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IO1- A3: Digital Design Compendium

Module: Digital Design & Digital Thinking: Connection to the Culture Sector

KA2 - Cooperation for innovation and the exchange of good practices Partnerships for creativity











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1 Introduction

<< Digital tourism is the integration of new technologies in the tourism sector, an economically relevant sector, an opportunity for business operators, but also a new paradigm that changes not only the rules of the game, but also tourists themselves and how they think about travel>>1. Starting from this concept, we introduce design thinking and digital design as the new approach for renew the idea of tourism, especially in this period strongly marked by the presence of covid-19 in the world.

1.1 Learning Outcomes

After completing this module, you will be able to:

- Understand the basic principles of digital design
- Understand the basic principles of design thinking
- Tourism through digital design and design thinking

1.2 Key words

- Digital
- Design
- Empathise
- Define
- Ideate
- Prototype
- Test

1.3 Estimated seat time

3 hours

¹ https://www.doxee.com/blog/customer-experience/what-is-digital-tourism/

















1.4 Glossary of terms

- Design thinking: It refers to the design process that offers a solutionbased approach to problem solving. It includes understanding *human needs*, brainstorming sessions for *conceptualization* of an idea, *prototyping* and *testing* before the final *release* of the solution (Friis Dam & Yu Siang, 2021).
- Digital Design: <<iis any design made to be interacted with on a digital device>> (<u>https://99designs.it/blog/web-digital/digital-design/</u>).
- Digital Tourism: << the use of all the various digital tools to prepare, organize, manage and enjoy a trip>> (<u>https://www.doxee.com/blog/customer-experience/what-is-digital-tourism/</u>).
- User centered design: <<*is an iterative design process in which designers focus on the users and their needs in each phase of the design process*>>.
 (<u>https://www.interaction-design.org/literature/topics/user-centered-design</u>)
- User Experience (UX) Design: <<is the process design teams use to create products that provide meaningful and relevant experiences to users>> (https://www.interaction-design.org/literature/topics/ux-design)

















2 Digital design & Design thinking: connection to the culture sector

2.1 What is Design Thinking?

According to Susan Schreibman² and Stephanie Ochiel³ <<*design thinking is many things to many disciplines. It is a method, a process, and a way of thinking*>>⁴. It is a user-centered approach to design and applies to design activity in various fields - from software and other digital projects, to buildings, to museum exhibitions- as well as in a wide variety of disciplines, from engineering to heritage studies.



Through an iterative and non-linear approach to project management, the design thinking methodology presupposes the identification of a problem that needs to be solved for the community for which it was designed. It sounds intuitive but it isn't always. Let's think, for example, of products created for a demographic target that does not need it: a bridge in a city center designed for vehicular traffic but potentially useful for pedestrians and cyclists as well, or software that is not very intuitive and difficult to understand for users. without significant training. Usually, designers intervened in the life cycle of the product or process towards

³ Junior All-round Marketing Professional at EXIN and Research Assistant at Maastricht University 4 <u>https://www.interaction-design.org/literature/topics/design-thinking</u>













² Professor of Digital Arts and Culture at Maastricht University





the end, to improve them becoming more desirable to the public⁵. Design thinking brings designers and other types of individuals together earlier during the in the life cycle to foster the creation of "products" based on the users' taste⁶. As Tim Brown notes, the <<*former role is tactical, and results in limited value creation; the latter is strategic, and leads to dramatic new forms of value*>>⁷.

With this course we want to underline the importance of design thinking and its strategic value for the cultural sector.

Although design thinking has been used in various disciplines over the past 20 years, it has more distant roots. In the 1950s, John Arnold, a professor of mechanical engineering and business administration at Stanford University, was one of the first to use the term in his 1959 monograph *Creative Engineering* in which he claimed to incorporate more creative processes and practices into the traditional analytical approach to engineering. Herbert A Simon was another early proponent of using design principles as a 'way of thinking'. In his 1969 book *The Sciences of the Artificial* he argued that all design is artificial, and for that reason it should make thinking about how things should be to be functional⁸.

Buckminister Fuller took it one step further and, while a professor at the School of Art and Design at Southern Illinois University in Carbondale, created a team of multidisciplinary specialists to address challenges and issues: from world poverty to renewable energy sources.

Another approach was the Scandinavian Design School which involved cooperation between all stakeholders in relation to a specific problem. In this framework designers frequently take the role of facilitators, encouraging 'designing-by-doing', similar to the current maker culture.

https://monoskop.org/images/9/9c/Simon_Herbert_A_The_Sciences_of_the_Artificial_3rd_ed.pdf











⁵ <u>https://readings.design/PDF/Tim%20Brown,%20Design%20Thinking.pdf</u>

⁶ http://businessvaluedesign.be/design-thinking/

⁷ CEO of IDEO, global design company. Brown, Tim (June 2008). 'Design Thinking'. *Harvard Business Review*. Available at https://fusesocial.ca/wp-content/uploads/sites/2/2018/06/Design-Thinking.pdf





Many of the methods, techniques, or "tools" that we will explain in this course derive from the Scandinavian approach: an iterative, experimental, and generally collaborative flow of activities that takes as a starting point what the consumer wants or needs. in user-centric design.

2.2 User-Centered Design⁹



A fundamental feature of Design Thinking, Human Centered Design involves users during all the design process leading it based on the public will. This process fosters the monitoring and evaluation during the phases and stimulate the implementation of the necessary changes (made in time). It is a very common practice, for example, in the sectors that design IT systems, from mobile phones to websites to vending machines.

In fact, involving users only towards the end of the design cycle helps to run for cover with respect to a project that has already started. To clarify what we mean, let's apply this concept to a museum: remove some objects from the display cases when museum visitors have already complained about the large number of objects; change the signage when the public continues to get lost.

<u>https://teach.dariah.eu/mod/lesson/view.php?id=1442&pageid=1489</u>















User-centred design <<*is* a framework of process (not restricted to interfaces or technologies) in which usability goals, user characteristics, environment, tasks and workflow of a product, service or process are given extensive attention at each stage of the design process [trying] to optimize the product around how users can, want, or need to use the product so that users are not forced to change their behaviour and expectations to accommodate the product>>^{10.} This methodology

helps to develop empathy for users by understanding their needs and wants.

How does it work in practice? By consulting users at the beginning of the project cycle, it allows us to understand their needs and interests, especially regarding the use of the product / service. According to the Interaction Design Institute, user-centered design is an iterative process focused on the implementation of specific analysis, study, interviews, able to investigate and figure out the customers' intentions¹¹.

These observations, adequately collected and analyzed, will be the starting point for the ideation process: brainstorming of ideas, exploration of multiple solutions, creation of the target.

Once the team arrives at the design idea they wish to pursue, it follows these actions: prototype, re-propose to the intended audience and get their feedback. Iterate the cycle until you are satisfied with the project or process and move on to production. Even if your organization does not have the resources for this type of design cycle (as, for example, for most non-profits that do not have a lot of resources, especially human resources) it is always advisable to commit to some points of the process user-centric. If your organisation, on the other hand, had the funding for implementing the entire cycle for a new project, it has to follow the above steps in the right order based on the user-centred process. Let's now deal specifically with these phases.

¹⁰<u>https://en.wikipedia.org/wiki/User-centered_design</u>
¹¹<u>https://www.interaction-design.org/literature/topics/user-centered-design</u>













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2.3 Design Thinking Process: the phases

One of the first Design Thinking process was created by Herbert Simon in 1969 (Nobel Prize laureate) and published in his book "The sciences of the artificial". It was based on seven stages. Despite the changes of the further models and theories (some of them contains three steps others seven), all of them have always been based on Simon's principles.

Below, we presented the five-step Design Thinking model proposed by the Hasso-Plattner Institute of Design at Stanford (d.school).

<< Design Thinking is a design methodology that provides a solution-based approach to solving problems. It's extremely useful in tackling complex problems that are ill-defined or unknown, by understanding the human needs involved, by reframing the problem in human-centric ways, by creating many ideas in brainstorming sessions, and by adopting a hands-on approach in prototyping and testing>>¹². It is based on 5 fundamental steps thanks to which each professional

¹² FRIIS DAM, R., YU SIANG T. (2020) 5 Stages in the Design Thinking Process, Interaction Design Foundation https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process

















who uses the Design Thinking methods can face and salve every complex issues in any micro-macro context.

Rikke Friis Dam and Teo Yu Siang - Interaction Design Foundation - analyzed the five-step Design Thinking model proposed by the Hasso-Plattner Institute of Design at Stanford (d.school), the leading university in the field of Design Thinking.

From this moment on we will refer to their analyzes for the explanation of the model.

The five stages of Design Thinking are as follows:

- 1. Empathise: increasing the awareness of people's needs;
- 2.Define: considering needs/problems in human-centric ways;
- 3.Ideate: defining new ideas to face people's needs/problems;
- 4. Prototype: creating prototypes as solutions to the problems;
- 5.Test: testing the prototypes in order to define the best way to solve people's needs/problems.

As below described, Design Thinking is dynamic process in which operators and users cooperate in order to create problems solutions based on the users' feelings and behaviors.

1. Empathise















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DESIGN THINKING

- EMPATHISE -



The first phase of the Design Thinking process consists in acquiring an *<<empathic understanding>>* of the issues to be solved. Therefore, that means to involve professionals and people in the process to acquire greater knowledge of the problems. The comparison between them allows experts to have a broad and concrete vision and awareness of the people's life and behaviours. Without empathy, the human-centered design process cannot be initiated: getting out of personal and limited visions to understand those of the end user.

In this phase it is possible to obtain the information that will then be used in the next phase, in addition to optimizing, as already mentioned, the perception we have of users, their needs and the problems inherent in a particular product.

2. Define (the Problem)













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DESIGN THINKING



In this phase, the information obtained in the previous module will be put together and will now be studied to define the previously identified issues. In that way, the problem to be reformulated in a human-centered way.

To clarify, instead of defining the problem as your desire or a company need, look at it from another perspective. It deals with to transform the way to consider the problems. That means to change the perspective, starting to consider a negative element into a positive way.

The Definition phase, through the analysis of the problem, allows to evaluate the issues and foster their comprehension. Instead of thinking on the problem in an unproductive way, considering them in a way to face it. It deals with to find out the answers to the questions: why the problem exists, how we can face and solve it, which are the solutions. This process has to be implemented in order to understand the users' needs and problems.

3. Ideate















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DESIGN THINKING

- IDEATE -



We are now ready to generate ideas. We have understood the users and their needs (Empathize), we have studying them (Define), and now we can arrive at the human-centered definition of the issue, finding their solutions.

During this phase you can use many techniques (Brainstorm, Brainwrite, Worst Possible Idea and SCAMPER) in order to find ideas / solutions to the problems. Among them the best ones will be chosen.

4. Prototype















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DESIGN THINKING

- PROTOTYPE -



In this phase the team will produce a series of prototypes that are the solutions to the problems. Through prototypes tests, analysis, modifications, the best possible solutions to the problems will be identified. At the end of this phase there will be a clearer and more concrete perception of both the problem and the behaviour of the users in relation to the prototype.

5. Test

DESIGN THINKING



















As above-mentioned, the identified best solutions will be tested. In this final phase, the problems will be reset creating solutions based on the "public" needs, behaviours, thoughts, ideas, opinions^{13.}

2.3.1 Design Thinking: an iterative approach.



The exposed Design Thinking process may seem direct and linear in which one phase leads to the next in logical way. Actually, the process is much complex and its phases are all interrelated¹⁴. The different phases, in fact, can be carried out simultaneously in order to set up more solutions simultaneously or can be followed a different order. Likewise, new user insights could arise from the testing phase and thus generate a new cycle.

A real order doesn't exist. The last phase can be brought to the second, the third to the first etc. It is an interactive process where all the steps are clearly identified but

¹³https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process ¹⁴ *ibidem*

















their order are not static but dynamic. That means that each of them can be repeated, carried out simultaneously in order to identify the best possible solutions. The main advantage of the Design Thinking consists of reusing the results in a dynamic way: a process in which the issues are rethought and redefined bringing or not to the creation of a new cycle. New information foster the creation of the new awareness of users' needs and to the new way to face and solve them.

2.4 Digital Design: definition and importance



As Dalia Goldberg¹⁵ reports, the term "digital design" refers to a design produced on a digital medium, for example on an app or website.

On Quora - forum platform where users can post questions and answers on any topic - user Retika Gore provides a concise digital design definition:

<< *Digital design refers to what is created and produced for viewing on a screen*>^{16.} Today we can no longer do without working with digital, and this is the reason why it is necessary to understand its characteristics and become familiar with the digital tools most in use.

¹⁵GOLDBERG, Dalia (July 16, 2019) <u>https://www.springboard.com/blog/design/digital-design/</u> ¹⁶ <u>https://www.quora.com/What-is-digital-design-1</u>

















2.4.1 Digital vs. Print Design

DIGITAL DESIGN

- DIGITAL VS PRINT -



Even if digital design and print design may look very similar, there are very different.

First of all, digital and print projects have different purposes and uses. The designer chooses them according to the result he wants to achieve.

Examples of digital design products/deliverables are:

- Banner ads;
- Infographics;
- Website elements;
- UX wireframes;
- Graphics for reports and white papers (PDFs).

Examples of print design products/deliverable are:

- Brochures;
- Magazine spreads;
- Book covers;
- Business cards;
- Print ads.















The first thing to do to work in the digital design sector, therefore, is to know the characteristics of the various products / uses. Some of these, for example, have standard formats:



A chart showing standard formats for web banner ads. Source: Wikimedia Commons¹⁷.

Other products, on the other hand, require a more transversal training and different skills: for example, to create an effective infographic you need to take into account the visual yield that is obtained online.

¹⁷ <u>https://www.springboard.com/blog/design/digital-design/</u>

















2.4.2 Analytics' use in Digital Design

DIGITAL DESIGN

- ANALYTICS' USE IN DIGITAL DESIGN -



The data and analytics make digital design different from print design.

The performance of printed products is difficult to monitor while metrics such as likes, shares, downloads and page views give us useful data to monitor the progress, impact, and performance of a digital product.

Furthermore, in order to create high-performance projects (that is, which return considerable numbers based on the predefined metrics above mentioned) a fundamental factor has to be taken in consideration: your target to reach. To capture interest and understand what your target audience prefers, it is necessary to test and experiment with different options (visual and content) your digital product until you understand which one works best.

















2.4.3 Interactivity

DIGITAL DESIGN

- INTERACTIVITY -



The interactive elements of digital design represent other factors that distinguish it from print design even if not all types of digital design are interactive.

For example, an infographic is a static image like a poster is.

The interactivity of digital design is represented above all by the immediacy with which users interact with the product you create. An entirely interactive digital design product, as it is more complex than the static one, must also necessarily be optimized for use on the web. We'll talk about this shortly (see UX designer).

















2.4.4 Professional classifications of Digital Designers

DIGITAL DESIGN

- PROFESSIONALS -



Who are digital designers? The most frequent professional classifications are the following:

Graphic Designers

- Graphic designer is defined as person who works with images such as: infographics, reports or digital illustrations;
- Web Designers;
- Web designer designs / creates the web pages from the point of view of layout to the interactive elements;
- UX Designers;
- UX designer are is focused on <<*usability*>>^{18,} creating few versions of the app or website that are tested by the users.

Once defined the difference between professionals in Digital Design, it is possible to explain the working chances.

- Digital Design Freelancers

¹⁸ <u>https://www.springboard.com/blog/design/digital-design/</u>

















Freelancers take a direct mandate from their clients. They freely organize the working day: customer research, billing and other activities related to business management.

Characteristics of freelance work:

- Surely the possibility of doing remote work is one of the great advantages of working in the digital fields. As a freelance, you are free to choose where to work from home, in a co-working, a bar, etc..
- A freelance's working day is predominantly occupied by work for a client. Commitments can be either in the form of short-term or long-term contracts.
- The administrative work of a freelancers is focused on the management of a portfolio website, research of clients, maintenance of professional network, the management of personal invoices.

In conclusion, being a freelance digital designer is the best choice for those who prefer variety rather than the economic stability and love to face always new challenges rather than pre-established jobs. Above all, it is suitable for those who know how to promote themselves and are available to face the economic risks19.

- Working at a Design Agency

Some professionals in digital design prefer to work in a design, marketing, or web development agencies.

Characteristics:

- Design agencies tend to hire experts who work in the offices even if, recentely, smart working has been spreading more and more.
- As for the freelancers, the working day is based on the development of clients' projects. In addition to this, their job consists also in handling administrative and management company tasks.
- Working in an agency means dealing with different clients and in different sectors which certainly makes the challenges and opportunities for

¹⁹ <u>https://www.springboard.com/blog/design/digital-design/</u>

















professional growth more stimulating. On the other hand, earnings prospects depend on the company's gain and don't always match the real value of professionals' work and experience.

- In-House Digital Designers

A third option is to be hired directly by a company to create their products or marketing materials and other resources.

Characteristics:

- In-house designers can aspire to career advancement ("creative director" / senior) or more specific titles (such as "UX designer" or "product designer").
- Even in this case, the work is generally carried out at the companies' offices or, in some cases, remotely.
- The in-house designer job is entirely dedicated to your companies' projects, contributing to their success.
- Working as an in-house designer allows you to deepen every single type of job and, perhaps, specialize in certain sectors or in a specific field.

2.5 The Principles of Digital Design

DIGITAL DESIGN

- PRINCIPLES -



















According to Cameron Chapman²⁰, the hardest part regarding the principles of design, is understand how many they are and which of them are the most important.

2.5.1 Basic Design Principles

In the design community there is no agreement on what the main principles of design are. However, it is possible to present the most common.

<u>Contrast</u>

Contrast indicates the arrangement between different elements in a design to bring out the difference.

It must be calibrated and, at the same time, capable of making the reading of the content of the text accessible, especially for people with visual disabilities.



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info@parabola.com +44(0) 131 603 8300 © 2018 Parabola Website by <u>dn&co.</u>

Parabola's website is a specific example of contrast design²¹.

²⁰CHAPMAN, Cameron (2018), *The Principles of Design and their Importance* <u>https://www.toptal.com/designers/ui/principles-of-design</u>

















<u>Balance</u>

The balance between various design elements is essential to ensure a suitable visual impact. Typography, colors, images, shapes, motifs, etc. have a different weight between them and there are, therefore, some that stand out more than others.

Balance can be symmetrical or asymmetrical: it is symmetrical when the same elements are positioned on the same line in the design project; it is asymmetrical when different elements are positioned in different "place" in the project.^{22.}



The Nue Co's website is an example of off-centered layout balancing huge and minimal images²³.

Emphasis

The emphasis is the principle that is applied when we want to distinguish certain elements. Generally, these elements to be emphasized are the most important information that the project must convey.

beauty.com/en-ch/brands/the-nue-co-

^{829?}gclid=Cj0KCQiAwqCOBhCdARIsAEPyW9lhkMItjW9U90TmJLolaj2BIITMkWEN1mqmW4cNeoB2K -h2RCX9TWUaAnENEALw_wcB













²¹ <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>https://www.parabola.com</u>

²² <u>https://www.toptal.com/designers/ui/principles-of-design</u>

²³ <u>https://www.toptal.com/designers/ui/principles-of-design; https://www.niche-</u>



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Clique's typography is an example of how to emphasize the slogan²⁴.

Distinguishing elements through emphasis can increase or decrease the impact of certain information and distinguish it between "primary" and "auxiliary". As happens, for example, between title and subtitle.

Proportion

This principle simply indicates the size of the elements in relation to each other. Proportion also contributes to assigning "importance" in a proportional sense to elements according to their measures: largest element = most important element and vice versa.

²⁴ <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>https://cliquestudios.com/university/page/2/</u>















Collin Hughe



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Collin Hughes' website is an example of how the different images sizes – in terms of proportion - wants to highlight the importance of the elements²⁵.

<u>Hierarchy</u>

Hierarchy refers to how web content should be perceived by people. The elements (or contents) that are most important to us will be placed in such a way that they seem the most important to visitors as well.

²⁵ <u>https://www.toptal.com/designers/ui/principles-of-design;</u> <u>https://collin-hughes.com</u>



















Grafill's website is an example of how the use of different positions., dimensions and sizes wants to create hierarchy: top position and huge size are set up for the most important contents²⁶.

The example of the difference between titles and headings is a case in point. The title of a page is of greater importance and should be made immediately recognizable as such.

The titles, subtitles and body of the text, therefore, must be formatted in relation to their importance.

²⁶ <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>https://www.grafill.no/om-grafill/faggrupper/grafill-illustrasjon</u>



















Repetition

Repetition serves to reinforce the visual image of the company \prime product by repeating the identical nuance, size, font, etc.^{27.}

The following article is an example of repetition. The use of the same format for all design principles means that they are the same value and they are correlated.



The images on the left-hand side of Type and Pixel's website are a great example of repetition in design.

Rhythm

The number of repetitions of elements creates different visual rhythm as well as the notes and pause in the music. There are five basic types of visual rhythm:

- << random rhythms have no discernable pattern;
- regular follow the same spacing between each element with no variation;
- alternating follow a set pattern that repeats, but with a variation between the actual elements (such as a 1-2-3-1-2-3 pattern);
- flowing follow curves similar to the flow of waves;

²⁷ <u>https://www.toptal.com/designers/ui/principles-of-design</u>

















• progressive - change as they progress, including any changes added in previous iterations>>^{28.}



TheArtCenter's website is an example with which irregular spacing between the shapes creates random rhythm.²⁹

Different rhythms stimulate different feelings: enthusiasm, quite, impatience, etc..

<u>Pattern</u>

The patterns are characterized by regular and geometric motifs that repeat themselves in an orderly way. Wallpapers are the classic example.

In digital design, however, they can also indicate certain standards for designing certain elements. An example is to place the navigation menu of a web page at the top.

²⁹ https://www.toptal.com/designers/ui/principles-of-design ; https://www.theartcenter.nyc













²⁸ <u>https://www.toptal.com/designers/ui/principles-of-design</u>





Isabelle Fox's website is an example of the most widespread "top navigation" design patterns on the internet³⁰ White Space

"White space" – also called negative space - is the part of the project that is empty – so, without images/photos/texts/etc..

While many designers overlook the value of white space, it serves many important purposes in a design:

- to give breath to the elements;
- to highlight specific content or specific parts of a design;
- to more easily distinguish the elements of a design.

Furthermore, negative space is more varied around lowercase letters so that typography is more readable when uppercase and lowercase letters are used, allowing people to understand easily.

³⁰ <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>www.isabellefox.com</u>

















Jan Behne's website is an example of white space able to take a "breathe"³¹.

Other times, negative space is used to create secondary images, not immediately apparent to the viewer at first sight. Used strategically, this mode can make the brand more attractive and surprise customers.



FedEx logo is an example of how to attract users/customers³²

³¹ <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>https://unmatchedstyle.com/gallery/jan-behne.php</u>
³² <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>https://www.fedex.com</u>

















Movement

Movement is related to the movement of the eyes on a project: from the most important element to the less important. This effect is achieved through placement (the eye falls instinctively first on certain areas of a design), emphasis and all the other design elements already mentioned so far.



The slanted images and numbers contribute to the movement principle on Abby Stolfo's website³³.

<u>Variety</u>

The variety serves to develop visual interest while preventing it from becoming boring. It should not be used as an end in itself but to reinforce the other elements of a design. You can play with various elements:

- Colors;
- Typography;
- Images;

³³ <u>https://www.toptal.com/designers/ui/principles-of-design; https://www.abbystolfo.com</u>

















- Forms;
- Etc.

Used together, these elements make the project attractive for the users.



Kennard Lilly's website is an example on who variety in terms of colours, shapes, etc to create users' interests.³⁴

<u>Unity</u>

Have you ever seen a website or other design products with completly different elements without regard to how they result in an overview? Newspaper ads using ten different fonts are one example.

Unity ensures the perfect homogeneity and and balance among the design elements³⁵. The visual is the element that - most of all - must be linked with the other elements in order to create clear contents easily to be figured out by the users. Projects with a "single" visual has synonymous of good management and high quality.

 ³⁴ <u>https://www.toptal.com/designers/ui/principles-of-design</u>; <u>http://kennardlilly.com</u>
 ³⁵ https://www.toptal.com/designers/ui/principles-of-design















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This is an example that shows how the use of a blue color transmits a sense of unity in the design and high quality³⁶.

2.5.2 Additional Principles of Design

Other important principles of design are; *<<typography, color, Gestalt principles, grid and alignment, framing and form*>>^{37.} However, some of these can be considered more as design elements. In any case, these are important aspects that a good designer must know along with the other basic principles to create the best user experiences.

<u>Typography</u> - Is the balance and interrelation between the shape of the letters on the page, a verbal and visual equation that helps the reader to figure out the shape and absorb the substance of the content. It includes fonts, their spacing, size, weight and the relationship among them.

<u>Color</u> - a digital designer must have a clear understanding of the values to be transmitted through the product he/she is creating. Corporate and visual identity is

^{37 &}lt;u>Ibidem</u>













³⁶ <u>https://www.toptal.com/designers/ui/principles-of-design</u>





vital for a company and colors play a fundamental role. Various psychological studies are dedicated to them and if the designer is able to understand how colors affect human behaviors, he will transform these into a decisive work tool with a great impact on the users' experience.

<u>Gestalt Principles -</u> In the graphic field, the Gestalt is characterized by various principles: the principle of closeness, of similarity, of common destiny, of continuity, of past experience, of closure or completion, of figure / background.

<u>Grid and alignment</u> - these two principles refer to how to arrange the elements of a page in the most balanced way possible in relation to an invisible grid.

<u>Framing</u> - Just like photography, framing is also important in visual design. Bringing the important elements into a frame and highlighting them foster the increase of people's attention. It helps increase the impact of the primary subject of a design.

Shape - by shape we mean both the specific ones used for the elements within the drawing, and the overall shape of the drawing itself. From a psychological point of view, as well as for colors, they stimulate different feelings, for example the circles are organic and fluid, while the squares are more rigid and formal, and the triangles give a sense of energy or movement.

So, to summarize, a good digital designer must understand how the above design principles, whether basic or auxiliary, affect the performance of the work and the perception of the users. The comparison with other professionals' experiences, the knowing the best practices is equally useful for improving oneself and the products.

To mistake is indisputably human and, especially at the beginning of a profession, it is taken into account. However, knowing the principles and putting them into practice helps save time and energy.

















2.6 Digital Technologies and Preservation of Cultural Heritage

According to the study of Antonina Nikonova and Marina Biryukova^{38,} the discussion about the use of virtual technologies in the conservation of cultural heritage is increasingly alive³⁹. There are many professionals involved in a more or less direct way by the question: researchers in the field of cultural studies, museum studies, psychologists who study the forms of perception, art historians, etc.

From the adoption of the "*Charter on The preservation of Digital Heritage*" by UNESCO in 2003, art galleries and museums began to transform their heritage in virtual format. As a result, every major museum now has its own e-portal or a virtual museum in addition to their expositions.

³⁹See for example, CAMERON, Fiona and KENDERDINE, Sarah. *Theorizing Digital Cultural Heritage: A Critical Discourse* (Media in Transition) . Cambridge, MA: The MIT Press (2007); KALAY, Yehuda, KVAN, Thomas and AFFLECK, Janice (2007) *New heritage: New media and cultural heritage*. London: Routledge; LYNCH, Clifford (2002) *Digital collections, digital libraries & the digitization of cultural heritage information*. In: Microform & imaging review, 31(4), pp. 131-145; STANCO, Filippo, BATTIATO, Sebastiano and GALLO, Giovanni (2011) *Digital imaging for cultural heritage preservation: Analysis, restoration, and reconstruction of ancient artworks*, Florence, KY: CRC Press / Taylor & Francis USA; YILMAZ, Haci Murat, et al. (2007) *Importance of digital close-range photogrammetry in documentation of cultural heritage* In: Journal of Cultural Heritage, 8(4), pp. 428-433.













³⁸NIKONOVA, Antonina A., BIRYUKOVA, Marina V., (2017) *The Role of Digital Technologies in the Preservation of Cultural Heritage*

https://www.researchgate.net/publication/317757322_The_Role_of_Digital_Technologies_in_the_ Preservation_of_Cultural_Heritage





The advantages deriving from the use of new technologies in the cultural field are undeniable, however experts in the sector draw attention to the need to analyze the content of the sites of museums and galleries in the context of the perception of new objects of information. The risk is that the boundaries of genuine art and its electronic reproduction cannot be distinguished. Today, in fact, it is difficult to witness a cultural communication based on its genuine meaning.

However, the function and value of culture for the formation of personality remains and, fortunately, the needs of its use remain the same.

Although the context of tradition and heritage still maintain their value and their importance for "humanity", it is the meaning of heritages that changes. Today, heritage is composed of a enormous variety of components, from natural elements to the technological instruments. It deals with the same miscellaneous that characterizes the link between humanity and nature^{40.}

Today, the role of cultural heritage in the education of modern people seems to take a back seat, compared to the technology.

⁴⁰CHANG, Rodney (30 November 2016) *Definition & Description of Cyberart or the Virtual Art of Webism*. Online at: <u>http://www.lastplace.com/page48.htm</u>,



















2.6.1 Various aspects of digital cultural heritage preservation

Industry professionals indicate two ways for the technological transformation of the cultural heritage:

a) e-form: the creation of electronic copies of the art;

b) electronic forms of the "art", which may possibly be considered as cultural assets but to be assimilated to intangible assets in terms of conservation methods.

Even if both have their own aspects, they are strictly connected. This connection is based on the "interactivity" that is bringing to the art digitalization.

The interactivity from one hand has fostered the "preservation" of cultural heritage but, from another hand, has produced the loss of the intrinsic meaning of the art. A clear example of this "process" is 3D.

















2.6.2 Characteristics of reconstructions



3D reconstruction is being developed in two directions: art reconstructions to show to the customers and art conservation to maintain the cultural heritage. Although they cannot bring back to light real monuments, they can give to the tourists much more than a simple imagine of a monument because they can recreate something very similar to the reality that the users can live. For that reason, "3d art" as well as the technologies, in general, are considered fundamental for the cultural world future. Computer reconstruction begins to become a new creative act, a kind of work of art itself. The technological tools and devices are becoming fundamental in the exhibitions. They allow to show to the customers enormous quantity of artistic projects overcoming the issues of the lack physical space. Furthermore, these instruments can provide a lot of information to the tourists about the heritage shown to the public. For that reason, over to play a fundamental role to vehicle the "art", they have become "art" themselves⁴¹.

⁴¹NOL, Lev. (2016) *Information technologies in museum practice* . Online at: <u>http://museolog.rsuh.ru/nol_kniga.html</u>

















Despite that, the 3D reconstructions create "sterile visual image" without giving information of the monument history.⁴².

The incompleteness of such work, however, remains: it distorts "perception" and is unable to save information. So, it can be said that 3D does not reconstruct but "deconstructs" the authentic monument and the information available, preserved in authentic historical sources.

2.6.3 Digital tools Vs Authenticity



Considering the above, it can be said that there is, objectively, an intrinsic limit to the application of digital technologies: the lack of "authenticity" of the digitized cultural product. The risk is that the mass use will be satisfied with the visual image of a new virtual object of cultural heritage rather than being stimulated to deepen.

Virtual reconstruction on the Internet makes us lose sight of all the laborious intellectual and "human" work that involves cataloging, searching for sources and attributions that is behind a cultural product.

From this, according to Roy Rosenzweig, problems of forgeries, plagiarism and copyrights arise in the digital world: <<*How, for example, do we ensure the "authenticity" of preserved digital information and "trust" in the repository?"*

⁴²EROHIN, S.V. (2010) *Aestetika cifrovogo izobraziteľ nogo iskusstva*. Saint-Petersburg: Aletejya, p. 328.

















Though, he continues, "paper documents and records also face questions about authenticity, and forgeries are hardly unknown in traditional archive>>^{43.}

Finally, the passage from real to virtual in the use of cultural products has also transformed the very meaning of cultural use: from education to entertainment to computer programs that simulate role-playing games. The latter, even, are designed with the possibility of modifying historical events. In the long run, both the knowledge of authentic "history" and the preservation of cultural heritage could become less important and urgent than a simpler and more direct virtual fruition. Virtual simulations could even be perceived as the only possibility of knowing the cultural heritage.



2.7 Tourism capacity through design thinking

According to the results of a research conducted by Dianne Dredge44, founder and director of the Tourism CoLab^{45,} operators in the tourism sector complain of a narrow organizational mentality that has been using the tools for decades.

⁴³ ROSENZWEIG, Roy (2003) *Scarcity or abundance? Preserving the past in a digital era, I*n: The American Historical Review, 108(3) p. 743.















In essence, it seems that the tourism sector uses low-tech services with low levels of innovation, despite being the predominant industrial sector (between 70 and 90% depending on the country) in the reality of SMEs.

This result also seems to refer to the management and control methodology, which is scarcely receptive to the adoption of new concepts and ideas. It is no coincidence that international agencies, including the OECD, are pushing the sector towards a new approach that includes not only technology and digitization but also social innovation, planning and management in a multisectoral perspective.

2.7.1 How to change Tourism through Design thinking



Design Thinking Process

The common steps of tourism management follow a fairly linear path:

- Studying the context;
- Monitoring and evaluation of the products;
- Defining the strengths and weaknesses of the places;
- Creating a plan for users;
- Defining a marketing plan.

⁴⁵ A social enterprise delivering cutting edge learning experiences, workshops and capacity building journeys into regenerative tourism.













⁴⁴ Dianne Dredge (Jul 19 2020) *Why we should embrace design thinking tools in tourism,* <u>https://medium.com/the-tourism-colab/why-we-should-embrace-design-thinking-tools-in-</u> <u>tourism-fd812e3c798b</u>





Often, however, these steps are carried out from top to bottom, that is, without really descending into the tourist destination.

These models offer little opportunity for real and localized community involvement, causing the devaluation of intrinsic and specific characteristics of destinations – since that they are not considered in the tourists' plan. Unfortunately, a lot of companies forget to take care of these "treasures" during the definition of the plan, losing the added value of the destinations⁴⁶.

Furthermore, it is assumed that this way of not taking into account the value of local communities and the natural environment (resources that up until now have always been taken for granted, as if they were eternal and immutable) in the planning and management of the tourism sector has emerged as one of the most important defect that has caused the current crisis. Without considering the specificity of the destinations, of the inhabitants and focusing just on the "external tourists' needs" a lot of occasions of development have been lost^{47.}

Therefore, it now seems necessary to adopt a way of planning tourism that revolves around a true co-creation of value, involving the interested parties with whom to share the co-created value more equally. This would stimulate the potential for regeneration of the same sources of value.

In summary, following the scheme outlined by Dianne Dredge, the new purposes of the tourism system should be the following:

- <<deliver value to all those stakeholders (human and nature-based) that contribute to the tourism system;
- acknowledge the importance of inclusive co-design;
- account for the diversity of social, environmental and economic value that is created, redistributed and consumed in the process of tourism-making;
- withstand shocks, find balance and regenerate>>48.

⁴⁸ Dianne Dredge, idem.













⁴⁶ Dianne Dredge, idem.

⁴⁷ Dianne Dredge, idem.





In this arduous task of unhinging habits, we are helped by design thinking or usercentered design which, in tourism, means an approach to the co-planning of collaborative actions for the benefit of all. The adoption of the design thinking approach in tourism, therefore, helps to design systems that include both a good design of tourism services and experiences and a long-term strategy.

So, design thinking is an approach to the co-design of solutions to identified problems that cannot be solved with the action of a single actor. The solution will come when we put the stakeholders at the center of the process.

Many large companies apply design thinking process: Apple, Google and Disney, FlightCentres and Intrepid specifically in tourism applying human-centered design, i.e. placing its customers and other interested parties at the center of the design and delivery of products and services.

So, what are the benefits of adopting design thinking in the tourism sector?

a) Place stakeholders at the center of problem solving. Doing so gains consensus from most traditional stakeholders. The collective effort

will help build a community that is more attractive to visitors as well.

b) Abatement of silos.

Businesses, communities, guests, visitors, governments, and tourism organizations co-design together in synergy. In this way the watertight compartments are broken down and "continuous" experiences are created for visitors. Destinations acquire fascination as they descend into an interconnected and productive ecosystem.

c) Design thinking argues that solutions come from us internally, not from external "experts".

It is the most creative and fun aspect of the process: teamwork, empathy and understanding will bring out the actions to be taken.

d) Design thinking is a transversal movement for every level of complexity. It can be applied to the creation of microservices to the design of tourist attractions and / or significant ecosystems. From local to global.

e) Design thinking is results-focused and low-risk.

















The active participation in the thought processes by all interested parties increases the ability to understand and identify solutions in an ever-faster way. In this way the results can be measured quickly through the prototyping and experimentation phases.

















3 Assessment

3.1 Knowledge assessment

Question 1(multiple choice or true/false): Design thinking is not a new approach to user-centred design.

[true] [false]

Question 2 (multiple choice or true/false): Design Thinking can be used in the humanities and heritage, but there are probably better method for generating new products.

[true] [false]

Question 3 (multiple choice or true/false): User-centered design [helps develop empathy for users by understanding their needs and wants] [helps develop sympathy for users by feeling their needs and wants] [helps develop antipathy for users by changing their needs and wants]

Question 4 (multiple answers correct): Select the 5 stages of Design Thinking [Empathise][Dismiss][Define] [Ideate] [Discard] [Prototype] [Disguise][Promote][Test]

Question 5 (multiple answers correct): The perfect sequence of stages characterizes Design Thinking [True] [False]

Question 6 (multiple answers correct): Types of Digital Designer are [Program Designer] [Objects Designer] [Graphic Designer] [Web Designer] [Travel Designer] [Ux Designer] [Tourism Designer]















Question 7 (multiple answers correct): Basic principles of Design are: [Selection] [Contrast] [Balance] [Brightness] [Exposure] [Emphasis] [Beauty] [Proportion] [Hierarchy] [Repetition] [Sound] [Rhythm] [Pattern] [White Spaces] [Movement] [Variety] [Connection][Unity] [Production]

Question 8 (matching): Match the terms with their definitions.

Term 1 Digital Tourism: Definition - the use of all the various digital tools to prepare, organize, manage and enjoy a trip.

Term 2 Digital Design: Definition - is any design made to be interacted with on a digital devicename

Term 3 Design thinking: Definition - It refers to the design process that offers a solution-based approach to problem solving, including the understanding of human needs, brainstorming sessions for conceptualization of an idea, prototyping and testing before the final release of the solution

Term 3 User-centred design: Definition - is a framework of process in which are given extensive attention at each stage of the design process to optimize the product around the user not forced to change their behavior and expectations to accommodate the product

Term 4 Emphatic Understanding: Definition - Getting out of personal and limited visions to understand those of the end user.

Term 5 Non Linear process: Definition – Steps on Digital Design could be interchanged, conducted simultaneously, repeated several times in order to increase the solution space and focus on the best possible solutions.

Question 9 (matching): Match the concepts with their explanations.

Concept 1 Empathising: Understanding the human needs involved.

Concept 2 Defining: Re-framing and determining the problem in human-centric ways.

Concept 3 Ideating: Creating many intencions in braining stormsessions

















Concept 4 Prototyping: Adopting a hands-on approach in foretyping.

Concept 5 Testing: Developing a verifiable prototype/solution to the problem.

3.2 Skills assessment

From your research you have highlighted an objective deficiency in the tourism / cultural system of your city: the institutions and all tourist / cultural / museum bodies do not communicate each other, generating confusion in the offer for the interested public, be it tourists or citizens.

Analyze the problem and propose a solution to be tested following the phases of Design Thinking.

Who do you involve to identify the nature of the problem? Who are your stakeholders? (for example: political representatives, museum directors, tourist agencies, final users etc etc);

How do you collect and analyze information?

What will be the ideas for creating the first solution models?

Choose the best solution to propose and to test.

Describe the characteristics of the final solution that you have decided to test, detailing the path of choice.

















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