



University Spin-offs Alliance:

From the idea to the market through mentoring and transnational entrepreneurial teams

Module 8

Innovation of project management in the digital transformation

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Introduction to this learning material

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Questions that inspire you to think entrepreneurially



Possible exercises and useful definitions



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Videoclips

Introduction



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Management and Project Management in the Digital Age

What is Project Management?



Project Management is one of the fundamental elements within a process aimed at the realization and development of an activity or the achievement of a goal. Project Management requires the use of resources and skills of different types to achieve the pre-established objectives within a work plan. Specific skills are needed, and they can be supported by tools, methodology and techniques useful for project management.

After the emergence of IT, various digital technologies (e.g., content management systems, platforms, research, and analysis tools) have arisen to support Project Management. In addition, project development and management often take place in a completely digital manner and allowing to achieve high-quality deliverables.

Project Management plays a fundamental role in the success or failure of a Project. Most project management failures we see can be traced back to requirements management, scope creep, change request handling, adoption failures, or sustained maintenance — all activities that are in the realm of project management. Therefore, it is very important to understand the critical aspects of project management and its related challenges and to be aware of the best project management techniques.

What is a Project?

A project involves the execution of a series of actions within a specified timeframe. Projects have definable goals, and outcomes, which usually differ from an organization's day-to-day activities. In addition, projects use resources (physical, intellectual, technological, and economic) that are allocated and prepared for the achievement of the goals of the project.



Definition:

According to the **Project Management Institute**, a project is, “A *temporary endeavor undertaken to create a unique product, service, or result.*”

Project Management cannot exist without the fundamental characteristics of a project.

First, it is crucial to clarify the **purpose** of the project. Secondly, it is appropriate to establish a **methodology**: following a project management model can help us achieve our goals effectively.

Of course, working on a project means that it is necessary to build a **team**, identify the people or partners to be involved, assign the responsibilities that each of the parties involved must assume and the tasks to be completed.

In addition, it is essential to establish the **timing** of the project: when it begins, when it ends, the expected duration. Timing also allows you to define the nature of a project. In fact, there are **temporary projects**, with defined start and end dates and whose resources are dispersed at the end of the project. On the other hand, there are **long projects** that fall within larger projects or that provide for a continuation after the conclusion of some steps.

Finally, the definition of the **budget** is fundamental for the realization of the project, establishing the costs of the activities and estimating the available resources.

Once these characteristics have been defined, two different groups of projects can be identified.:

1. **Simple projects** (for example, creating a website, working on low volumes of data, organizing a conference);
2. **Complex projects** (e.g., working on projects with multiple partners, working on large volumes of data, building an international infrastructure).

The number of people involved changes according to the degree of complexity of the projects. Simple projects will require limited involvement of individuals, while complex projects may involve different organizations from different countries (**such as SPINteams!**) or even different government institutions.

For these reasons, in recent decades the figure of the **Project Manager** has emerged. His role is to manage the process and to offer advice to the clients, not to carry out the work of the project. The Project Manager is responsible for guiding the team towards the final goal, ensuring compliance with the costs, timing, and quality of the project.



Tasks of a Project Manager, PRINCE2 Model.

A Project Manager must have the following skills:

1. Excellent ability to **control processes**.
2. Be skilled in **problem solving**.
3. **Leadership and team-working** skills.
4. Excellent **communication** skills.

Why Project Management is important?

Project management is important because it allows you to develop a plan to be followed in order to achieve the goals set. Following a project management model allows you to establish all the tasks, the relationships of dependence between the assignments, the responsibilities of the various areas and the roadmap. A detailed plan works as a guide that assists the project manager in the design, implementation, and execution of the project.

Many of these project management models now move within a digital ecosystem.

In recent decades, thanks to the increasing availability of ever faster broadband connections and the spread of technologies that require access to the Internet, the way we live, and work has changed dramatically. At the same time, the way of doing

business has also become more complex and many processes have been transposed and created in the digital environment.

Digital transformation affects all areas of production and all companies, regardless of their size. All companies have had to deal with the innovations of recent years: the advent of social networks and smartphones, the possibility of doing business and developing relationships via the web, the interoperability of processes and the cloud storage of data. In the face of these innovations, digital is transforming project management models and production processes, facilitating, and accelerating the achievement of the goals set. At the same time, entrepreneurship is increasingly looking for professionals who have skills in project management and digital project management.

Project Management covers several phases during a process: initiating, planning, execution, monitoring and controlling, closure.



"Initiating" takes place at the beginning of any project and concerns the assignment of a project manager, the formal approval of the project and the guidelines, the development of the work plan. Within a digital context it is essential to follow this initial phase, since often at the start of a project we focus almost exclusively on the allocation of financial resources while it is essential to monitor the status of the project in real time and being sure that all the people involved are responsible and able to make the right decisions.

"Planning" is critical to the success of any project. Planning processes are subject to frequent iterations before the plan is completed. For example, if the scheduled completion date is too late, you may need to change the scope of the project or you may need to increase your budget. Some detailed planning processes have clear dependencies that require them to run sequentially.

"Execution" is usually the longest phase of the project lifecycle and is usually the most challenging. It deals with the realization of the project plan, the execution of the identified tasks and the construction of the deliverables to be presented to the customer, managing at the same time the various technical and organizational interfaces.

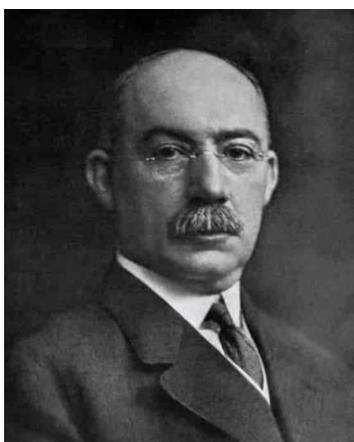
"Monitoring and control" are the measurement of the progress of the project to identify deviations from the original plan, as well as to make any changes or determine a date of completion of the project.

Finally, the **"Closure"** is responsible for ensuring that the results of the project have been completed satisfactorily. The resolution of any pending administrative issues and the filing of contractual documentation, as well as the collection and dissemination of information to formalize the completion of the project, must be completed.

During these phases, additional steps are also included such as the management of relations with stakeholders, governance, communication, management of time and economic resources, quality control, performance, risk.

A brief history of Project Management

Project Management responds to a basic need to give rise to processes and achieve the goal. From a certain point of view, we could identify project management methodologies starting from antiquity, just think of colossal projects such as the construction of the **Pyramids** or the **Great Wall of China**.



Henry Gantt, 1861-1919

It is no coincidence that in the modern age, the first forms of project management have emerged in the public sphere in relation to the need to develop civil engineering projects. One of the pioneers of project management was Henry Gantt, father of the **Gantt Chart** still used among the tools of project management.

However, it was after the end of the Second World War that project management was «entrusted with a significant range of

intricate and demanding undertakings, often requiring the integration of complex components, sub-systems, systems, projects, programs and specialisms»¹. Many of these new methodologies represented ambitious, previously unknown, and extremely innovative efforts, requiring an entrepreneurial mindset, and increasing the level of complexity of the processes and the quality of the results expected by the companies.

Project management moved from engineering to military. This transformation of project management processes was analyzed by **Burton Klein** and **William Meckling** in 1958. The two American economists tried to idealize two types of production process management model. Klein and Meckling created two fictional characters, **Mr Optimiser** and **Mr Skeptic**, who embodied antipodal positions in managing time and resources within a project and represented the methodologies adopted at that time.

Mr. Optimiser and Mr. Skeptic

Both characters have a certain capital and a set period of time to develop a given product. Mr. Optimiser, in the early stages, is dedicated to the systematic and comparative analysis of different prototypes and methodologies. He evaluates the costs of each solution, compares the resources to be used, evaluates the impact with the future operating environment, until he chooses what he thinks is the best solution to work on. This preliminary attention allows Mr. Optimiser to efficiently realize the finished product, since it allocates resources precisely avoiding waste of time.¹¹

Mr. Skeptic, on the contrary, prefers to work by overshadowing the need to optimize time and resources. In the initial stages it adopts flexible strategies, carving out time to learn the characteristics of a wide range of possible models and processes useful to achieve the set goal. Mr. Skeptic postpones decisions on key steps, keeping open a series of options that allow him to define a single methodology only in the final stages



Read the full article about Mr. Optimiser and Mr. Skeptic

Klein, Burton, and William Meckling. "Application of Operations Research to Development Decisions." *Operations Research* 6, no. 3 (1958): 352–63. <http://www.jstor.org/stable/167024>.

¹ Dalcher, 2015: 1

of production.

Klein and Meckling concluded that the potential user would prefer the product offered by Mr. Skeptic, since this is the result of a long process of analysis and development. This exemplification of two different models of proceeding in project management still endures and is identified as a cornerstone of the origins of the discipline of project management. According to Google® Scholar, Klein and Meckling's paper is cited by about 150 articles and papers despite the fact that more than sixty years have passed since its publication. Project management still oscillates between approaches related to the optimization of time and resources and approaches that invest more in creativity and in the exploration of flexible solutions.



Who do you feel closest to?

Read the text box and find out if you agree with Mr. Optimiser or Mr. Skeptic.

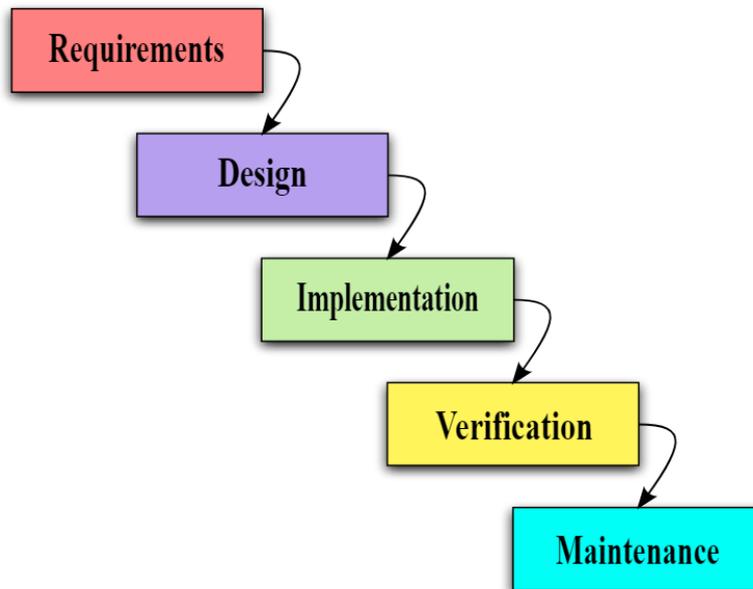
Following the technological advances recorded in the sixties, the activity of the project manager became increasingly defined. In 1965 the **International Project Management Association** was founded in Vienna, while in 1969 the **Project Management Institute** was founded in Pennsylvania.

Of course, the advent of computer science completely changed project management methodologies, using the first computers to develop software that supported project management.

During the Seventies, the **Waterfall methodology** was the most widespread for the development of software and systems dedicated to the management of a project.

It is a concatenated system composed of five phases, each phase corresponds to a different and self-conclusive function: **Requirements, Design, Implementation, Verification, Maintenance.**

Although this methodology made it possible to carefully evaluate the various goals of the project and to identify any errors, there were many weaknesses, including the enormous documentation (contracts, design, instructions, etc.) that accompanied the initial stages of a project. Waterfall requires a certain level of abstraction because clients may evaluate the product only at the end of the work.



Model of Waterfall Methodology.

The Waterfall methodology implied that the life cycle of projects extended more and more, becoming ineffective in the face of competitors capable of working in a more agile and innovative way.

In 1975, in the face of protests over the excessively long time of computer projects, Simpart Systems Limited created the **PROMPT method** aimed at regulating the workflow in computer projects.

At the same time, the **Lean Methodology** began to take hold, adopted by Toyota since the fifties, and designed as functional to the total reduction of waste, increase competitiveness and the implementation of continuous improvements. Between the fifties and the nineties, Toyota experienced exponential growth all over the world, beating the competition in the automotive sector.

In 1986, an article published in the Harvard Business Review by **Hirota Takeuchi** and **Ikujiro Nonaka** paved the way for alternative methodologies adopted in project management. The article launched the **Scrum method**, the result of an attempt to understand how the work processes were articulated within those companies that were making great strides in terms of technological innovation, surpassing their

 **Read the full article that launched Scrum**

Takeuchi, Hirota, and Ikujiro Nonaka. "The New New Product Development Game." *Harvard Business Review* 64, no. 1 (January–February 1986). <https://hbr.org/1986/01/the-new-new-product-development-game>

competitors. The Scrum method was based on what Takeuchi and Nonaka had defined as the "**Rugby approach**": rather than following the traditional cascade model, where a team after finishing its work passes it on to the next team, in the Scrum method the whole team "tries to go the whole distance as a unit, passing the ball back and forth".

The spread of Scrum, associated with progressive technological and IT advances, favoured the multiplication of methodologies and practices useful for the management of work processes.

In 1989 the Central Computer and Telecommunications Agency of the United Kingdom government developed the **PRINCE method**, adopted as a standard by several government institutions and revised later. The intent of the PRINCE method was to establish precise and pre-established guidelines in the execution of government projects.

In 2001 developers and project management scholars decided to collect good parts and alternative methodologies to the traditional Waterfall system. Kent Beck, Martin Fowler, Ron Jeffries, Ken Schwaber, and Jeff Sutherland and others give life to the **Agile Manifesto** that collects principles of collaboration, flexibility and self-organization that should guide the development of projects, overcoming the rigidities of traditional models.

Overview of management evolution during digital transformation

According to the International Data Group during the 2018 State of Digital Business Transformation², **89% of companies adopted digital-based management strategies.**

What are the technologies that are characterizing the digital transformation of companies? Big data analysis, use of mobile platforms, use of APIs and embeddable contents, use of cloud storage and sharing systems. Digital transformation requires a

² https://cdn2.hubspot.net/hubfs/1624046/Digital%20Business%20Executive%20Summary_FINAL.pdf



Learn more about the creation of Agile Methodologies

Rigby, Darrell, Sutherland, Jeff, and Takeuchi, Hirotaka. "The Secret History of Agile Innovation." *Harvard Business Review*, (April 20, 2016). <https://hbr.org/2016/04/the-secret-history-of-agile-innovation>



Do you know how Digital Transformation is reinventing business?

Watch this video and discover what is happening: <https://www.youtube.com/watch?v=508CR1fd8ws>

rapid and flexible response of companies in the face of constant market changes.

For a long time, digital transformation in companies has only concerned the transposition into a digital environment of the internal processes of the organization.

The computer has been conceived for too long as a valid tool to facilitate the work to be carried out in the office. Of course, this type of approach has ensured an increase in the efficiency and speed of execution of processes, especially in areas such as internal communication, data and information storage, administration management.

However, digital technologies have never stopped evolving.

Today it is possible to move from a communication based solely on the exchange of e-mails, to the use of software and tools to follow up on an instant communication within the organization and between the project partners. At the same time, document editing has also taken on a collaborative dimension that transcends time-space barriers.

Through tools like Google Docs, Office Online and more you can edit documents from anywhere in the world in real time. The internal processes of companies are therefore moving towards a perspective that is not only of **digitalization** but also of "**cloudification**".

Digital transformation has also changed the way businesses and consumers relate. Nowadays, sales channels try to intercept the preferences and needs of online users, through a constant work of profiling and data analysis.

Today we can buy a finished product without leaving home and without ever having contact with the company that produced it. In this way it almost seems that the digital transformation of production processes corresponds only to a chained series of clicks.

In fact, behind every product (digital and not) there are processes that it is essential to understand to be aware of how much digital transformation is transforming the world in which we live.

Introduction to Cultural and Creative Industries (CCIs)

The cultural and creative sectors are important in ensuring the continued development of societies and are at the heart of the creative economy. They are crucial because **they foster a shared sense of European identity, culture and values.**

In particular, they accelerate sustainable human development, stimulate innovation in driving inclusive sustainable growth, transform the economy by generating socio-economic progress, create new jobs and opportunities, contribute to social inclusion creating an impact on the territory and within communities.

The cultural and creative industries (CCIs) are one of the world's most rapidly growing economic sectors that generate value in our society.

A brief history of the concept

The era of the cultural and creative industries brought together many different approaches to culture around an urgent call for recognition of a new reality that was «out there» and that represented the future, change, renewal and the re-vitalisation of the economy.



Theodor Adorno 1903-1969

The concept of cultural industries - the creation, industrial reproduction, and mass distribution of cultural works - is not new.

Theodore Adorno and Max Horkheimer coined the term.

They introduced the term “the culture industry” to refer to industrially produced commercial entertainment such as broadcasting, film, publishing, recorded



About Cultural and Creative Industries see the video below:

<https://ied.eu/project-updates/culture-creativity-connected/>



Learn more about the Frankfurt School:

<https://plato.stanford.edu/entries/critical-theory/>

music, in opposition to the subsidised “arts” such as visual and performing arts, museums and galleries.

The **Frankfurt School** writers were, of course, using the term “the culture industries” pejoratively: emphasising the new ideological functions that mass entertainment was playing within capitalistic systems of socio-economic relations.

Half a century has passed since they developed the concept and during this time the ways of creating, producing and distributing cultural products has changed dramatically.

Cultural industries have incorporated, in addition to adapting to technological advances and the evolving place of media in society, **sophisticated production processes and large-scale distribution methods to reach global markets.**

The concept evolution during the ‘80s

Contrastingly to Adorno and Horkheimer, during the 1980s, the term cultural industries was employed in the UK with quite a different political inflection: indicating the democratic possibilities for **promoting forms of popular cultural production within progressive public policy.**

The creative industries were defined in the United Kingdom as “those industries which have their origin in **individual creativity, skill and talent which have a potential for job and wealth creation through the generation and exploitation of intellectual property**”³(Creative Industries Mapping Document, DCMS, 2001).

The **first Creative Industries Mapping Document**, published in November 1998, was the first ever attempt to measure the **economic contribution** of these industries to the UK, and to identify the opportunities and threats they faced. The Mapping Document also helped set a blueprint for action for both **Government and the industries.**

It was an important foundation document that influenced and guided many subsequent DCMS activity in terms of policy and programmes.

³ Creative Industries Mapping Document’, DCMS, 2001 Department for Culture Media and Sport, London.
<https://www.gov.uk/government/publications/creative-industries-mapping-documents-2001>.



About the Theory of culture industries of Horkheimer and Adorno School read

T. Adorno-M. Horkheimer (1944) *The Culture Industry: Enlightenment as a Mass Deception.*



For further study see the Works:

Garnham, 1987;
Looseley, 2011; Street,

The **Creative Industries Mapping Document 2001** retains the same coverage, taking the creative industries to include advertising, architecture, the art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software, music, the performing arts, publishing, software and computer services, television, and radio.

The DCSM, 2001 also recognises **the close economic relationships with other sectors such as tourism, hospitality, museums and galleries, heritage and sport.**

Cultural and Creative Industries



The CCI in DCSM, 2001.

About the growth of creative industries, this report faces some issues impacting on its growth potential. These include the importance of:

- **stimulating creativity and innovation** in young people to ensure we have a long-term supply of creative talent.
- ensuring that at primary, secondary, and tertiary education levels, it is possible **to identify and develop new talent.**
- ensuring that people have both the **creative and business skills** necessary to succeed.
- ensuring wider **public awareness** of the importance of intellectual property rights to longer-term creativity.
- ensuring that creative businesses have access to appropriate **financial support**, and that the financial sector is aware of the opportunities and benefits of investing in the creative industries.
- responding to **global opportunities**, promoting creativity and innovation throughout the world, removing obstacles

to free trade, and opposing the introduction of measures which would harm the competitiveness of companies.

- exploiting the opportunities presented by **e-commerce and the Internet**.
- ensuring the regulatory burden does not fall disproportionately on creative businesses.
- recognising the **interlocking relationship and synergies** between the subsidised and commercial creative sectors, between the creative industries and broader cultural sectors, and promoting the UK's diverse vibrant cultural life.
- continuing to improve the collection of robust and timely **data** on the creative industries, based on a common understanding of coverage.

Concepts and approaches

1. DCMS Model

Advertising
Architecture
Art and antiques market
Crafts
Design
Fashion
Film and video
Music
Performing arts
Publishing
Software
Television and radio
Video and computer games

2. Symbolic Texts Model

Core cultural industries
Advertising
Film
Internet
Music
Publishing
Television and radio
Video and computer games

Peripheral cultural industries
Creative arts

Borderline cultural industries
Consumer electronics
Fashion
Software
Sport

3. Concentric Circles Model

Core creative arts
Literature
Music
Performing arts
Visual arts

Other core cultural industries
Film
Museums and libraries

Wider cultural industries
Heritage services
Publishing
Sound recording
Television and radio
Video and computer games

Related industries
Advertising
Architecture
Design
Fashion

4. WIPO Copyright Model

Core copyright industries
Advertising
Collecting societies
Film and video
Music
Performing arts
Publishing
Software
Television and radio
Visual and graphic art

Interdependent copyright industries
Blank recording material
Consumer electronics
Musical instruments
Paper
Photocopiers, photographic equipment

Partial copyright industries
Architecture
Clothing, footwear
Design
Fashion
Household goods
Toys

5. UNESCO Institute for Statistics Model

Industries in core cultural domains
Museums, galleries, libraries
Performing arts
Festivals
Visual arts, crafts
Design
Publishing
Television, radio
Film and video
Photography
Interactive media

Industries in expanded cultural domains
Musical instruments
Sound equipment
Architecture
Advertising
Printing equipment
Software
Audiovisual hardware

6. Americans for the Arts Model

Advertising
Architecture
Arts schools and services
Design
Film
Museums, zoos
Music
Performing arts
Publishing
Television and radio
Visual arts

Different Classification Systems for CCIs (UNESCO 2013:22).



In recent years concepts such as content industries and copyright industries have also been introduced including slightly different definitions and disciplines.

In addition to the DCMS Model, discussed above, there are further different classifications for CCIs:

- the **Symbolic Texts Model** (Hesmondhalgh, 2002) is on industries concerned with industrial production and dissemination of symbolic texts. The production of symbolic meaning through a range of different way allows this approach to point out differences within the CCIs⁴. This model is the first one that explicitly recognizes **advertising and public relations** as core cultural industries based on their actual output as well as their contribution to other cultural industries.
- the **Concentric Circles Model** (Throsby, 2001) is based on the origin and the diffusion of creative ideas in **sound, text and image** from core creative arts. This model focuses on the dynamics of cultural transmission within a cultural production system. In that way, the CCIs activities do not only pertain to a strict set of defined and limited sectors, but extend their branches to a variety of **collateral, complementary, integrative activities within the whole economy**⁵;
- the **WIPO Copyright Model** (WIPO, 2003) is based on industries involved directly or indirectly in the creation, manufacture, production, broadcast, and distribution of **copyrighted works**. This model is based on the degree of copyright protection of an output and of an industry. The WIPO approach underlines the **role of copyright in contributing to the assessment of economic performances**. Intellectual property is an affordable and reliable method to assess the health of a specific creative and cultural economy.

⁴ Hesmondhalgh, D. (2002), *The Cultural Industries*, London: Sage.

⁵ Throsby, D. (2001) *Economics and Culture*, Cambridge: Cambridge University Press.



- the **UNESCO Institute for Statistical Model** (UNESCO, 2005) is based on cultural goods and services entering international trade. The definition proposed is broad. For UNESCO cultural industries (sometimes also known as “creative industries”) combine the **creation, production, and distribution of goods and services that are cultural in nature and usually protected by intellectual property rights**⁶. According to the UNESCO’s Framework for Cultural Statistics, the definition of the cultural and creative industries are sectors of organized activity that have as their main objective the production or reproduction, the promotion, distribution or commercialization of goods, services and activities of content derived from cultural, artistic or heritage origins.
- The **Americans for the Arts Model** (Americans for the Arts, 2005) is based on businesses involved with the production or distribution of the arts (“**arts-centric businesses**”). Mainly used as a lobbying tool by the arts sector, it relates very clearly to arts policy, but ignores links with technology, computing, and other creative sectors⁷.

The UNCTAD classification of the creative industries

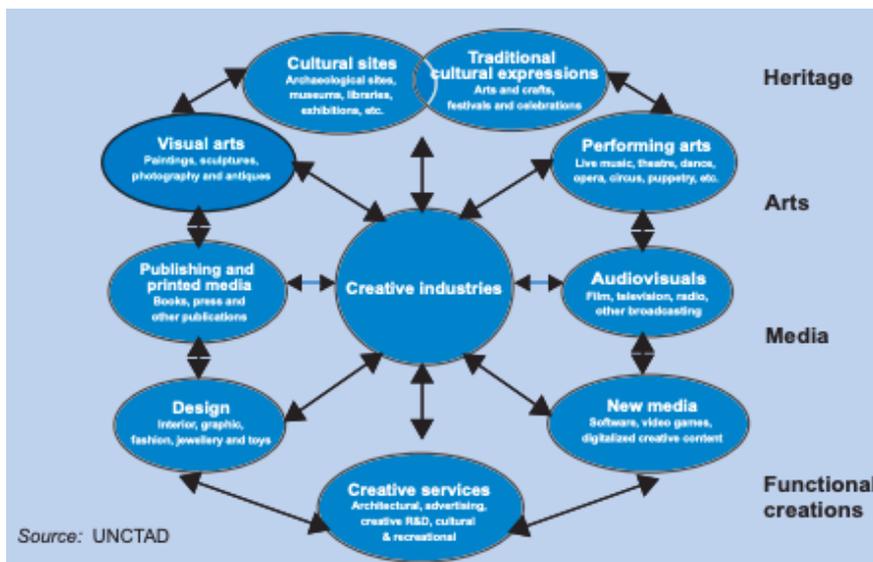
A significant landmark in embracing the concept of the “creative industries” was the UNCTAD XI Ministerial Conference in 2004.

The UNCTAD classification provides a convenient classification into four broad groups that are helpful for the sampling purposes:

⁶ UNESCO, Institute for Statistics, 2007.

⁷ Americans for the Arts, 2005. Creative industries 2005: The congressional report. Available from: https://www.americansforthearts.org/sites/default/files/pdf/about_us/2005AmericansForTheArtsAnnualReport.pdf

- **Heritage** (including cultural sites and traditional cultural expressions).
- **Arts** (including performing and visual arts).
- **Media** (including publishing and audiovisuals).
- **Functional creations** (including new media, design, and creative services).



UNCTAD Classification of Creative Industries (UNDP/UNCTAD 2008).

Three main pillars of this model:

- the CCIs serve to promote the **diversity of cultural expressions** within the global circulation of cultural expressions.
- CCIs are a **driver of economic growth** in terms of job opportunity and export diversification.
- CCIs are at the base of development pathways beyond economic terms focusing on the **social and human aspects before economic aspects**⁸.

Common features

Even if finding and investigating common definition is very hard, anyway these approaches are one of the reason of the fascination and specificity of the creative industries which

⁸ Read more: <https://disce.eu/wp-content/uploads/2019/12/DISCE-Report-D2.1.pdf>, https://unctad.org/system/files/official-document/ditc20082cer_en.pdf.

‘refuse to lie down and be measured like other sectors of the economy. And that is why economists and statisticians will probably never stop debating how to define them and how to estimate their worth’ (Newbegin 2010).

Regardless all of these concepts and approaches share the common theme of creativity. **Human creativity is the source of cultural and creative industries goods and services.**

They also share the common links of **culture, trade and intellectual property rights, particularly copyright.** The differences in the definitions adopted on a national level depend largely on the needs and scope defined within local policy evaluations and development initiatives.

The Creative Ecosystem

Cultural and Creative sectors operate within ecosystems.

At the heart of this ecosystems approach is the idea that cultural and creative sectors work in an inter-twined way with different sectors adjacent to their own, or with completely different sectors, and also in a cross-sectoral way.

Creative ecosystem is where interlinked creative resources (human) come together with venues, workspaces and platforms either physical or digital. Human resources include policy makers, creators, professionals, entrepreneurs, intermediaries. Interdependency is the glue that binds successful ecosystems.

This has been pointed out by the OMC report on "The role of public policies in developing entrepreneurial and innovation potential of the cultural and creative sectors"⁹.

Why is the sector important to European economy?

Cultural and creative sectors are important for innovation, job creation, cohesion and well-being of societies.

⁹ Read more: <https://op.europa.eu/en/publication-detail/-/publication/5d33c8a7-2e56-11e8-b5fe-01aa75ed71a1/language-en>.

Cultural and creative ecosystems are the nurturing ground for innovation, in particular within the increasingly recognised broad concept of innovation, going beyond pure tech-innovation from STEM (science, technology, engineering and mathematics) to STEAM (science, technology, engineering, arts and mathematics) and including social and societal innovation aspects.

This approach is reflected in new programmes such as Horizon Europe and KIC (Knowledge and Innovation Communities) for Culture and Creative Industries (CCIs), where cultural and creative sectors play a pivotal role.

The innovative power of the cultural and creative sectors is essential for the further development of European economies and societies, because it:

- Generates well-being and cohesion.
- Shapes the public space used by millions of Europeans.
- Modernises industries and business sectors with new creative input and methods.
- Provides meaning and a feeling of belonging.
- Upgrades urban and rural areas.
- Designs our products and services.
- Produces and digitises content.
- Enriches our visual experiences.
- Provides content for debates.

The creative economy: a leading sector

Regardless of the way in which the creative industries are defined and classified, there is no disagreement that they lay at the centre of what can be labelled in broader terms the “creative economy”.

The term “creative economy” appeared in 2001 in John Howkins’ book about the **relationship between creativity and economics**. For Howkins, “creativity is not new, and neither is economics, but what is new is the nature and the extent of the **relationship between them and how they combine to create extraordinary value and wealth**”

The creative economy places an emphasis on creativity and presenting it as the engine of innovation, technological change and as a comparative advantage in business development.



Learn more about EU programmes:

https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en



Learn more about Creative Economy:
Howkins (2001), *The Creative Economy: How People Make Money from Ideas*

In many advanced economies, the creative economy is now recognized as a **leading sector** in generating economic **growth, employment, and trade**. Cultural and Creative sectors occupy a significant place in today's European economy, by contributing to innovation, investment, digital modernisation, and cultural tourism.

In Europe, the creative economy generated a turnover of 654 billion euros in 2003, increasing 12 per cent faster than the overall economy and employing about 4.7 million people¹⁰.

	Turnover, 2003 (all sectors included) (€ million)	Value added to national GDP (all sectors included) (%)
Austria	14,603	
Belgium	22,174	1.80
Cyprus	318	2.60
Czech Republic	5,577	0.80
Denmark	10,111	2.30
Estonia	612	3.10
Finland	10,677	2.40
France	79,424	3.10
Germany	126,060	3.40
Greece	6,875	2.50
Hungary	4,066	1.00
Ireland	6,922	1.20
Italy	84,359	1.70
Latvia	508	2.30
Lithuania	759	1.80
Luxembourg	673	1.70
Malta	23	0.60
Netherlands	33,372	0.20
Poland	6,235	2.70
Portugal	6,358	1.20
Slovakia	2,498	1.40
Slovenia	1,771	2.00
Spain	61,333	2.20
Sweden	18,155	2.30
United Kingdom	132,682	2.40
Bulgaria	884	3.00
Romania	2,205	1.20
Norway	14,841	1.40
Iceland	212	3.20
Total European Union (25 countries)	636,146	0.70
Total 30 countries*	654,288	

*The countries covered by the statistical analysis include the 25 Member States of the European Union plus the two countries that joined in January 2007 (Bulgaria and Romania) plus the three European Economic Area countries of Iceland, Norway and Liechtenstein.
 Source: Eurostat and AMADEUS/Data elaborated by Media Group.

Contribution of European CCI sector to the European National economies (Creative Economy Report 2008).

In the United Kingdom in 2004, the creative industries contributed 8 per cent of gross domestic product (GDP) and generated nearly 2 million jobs. Denmark is another remarkable example where the creative economy accounted for 5.3 per cent of GDP, providing 12 per cent of total jobs and 16 per cent of total exports.

¹⁰ Creative Economy Report 2008; The Economy of Culture in Europe, study prepared for the European Commission by Kea, European Affairs, Brussels, 2006.

The Cultural and Creative Industries generate indeed around €509 billion per year, representing 5.3% of the EU's total GDP and employ 12 million full-time jobs, which constitutes 7.5% of the EU's employment¹¹ and the third largest employer sector in the EU (European Commission, 2018¹²).

They are the third largest employer in the EU, after the construction and food and beverage sectors.

The number of enterprises born in the cultural sector in the EU-27 has grown between 2012 and 2017 at an average rate of 1.5 % per year.

Small and medium-sized enterprises (SMEs) (enterprises with less than 250 persons employed) dominate most cultural activities within the EU-27, while large enterprises (with 250 or more persons employed) are predominantly active in programming and broadcasting activities.

In 2017, SMEs employed the majority share of the EU-27 workforce for a range of cultural activities, including: 97.1 % of total employment for photographic activities, 91.5 % for specialised design activities, 85.9 % for printing and the reproduction of recorded media and 84.6 % for motion picture, video and television programme production, sound recording and music publishing activities.

In 2018, there were 7.4 million people across the EU-27 carrying out a cultural activity or having a cultural occupation, which presents an overall increase of 8% since 2014. This number was equivalent to 3.7 % of the total number of persons employed in the EU-27 economy.

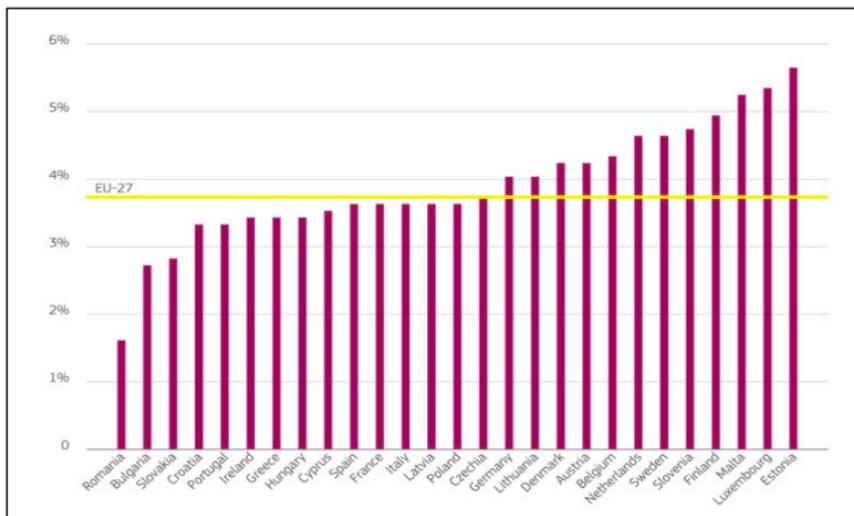
¹¹ The study, "Creating growth", published by Ernst and Young in 2014 estimates that in 2012, CCIs have revenues of €536 billion, contribute 4.2 % GDP, employing 7 million people or 3.3% of the active population. There is a lack of comparable statistics on the cultural and creative sectors at European level.

¹² EU, Report from the Commission to the European Parliament and the Council: Mid-term evaluation of the Creative Europe Programme (2014-2020).



Read more about the importance of CCIs in European economy:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF>



Cultural Employment represent on average 3.7% of total employment in the EU-27 (JRC based on 2018 Eurostat data).

What makes the CCS unique is that organisations are often small-sized (with 10-49 persons employed) or even micro-sized enterprises (with less than 10 persons employed). A closer examination reveals that e.g., a majority of the EU-27 workforce in photographic activities (86.5 %) and in specialised design activities (78.3 %) was employed by micro-sized enterprises. Furthermore, the CCS ecosystem is also made up of many **freelancers and temporary and intermittent workers**.

The relative weight of **self-employment** in the field of culture is more than twice as high as in the rest of the economy. Another characteristic of cultural employment is the high share of **part-time workers**. In 2019, just three quarters (75%) of the cultural workforce in the EU-27 was employed on a full-time basis, while the share of full-time employment across the whole economy was 81%. However, the EU Labour Force Survey does not consider in its statistics the great number of 'invisible' workers in the CCS: **temporary and intermittent workers**.

So, they also contribute significantly to investment, innovation and creation of jobs throughout the economy. There are positive spill over effects in particular on the digital sector e.g. content triggers the development of broadband infrastructure, and cultural tourism.

Culture and creativity also facilitate European exports around the world by strengthening the image of Europe and the European way of life.



More than the economic value added to the EU's GDP, cultural and creative sectors promote the European culture within and beyond the EU's borders.

beyond the EU's borders.

In a political context characterised by the questioning of the European project, cultural and creative sectors have the potential to:

- Strengthen the European identities, cultural diversity, and values.
- Favour the critical thinking.
- Build bridge between art, culture, business, and technology to bring the European citizens closer.

Cultural and creative sectors build bridges between art, culture, business, and technology. They contribute to developing critical thinking and problem-solving skills, as well as risk-taking attitudes, which are key competences in tomorrow's society. Through their focus on creativity and early adoption of new technologies e.g., the use by museums of apps to enhance access to collections or by theatres of video or subtitling, they are catalysts for innovation.

How management changes in CCI after Covid-19: opportunities and experiments

The COVID-19 pandemic has pushed many businesses, including those within the creative industries, to operate rapidly and develop new, more resilient ways of functioning.

In order for businesses and organisations to survive in times of crisis, the main component of every system should be **resilience**.

The recent events of the COVID-19 pandemic have



demonstrated that the creative industries adopted new business models to operate during this crisis. For example, some museums started to offer online exhibitions, while musicians delivered concerts via online

streams or recorded their performances, changing the customers' experience, demand and consumption.

The majority of small businesses, freelancers, and self-employed in the creative industries struggled to **adapt to new changes and be resilient**.

Before COVID-19 CCIs found themselves in this situation: stuck in a status quo despite signals of unsustainability (e.g. vulnerable working situations, lack of basic social rights for non-standard workers, fragile financing structures).

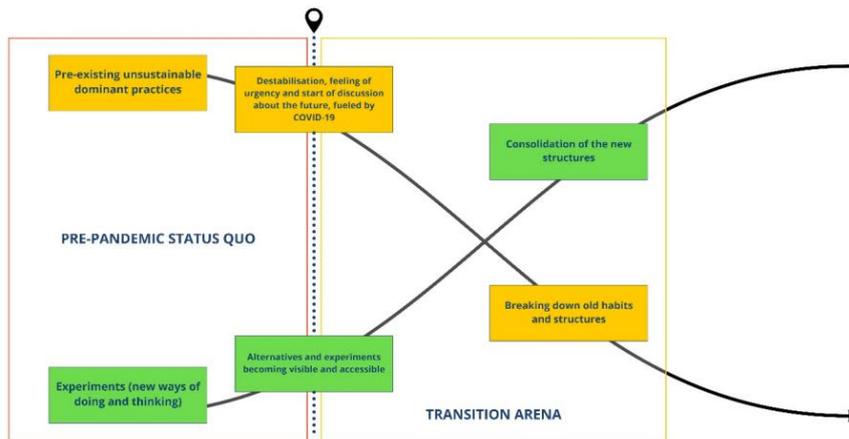
The current COVID-19 pandemic can be considered as an unprecedented event that has greatly upset this status quo. On the one hand, it has exacerbated non-sustainable practices, but on the other hand, it has brought out experiments and new practices (both on the side of the CCS and policy makers).

The disruptiveness of the pandemic has created momentum for **looking beyond a recovery approach** (i.e., going back to the status quo) when thinking about future perspectives for the CCS and for moving into the transition arena towards the right along the x-curve.



For further details on Covid-19 impact read:

Agostino 2020; Eggers, 2020; Ines, 2020; Ivanov, 2020; Unesco 2021.



COVID-19 and the transition pathway for the CCS
 (Report for Cult Committee 2021)

While the CCS has entered the transition arena, it is of utmost importance that the transition movement continues with **sustainability as a long-term compass** (as opposed to the current unsustainable situation). The European CCS not only needs to be **'built back better'**, 138 but also to be **re-built under the banner of sustainability**, so as to lead to a deep (COVID-19-proof) systemic change.

Recovery approach ('Back to Normal')	Sustainability transition approach ('Repair and prepare' ¹³⁹)
Short-term view focusing on repairing the damage.	Short-term (repairing the damage) and long-term (preparing for a long-term future) views combined.
Based on the assumption that the CCS were healthy and strong before the COVID-19 crisis and that the severe impact on the sector is due to strict containment measures.	Based on the assumption that the pandemic has exacerbated pre-existing unsustainability and that the strict containment measures were the last in a series of cumulative unsustainable situations.
It considers the 'Back to Normal' as reference point to design support schemes and legislative actions.	It considers the 'New Normal' as a part of a long-term transformation. Long-term systemic change as starting point to guide and shape short-term actions.
Short-term approach that aims at getting the CCS out of the crisis by building on the emergency measures taken during the crisis management phase.	Long-term approach that aims at making the sector crisis-resistant by substantively and sustainably addressing the root causes of unsustainability.

Comparison between a status quo approach and a sustainable transition approach (Report for Cult Committee 2021).

The sustainability transition approach for the CCS considers all the **17 SDGs** (Sustainable Development Goals) as essential.

Digital Innovation in CCIs as a driver and enabler of sustainable development

The future crisis resistance of the CCS strongly depends on their way of doing business, the degree of digital innovation, the set-up of new collaborations, the re-thinking of



relationships with audiences and customers and the development of new revenue models.

When the COVID-19 containment measures forced CCS organisations and freelancers to close their doors and halt their activities, many of them promptly adapted their offer in different ways to new digital distribution formats. When possible, **some sub-sectors have also adapted their creative processes.**

The innovativeness of the digital solutions proposed by the sector during the Great Lockdown and in the post-Great Lockdown period have their roots in the pre-crisis status quo where the discourse on the need to open to digital technologies was already widely present. Initiatives such as the hackathon 'HackCreative', for example, boosted innovative ideas to provide support to the industry in crisis times (and beyond) thanks to the use of digital technologies.

The COVID-19 crisis has accelerated the adoption of digital solutions and the development of new digital formats.

Although it is clear that for some sub-sectors – such as performing arts and live music – the digital element cannot replace the need for human interaction, there is no doubt that digital technologies have successfully enabled organisations and professionals to continue producing, distributing and maintaining contact with audiences and communities.

The **main digital solutions** that have seen an increase in their use can be clustered as:

- **distribution of digitised content:** CCS organisations and professionals have shown immense resilience, inventiveness and adaptability in order to continue to be able to perform business activities and to reach audiences. Organisations and artists increased the sharing and distribution of digitised content. Virtual tours, online exhibitions, 'opera on the sofa', among other initiatives were organised by museums, theatres and individual artists. Many cultural and creative industries declared that they have adapted by switching to the online way of performing business activities. They offered online cultural content of recorded material (theatre shows, performances), digitised material (libraries, archives) and live performances (concerts, book reading). On the distribution side, in addition to the big digital platforms mainly used in the music and film sub-sectors, new

independent platforms and ways to distribute online content emerged during the Great Lockdown period.



#Operaonthesofa- Teatro Regio di Torino

- digital creation and mobility:** in times of confinement and social distancing, new forms of artistic creation emerged. Digital technologies have been a valuable not only in distributing and presenting physical or digitised creative content, but also in creating new content. The most interesting experiments come from those **sub-sectors that were less used (or inclined) to create content with digital formats**. ‘You never dance alone’ is a project/platform launched to establish an alternative place to stay connected, where audiences and dancers co-create the content on the platform. Other interesting projects were developed thanks to the collaboration between cultural centres and multi-disciplinary artists. The Austrian cultural centre ArtSocialSpace Brunnenpassage launched the online project JUMP!STAR as an emotional project helping audiences shape hopes for the post-COVID-19 era In addition to pre-recorded performances, live digital performances also became popular: the Canadian Festival of Live Digital Art (FOLDA), supported **artists in creating theatre in a digital age**¹³.

In the framework of a long-term transition, digital solutions can complement the physical element in order to:

- make the CCS more economically and financially sustainable and COVID-19-proof in the longrun;

¹³ Read more: [https://www.europarl.europa.eu/Reg-Data/etudes/STUD/2021/652242/IPOL_STU\(2021\)652242_EN.pdf](https://www.europarl.europa.eu/Reg-Data/etudes/STUD/2021/652242/IPOL_STU(2021)652242_EN.pdf).



Learn more about
digital contents and
digital mobility:

<https://www.teatroregio.it>
[orino.it](https://www.teatroregio.it)

<http://you-never-dance-alone.ch>



- make cultural and creative content accessible to a wider range of people, especially those that are less mobile and/or living in rural and remote areas;
- ensure continuity of contact with audiences and communities;
- foster sectoral internal innovation, new artistic expressions and access to new market opportunities.



Which deep competences and soft skills the CCIs need for the management in the Digital Age?

The **7 essential skills** to progress successfully into the creative industries are as follows:

- 1. Creativity:** *"The use of imagination or original ideas to create something; inventiveness."* Creativity is a skill that is really sought after when entering the creative job market. You need to show that you have a showreel that isn't just the same as every other showreel that the recruiter looks at. **Incorporate creative ideas and methods as part of your portfolio** to stand out from the crowd. Coming up with cool ideas, testing if they work, and failing fast to enable you to try again is a great way to show passion and resilience.



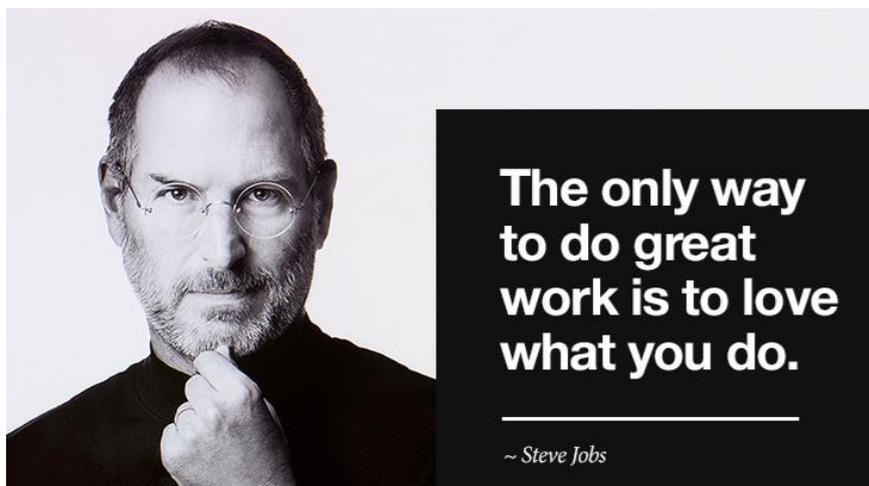
- 2. Communication and teamwork** are key skills to succeed. Being able to listen to instructions and cooperate with team members to solve problems and work through tasks will increase productivity massively.



3. **Adaptability:** the creative industries are constantly changing and developing, even more so with the introduction of new technologies. As an artist in the creative industries, keeping up with the technologies is key; but more importantly it's **your ability to adapt to the fast-growing environments that you will be working in.** *"The creative industry is rapidly evolving, and even on a daily basis, what you work on will never be the same as the day before! Get ready to work in a fast pace environment".*
4. **Working to deadlines:** Being able to work to tight deadlines is also a key skill for the creative industries as you will be given a brief and you will need to have completed your task by a strict time in order to see how **your work aids the bigger project.**
5. **Time Management:** You need to have good time management to meet the deadline. People manage their time in a huge variety of different ways. Some people make lists, some prioritise their tasks and some use Gantt Charts and other visual formats. Find a method that works best for you and stick to that method. The main thing is that you **break down the larger tasks**

into smaller ones to make sure that your brain does not feel overwhelmed. **Planning your time will enable you to make it through the task more productively.**

- 6. Passion:** you need to have a passion for the work that you are doing. Creative Roles can be very demanding, and it is highly important that you are passionate about it so that you can put your all into it.



Proactivity: is a behavioural attitude that involves acting in advance for a problem. refers to an anticipatory, change-oriented, self-initiative mode. If you master all the skills mentioned, you will be a more productive creative artist, allowing you to progress and impress recruiters.

On 28 April 2022, the European Commission launched a new **Pact for Skills**, a shared engagement model for skills development in Europe since November 2020. BEDA (Bureau of European Design Associations), Creative Skills Europe and the European Creative Business Network (ECBN) were co-chairing the working group of 60 partners “Towards a large-scale skills partnership for the Cultural and Creative Industries (CCIs) ecosystem”.

The Pact is anchored in the principles of **Social Rights** and supports the goals of the **Green Deal** and the **digital transformation**.

General Key principles as follows:



Read about Pact for Skills:

<https://www.beda.org/news/the-pact-for-skills-for-ccis>

- Promoting a culture of lifelong learning for all
- Building strong skills partnerships
- Monitoring skills supply/ demand and anticipating skills needs
- Working against discrimination and for gender equality and equal opportunities

The final goal is to build a common proposal for up-skilling and re-skilling the creative and cultural actors.

BEDA is endorsing the Creative Pact for Skills (C-P4S) that is focusing on the most urgent horizontal skills needs, relevant for the Cultural and Creative Industries ecosystem:

- **Skills and competences for the digital environment**
- **Management, funding, business, and entrepreneurial skills**
- **Skills to support and integrate the green transformation**
- **Transversal and transformative skills that lead to cross-sectoral innovations**
- **Technical skills, arts and crafts to preserve the cultural and creative heritage**
- **Hands-on and ‘on the job’ skills solutions**
- **Complex problem solving, critical thinking and creativity** are acknowledged as “important skills for the 21st century” by the World Economic Forum and by Educational Institutes.

Top creative thinking skills

In addition to these skills, we should also consider the creative thinking which means **thinking outside the box**.

Creative thinking is the ability to consider something in a new way. Creative thinking isn't limited to artistic types, it is a skill that anyone can nurture and develop. Employers in all industries want employees who can think creatively and bring new perspectives to the workplace.

Creative thinking can involve:

- A new approach to a problem
- A resolution to a conflict between employees
- A new result from a data set

- A previously untried approach to earn revenue
- A new product - or product feature



Creative thinking might mean devising new ways to carry out **tasks, solve problems and meet challenges**. It means bringing a fresh, and sometimes unorthodox, perspective to your work. This way of thinking can help departments and organizations **be more productive**.

Cultural and creative industries have become a vital force in accelerating human development. They empower people to take ownership of their own development and stimulate the innovation that can drive inclusive sustainable growth. If well-nurtured, the creative economy can be a source of structural economic transformation, socio-economic progress, job creation and innovation while contributing to social inclusion and sustainable human development.

Digitalization and Innovation

Project Management methodologies in the context of Digital Transformation

Anand Swaminathan, leader at McKinsey Digital in Asia, argues that the digital transformation of business processes must be accompanied by a real cultural transformation within organizations.

It is not the use of certain tools or software that makes the transition to digital in a company, but rather the adherence to certain values and the adoption of methodologies that know how to enhance the possibilities of communicating and sharing expressed by digital technologies.

The Agile Methodologies

These values are set out in the **Agile Manifesto**, launched in 2001. Agile was thought as a response to the weaknesses showed by the Waterfall method. The Agile Manifesto sets out twelve fundamental principles that can be summarized in these four concepts:

- 1) **Individuals and interactions** over processes and tools.
- 2) **Working software** over comprehensive documentation.
- 3) **Customer collaboration** over contract negotiation.
- 4) **Responding to change** over following a plan.

Agile is configured as an umbrella framework within which fall different methodologies that recall the values of the Manifesto. Basically, Agile methodologies aim to give flexibility and control over the execution of the project. For this reason, Agile methodologies are the most successful in the management of digital projects.



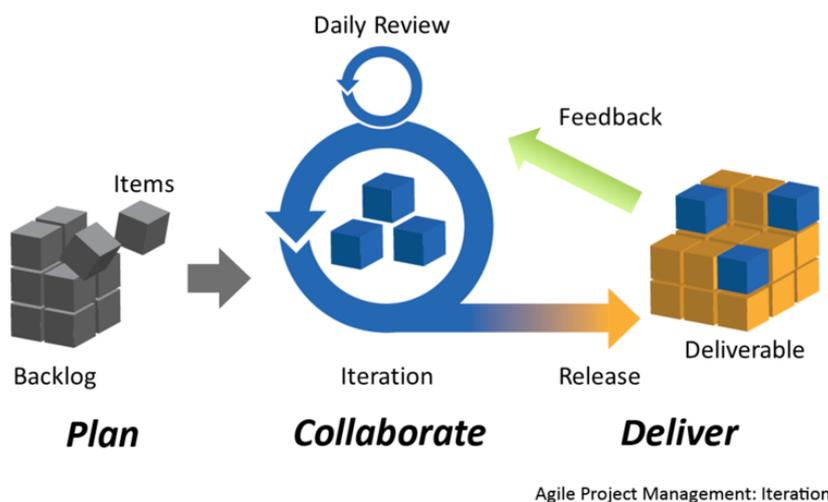
Learn more about
the twelve principles of
Agile Manifesto

<https://agilemanifesto.org/principles.html>

Agile is best suited for projects that have a certain level of complexity and a need for flexibility, providing a clear and measurable structure that fosters iterative development, team collaboration, and change recognition.

Agile's values include customer satisfaction in first place, a goal that can be achieved through continuous deliveries made within short-term deadlines. Unlike Agile, traditional methodologies favor a management and development model that assumes that consumer demands remain unchanged throughout the production process.

This approach cannot be considered since the constant changes in the market and technology require a high degree of flexibility of the projects on which we work.



Project development using Agile Methodologies.

Agile methodologies resort to an **iterative approach** that allows to meet the demands of consumers, to adapt the project to any type of change, reducing waste and risks.

The most far-reaching problems are addressed immediately; project deliverables are divided into smaller packages, released periodically, and reviewed through collaboration with stakeholders, employers, and consumers. In this way, a virtuous circle is created that allows you to share progress, encourage collaboration between the parties involved, make changes to the project.

These methodologies allow a high degree of control over the project and reduce any type of risk of failure.

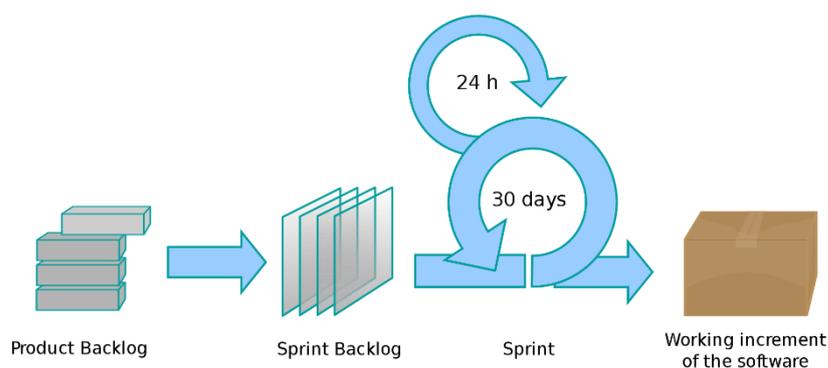
Agile methodologies include methodologies such as Extreme Programming (XP), Scrum, Kanban, and others.



List of Agile Methodologies.

Agile project management with Scrum

Scrum is one of the most used methodologies in the Agile field and proves to be particularly functional since the work is divided into portions of the project called "Sprints" that are completed within 30 days. At the end of each sprint the team reviews the work done and evaluates it before moving on to the next sprint.



Scrum Model: the process is quite similar to a basic Agile methodology. The project is divided in "Sprints", small workable packages.



Did you know the Agile methodologies before this webinar?

A project manager identified even 42 methodologies.

<https://thedigitalproject-manager.com/agile-methodologies/>



Learn more about Scrum reading the official guide.

<https://scrum-guides.org/scrum-guide.html>

Every day progress is measured, and visual and graphic supports are used to record the progress of the project. In this way, changes can be made evaluating each step, and feedback is collected from those who work and from end users.

Scrum highlights some of the aspects of the Agile model: transparency, inspection, adaptation, self-organizing teams, communication. **These aspects are consistent with the five values of Scrum:**

- 1) Commitment.
- 2) Focus.
- 3) Openness.
- 4) Respect.
- 5) Courage.

Scrum was created for software development team, but it is largely adopted in business and industry context in order to carry out complex projects.

How does Scrum work?

First, the Scrum methodology needs a highly flexible team with good adaptability.

Within the **Scrum Team** there are three roles:

- 1) **Product Owner:** the product expert and the one who represents the stakeholders and consumers. The only task the Product Owner takes care of is to manage the Product Backlog.
- 2) **Development Team:** it consists of professionals (developers, programmers, designers) who work on the realization of each Sprint, presenting to stakeholders the results achieved.

- 3) **Scrum Master**, this figure is a super organized servant-leader who takes care of ensuring the performance of the work following the Scrum methodology. The Scrum Master follows the various needs of the Development Team, makes sure that the work progresses by providing the required resources, limits risks and deviations of the development process.

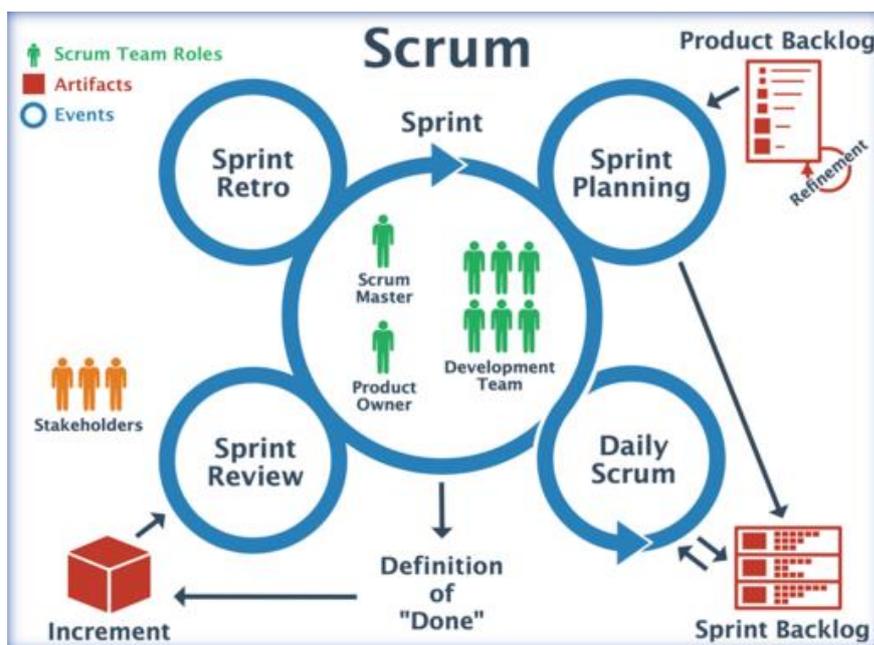
The **Scrum Team** works on three **artifacts**:

- 1) **Sprint**: it is the main feature of Scrum. It is an iterative portion of the project, defined by deadlines and linked to the achievement of a goal. Each Sprint releases usable content (called Increment) and allows you to start work on the next Sprint.
- 2) **Product Backlog**: it contains all the necessary requirements for the realization of the product organized by priority. The Product Backlog can always be reviewed.
- 3) **Sprint Backlog**: it is a list of all the tasks and requirements that the Sprint Team needs to achieve while working on a Sprint. You can represent the Sprint Backlog on a **Scrum task board**, where each task is displayed in three channels: **To Do, Doing, Done**.

The Scrum methodology follows a precise **workflow** that consists of several **events**:

- 1) **Sprint Planning**: this event precedes the start of work on any Sprint. A team meeting allows you to define the deadlines, activities, and goals to be achieved.
- 2) **Daily Scrum**: a daily meeting of 15 minutes in which the Development Team discusses the results achieved the previous day and what results it expects to achieve during the next day.

- 3) **Sprint Review:** an informal meeting in which the Scrum Team presents the Increment to the stakeholders, allowing the exchange of feedback and to optimize the work on the product and review the Product Backlog.
- 4) **Sprint Retrospective:** it is an event that takes place after the Sprint Review and before a Sprint Planning. It is useful to draw up a balance sheet of the work done on the last Sprint and establish any changes to be made.



Scrum Model with Scrum Events and Artifacts.



Awareness and collaboration through Project Management in Digital Age



During the COVID-19 pandemic, many companies have had to deal with the need to transfer their daily business to a digital dimension. In fact, many of the tools used were already available before the spread of the pandemic but largely underused.

Analysts argue that the number of remote workers will continue to increase even in the post-pandemic phase. About 70% of the workforce will work remotely for at least part of the day by 2025.

The transition to remote working also affects project development and management. It could be said that precisely in the context of the implementation of projects, given the complexity and involvement of partners located in different places, digital communication and sharing tools were already widely used.

Working remotely implies the need to have tools and methodologies that can allow continuous contact between teams and the maintenance of quality standards in production. To achieve these goals, it is also necessary to achieve a certain level of collaboration, sharing and awareness among all parties involved.

The experience of Project C3

An example of how collaboration, sharing and awareness are fundamental elements within a business environment is offered by **Project C3 – Creative, Cultural, Collaboration**.

It is a project that involved the University of Bari "Aldo Moro" through the Department of Computer Science and the spin-off D.A.Bi.Mus S.r.l. together with other partner companies that deal with creating Computational Artifact (creative artifacts made with the help of a computer).



These are companies that operate in an industrial segment in continuous expansion although marked by the presence of small companies and freelance artists.

Among these companies, the shared difficulty of using creativity as a production factor, of evaluating the industrial cost of the product, often made by teams that have extremely different needs, work times and production costs, has emerged.

Many companies in this industrial sector are composed of employees and collaborators who work remotely in the most disparate places. These companies are facing a radical transformation of the traditional business model, highlighting the need to conceive and experiment with a methodological and technological framework of the process of creating a Computational Artifact.

Project C3 used methodological tools to represent and share knowledge on the implemented production processes, using standard methods such as BPMN (Business Process Modeling Notation).

The analysis of the production flows has determined the idea that collaboration in a creative team can be improved thanks to a widespread awareness in the team.

 **Learn more about Project C3 visiting the official website.**

<https://collab-c3.github.io/>

An awareness that can be based on different factors (informal/presence awareness, workspace awareness, structural awareness, social awareness).

The idea of a sort of **C3 Awareness** was therefore shared, which declines some of these factors and seizes the opportunities of a technological framework based on Open-Source solutions, to address co-working problems, and a series of targeted Plugins able to integrate into the technological solutions already adopted by the partners.

This framework made possible to evaluate decision-making processes, coordination, communication, knowledge sharing, tracking of problems/tasks and solutions, sharing and versioning of digital resources. A series of features integrated into the work tools used (proprietary authoring tools, commercial solutions) was tested, constituting a set of C3 Plugins.

The results of the project were also tested in terms of competitiveness.

In the face of the presence of large players in this industrial segment, with considerable investment capacity and attraction, small businesses need to make production processes efficient and contain production costs, while guaranteeing originality, specificity, quality, and innovativeness of production.

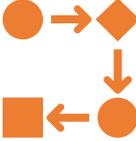
The project confirmed the positive expectations in terms of competitiveness of the grouping both as a significant containment of production costs (much greater than the expected reduction between 10% and 20%), and for greater elasticity and performance in responding to specific market needs. The direct employment impact on the project was higher than expected.

Digital Tools for Project Management

According to a report by PriceWaterhouseCoopers (PWC), 77% of companies that have made high performances have resorted to the use of project management software¹⁴.

Basically, there are four categories of software and digital tools useful for project management:

- **Collaboration tool:** team collaboration software allows stakeholders and project partners to access and edit documents and materials of different types. There are different types of software that often provide real-time editing and live chat. One of these tools is **Basecamp**, which allows file sharing, the preservation of documents useful for the project, collaboration with teammates and clients, the use of a native chat app, the reporting of activities.


- **Communication tools:** these tools facilitate communication within teams and between partners involved in a project. There is a large choice of real-time communication software. Their use is also essential to maintain a quick but formal level of communication between the parties involved. **Slack** is a software designed for communication in a business environment, a chat whose spaces are divided into different channels for each stage of project development.


- **Time and Task Management tools:** digital tools that help each team, partner or individual to deal with assigned tasks. Using these tools, you can check progress and deadlines. This kind of software allows you to make the necessary decisions to move forward or review some steps. **LiquidPlanner** is a software that deals entirely with the planning and management of time and resources within a project.



¹⁴ <https://www.pwc.com/cl/es/publicaciones/assets/insighttrends.pdf>



- **Workflow tools:** this software give you a high level of control over the management of business processes. Workflow tools are not tools designed for project management but are used to enhance a collaborative digital environment in which tasks are divided among different teams. It helps you to intervene on the performance of processes and access to shared materials. The best known among this software is **Monday**, a platform that can be customized according to the type of project, company, and needs.





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