What is digitalisation

Think about this morning. The alarm on your phone woke you up, you checked the bus on an app, you paid a friend back with Bizum and you listened to music on the way. How many of those things would your parents have done on paper, face to face, or not at all, when they were your age?

That change has a name, and it is the subject of this whole module. It is not only about you: in 2025, people in Spain sent about **1,237 million** Bizum payments, money that twenty years ago moved in cash or at a bank counter. Every company you will write software for is going through the same change, and many of them will hire you precisely to push it forward.

What you will learn

- Tell **digitisation**, **digitalisation** and **digital transformation** apart with one example of each
- Avoid the trap: digitalising is not buying computers, it is changing **how the work is done**
- Explain how digitalising a process changes the **organisation** of a company: tasks, roles and departments
- Recognise the two faces of a company, **IT** and **OT**, and give an example of each
- See your company as a **city** you run, with a city hall and an infrastructure

Three words that people mix up

The three words sound alike, and even newspapers confuse them. They are three different steps.

> **Digitisation** is turning analogue information into a digital format. The medium changes; the process does not.
>
> **Digitalisation** is using digital technology to improve or automate a process that already exists.
>
> **Digital transformation** is a deep change in the business model, the organisation or the relationship with the customer, made possible by digital technology.

Follow one hotel in Calvià through the three steps. It is a made-up hotel, but every Balearic hotel has walked this road.

Step	What the hotel does	What changed
Digitisation	The paper guest cards are scanned and saved as PDF files	Only the medium: paper became a file
Digitalisation	Guests check in online and open their room with the phone	The process: no queue at reception, no plastic key
Digital transformation	Prices change every day according to demand, and most rooms are sold directly on the hotel's website instead of through travel agencies	The business: how the hotel earns its money

Now your morning:

Service	Which step?	Why
Photos of your class notes	Digitisation	The notes are the same; only the medium changed
Bus ticket on the phone	Digitalisation	Same trip, better process: no coins, no paper ticket
Bizum and mobile banking	Digitalisation, and a transformation of the sector	Paying is faster, and the relationship with the bank moved from the branch to the phone
Spotify or Netflix	Digital transformation	The business changed from selling a physical object (a CD, a DVD) to selling access

> **Careful: "digitalising means buying computers"**
> A company can fill its offices with new laptops and keep working exactly as before: printing emails, copying numbers from one program to another, filing paper. That is not digitalisation. Digitalising changes **the process**. The technology is the tool, not the goal.

Digitalising changes the organisation

When the hotel moves check-in online, the change does not stop at reception. Ask yourself: what happens inside the company?

Before	After
Several receptionists typing guest data at the desk	Fewer people on repetitive tasks; more people on customer care
The hotel learns who the guest is when they arrive	The guest's data arrive days earlier: the room can be prepared, services can be offered
Nobody in charge of the systems	New roles: systems administrator, data analyst, cybersecurity

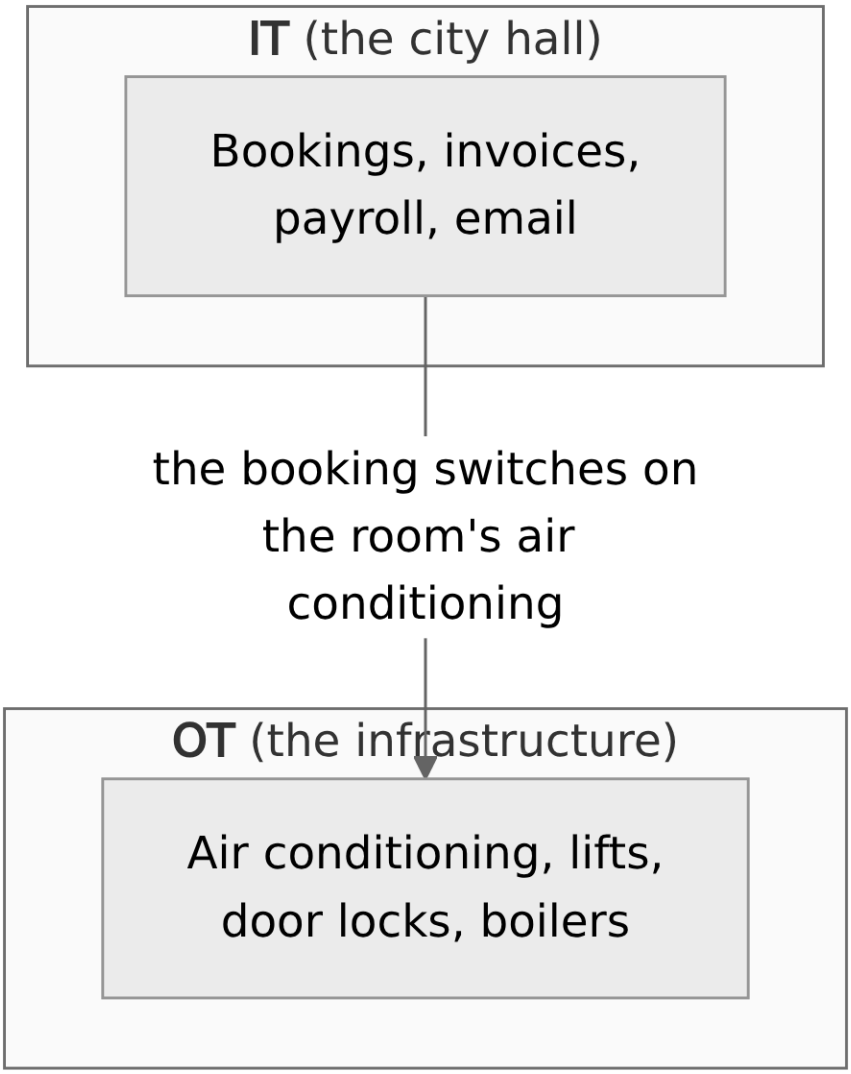
Technology moves tasks from one person to another, creates new jobs and makes others disappear. That is why the programme of this module asks you to **relate** digital technology to **the organisation of the company**: you cannot digitalise a process without reorganising the people around it.

IT and OT: the two faces of a company

Back to the city-builder game. A company is a city you run, and every city has two halves.

> **IT** (*information technology*) is the technology that manages information and business data: the office side.
>
> **OT** (*operational technology*) is the technology that monitors and controls physical processes, machines and installations: the operational side.

	IT · Information technology	OT · Operational technology
Manages	Information and business data	Physical processes, machines and installations
Where	Offices: administration, accounting, HR, sales	Plant, factory, installations, the field
Examples	ERP, CRM, email, website, booking system	PLC, SCADA, sensors, robots, air conditioning, access control



	IT · Information technology	OT · Operational technology
Priority	Confidentiality and integrity of the data	Safety of people and availability: it cannot stop
Lifespan	3–5 years, frequent updates	10–15 years or more, very controlled changes

Look at the arrow in the diagram. When the hotel's booking system (IT) switches on the room's air conditioning (OT) before the guest arrives, the two halves of the city are talking to each other. This connection is the heart of the unit, and you will study it properly in Plant, business and IT–OT.

> **Does every company have OT?**
> Almost every company has IT. Not every company has much OT. A company that sells hotel rooms online to other businesses, such as Hotelbeds in Palma, is almost all IT: its "factory" is software. A water company like EMAYA, an airport or a cheese factory has a lot of OT. For your course project you need a company with **both** halves.

In class: my digital life and the two faces

The session had two short activities.

Step	Do this	You should see
1	Write down three digital services you used today between waking up and arriving in class	A list that mixes apps, payments and media
2	Classify each one: digitisation, digitalisation or digital transformation	Most are digitalisation; streaming and banking are transformations
3	In groups, take one real Balearic company (Meliá, Palma airport, the Port of Palma, EMAYA, EMT Palma or Hotelbeds) and write **two IT systems** and **two OT systems** you think it has	A short table; if the company has no OT, a sentence saying why
4	Propose **one connection** between an IT system and an OT system that would add value	For example: the bus app (IT) shows the position sent by the bus GPS (OT)

These were **hypotheses**: you guessed what systems each company has. From now on, in the project, you will have to **find** them and **cite** the source.

For your project

Your group now works on one real company for the whole year (see the course project). This lesson feeds Deliverable 1:

- The **group introduction** says what digitalising means for *your* company, with the three words used correctly.
- **Section A** describes how digital technology is organised in the company: departments, roles, systems.
- The **group comparison** of IT and OT starts from the table on this page, filled with your company's real systems.

Key takeaways

- **Digitisation** changes the medium, **digitalisation** changes the process, **digital transformation** changes the business.
- Buying computers is not digitalising: what matters is **how the work is done**.
- Digitalising a process changes the **organisation**: tasks move, new roles appear, others disappear.
- **IT** manages information (the city hall); **OT** controls physical processes (the infrastructure).
- IT protects the **data**; OT protects **people and availability**, and lives much longer.
- The most valuable work happens where IT and OT **connect**.

Quick check

1 A dental clinic scans its old paper patient files and stores them as PDFs. Nothing else changes. What is it?

A Digitisation
B Digitalisation
C Digital transformation
D Industry 4.0

2 Which example is a digital transformation?

- **A** A shop starts accepting card payments at the till
- **B** An office scans its contracts
- **C** A software company stops selling licences and sells a monthly cloud subscription instead
- **D** A school sends the timetable by email instead of printing it

3 A company buys 50 new laptops, but everybody keeps printing the orders and typing them again into the accounting program. Has it digitalised?

- **A** Yes: it has more digital technology than before
- **B** No: the process is the same; digitalising means changing how the work is done
- **C** Yes, as long as the laptops are connected to the internet
- **D** No, because digitalising requires a factory

4 Which of these is an OT system in a hotel?

- **A** The booking system
- **B** The payroll program
- **C** The control of the air conditioning in the rooms
- **D** The hotel's website

5 What is usually the first priority in an OT environment?

- **A** Keeping the data confidential
- **B** The safety of people and keeping the process running
- **C** Installing updates as soon as they appear
- **D** Replacing the equipment every three years

6 A hotel moves its check-in online. Which TWO changes in the organisation are likely?

- **A** Fewer people doing repetitive data entry at reception
- **B** The hotel no longer needs any staff
- **C** New roles appear, such as someone in charge of the systems or the data
- **D** The accounting department disappears

7 In the city-builder analogy, which part of the city is OT?

- **A** The city hall with its registers and taxes
- **B** The citizens' service desk
- **C** The water plant, the power station and the traffic lights
- **D** The city's budget

Now you know the two halves of the city. Next, where all this comes from, who uses IT inside a company, and how similar IT and OT really are: Industry 4.0 and IT systems.

Solutions

1. A · The information moved from paper to a file, but the way the clinic works is the same. Only the **medium** changed, so it is **digitisation**.

2. C · Selling a subscription instead of a product changes **how the company earns money**: the business model. That is **digital transformation**. The other three improve a process or change a medium.

3. B · **Digitalisation** improves or automates a **process**. New hardware with the same paper-and-retyping process changes nothing. The technology is the tool, not the goal.

4. C · **OT** controls physical processes and installations. The air conditioning heats and cools real rooms; the other three manage information, so they are **IT**.

5. B · In **OT**, if the system stops, the plant stops, and a failure can hurt people. That is why **safety and availability** come first, and why OT equipment is changed rarely and carefully.

6. A, C · Digitalising **moves tasks**: repetitive work shrinks and new technical and customer-care roles appear. It does not remove people or whole departments by magic.

7. C · **OT** is the infrastructure that physically works. The city hall, the service desk and the budget handle information and records: that is the **IT** half.