

**Empowering Airbrush Design for Social Innovation:  
Building a Micro-Community Based Creative Platform**

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## **Abstract**

Airbrush is a mechanical painting tool using compressed air to spray paint onto various surfaces. Since its introduction with the first patent in 1876, commercial artists and illustrators applied its seamless color blending effects in a wide range of creative areas, and the medium reached its peak in popularity between the 1950s and late 1980s. Now, the medium is facing the challenge of being marginalized in the mainstream design industry due to the advancement of digital technology. To begin a critical inquiry of this situation, French art critic Nicolas Bourriaud's concept of "Relational Aesthetics" will be the main theoretical reference for this thesis. Viewing the medium as a relational art, this thesis connects Italian design theorist Ezio Manzini's "Bottom-to-Top" design methodology to facilitate the delivery of a community-based Airbrush Design platform. This platform will act as a catalyst to empower people to use the medium for social recognition and to mediate between individual (private) and institutional (public) spaces.

## **Dedication**

I want to dedicate this thesis work to my family:

To my Parents: for providing me the opportunities and giving me freedom to choose the path of my life.

To my wife: it is your sweet love and support that keeps me going!

To my two beautiful children: you are my inspiration and source of energy!

I love you all very, very much!

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## Introduction

From ideological and material perspectives, technology constantly changes the way we design the world. According to Luis Suarez-Villa (2012), this trend has exacerbated many social problems such as wealth and power disparities, obsolescence of traditional media, and the marginalization of people with less access to technological and material resources. Specifically, in the field of design, Airbrush Design as an artistic practice faces the challenge of being replaced by new technologies.

Taking the practice as a case study, this thesis responds to the decline of Airbrush Design applications in the mainstream design industry by first asking a basic question: “what is the value of Airbrush Design in the contemporary social and technical environment?” To conduct the critical inquiry of the medium, I look into the term “Rational Aesthetics” coined by French art critic Nicolas Bourriaud (2002), in which art is described as a relational representation of human interactions in its social context. I argue that Airbrush Design is a relational medium with inherent social connectivity. That said, this research is not intended to judge the issues of aesthetics or techniques, but to explore the practice of the medium as a catalyst to empower people through access to technology and resources for social engagement.

In search of a way to empower people from the ideological perspective of Bourriaud’s relational aesthetics, the Italian design academic Ezio Manzini’s (2014, 2015) “Bottom-to-Top” approach as a strategy to mediate between the social differences and inclusive social imagination could work as a design methodology to deliver the catalyst. To facilitate the vision of “everyone designs,” this thesis proposes to design a micro-community-based Airbrush Design platform that provides easy access to people to explore their creativity with the medium. The design objective of this platform is to mediate a space between the public (institutional) and private (individual).

To meet this objective, this platform consists of two major components: the mobile airbrush Fablab, and an interactive website. The Fablab is a physical space to provide expert facilitation to support and participate in the Airbrush Design. The website is an interactive digital space designed for sharing ideas and learning through users’ participation and collaboration.

Ultimately the design process evolves into a means of sharing and co-existing in today's fast-changing social, technical and economical contexts.



## Chapter 1: Framing the Critical Issues of the Marginalization of Airbrush Design

Airbrush is a mechanical painting tool (Figure 1). The earliest airbrush patent dated 19th September 1876, was introduced by Frank E. Stanley as “an improvement in atomizers” (Soltan, 2015). It uses compressed air to spray small particles of paint onto various surfaces.

Airbrushing was especially popular from 1950 to the late 1980s, used by commercial artists and illustrators in many creative areas, such as visual art, architecture, industrial design, advertising, illustration, graphic design and craft making. The tool complemented the rise of popular culture and consumer advertising. However, due to the advancement of digital technology, Airbrush Design has been phased out of mainstream design production methods since the 1990s. As a result, the medium has been gradually marginalized in the design field. It became a specialized art and design practice in the individually based customization and personalization market that embraces individuality and uniqueness for self-expression. The airbrushing style is subject to the debate of high and low taste in society. This chapter provides a preliminary background analysis of the medium as a diminishing discipline practice in the digital age.

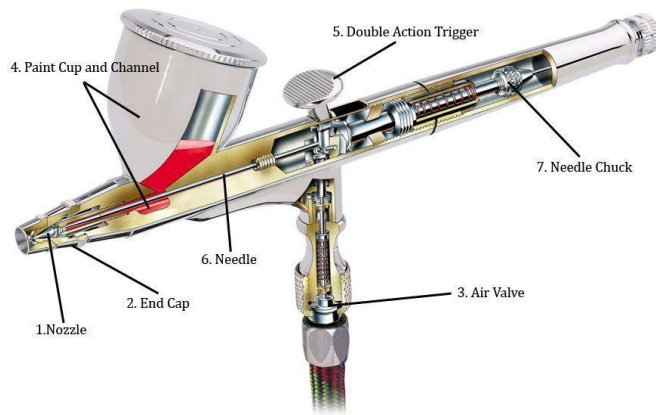


Figure 1:  
Modern Airbrush

Airbrush Design was a popular technical tool in art and design disciplines before the digital age. It was widely applied and made significant headway in graphics application in the 1930s. For example, influenced by Art Nouveau and Bauhaus philosophy led by Walter Gropius, Wassily Kandinsky and other eminent artists, posters using airbrushing painting method are seen as a synthesis of art and technology with aesthetics in modernist graphic styles of simplicity, order and clean colors. Airbrush Design became a popular form of commercial art during the 1960s,

following a long period of demand for flat colors in clean, modernist graphics style. It gave many creative opportunities to illustrators such as David Jackson (Figure 2) and Terry Pastor to develop their narrative illustration styles. It became an instrument of visual art in the exploration of new styles of painting, such as in the work of Peter Sedgley, Paul Sarkisian, Ben Schonzeit and Peter Phillips. This style ranges from surrealist, modern, abstract to narrative, photo-realistic and pop art (Curtis & Hunt, 1980).



Figure 2: David Jackson, self-promotional illustration. Date: 1978

Since the early 1990s, digital technology has driven changes and Airbrush Design has been gradually replaced by new digital design tools such as the image editing software Adobe Photoshop for photo retouching needs and 3D rendering software for rendering of realistic images. In the area of printing, wide format digital printers that produce large advertising posters, murals, outdoor billboard and other commercial commodities are also reducing demand for Airbrush Design. As a result, the market for the medium has been declining in the past three decades and Airbrush Design is often seen as an outdated technique and style.

In the commercial based design field, Airbrush Design is marginalized as a craft service and often expressed as a one-of-a-kind craft. It delivers designs and individualized commodities such as high-value airbrush car designs, sport equipment or street fashion like graffiti apparel.

Airbrush Design survives as a specialized medium. It is controlled by the marketplace and it is utilized as a “filler” medium to create add-on value for profit-driven product or service. It produces the unique “eye candy” effect that draws people’s attention to the subject. Airbrush body painting, another application example, is used on special occasions in both private and public functions to create spectacle artwork for individual expression or for marketing promotion.

Although the cost for commissioning Airbrush Design services is increasing, which is good for the artists and designers, its representation in the social realm is diminishing due to the lack of inclusiveness for outsiders. On the other hand, to survive market competition, practitioners tend to favor commercial projects because of higher monetary returns. Thus, it becomes more and more difficult for the general public to see Airbrush Design work in mainstream commercial venues and more difficult for people to commission airbrush practitioners for their individual expression.

From a technological perspective, new technology generates productivity, older technologies tend to become obsolete and are replaced in the production process (Suarez-Villa, 2009). Airbrush Design as a mechanical tool requiring manual operating skill has lost its competitiveness in the mainstream digital-production system. Its application has expanded largely into the specialized areas of personalization and customization, which are generally outside the aesthetic standards in mainstream design professions. Airbrush Design sometimes is considered as a kitsch style, because it is embraced by the grassroots and blue-collar aesthetics that often use street styles such as graffiti art, anti-design, and antagonist approaches of self-expression. The phenomenon of the transformation of Airbrush Design from its former commercial popularity to its present marginalization reflects the challenge of preserving traditional media and craft making processes.

Design researchers, Yung & Piebalga (2013) observed there is great polarization in attitudes toward digital and traditional design tools within contemporary society, between technological enthusiasm and technological antagonism. It is a challenge to mediate between these perspectives. These challenges pose the question of how Airbrush Design as a conventional analog medium can adapt to the current digital environment and acquire its identity as a creative

discipline. Airbrush Design is not generally seen as an independent design discipline practice and is judged mainly for its technical and practical value in some design processes. The lack of serious academic study of the medium means that its contributions to the art and design history have been ignored, especially in respect to its social development.

This thesis posits that Airbrush Design can rely on its technical function to survive today's marketplace by promoting its unique or stylized niche for customers, such as using the hand painting process as a marketing tactic to create individual or customized designs on automobiles or everyday commodities. However, as digital technology is moving towards small scale and desktop-based production systems, new production methods and techniques are developing exponentially (Sudoh, 2005), like design software, digital printing, sublimation transfer and computer numerical control laser cutting. Individuals have more and more options to customize everyday products.

The DIY culture, interpreted by Ellen Lupton (2006) as "Design-It-Yourself" is ubiquitous globally, with people utilizing a variety of tools to design customized goods and be less dependent on corporations for material production and distribution. Airbrush Design will continue to be marginalized if it relies only on its technical value to compete in the digital era. This thesis argues that the medium can survive by using its unique production process and visual style as a strategy to develop a subculture design community. This approach can open new opportunities for self-expression for a broad group of people and increase diverse representation in social spaces.

In conclusion, Airbrush Design once thrived as a mechanical technology and art discipline, but it is now used less often in the centralized production system. Relying on its technical value to compete in a specialized area, airbrush designers may survive and even establish an exclusive niche in the contemporary marketplace. However, since it can be argued that technology is the tool to expand our boundaries, the important question is how to use it to create meaning in an inclusive and diverse society (Heller & Vienne, 2003). This is the real challenge facing by Airbrush Design, as well as all other traditional and digital media.

## **Chapter 2: Social Critiques of Airbrush Design**

Informed by contemporary art critic Nicolas Bourriaud's (2002) relational aesthetics concept, this chapter is focused on examining the social implications of Airbrush Design. The purpose is to establish a social critique that supports further investigation of utilizing Airbrush Design as a tool to resist marginalization in the design industry and the society. It begins by critiquing traditional studio-based airbrush practice which follows the common practice of artists and designers working in private spaces to create artistic production for public consumption. Then, the investigation will focus on analyzing the social presents of Airbrush Design with examples of various applications in both the private and public worlds in contemporary society.

### **The Practice of Airbrush Design**

This thesis asserts that Airbrush Design is a creative practice and that it was one of the most popular art and design visualization media in the 20th century. It was applied in a wide range of artistic production and disciplines before the digital age, ranging from fine art painting to photography, architecture to sculpture, communication design to industrial design and more (Curtis & Hunt, 1980). However, there is an absence of in-depth academic social critical studies of Airbrush Design.

The traditional practice of Airbrush Design is similar to the art practice involving artist, galleries and private patrons. It works in the linear, separated connections between the institutions and individual spaces. As in the case of an artist producing "fine art," where the process is done behind the studio door, and the final artwork displayed in a gallery or delivered to the art collector who has the authority to accept or reject the work (Gorys, 2016). Airbrush Design works in a similar fashion as in the fine art world, but instead of being produced for galleries or art collectors, the commercial works usually are for institutional, corporate or individual clients. From the perspective of artistic production, airbrush artists and designers work within the mainstream design culture dominated by a similar production method.

Commercially, non-mainstream Airbrush Design provides add-on value in design ornaments and surface renderings and supports established design authorities through promotional events. Airbrush Design is also thriving in private spaces for individual creations, delivering customization and serving the alternative tastes of non-mainstream customers. In today's context, this medium has developed a variety of applications, styles, and techniques for different audiences. It is becoming an exclusive or niche choice for people who find its visualization language speaks for them.

Bourriaud (2002) sees art as having the ability to open up communication between obstructed spaces: "artistic activity, for its parts, strives to achieve modest connections, open up obstructed passages, and connect levels of reality kept apart from one another" (p. 8.). Here I argue that the practice of Airbrush Design can open up a space between the mainstream and subculture community in society since it has been serving like-minded communities in both areas. It connects individual tastes and the public space with its versatile applications.

Bourriaud's idea of relational connectivity in art provides an ideological articulation (Bishop, 2012) which would help us understand the social value of Airbrush Design. Airbrush, as a medium in both art and design between the public and private spaces, could perform the social function of increasing inclusiveness. This inclusivity can open up communications and create connections through the interactive, cooperative process between the separate spaces of different stakeholders. In the following sections, I will continue with Bourriaud's critiques of rationale aesthetics to analyze the medium.

### **Airbrush Design as an Interactive Tool with Examples of Human Connectivity**

This thesis argues that Airbrush Design's potential to be an interactive art form comes from its unique method of operating the mechanical devices to produce artworks on many types of surfaces. This characteristic of the medium allows designers to work in a studio-based environment, but also to work in a public space for a viewing audience. When Airbrush Design works as an art process in the public space as an interactive activity, it gives the audience the chance to spectate, or be a part of the creative and making process. For example, Airbrush

Temporary Tattoos, which emerged around the year 2000, are one of the many popular airbrush applications (Figure 3). This temporary tattoo is done by using pre-made stencils in combination with freehand techniques, to apply FDA (Food and Drug Administration) approved body paint directly onto the skin. The chosen tattoo design can be transferred onto the customers as a temporary tattoo which lasts for a few days. The customers can enjoy the artwork themselves and share it with friends. Throughout this process, the Airbrush designer performs an interactive art activity directly with the customers and indirectly with friends of the customers who view the temporary tattoo work.



Figure 3: Airbrush Tattoo Sleeve Design, by Frank Zhang. Year: 2012

This interactive activity transforms the traditional studio-based Airbrush Design into a personal service and a public spectacle that creates the “state of encounter imposed on people” (Bourriaud, 2002, p. 15). The process is between the user, the design and the reception of the design by spectators in public. The customers in this application not only carry the airbrushed temporary tattoo, but also act as the co-producer through the design and making process of the temporary tattoo. It is a form of self-expression as the customers demand that the designers perform on them, and the result is that they show the artwork on their body proudly in the public space.

In this case, airbrush tattoo artwork becomes a way of amplifying individual expression in public spaces to encourage conversation and dialogue. Airbrush temporary tattoos, in this regard, work

as a social connection between people with similar interests. It links them together in a fun, interactive activity. This interactive airbrush application is becoming a popular activity in both commercial and social contexts for private or public events. For example, since 2010, Parks Canada, a division of the federal government, has been using airbrush temporary tattoos as an interactive activity in its Outreach program to educate the public and promote national parks.

### **Airbrush Design as a Relational Art Between Public Spaces and Private Spaces**

Referencing Bourriaud's relational art concept, I argue, the interactivity of Airbrush Design creates relational connectivity in many different spaces. For example, the social interaction of Airbrush Design can be achieved through the public murals, community art and graffiti that utilize airbrush techniques. Airbrush painting can also be found in customized designs on personal belongings such as automobiles and motorcycles. Although these two types of airbrush paintings in public and private spaces may have different purposes and messages, airbrush is the common tool.

With similar spray tools and airbrush techniques, artists can create vernacular visual language that is shared by the selected community or by individuals. These visual narratives are often codified with the local history, culture or social values in everyday images with individual styles and aesthetic taste (Danysz & Corkett, 2016). Examples can be seen in Toronto urban graffiti murals located near Bloor St. West and Bathurst Street (Figure 4). These murals were created as city-funded projects on private properties, which unified the neighborhood with stylized graffiti painting in airbrush and air spray styles.





Figure 4: Graffiti walls. Location: Bloor St. West and Bathurst St., Toronto, Ontario, Canada.

In these murals, Airbrush Design works as a tool for visual communication in the public space by using vernacular visual language, such as the bus and shop signs, to create dialogues and construct an urban identity for the place. This creation ability of Airbrush Design, as an artistic medium for shared space, could be viewed as a “social interstice,” as described by Bourriaud (2002) in relational aesthetics. In this regard, I claim that the medium works as a relational art form, as it opens up a passage between the private and the public spaces, with its connectivity and inclusivity involving diverse social groups and individuals.

The function of Airbrush Design in public art goes above and beyond its technical advantage of working on different surfaces ranging from brick walls to metal finishes. By creating images on large wall surfaces, the designers are expressing themselves, conveying messages to educate and influence the general public. Airbrush Design is known for its ability to produce realistic rendering effects. This visual style is able to send messages from the creator to the public viewers clearly and directly, without the ambiguity of abstractions. This realistic rendering technique has been the visual style signature of Airbrush Design since the 1960s and was one of the reasons it was a favorite medium for commercial designers and illustrators for several decades until the 1990s.



Figure 5: *Oh Canada*. Location: 15243 Yonge Street, Aurora, Ontario, Canada  
Leading Artist: William Lazos. Year: 2001.

In the context of public space, an excellent example of Airbrush Design is found in the work of Toronto based mural artist, William Lazos who has painted over 200 murals from the 1980s to 2018. He applies Airbrush Design in a photorealistic style to tell a story to his viewers. In his public mural, *Oh Canada*, located in Aurora, Ontario, he used airbrush painting to combine historic events and iconic portraits to narrate the nation-building story of Canada (Figure 5). He articulated a sense of national pride showing great achievements and memorable moments. This narrative airbrush mural in realistic style, not only became a local attraction but also a site for photo taking for posting on the social media. Through this mural, Airbrush Design became relational art for the local citizens, visitors to the site as well as those seeing the photo on the internet.

The relational connectivity created by Airbrush Design for street art such as graffiti design differs from the connectivity of customized art, airbrush motorcycle design or personalized T-shirt design that is shown and shared in public spaces. As a unique medium to apply the design on different surfaces, Airbrush Design has the power to showcase the individual's aesthetic choice in public. This type of visual presentation can be seen as an amplified own expression that aims to draw attention and to make an impression publicly. Because the spectrum of airbrush

techniques and styles can be tailored to individual aesthetic needs and taste, here Airbrush Design has become a tool for individuals to express themselves without relying on the mass-production based design system. This allows people to access personalized design production on a small scale with relatively cheaper cost to express themselves. From this perspective, I argue, Airbrush Design could be considered as the “catalyst” to facilitate social connectivity and inclusivity from Bourriaud’s (2002) relational aesthetics viewpoint.

This customized Airbrush Design for self-expression on personal commodities can often take an unconventional or even provocative position, sometimes challenging or even attempting to break the boundaries of what is acceptable in society. In any case, the versatile techniques and styles in custom Airbrush Design offer a range of opportunities for individual expression through visual statements in the public sphere. As Bourriaud (2002) analyzed: “present-day art show that form only exists in the encounter and in the dynamic relationship enjoyed by an artistic proposition with other formation, artistic or otherwise” (p. 21) which we can find in those features in the Airbrush Design examples viewed above. The artistic expression that is created by Airbrush Design in private space works as an agent for individuals to encounter others in public, to gain social acceptance and claim a share of public spaces. Thus, in this way, the medium can be seen as a relational art that connects individuals to publics and stimulates social interactions and dialogue.

### **An Inclusive Space, In-between the Public and Private Spaces**

Jeremy Rifkin (2011), the author of *The Third Industrial Revolution*, pointed out that the advancement of technology empowers individuals with creative freedom and reduces dependence on a centralized production system. Similarly, Ellen Lupton (2006) has claimed that the current phenomenon of desktop publishing technology allows for micro-production of individuals’ creations. Such a trend of empowerment is not limited to the desktop technology of digital publishing, but to other media as well. I assert that Airbrush Design could be viewed as an operation in Lupton’s “Design-It-Yourself” (DIY) process. Because of its versatile adaptability to work in all types of material and with all walks of people, the customization in

airbrush culture belongs to the self-initiated design and making process. It embraces all types of creative opportunities from individual hobbies to subculture fashion styles for self-expression.

Technically, Airbrush Design is widely connected to mechanical, analog and digital production processes from digital to physical spaces. For example, the computer numerical control cutting technology is used in stencil making in addition to the handcraft method; image editing, and vectoring software are used in generating preliminary designs; digital projectors are used in transferring designs to painted surfaces; laser engraved, and 3D printed products utilize Airbrush Design for visual effect. In mechanical and industrial production, airbrushes are used for creating quality finishes such as polished high glossy surfaces and smooth color blending effects.

Airbrush Design as an inclusive medium has evolved into many levels in custom DIY culture: anything can be airbrushed, from industrial production to individual design of everyday objects. In the context of everyday life, Airbrush Design are found in apparel, beauty and makeup, customized sport equipment design, culinary design, etc. Behind the technical and aesthetic versatility of Airbrush Design in the DIY applications, the social meaning of inclusiveness can be traced since the medium is indeed providing many alternative choices to the general public even though they might not be aware of all of them.

Based on the critique in reference to relational aesthetics, instead of viewing Airbrush Design as a diminishing mechanical painting tool, it can be seen that the medium has the potential to bring people together to participate in multi-directional interactivities with an array of choices and opportunities. By utilizing this creative medium as the catalyst in communities, individuals from many different private spaces can reach out to each other by sharing their passion and love (Mahoney, 2017) of Airbrush Design. Thus, the thesis proposes to utilize Airbrush Design's potential for inclusivity so that it can perform its social function, mediating the gaps between public space, individual space, physical space and digital space, and extending Airbrush Design from a tool to a platform that supports everyday innovation for individuals. In next chapter, I will look into a design methodology to connect with Airbrush Design and bring the concept of relational aesthetics into the design context.

### **Chapter 3: A Consideration of the Micro-community Based Co-design Methodology in Airbrush Design**

Informed by Nicolas Bourriaud's (2002) concept of relational aesthetics, this thesis argues that Airbrush Design can perform a social function in the areas of inclusivity and connectivity. To connect those spaces to resist marginalization, the Italian design thinker Ezio Manzini's (2015) human-centered co-design methodology could work well with the concept of relational aesthetics. This chapter will review how Manzini's co-design strategy inspires my design insights for a design proposal using the medium as the catalyst for a micro-community-based Airbrush Design platform to assert its social values to the mainstream society and design industry.

#### **Connecting Relational Aesthetics to Co-design methodology**

As reviewed previously, this thesis uses the ideological concept of relational aesthetics to critique the social function of Airbrush Design. It argues the medium is a relational tool and could be a catalyst for on inclusivity and connectivity. Bourriaud (2002) has pointed out the urgent need in post-industrial societies for artistic practice leading to the emancipation of individuals, interpersonal communications, and the empowerment of existences in plurality. As he described: "The artistic practice thus resides in the invention of relations between consciousness. Each particular artwork is a proposal to live in a shared world" (p. 22). That is to say, the aim of utilizing Airbrush Design should not be only to benefit individuals materially, but also to initiate a collective sense of social participation and imagination with mutual respect in a shared world.

Italian design thinker Ezio Manzini's (2014) Bottom-to-Top design methodology echoes the concept of relational aesthetics in inclusivity and connectivity in shared spaces. Manzini's book, *Design, When Everybody Designs: An Introduction to Design for Social Innovation* posits a micro-community-based platform to stimulate social innovation through participation and collaboration. His theory rooted in human-centered co-design methodology fits well with the

concept of relational aesthetics. Manzini (2015) believes in the principle that everyone can design. He argues that contemporary design practices should shift from the traditional product-oriented, problem-solving design approach towards connected and systematically developed public platforms. This kind of design practice in public will provide opportunities for everyone to participate in design processes, explore design sustainability and compassion design culture for social innovation. His discourse focuses on social connectivity and processes, encouraging cross-boundary participation and collaboration.

Manzini's (2015) design strategy suggests community-based co-design platforms can use all available tools to initiate design interests and stimulate creativity by giving choices to people. By using a medium of interest to connect individuals in an inclusive and diverse artistic community, his vision of design resonates with Bourriaud's insights in relational art. They are about human connectivity and inclusivity, which are the key to develop a democratic and harmonious social world.

Bourriaud (2002)'s articulation of art as social interstice between the institutional and private spaces responds to changes in art production in the context of art, institution and art spectators of the 1990s. His concept of art providing relational connectivity between different social spaces is intrinsic to the design context for empowering Airbrush Design as a social tool in developing a co-design platform. Therefore, in reference to Bourriaud's relational art concept in Manzini's co-design processes, Airbrush Design can expand its connectivity and inclusivity in the shared space between the individuals and institutions by playing a vital role in social interstice to facilitate connections between stakeholders for the purpose of producing the "state of encounters imposed on people" (Bourriaud, 2002, p. 15). This theory is noted in Manzini's work, where he sees "a connected world design process tends to be increasingly distributed among numerous actors who differ in culture, motivation and professional development" (p. 39).

As Manzini (2015) points out, traditional methods of design are "shifting from dealing with traditional product and communication artifacts towards design processes in which what have to be designed are hybrid, dynamic artifacts where product, service, and communication are systemized and present as a whole" (p. 43). In other words, his view of design today is similar to Bourriaud's vision of contemporary art, which does not emphasize the result and final product,

but the relational connection between different stakeholders in a shared space. This shared space, in Manzini's term, is a platform based micro-community that utilizes design as a relational tool, in the way that Bourriaud (2002) articulated "social interstice" in art. In this shared space, the individuals are connected by a medium (such as art or design) that simulates social dialogue and participation in-between the private and public spaces, as a way to ease social polarities, differences and to imagine a harmonious and democratic social sphere.

### **Co-design Methodology: Multi-community Based Platforms**

Manzini (2015) describes the concept of "archipelago," the approach of using multi-community-based platforms to replace the centralized industrial design system, by bridging between communities and platforms to create a resilient, sustainable production network. He envisions a transformation from centralized production systems to multi-platform-based productions giving individuals the opportunity to participate in localized production and maximize their potential for innovation. This independent but connected design production system utilizes experts and technologies in co-design processes to empower individuals to participate in social innovation.

Manzini (2015) does not limit his interpretation of social innovation to material production but also envisions a multi-spectrum of connected, yet independent new cultural practices. He suggests that social innovation is a democratic process of connecting each individual to make a collective force, creating new alternatives that benefit social needs in all aspects: "taking place at every level, and mobilizing all existing resources" (p. 26). He defines social innovation as: "new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations" (p. 11). This definition of social innovation informs his advocacy of a design methodology where everyone can participate in the design process. This methodology could be adapted for the design of an Airbrush Design platform. As Manzini advocates, the inclusiveness in the Bottom-to-Top co-design process is intrinsic to this shared project and the fostering of harmonious relationships between individuals and institutions.

Manzini's (2015) methodology of design for social innovation encourages everyone to design in collaboration, building a design culture that is based on the co-design process of sharing and

bridging between different disciplinary platforms, like a chain of islands. In his words, co-design is expressed by networks and coalitions of separated, mutually independent actors, who work together as both consumer and producers in connected and shared spaces. Manzini's approach will be one of the fundamental principles of my design project.

My proposed project, which will be elaborated in the next chapter, utilizes Manzini's concept of the consumer as a producer in co-design. This consumer-as-producer concept is based on French sociology theorist Michel de Certeau's work, *The Practice of Everyday Life*. It posits that people use various tactics in everyday life to subvert public control. By examining these activities employed by individuals to claim their autonomy by negotiating and adapting to the open environment, he recognized that the consumer is also the producer (Certeau cited in Imbesi, 2016). Along these lines, the users of my proposed Airbrush Design platform will also be the catalyst and producer, who participate through co-design processes to develop their tactics to express and assert their views in the society.

Environmental design scholar Lorenzo Imbesi (2016), the author of *Design for Social Innovation in Canada*, views these tactics employed in everyday life as a form of local resistance to global strategies of centralized forces of production. He points out that people generally prefer to make independent choices to resist standardization and authoritarian control. Similarly, Manzini (2015) also recognizes individual choices can intervene with provisional conditions in design and the consumer could be viewed as a co-producer in a design process. He believes the shift in consumer-to-producer relations has fundamentally changed the passive role of consumers in a conventional design method to an active role as participants in the co-design process.

This Bottom-to-Top design method suggested by Manzini (2014), provides the opportunity for individuals to take an active role in a design process, taking control and making choices to negotiate with established design authorities (Mouffe, 2007). As Bourriaud (2002) interpreted in relational aesthetics, this relationship between consumer and producer is similar to the roles of art spectators and art makers in a relational art context, in which art spectators are also art makers in the art-making process. Bourriaud (2002) sees relational art as made by the interaction of people in a shared space with choices and constraints. It challenges institutional limitations by opening up social passages between galleries, artists and spectators. This process is similar to a



co-design approach that is based on making choices and working within the limitations of public space in a democratic process. As Manzini (2015) recognized, in co-design both individual decisions and provisional constraints co-exist in a shared space, where the consumer is also the producer in the process of design working in collaboration with others. For my creative project of Airbrush Design platform, both Bourriaud and Manzini's work underpins my co-design methodology principles. My design approach is to facilitate the nurturing of a shared space for all participants.

In our present fast-developing social-technological-economical context, in which a centralized industrial production system has exacerbated environmental crises and socio-economic disparities, there is a clear need for innovative solutions to society's problems. Manzini (2014)'s Bottom-to-Top design method for achieving social innovation suggests a means convergent with technical innovation to increase social interaction, free choice, self-expression and empowerment. By providing technical support encouraging and enabling people to create alternative ways of living, positive behavior and values emerge as sustainable cultural phenomena, "impacting what we count as well-being and the values on which we base our choices" (p. 22). This type of social innovation is based on his view that technological development today enables a radical transformation from a centrally dominated system towards many dynamic local production systems connected by technology and networks. Using technology to connect individuals and institutions locally and globally, resilient infrastructure and a more sustainable cycle of production to consumption can be created to meet every day needs. A more equitable and sustainable social structure could lead us in the direction of a new civilization. Manzini's suggestion of using technology to connect people corresponds with Bourriaud's vision of technology as the "communication superhighway" (p. 8) that should be used to achieve connections to "open up obstructed passages" (p. 8).

Manzini's concept of design for social innovation, in connection with Bourriaud's relational aesthetics, support the argument that design can work as a "social interstice" to help reduce social polarization. These two concepts provide guidelines to the co-design method for designing the Airbrush Design platform, with a goal to expand airbrush practice to assist social innovation in community-based participation. As both Bourriaud (2002) and Manzini (2015)

noted, technology tends to increase the concentration of power in a monopolized market economy within a capitalist superstructure, leading to social disparity. However, technology can also provide opportunities for relatively small, specialized production with the connectivity of shared resources. By utilizing available technology to support community-based social participation, design becomes a multidisciplinary practice in connection with other disciplines and creates new system linkages to share and connect diverse platforms to promote social innovation (Spinuzzi, 2005). This emerging design tendency provides spaces for everyone to grow and contribute in the shared platforms for innovation, imagination and the creation of sustainable and resilient design culture. As an open passage connected by art or design, this shared space mediates the disparity between institutional values and individual choices. In this context, my proposed Airbrush Design platform can also be a medium of connection as “social interstice.”

### **Design for Social Innovation: Everyone Designs**

Bourriaud’s (2002) relational aesthetics advocates art as a social connection and Manzini’s (2015) design theory for social innovation emphasizes the co-design methodology of community-based participation. Both are rooted in the concept of sharing between the participants. Sharing in the process of learning and making is the connectivity that brings the public and private values into a hybrid space and is the aim of the design method for the project proposed in this thesis.

Manzini’s (2015) design for social innovation suggests that facilitating and providing choices to participants in the co-design process can lead to sense-making and encourages social innovation. Imbesi (2016) further interprets the meaning of making as “the way collective intelligence and technological innovation is happening not only related with the interaction in the virtual space of the internet, but also through physical relations and material contact” (p. 15). Their work informs the making of this thesis project in which the design delivery should encourage the physical making with all senses and participation in a co-design process, as a way of stimulating social imagination through design practice.

As the connection between design, material, participants, and making in co-design has a profound meaning in the design process, it engages both creativity and criticism with the subject as noted by the design scholar Ellen Lupton. Making creates interactivity and connectivity that involves participation and collaboration through the process. By sharing experience, exchanging information and learning new knowledge in the making process, it can lead to discovering new solutions to problems and advancing social innovation.

Lupton (2006) views design as an instrument to package ideas and make them available to the public. Learning helps us become more critical of everyday media and become more conscious of the skill and artistry required to create at the highest level. As an integral part of the co-design process and multi-disciplinary participation, learning is also one of the most critical components to initiate design interest and connect people with interactive activities and the exchange of knowledge. Manzini (2015) has recognized learning occurs through participation in the co-design process: “to support the capability of other actors to design in a dialogic way” (p. 67). Accordingly, promoting learning will also become one of the design principles and criteria of the Airbrush Design platform.

Bringing Bourriaud’s relational art concept into the design context, this thesis project aims to nurture the social power of inclusiveness in Airbrush Design, use connectivity as a key to adapt Airbrush Design in the concept of relational aesthetics and apply Manzini’s (2014) Bottom-to-Top design method to design a platform that supports everyday design innovation. By combining relational art theory and co-design methodology, I assert Airbrush Design can advance the social function of inclusiveness by connecting individuals through the making, learning, and sharing the process.

With community-based participation, Airbrush Design can be elevated from its traditional craft role to a representation of a new social form that connects publics with independent individuals in shared spaces (Wood, 2017). There are many examples which can provide us with references for designing micro-community-based co-design platforms. Toronto Woodturners Guild (TWG) provides an excellent example of this Bottom-to-Top community-based platform (Figure 6). The TWG platform is designed by a community of woodturners who are “dedicated to advancing the art of woodturning through the sharing of ideas and techniques, education and community

involvement” as described in their website (<http://www.torontowoodturnersguild.com/>). TWG is also a part of the American Association of Woodturners (AAW), a non-profit organization headquartered in the USA and dedicated to advancing the art and craft of woodturning worldwide.

Working with this community of woodturners by demonstrating airbrush techniques in the last few years, I have collaborated with a range of experts, including lawyers, artists, mechanical engineers and other professionals in cross-boundary practices. Humber College’s Centre for Trades & Technology, Toronto, a well-equipped facility, is the base for TWG’s monthly meeting and workshop. TWG’s participants bring their creations to general meetings and discussions to share ideas and learn different techniques. The regular three-hour meeting consists of an expert demonstration, show and tell, technical facilitation and consultation between the members.

The TWG website serves as a digital archive, resource and network to facilitate members in learning, making and sharing. Although the website is designed for members, it provides a window for the public to obtain insights from woodturners and it connects TWG to the larger woodturning community and the world. Periodically, hands-on lessons and all-day seminars are organized by TWG to support community learning. It provides opportunities for anyone to experience the woodturning art. It also supports the local woodturners to promote their talent and product in the marketplace that “have artistic merit as well as practical value” (TWG, 2019).

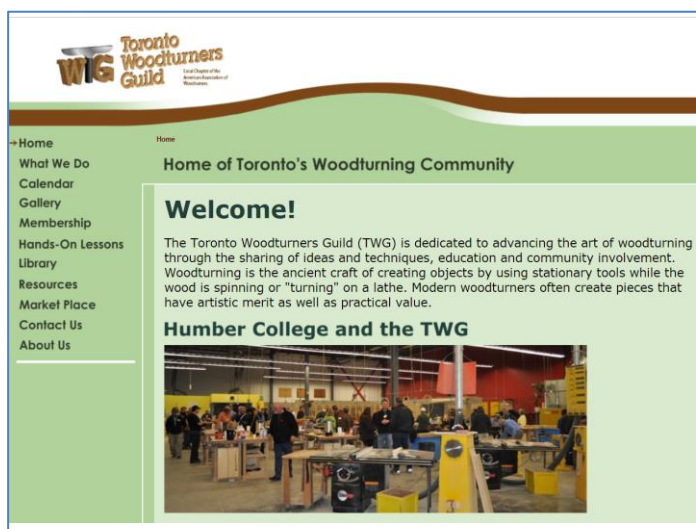


Figure 6: Toronto Woodturners Guild website: <http://www.torontowoodturnersguild.com>

With relational aesthetics as the theoretical support, co-design methodology will be used as a design guideline. Much can also be learned by considering the experience of existing community-based platforms such as TWG. Airbrush Design as a mechanical and analog technology can be combined with digital technologies to build a creative platform to connect people of diverse cultural and social backgrounds. A community-based platform can utilize Airbrush Design as a medium of connection to combine traditional and digital tools to encourage social participation. Manzini (2015) suggested that existing technology can be used and connected in new ways to effectively change the technical system to a new social form. By giving people the opportunity to design using a range of tools, an Airbrush Design platform can also be a unique space that bridges physical and virtual spaces, mediating the gap between digital technology and handmade crafts in a complementary creative process. The next chapter will provide an overview of the proposal of empowering Airbrush Design with a community based creative platform.

## Chapter 4: Empowering Airbrush Design: A Proposal for a Micro-Community Based Creative Platform

Based on the discussion articulated in previous chapters, this thesis proposes to design a creative platform that supports Bourriaud's concept of relational aesthetics and Manzini's Bottom-to-Top design methodology that facilitates connectivity, interactivity, and inclusivity for building a micro-community for Airbrush Design practice. Ultimately this platform will act as the catalyst to empower people who are interested in the medium, to resist social polarities as reflected in the marginalization of traditional media in the digitally-based post-industrial environment.

This platform proposes using making, learning and sharing as the main strategy to connect participants and initiate an array of design projects, exploring a democratic co-design process with experts and non-experts sharing their experiences to establish a community of airbrush enthusiasts. This chapter will provide an overview of this proposal.

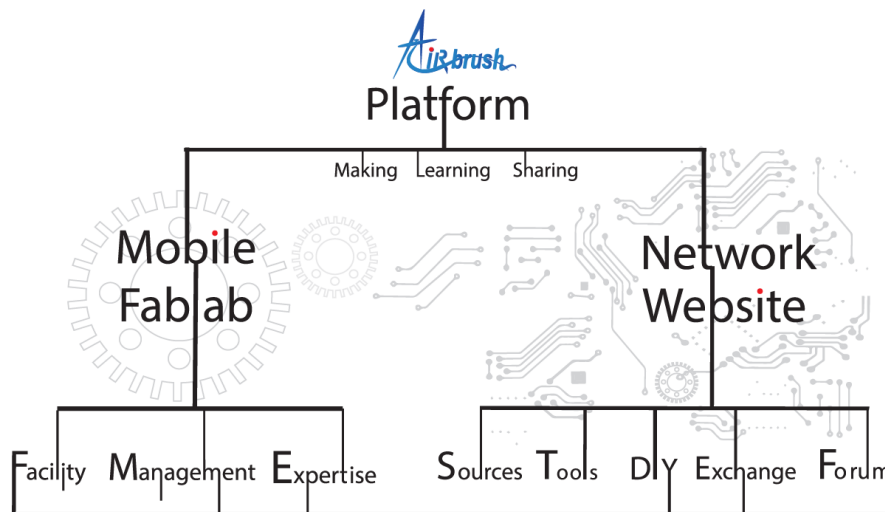


Figure 7:  
Airbrush Design  
Platform Structure

The structure of the Airbrush Design platform includes both physical and digital spaces. The digital design output is an interactive website that supports the learning and sharing of Airbrush Design (Figure 7). The physical design output is a mobile airbrush Fablab that provides tools and expert facilitation. The two components complement each other: the Fablab serves as a research making facility, and the website serves as an information exchange and resources. This

is to support the sharing culture and multi-disciplinary approach in Manzini's co-design methodology, in order to encourage everyone to design and help create a harmonious social atmosphere.

The design of the Fablab focuses on creating an accessible and inclusive public space, so mobility and the use of materials for the facility are important design considerations. Thus, the facility designs need to be portable, lightweight, and be able to fit in a variety of physical spaces. To meet these design challenges, recycled cardboard is used for the airbrush workstations (Figure 8). The interlock-able structure gives participants the opportunity to combine, modify or re-design their workstation according to their individual needs. The design allows anyone to reproduce and repurpose the structures. In addition, a digital version of the construction plan will be available for downloading and participants can share their revised designs (Figure 9). This is to stimulate design participation and encourage the contribution of new ideas.



Figure 8: Interlock Portable Furniture Design

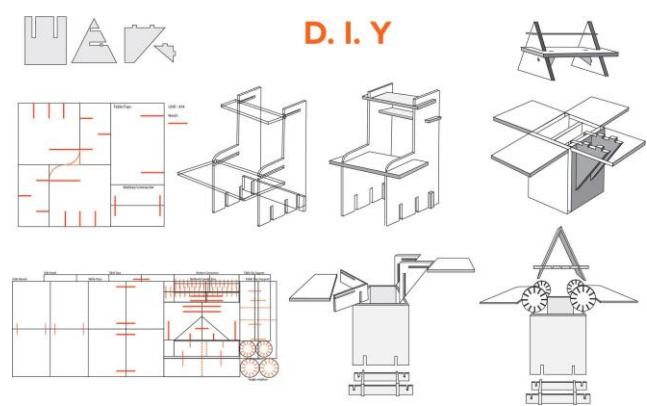


Figure 9: Interlock Portable Furniture Design, DIY File

The second component, the website Spectra Airbrush, is a network of learning and sharing to provide information and inspiration. Using the internet, the website connects the airbrush platform to the local communities as well as the world for new opportunities in collaboration and participation. The website consists of learning resources including technical information; DIY process, images and video archives, an online marketplace, discussion forum, and member

pages. All the website components are constructed to support the making, learning and sharing experience through community-based participation (Figure 10). Overall, the Fablab and the website connect the physical and virtual world in-between the private and public spaces, links Airbrush Design to different technologies and tools to stimulate design interest through co-design exploration (Smith& Kanstrup, 2017).

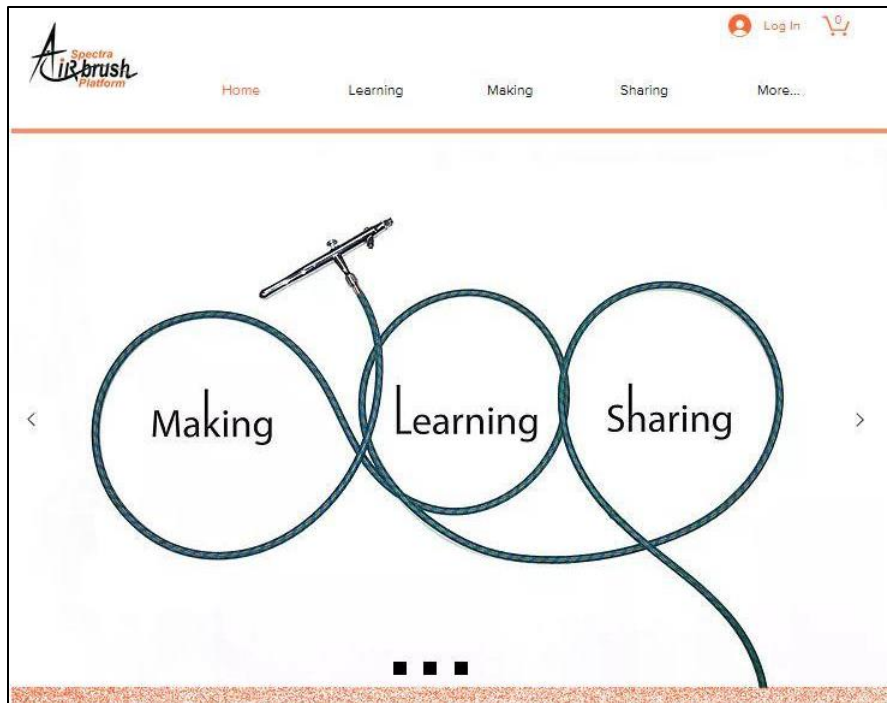


Figure 10:  
Website Homepage  
Design

Promoting learning is one of the primary objectives in designing this Airbrush Design platform since learning is an important component in initiating participants' design interest. The learning experience is introduced by providing tools and expertise to facilitate the hands-on experience, such as assisting individuals to make personalized design in the Fablab. In connection with these interactive activities, a learning section of the website is dedicated to introducing a range of creative airbrush applications. The purpose is to stimulate the participants' interest and motivate them to participate in the design community. For example, the "Pizza box" stencil tool kit (Figure 11) is designed to facilitate the learning. The box de-constructs traditional airbrush learning from a technical approach to a fun, interactive activity by using pre-made stencils in basic graphic forms. The participant can learn Airbrush Design by using stencils to compose designs with unlimited possibilities. In this co-design process, the airbrush expert becomes a



facilitator to help the participants making choices, iterate and discover new alternatives during a fun learning experience.



Figure 11:  
Pizza Box Airbrush  
Learning Tool Kit

Making, as a connection between design and participants engages both creativity and critical thinking. It stimulates our senses and imagination in contact with a material process (Kazmierczak, 2003). By providing the opportunity for making with tangible airbrush tools, the design process takes the physical interactivity between people and material to a process of making sense and reasoning in visual and technical exploration. This making process transfers human interactions with material into a philosophical sense-making that leads to the social imagination of a diverse, inclusive world (Opazo, Wolff & Araya, 2017).

To facilitate making, the FabLab provides the tools and expertise to support participants at all levels of ability. It utilizes airbrush to encourage an “everyone designs” philosophy, to stimulate imagination, promoting a sense of sharing and community. Materially, the airbrush Fablab encourages redesigning, repurposing and reusing material to raise awareness of sustainable design practice with a *DIY* approach.

This platform adopts an inclusive approach to Airbrush Design, from simple art tools to computer numerical control and automation. The website introduces analog, mechanic and digital tools to inspire creative making at all skill levels. The Fablab is equipped with graphic design software, digital stencil cutter, and mechanical tools in the making process. The website also dedicates a section to introduce *DIY* ideas, advanced digital machinery and industrial based production methods. As additional support, my design studio is also available for more advanced design production beyond the Fablab.

By adopting an inclusive approach to both traditional and digital technologies, this platform proposes using all available tools to empower people in the making process. As Manzini (2015) envisioned, new choices and possibilities are open to individuals to collaborate and learn from each other. Dialogue and participation in the making process can help diminish social barriers. This making process can be understood as human interactivity that, as Bourriaud (2002) noted in the context of relational art, can help to bridge the gaps between divided social spaces.

Sharing, as the linkage between learning and making, is the connectivity that brings public and private values into a hybrid space. As a network that combines physical and digital tools, the Airbrush Design platform depends on sharing to amplify its social function of inclusiveness. Sharing information and experience is essential in this platform, enabling it to become a crowdsourcing community producing collective intelligence to create new possibilities. This goal will be achieved by linking the Airbrush Design platform to other platforms such as social media, video streaming and online meeting apps to connect participants. The website will connect to the YouTube video platform as one of its built-in channels for sharing information and resources.

Finally, to provide the space for individuals to participate in this community platform, the website is equipped with member sections. The participants can create personal pages, discussion forums and posting blogs. By using the community-based, Bottom-to-Top design method advocated by Manzini (2014), this Airbrush Design platform takes the theoretical inspiration from Bourriaud's (2002) relational aesthetics to a tangible design endeavor that adapts Airbrush Design as a catalyst to empower people for social engagement. The design outcomes of the proposed Airbrush Design platform are based on the words of Lorenzo Imbesi

(2016): “The collaborative power of networks is not only about connecting people worldwide with new forms of communication, but connecting knowledge (so enlarging our collective intelligence) and furthermore making interactive links with technologies and objects, which result in a higher complexity and resilience” (p. 15).

In response to social polarization and obsolescence of traditional media caused by rapid technological change, the proposed Airbrush Design platform is an exploration of the contemporary discourse of design. It elevates material production to a making, learning, and sharing experience that mediate a space between the public (institutional) and private (individual). This platform is for people who are interested in this art form, and it will work as a channel to represent this micro-community in our society.

## Conclusion

Technology enriches our lives in many ways, but the focus on using digital technology for material production has exacerbated the obsolescence of traditional media and social polarization. This thesis responds to the marginalization of Airbrush Design due to technological changes in the market-driven design field. To research the question of “what is the social value of Airbrush Design,” Nicolas Bourriaud’s (2002) art theory of relational aesthetics is used to critique the social functions of the medium. I argue that Airbrush Design can be viewed as relational art, an intrinsically inclusive medium.

By elaborating Ezio Manzini’s (2015) everyone designs philosophy, the concept of the Airbrush Design platform for a micro-community has emerged. This platform consists of a physical design Fablab and a support website, using learning, making and sharing as the primary connection for building a design community. Using Airbrush Design as a catalyst, the goal of this platform is to create an inclusive space that stimulates design interests and participation, and ultimately facilitates the establishment of an Airbrush Design community. It hopes that by connecting this community of shared interest using the medium, not only will it create the solidarity necessary to resist the disappearance of Airbrush Design, but also to engage in dialogue with mainstream society.

This thesis is a small part of the exploration that contributes to the knowledge of Airbrush Design as a social tool in the context of design. Further study and investigation will help us understand and better use a powerful medium that reflects dramatic changes in our technology, society, culture and history and holds out the prospect of mitigating some of the social problems which challenge us today. Throughout this thesis research, I have deepened my understanding of contemporary art theories and co-design methodology, altering my perspective on Airbrush Design theory and practice. I realized Airbrush Design can also have a profound social value in addition to be a technical and aesthetic endeavor. As a design practitioner, I have the social responsibility to advocate for de-marginalization, connect traditional craft with current technology and empower design as a social tool to express a vision of a diverse, inclusive and democratic world.

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