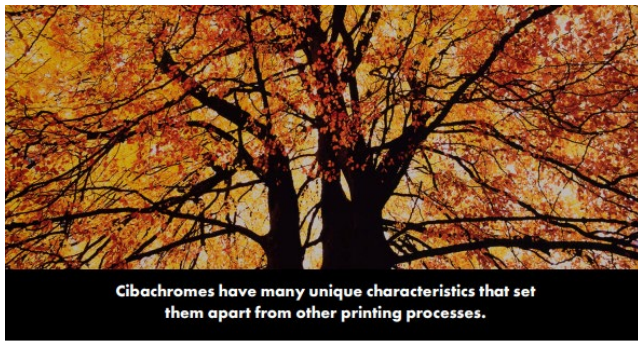
Cibachromes are among the most renowned color printing processes. A Cibachrome is a high quality colour print made from a colour transparency enlarged directly onto reversal colour paper. The paper is unique in that dyes are incorporated into the emulsion on the paper instead of being formed chemically. This gives exceptional colour image brilliance. Chromogenic prints are the traditional type of photographic paper, where the dyes are formed by a chemical reaction when developing the photograph.



Cibachrome's history

The Cibachrome process was invented in 1903 by Dr. Bela Gaspar. The process was based on the Silver Dye Bleach process, attempted unsuccessfully in 1906 by Dr. J.H. Smith of Zurich. Since the original Cibachrome material was introduced there have been various updates and variations, throughout various different successive companies. Below is a timeline of Cibachrome's milestones.

E.4. Unique Section Screenshots:



Properties of a Cibachrome

- Do not require cold storage such as Chromogenic prints do.
- Provides very sharp and detailed images due to layer that minimizes light scattering.
- Due to the fact that the dyes are incorporated in the paper, these dyes are higher quality than those created through a reaction.
- Very stable for archival purposes.
- The paper's base is polyester which makes it very sturdy and flat. The polyester is also chemically inert leading to a very neutral but bright white which is important for great color reproduction.



Traditional chromogenic processes created photographs by the reaction of two chemicals on the print material. Cibachromes are based on the silver dye bleach, where the dyes are all incorporated in the paper and they are bleached to reveal colors. If one were to scratch a Cibachrome paper they would be able to see the three layers of dye (below). These prints were always renowned for their color saturation and greater storage stability, especially when compared to chromogenic processes.

How to identify a Cibachrome.



It is sometimes difficult to identify Cibachrome prints due to the diverse materials produced with this process. Many of the identifiers commonly used to identify these prints are often not unique to Cibachromes, leading to misidentification. There are differences that one can look for that are "definite identifiers," as term proposed by Suk-fung Chui in her thesis Cibachrome Inside Our Identification of Silver On Resin Prints. These identifiers are helpful when comparing a Chromogenic print with a Cibachrome. Traditional identifiers are also useful in determining the material of a photograph, but one must be wary of the fact that Chromogenic prints and Cibachromes often have similar identifiers, but they have completely different archival characteristics.



Image with bleach holes present



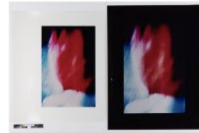
Integrated back at image above, highlighting bleach spot

Azo dyes and bleach holes

Azo dyes are only present in Cibachrome prints, identifying these dyes are the only definite identifier of a Cibachrome print. For one to determine the presence of Azo dyes in a print, a spectrometer is used, the readings of the different dyes will confirm or deny the presence of Azo dyes. One can also look for "bleach holes" which are small spots without dye as a result of the bleaching process. The presence of these white indicates Azo dyes. While necessary are required for these tests, they are non-destructive.

Back print

Cibachrome paper can have symbols on the back side that identify the manufacturer or production. If these symbols are present they are an easy way to identify whether the print is a Cibachrome or another material. They are often not present even on Cibachromes, so they are not always a reliable indicator.



Black borders

Since Cibachrome paper is completely black before exposure, the unexposed edges will remain black. This is the opposite of Chromogenic processes where the edges remain white. This identifier can be deceiving because there are ways of making the borders of a Chromogenic print black.

Visual Characteristics

The highest visual characteristics of Cibachromes are often used to identify these. High color saturation and high contrast are associated with Cibachrome prints, but they are not properties exclusive to these prints or even not the world's other producing these qualities. The way high gloss finish of the material's surface is also often an identifier. This high gloss is due to the base of the print, which can be used by chromogenic processes too, gloss is not a definite identifier of Cibachromes.



[Previous page: Introduction](#)

[Main menu](#)

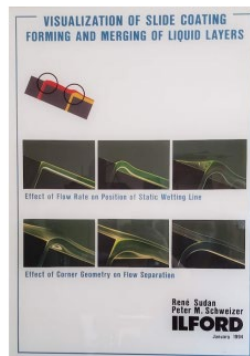
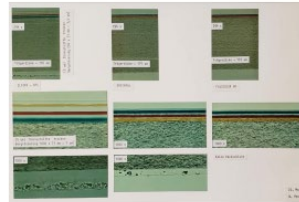
[Next page: Materials](#)

E.5. Producing Cibachrome Prints Section Screenshots:



Cibachrome cross cuts

- The print material is made by layering dyes in a coating machine. These dye layers have a larger buffer between them than other contemporary colour prints.
- The image to the right shows crosscuts of a Cibachrome print compared to contemporary colour print materials available, with the Cibachrome labeled "ILFORD - CPS" on the left.



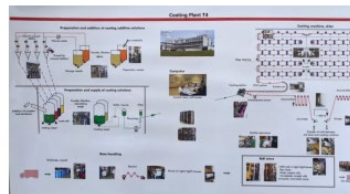
Informational graphic of slide coating process

Forming Emulsion Layers

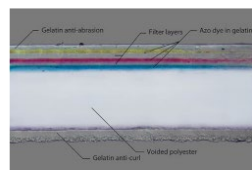
- The thin layers of Cibachrome paper are formed with slide coating, as shown in the informational posters shown. Each layer of dye (magenta, cyan, yellow) is laid on top of the other with this technique.



Small scale coating mechanism



An informational graphic describing the coating processes used to make the Cibachrome Print materials



Silver Dye Bleach

- Cibachrome material utilizes the Silver Dye Bleach process, which is the reason the material has so many unique properties.
- On the polyester base of the material there are three layers of dyes: magenta, yellow, and cyan.
- These layers are bleached to expose the different layers of colour.
- Each layer of dye has a filter layer of the opposite colour, for example: on top of the magenta dye there is a green filter layer. This is to minimize light scattering and to provide increased detail.

"It is recommended that Cibachrome Print material be used in place of Kodak Ektachrome paper because it is more easily processed, the cost is equivalent, and it provides improved resolution, color quality, and image fade resistance."

-Hawson, M. S. Photochrom working for NASA

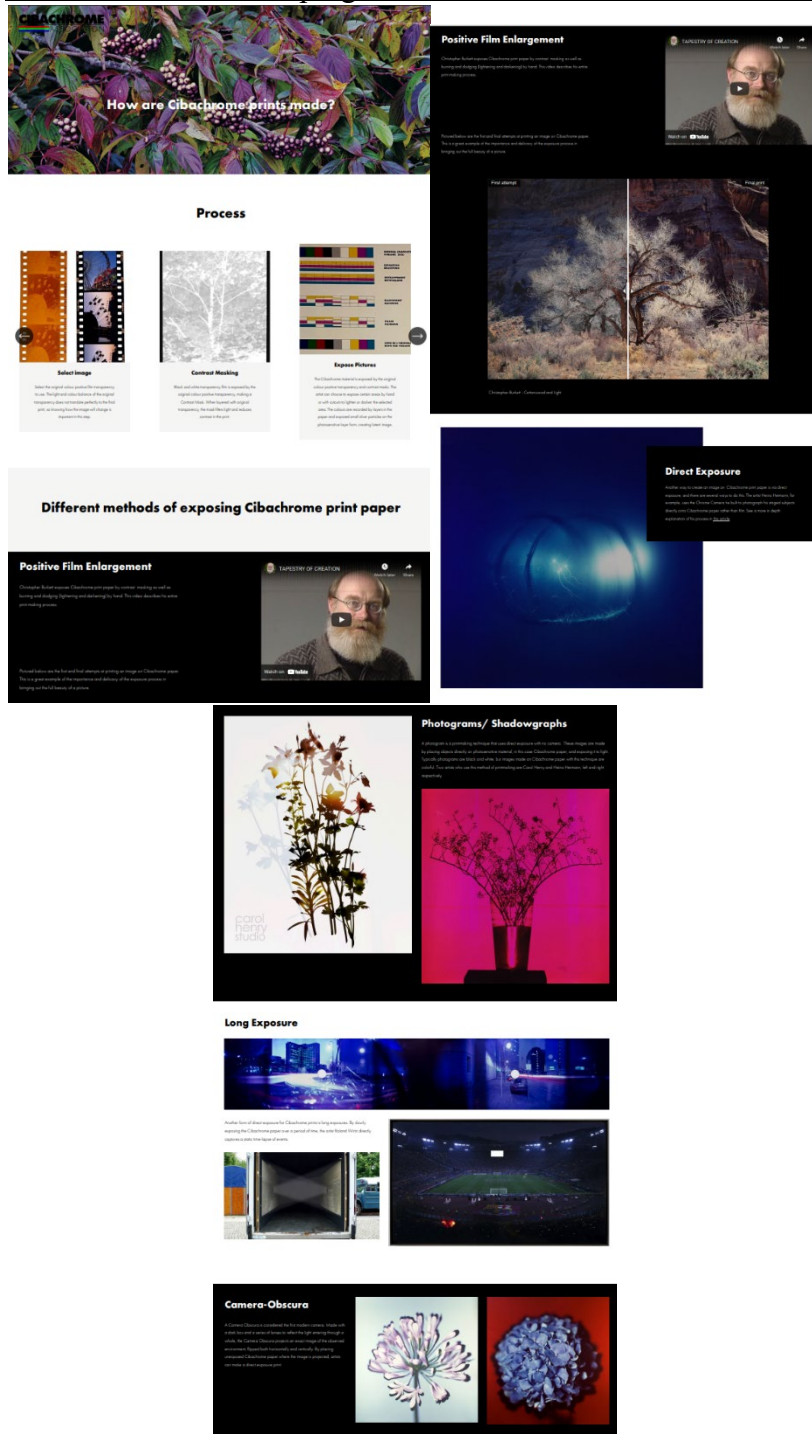
PHOTO: © FREDD FRAME
ALPACHROME CLASSIC CLASSIX

[Previous page: Materials](#)
[Main menu](#)
[Next page: Developing a Cibachrome](#)

Made for the Cibachrome Association by WIP Students
Erica Benati, Edmund Moad, Dana Sultan, Kayla Sundballe
https://association.cibachrome.com

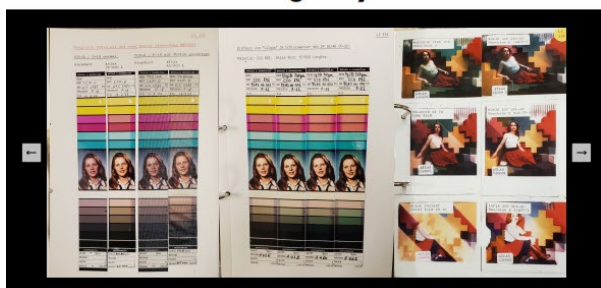
[Source](#)

E.6. The Art of Developing a Cibachrome Print Section Screenshots:



E.7. Longevity Section:

Longevity



Longevity

Light Fading

- Light stability test performed on 400 Celsius, 35% RH – far superior than other chromogenic papers
- Cibachrome dye density loss after 150 days = 1/3 of loss in other chromogenic papers. Cibachrome dye density loss after 360 days = 70% of loss after 150 days for other chromogenic papers.
- High humidity and high temperature increase light fading

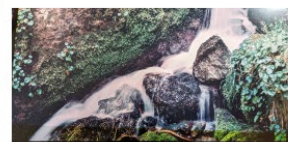
Fading in the Dark

- No time predictor available for any density loss in dark at room temperature and 40% or 60% Relative Humidity because the fading would take far too long
- Cibachrome materials slowed by high temperatures and high humidity can be partially regenerated if fixed with chemical processes – because even at high temp and high humidity, irreversible oxidation is very slow



How to make it last

- Cibachrome prints can be sealed with or mounted on various materials to help preserve them. Choosing the correct materials is important because while some help preserve the image, others will enhance deterioration.
- When displaying a print, ensure the environment does not reach high temperatures or high relative humidity as this will speed up the fading of the print. Select lighting carefully, minimizing UV exposure.
- When in dark storage, avoid high temperatures and high humidity. Although most of the chemical alteration arising from dark storage in these climates can be fixed, it is still detrimental to the health of the print.



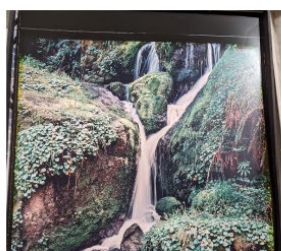
Archival Properties

- Advertised as archival material
- go into what archival pamphlets said



Historical Use in the World

- Due to the colourfast properties of Cibachrome prints, they were used as standard for passport and ID photos.
- Photo booths around world with automated Cibachrome Print processing provided quick access to these high quality ID photos.

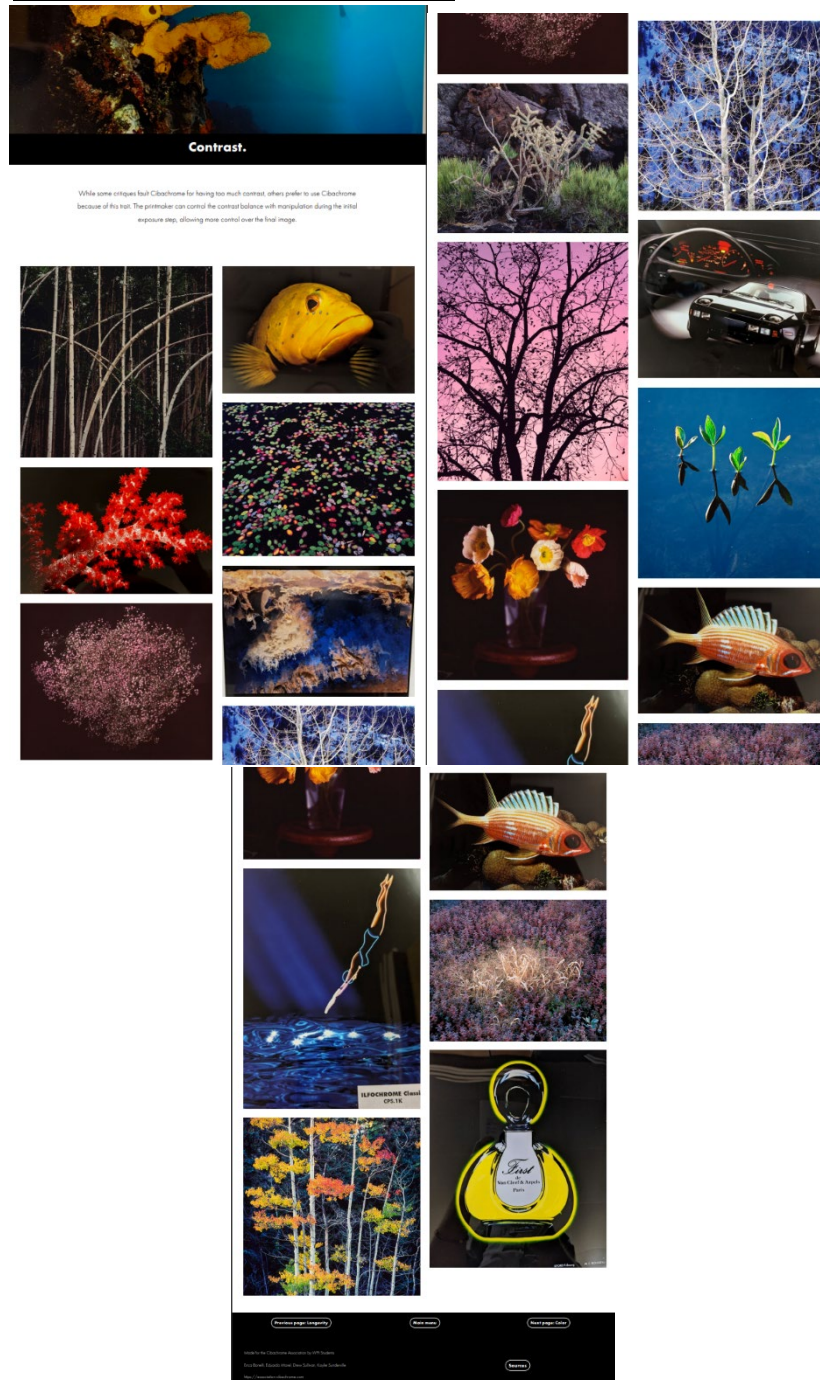


How to make it last

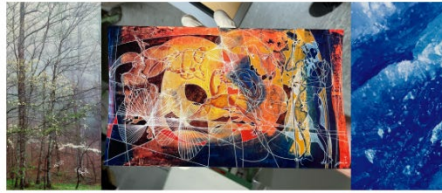
- Cibachrome prints can be sealed with or mounted on various materials to help preserve them. Choosing the correct materials is important because while some help preserve the image, others will enhance deterioration.
- When displaying a print, ensure the environment does not reach high temperatures or high relative humidity as this will speed up the fading of the print. Select lighting carefully, minimizing UV exposure.
- When in dark storage, avoid high temperatures and high humidity. Although most of the chemical alteration arising from dark storage in these climates can be fixed, it is still detrimental to the health of the print.



E.8. Contrast Section Screenshots:

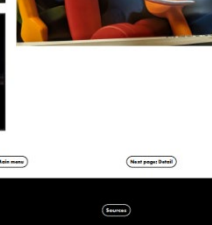
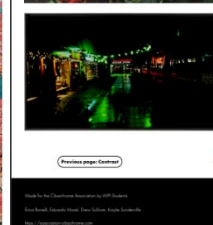
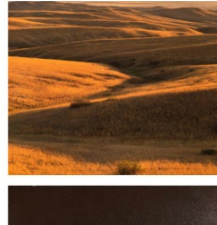
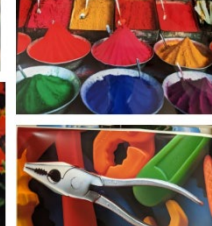
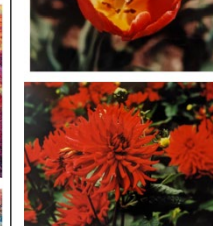
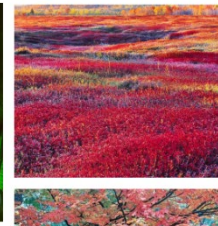
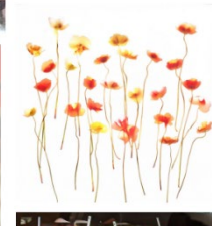
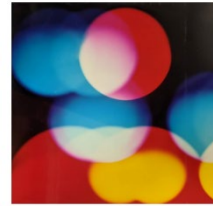
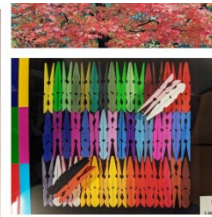
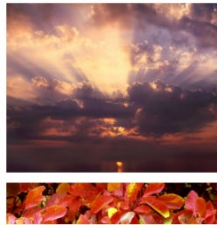


E.9. Colour Section:



Colours of Cibachrome

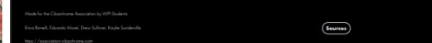
Cibachrome prints have the advantage of using Azo dyes, these are known for their saturated and deep colors. These dyes are able to be used because they are put on to the Cibachrome material, with traditional chromogenic processes the dyes are the result of a chemical reaction. There are not many dyes that can be created as a result of a reaction, this is why these dyes are not as stable. With Silver Dye Bleach materials such as Cibachromes there are far more choices of dyes to use within its emulsion layers, the Azo dyes are particularly colorful and resistant to fading.



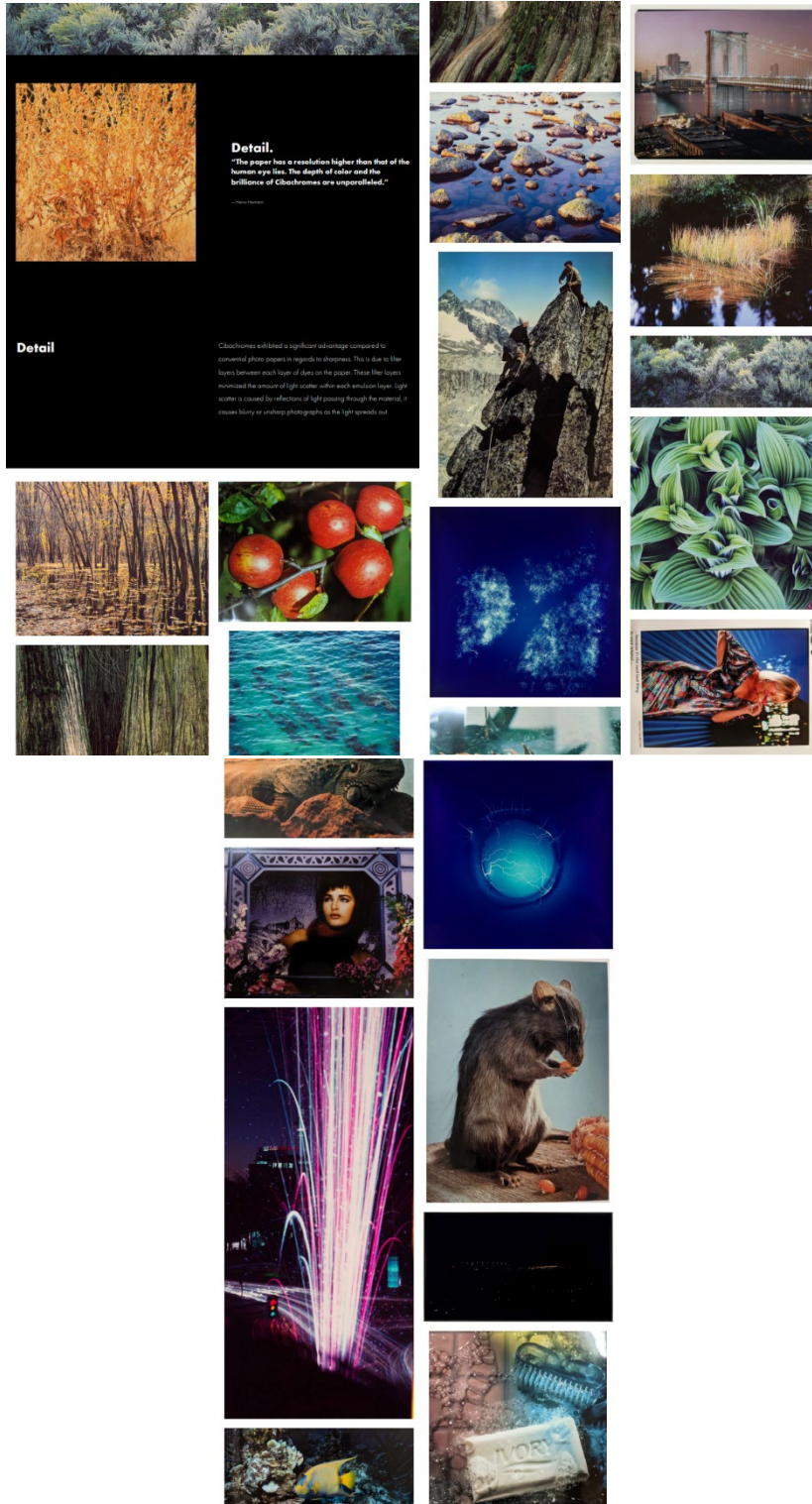
[Previous page: Colour](#)

[Main menu](#)

[Next page: Dots](#)



E.7. Detail Section Screenshots:



Appendix F – Promotional Plan

The following promotional plan is based on data acquired through our survey, interviews, and background research. It is recommended that the Cibachrome Association monitor engagement on the posts and advertisements put out. This can be done using the built-in tools on Instagram and YouTube. If a certain type of posts or advertisement receives more engagement than usual, it would be best to make more posts and advertisements of the same type.

For the purpose of this promotional plan, all times are in our sponsor's local time unless otherwise noted. For a majority of the year, they observe Central European Time (CET: UTC+01:00), but during the summer months they use Central European Summer Time (CEST: UTC+02:00).

Currently, this promotional plan is written solely for Instagram and YouTube and provides a good starting ground. After picking up engagement on these two platforms, the Cibachrome Association could expand to other platforms, but taking on too many at once at the start is not ideal.

F.1. Instagram

- Instagram Handle:
 - @CibachromeAssociation
- Profile Photo:
 - Cibachrome Association Logo
- Bio Information:
 - Write a short one sentence description of the Cibachrome Association.
 - Include link to YouTube and other social media platforms under this sentence.
 - Link website under the website option.
 - This will create a button on the profile that allows users to jump to your website. Alternatively, you can change this to the showcase and have users be able to jump to the virtual showcase right from your Instagram page.
- Hashtags:
 - #Cibachrome
 - #CIBA
 - #photography
 - #virtualshowcase
 - Only include this one if the content is about the virtual showcase)
 - If there is a specific topic that is being posted about a lot, create a quick, one-to-two-word description of that content and use that as a hashtag on any similar content.

- Types of Content:
 - Photographs
 - Can be one or multiple.
 - Short videos
 - Posts to Instagram feed should only be 10-20 seconds, posts to Reels and IGTV can and should be longer (aim for less than 2 minutes).
- Posting schedule and guidelines:
 - When to post content:
 - Mealtimes (will get more of a European audience):
 - 7:00am
 - 12:00pm
 - 6:00pm
 - Post content at least twice a week
 - Can be any combination of photos and videos each week, but goal should be to have one out of every four posts being a video.
 - “Post” is defined as any content posted to the Instagram feed, uploaded to Reels, or posted on IGTV.
 - Best recommendation would be to post to the feed and Reels most, with occasional longer videos going on IGTV.
 - Not using IGTV is also perfectly fine as it may not get as high levels of engagement as the other options.
 - Make sure to include the hashtags at the end of each post to allow algorithms to show this content more consistently to people who interact with similar content.
 - A majority of these posts should be focused on the Cibachrome Association, its archive, the mansion, and any work/events the organization is doing.
 - An occasional post (maybe once a month) about the showcase is a good idea, but advertisements should focus on promoting the showcase itself
 - While language may be an issue for text within the content, it is possible to have the content appear on multiple slides of the same post but translated. Additionally, writing the caption in multiple languages is advised, but not necessary as Instagram *should* offer the ability to translate automatically.
- Advertisement schedule and guidelines:
 - When to schedule advertisements:
 - NOTE: These times can, and should, be scheduled based on the time zone of the target audience (i.e., if trying to reach a target audience in Marly, use CET/CEST, and if trying to reach a target audience in Worcester, use EST/EDT).
 - Mealtimes (applicable to the US and Europe):
 - 7:00am
 - 12:00pm
 - 6:00pm
 - Commutes (applicable to most of Europe and to large cities in the US):

- 7:30-8:00am
 - 5:00-6:00pm
- These should all be focused on the virtual showcase.
 - Some local ads can be focused on events the Cibachrome Association will be hosting if wanted.
 - Another exception would be if there was a large event or lecture being live streamed in the upcoming days/weeks.
- Be sure to post to different target audiences at different times to engage people in different areas of the world.
 - Similarly, be sure that the language the post and content are written in are tailored to the target audience (i.e., a post in Worcester should be written in English, while a post in Marly could be written in French with an option to read it in English or German too).

F.2. YouTube

- Account Name:
 - Cibachrome Association
- Profile Photo:
 - Cibachrome Association Logo
- Bio/About Channel Information:
 - Write a short one sentence description of the Cibachrome Association.
 - Include link to Instagram and other social media platforms under this sentence.
 - Also include a link to website under the website option.
 - Alternatively, you can change this to the showcase and have users be able to jump to the virtual showcase right from your YouTube channel.
 - Including both is also an option.
- Hashtags:
 - #Cibachrome
 - #CIBA
 - #photography
 - #virtualshowcase
 - Only use this one if the content is about the virtual showcase.
 - If there is a specific topic that is being posted about a lot, create a quick, one-to-two-word description of that content and use that as a hashtag on any similar content.
- Types of Content:
 - Short videos
 - Short 2–5-minute videos (examples could include videos about the Cibachrome process or the history of the Cibachrome Association)
 - Long videos
 - Longer 10–25-minute videos (examples could include lectures, events, detailed history, archive tours, or an overview of the Cibachrome process)

- In general, videos longer than 25 minutes will not get much engagement. There are very few exceptions to this, and the most common one is lectures or museum talks.
- Posting schedule:
 - When to post content:
 - Mealtimes (will get more of a European audience):
 - 7:00am
 - 12:00pm
 - 6:00pm
- Advertisement schedule:
 - When to schedule advertisements:
 - NOTE: These times can, and should, be scheduled based on the time zone of the target audience (i.e., if trying to reach a target audience in Marly, use CET/CEST, and if trying to reach a target audience in Worcester, use EST/EDT).
 - Mealtimes (applicable to the US and Europe):
 - 7:00am
 - 12:00pm
 - 6:00pm
 - Commutes (applicable to most of Europe and to large cities in the US):
 - 7:30-8:00am
 - 5:00-6:00pm
- As mentioned in the Instagram section, be aware of the language difference between target audiences. This will be especially tricky with videos, so it is recommended that subtitles or closed captions in a variety of languages be included.

F.3. Management Platforms

- Consistency is key!
 - If the account posts multiple times a week one week and then disappears for a few weeks, any traction and engagement that was built up before the break has been lost.
 - It is possible to schedule posts using tools like the Facebook Business Suite, Sprinklr, Hoot Suite, YouTube's built-in tools, and other such management tools.
 - If it is necessary to take a break from posting for a week or so, either schedule posts in advance to post during that break, or post something indicating the break and plan to have some sort of major content release (an update to the showcase, the announcement of an upcoming event, a press release, a new YouTube video, etc.) after that break.
 - These tools can also be used to schedule out a whole week's (or even a whole month's) worth of content to be posted. Setting one day aside each month to create and schedule all the content posts for one week is a great way to ensure consistency in posting.