



MODULE 5

Digitisation and digitalisation of products

Topic 1

What is a product?

Topic 2

What is a digital transformation?

Topic 3

How to digitise or digitalise your products?

"It is vital to introduce women and girls to information and communication technologies for several reasons. ICTs facilitate access to education and training, they also improve access to health services and participation in the economy and civil society. In a world where 95% of all jobs have a digital component, it is crucial to get more women and girls into ICTs."

Hamadoun Touré, Secretary General of the International Telecommunication Union

Ice - Breaking activity - What do you think about this declaration?

With the constant evolution of new technologies, business today are experiencing a major shift in the way they produce and distribute product. For a future or a current entrepreneur, it's important to know what are these new ways and how to integrate them into a business.

If you are a woman, and you are thinking of a business idea, this module **“digitisation and digitalisation of products”** will provide a general overview of how they can be put at the service of a company, for its success.

Introduction and description of the module

Empowering women by increasing their level of soft skills, especially those related to creativity and business

- Learn about what is a product in an economical way
- Learn what is digital transformation
- Learn how to digitise and digitalise your product
- Learn the difference between digitisation and digitalisation
- Improve your understanding of how new technologies are impacting business and product

Objectives



What is a product?

In a general way, a product is something that is born from an activity of nature or of man, e.g. a vegetable is a product of the soil following a planting activity.

But in a more economical way, what a company will call product, is something that results from a production process, e.g. for a car company, the car is the product of an industrial manufacturing process. Therefore, when speaking of a company product, it is important to link this concept to a making process own by the company that gives a result.

TOPIC 1

What is a product?



What is a product?

Because new technologies are pushing companies to be more and more competitive, the success of a product is no longer limited to the way it is produced, which usually influences its price and quality making it more attractive than the competitor's. Today, companies have to innovate all the time, in order to find production processes that integrate new technologies. Let's take a look at what was the evolution of the industrial production process over the time.

TOPIC 1 What is a product?

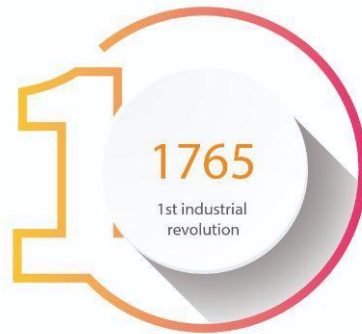




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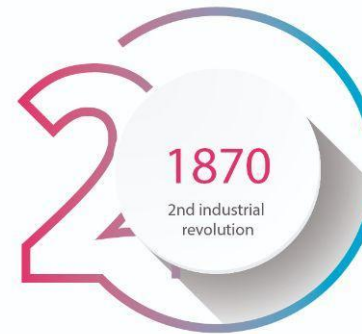


INDUSTRIAL REVOLUTION



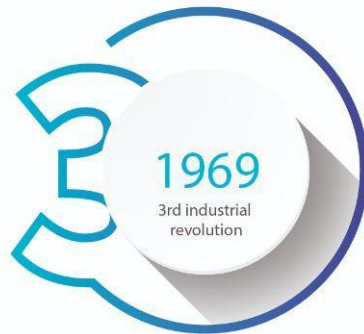
Machine production

Carried by the steam machine



Mass production

Driven by electronic and oil energy



The automated production

Supported by electronics and IT technologies



Introduction of new technologies

The Internet of Things, AI, cloud, big data, etc.

What is a product?

- **1st industrial revolution:** it began in 1769 with the exploitation of coal and the development of the steam engine by James Watt.

This will radically transform the mode of manufacture. Indeed, the craft industry will be replaced by mechanical production, factories will replace manufactures and craft workshops. In factories, the revolution corresponds to the use of the steam engine to drive the machines, allowing increased rates. This leads to a more important manufacturing, and gives life to products in small series.

TOPIC 1 What is a product?



What is a product?

- **2nd industrial revolution:** the second industrial revolution was brought by the use of oil and electricity at the end of the 19th century. This will allow the modernisation of the means of production. The automobile and chemical industries will take full advantage of it. From then on, the production machines were no longer "steam powered" but "electric". This period corresponds to the implementation of Taylorism and assembly line work, making unskilled workers productive. This corresponds to mass production of identical products.

TOPIC 1 What is a product?



What is a product?

- **3rd industrial revolution:** the third revolution took place in the middle of the 20th century with the advent of electronics, telecommunications and computer science. These different disciplines will allow the implementation of important automations which will relieve the workers of the most difficult tasks. This is the beginning of robotics, of the flexibility of production tools and of mass production.

TOPIC 1

What is a product?



What is a product?

- **4th industrial revolution:** today, it is no more question of a production method producing a product thousands of times (or rather reproducing it). We have entered the era of product customization. The consumer wants a completely personalised product, which does not look like the one next door. **Industry 4.0¹** is committed to meeting this demand for unique and personalised products while keeping costs the same, despite the low production volumes involved. This is why one of the challenges of this 4th industrial revolution is to succeed in connecting the customer's needs to the production facility. This connection cannot be made without the contribution of new technologies, which will have to be exploited.

TOPIC 1 What is a product?



What is a product?

To sum up, the process of producing a product has evolved significantly over time. We went from the steam engine, to the electric machine, to the industrial robot and now the cyber-connected system. This cyber-connected system is part of a new wave called digital transformation.

TOPIC 1 What is a product?



What is a digital transformation?

As seen above, to stay competitive in a constantly changing market, a company must be able to adapt quickly, especially by adopting new technologies. Today, most companies use digital technologies to offer unique product and engaging experiences to their customers and prospects.

By definition, **Digital transformation** is the profound transformation of a company's components (processes, culture, organisation, activities, competencies, business models) to fully leverage the opportunities of digital technologies. The main goal is to improve efficiency, manage risk or discover new monetisation opportunities.

TOPIC 2

What is a digital transformation?



Advantages of digital transformation

Digital transformation is therefore essential for a company for several reasons:

Improving the customer experience

Today's consumers have never had so many choices of product. So offering innovative products or services at attractive prices is no longer enough to stand out. Companies must now focus on customer interactions and provide unique and flawless experiences that encourage customers to stay loyal to the brand.



Optimise processes

A company that has operational problems will not be able to provide an exceptional experience to its employees, nor to its customers. Digital transformation helps to rationalise workflows, digitalise processes and automate tasks, allowing the company to be more efficient.



Digitise and digitalise products

Finally, you can use digital technologies to enhance a product or service. This is the case with connected or voice-activated devices. Digital transformation also helps you build an agile system that allows you to constantly innovate and adapt to rapid changes and new consumer demands.



Two examples of successful digital transformation

Initially specialised in coffee beans, **Starbucks** quickly became the reference in the world. The company claims a digital strategy in order to extend its physical stores to its customers, without, of course, deteriorating the in-store experience. To improve the in-store customer experience, Starbucks has invested in a **mobile application** to place orders and pick up products directly from a selected Starbucks store, automating some manual tasks to gain responsiveness (especially regarding inventories), the company wants to allow its employees to spend more time with customers.



Two examples of successful digital transformation

A reference in mail order sales for decades, **La Redoute**, in order to reinvent itself, decided to stop investing massively in its ageing catalogue and to reinvest in a digital catalogue and communication. With the implementation of chatbots to improve the customer experience, a strong presence on social networks, and prestigious physical sales spaces within Galeries Lafayette, La Redoute has skilfully changed its approach to better rebound by placing digital and data at the center of its concerns.

Companies that don't use new digital ways to digitise and digitalise their process of production or selling are doomed to disappear.



How to digitise and digitalise your products

Although they may sound the same, digitisation and digitalisation are two different things, but are both part of a digital transformation.

How to digitise your products

By definition, digitisation is the process of converting something physical into a digital representation that will be used by computer systems and automate processes or workflows. If you want to proceed to the digitisation of your product, you must exploit a certain number of tools related to the web universe.

TOPIC 3 How to digitise or digitalise your products?



Process to digitise your product

A process to digitise your product, for example, can be:

A website: an online showcase for your products

If you have a physical clothes shop, a website can be a new digital way to digitise your products. Because by taking pictures of your clothes and uploading them to your website, they are automatically converted from something physical to something digital. A website is the online presentation of your products, It can be visited and consulted by Internet users from all over the world. Consumers use the internet and especially Google to search for products that interest them. Therefore, your website is often the first approach they have of your products and company. There are many tools you can use to create an online shop to sell your products: **e.g.** Shopify, Woocommerce, Prestashop, Magento



An online catalogue accessible everywhere

E.g. If you work in the publishing field, scanning a paper document (a book, magazine) and saving it to a computer hard drive as a digital document, such as a PDF

E.g. Convert CD, DVD or Blu-ray into online catalogue such as a movie or a music streaming platform (Netflix, Spotify, Amazon Prime ...)



A production process thanks to 3D

3D printing offers multiple possibilities for customising and designing products. This production process consists of scanning an object or designing it using computer-assisted design software. An algorithm validates the feasibility of the object, then the printer is launched and layers of different materials (plastic, metal, ceramic, concrete, etc.) are layered until the object has taken on its final shape. This process is to offer the consumer the possibility of personalising the product down to the smallest detail, or even designing it themselves.

E.g. This technology has been used, for example, by the Nike brand, which was the first to use this process to design the crampons of its Vapor Laser Heel model, a model designed for American football players

How to digitise and digitalise your products

While digitisation is a process that consists of identical duplication, digitalisation is a process that brings new ways of doing things.

How to digitalise your products

Gartner Glossary defines **Digitalisation** as: “the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It is the process of moving to a digital business.”

TOPIC 3 How to digitise or digitalise your products?



Process to digitalise your product

A process to digitalise your product, for example, can be:

An application for your products

In January 2020, there were 5.19 billion mobile users in the world. This represents 67% of the total population. As you can see from this percentage, the use of mobile applications is a real trend today, especially since most new technology enthusiasts can no longer part with their smartphones and tablets, that is why you should consider digitalising your products for smartphones and tablets. Creating a mobile application is another way that allows you to collect information from your partners and customers more easily.

E.g. Walmart is one of the largest food retailers in the US and has chosen mobile as an integral part of its strategy. The app helps customers keep track of the items they need with its mobile shopping list feature that allows them to create lists using scanned paper receipts. Customers can also use the app to check if the product(s) they want are in stock.

Artificial intelligence at the service of connected objects

It is one of the biggest pillars of digitalisation. Connected objects are electronic objects connected without wires, sharing information with a computer, a tablet or a smartphone and capable of perceiving, analysing and acting according to the context and our environment. These objects are very popular with consumers, as they are addicted to their smartphones and never leave them.

E.g. this has led to the development of classic hybrid products such as polaroids, which can now print photos immediately and store them in the cloud.

Artificial intelligence at the service of connected objects

E.g. wearables for individuals: connected watches, smart headphones, smart clothes;

E.g. at home: connected thermostat, connected shower head, voice assistants (Alexa; Google home)

E.g. at office: physical distance badges, presence detectors

E.g. in industry: sensors for predictive maintenance on equipment, asset tracking, robots;

E.g. in retail: smart labels, inventory chips, connected lighting;

E.g. in agriculture: temperature sensors, smart watering, connected animal collars

Conclusion

We have learned through this module, that we live in a digital world, and not taking this into account when starting a business can be fatal to its success. Today it is no longer a question of mass-producing the same identical product, today's consumer wants an innovative and personalised product, and it is for this reason that a company must implement a digital transformation through digitalisation and digitisation in order to propose not just a product, but an experience that mixes the physical and digital worlds.

Wrap-up

Digitisation and digitalisation of products



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Time to practise!

First practical activity

- 1) Today, the consumer wants a completely identical product, which does look like the one next door. **The statement is true or false?**
- 2) The process of producing a product has evolved significantly over time, we went from the steam engine, to the electric machine, to the industrial robot and now the cyber-connected system. **The statement is true or false?**
- 3) Fill in the gap
Digital transformation is the profound transformation of a company's _____ to fully leverage the opportunities of digital technologies.



Time to practise!

First practical activity

4) Among these proposals, which ones are part of Digitalisation ?

- an online shop
- a connected object
 - an online catalogue

5) Digitisation is the process of converting something physical into a digital representation that will be used by computer systems and automate processes or workflows. **The statement is true or false?**



Time to practise!

Answers

1) False

1) True

1) Fill in the gap

Digital transformation is the profound transformation of a company's **components (processes, culture, organisation, activities, competencies, business models)** to fully leverage the opportunities of digital technologies.

1) Among these proposals, which ones are part of Digitalisation ?

- an online shop
- **a connected object**
- an online catalogue

1) True



Time to practise!

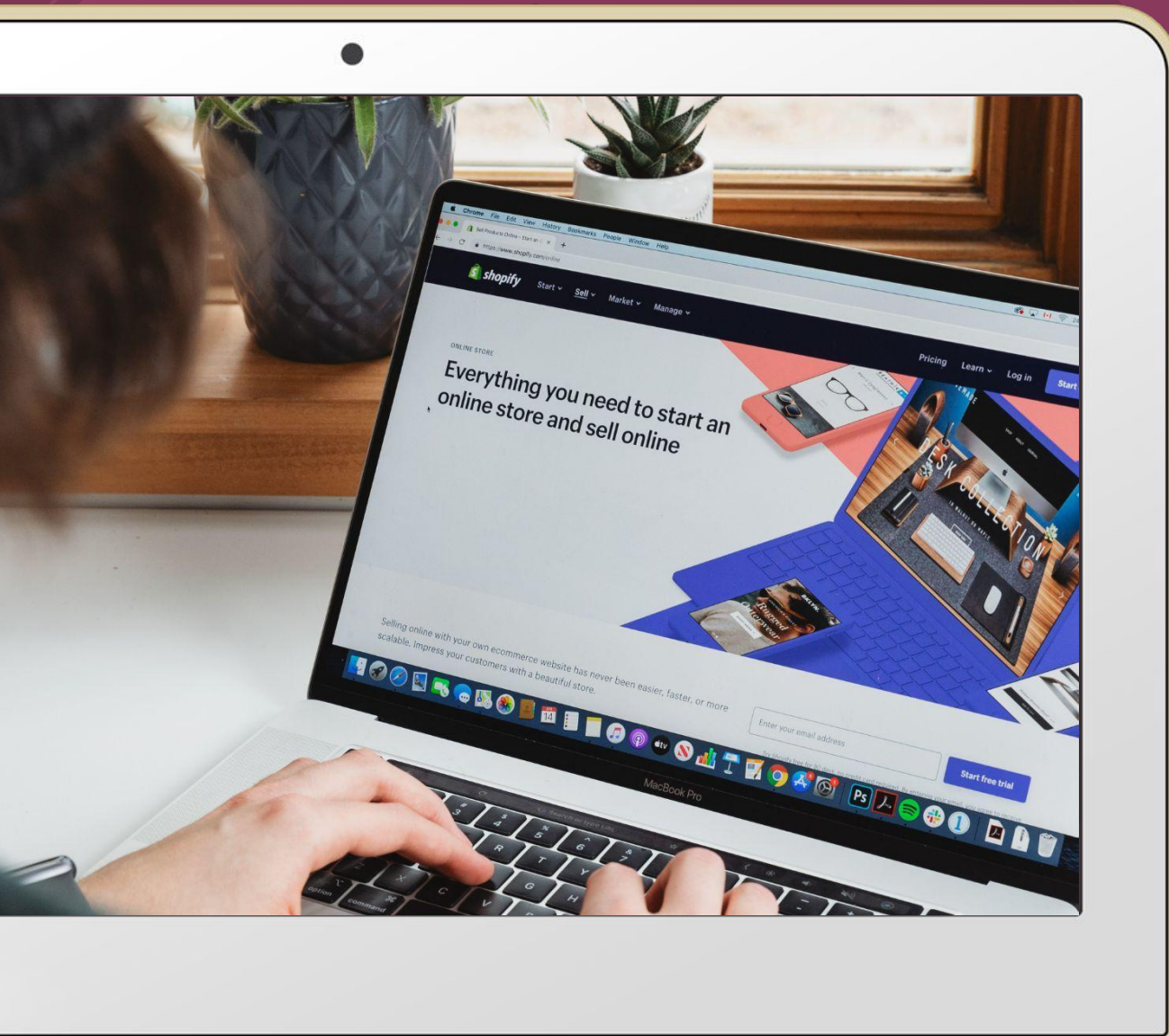
Second Pratical Activity

We have reached the end of the course.

We hope that what we have explained to you during this course will help you open up your panorama of possibilities.

To practice these new notions, let see together in three steps how you can be present online as a company.





1. How to appear online

1. Creating content to promote your products

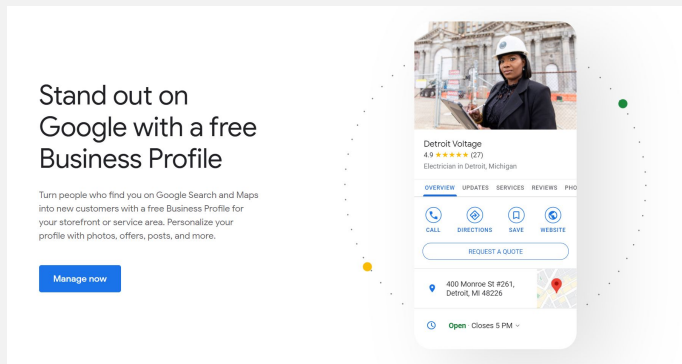
1. Selling online

Time to practise!

1. How to appear online

We have learned through this module, that we live in a digital world, and not taking this into account when starting a business can be fatal to your company. That is why it is important that your business has an online profile which can be found in internet searches.

Google is the most used search engine in the world, and it is possible to create an online profile for your company through Google.



Learn how to **create an online profile for your business** with Google by clicking on this: [link](#)



Time to practise!

2. Creating content for your product 1

Now that you have an online profile for your business, it's time to start creating contents (**text, images, pictures, videos**) to promote your products.

Once your business profile has been created and is visible in a research, it is now important to promote your business and your offers. And to do this, you can:

1. Create a one-page

By definition, a "one-page site" refers to a website where all the content is gathered on a single page.

Before creating your website, it is very important to host your website and all your content on a web host. The best known hosting companies are : [IONOS](#)

Then there are several easy programs that allow you to create a website for your content, these are CMS (Content Management System). We have: [Wix](#) , [Wordpress](#)



Time to practise!

2. Creating content for your product 2

Now that you have an online profile for your business, it's time to start creating contents (**text, images, pictures, videos**) to promote your products.

Once your business profile has been created and is visible in a research, it is now important to promote your business and your offers. And to do this, you can:

2. Promote your products on social networks

Today, social media are very powerful platforms for promoting your company and its products.

Learn how to create a Facebook business page for your company:

[link](#)

Learn how to create an Instagram business page for your company: [link](#)



Time to practise!

3. Selling online

Now that your business is visible online and your products are promoted through your website and social networks, it is time to start selling your products by creating your online shop.

Some examples of tools you can use: **Etsy, Shopify,**

How to Open an Etsy Shop: [link](#)

How to Open a Shopify Shop: [link](#)



References

Slide 1 - Citation

Hamadoun Touré, Secretary General of the International Telecommunication Union

Slide 6 - Image

Graphic made by Les Apprimeurs

Slide 8 - Industry 4.0 definition

Wikipedia's definition : “The concept of industry 4.0 or industry of the future corresponds to a new way of organizing the methods of production. This new industry is the convergence of the virtual world, digital design, management with products and objects of the real world”

Slide 16 - Definition from Gartner Glossary

Digitalisation : “the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It is the process of moving to a digital business”.



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