Products, services and markets

How many songs do you own? Not “have on your phone”: own, as in bought once and kept forever. Probably none. You pay a monthly fee, or you listen with ads, and the music is never really yours. Twenty-five years ago people bought CDs. The product became a service, and a whole industry changed its way of making money.

That shift was not a fashion. It was made possible by the technologies of the last two lessons: the cloud stores the catalogue, big data and AI learn what you like, and your phone is a connected product that the company improves after you have bought it. This page is about what comes out of the tech tree: new products, new services and markets that would not exist without it. Most of them are software, which is where you come in.

What you will learn

- Explain four ways enabling technologies change products and services: **connected products**, **personalisation**, faster development and **servitisation**
- Recognise the most common digital **business models**: subscription, pay per use, platform and freemium
- Name markets that would not exist without enabling technologies, including some born in the Balearic Islands
- Read a real pricing page, identify its model and calculate what it would cost your company
- Avoid the trap: a business model is how a company earns money, not the technology it uses

Four ways products change

Change	What it means	Example	Technologies
Connected product	The product carries sensors and software, sends usage data and can be improved after it is sold	A smartwatch; a car that gets new functions with an update	IoT, cloud, 5G
Personalisation	Each customer gets a version adapted to them, without the cost exploding	Music recommendations; a hotel offer based on your past stays	Big data, AI
Faster development	You test before you build	A 3D-printed prototype in a day; a line simulated in a digital twin	Additive manufacturing, digital twins, AR/VR
Servitisation	The company stops selling the product and sells its use or its result	Engines paid per flying hour; software by subscription instead of a licence	IoT, cloud, AI

> **Servitisation** is the shift from selling a product to selling it as a service: the customer pays for the use or for the result, and the maker keeps the product working.

Two real cases. Since 1962 Rolls-Royce has offered aircraft engine contracts called *Power-by-the-Hour* (today *TotalCare*): the airline pays a fixed price per flying hour that includes maintenance, so the maker only earns while the engine works. That is why Rolls-Royce fills its engines with sensors: when you are paid for hours of flight, a breakdown is your problem. And in May 2013 Adobe announced it would stop developing the boxed Creative Suite and sell its software only by subscription, through Creative Cloud.

In the city-builder, servitisation is like the utility company you rent water from: you do not buy the pipes, you pay for the litres.

Business models

> A **business model** is the way a company creates value for its customers and earns money from it.

Enabling technologies made four models very common:

Model	How it earns money	Examples
Subscription	A regular fee to access the product or service	**SaaS** (software as a service), music and video streaming
Pay per use	You pay for what you actually consume: hours, requests, kilometres, gigabytes	Cloud services, shared bikes and cars
Platform (marketplace)	It connects supply and demand and takes a commission or a fee	App stores, holiday rentals, online hotel distribution
Freemium	A basic version is free; advanced functions or higher limits are paid	Many mobile apps, online collaboration tools

On top of all four there is a fifth idea: **data as an asset**. Whoever has the usage data of its customers can improve the product, personalise it and decide better than its competitors.

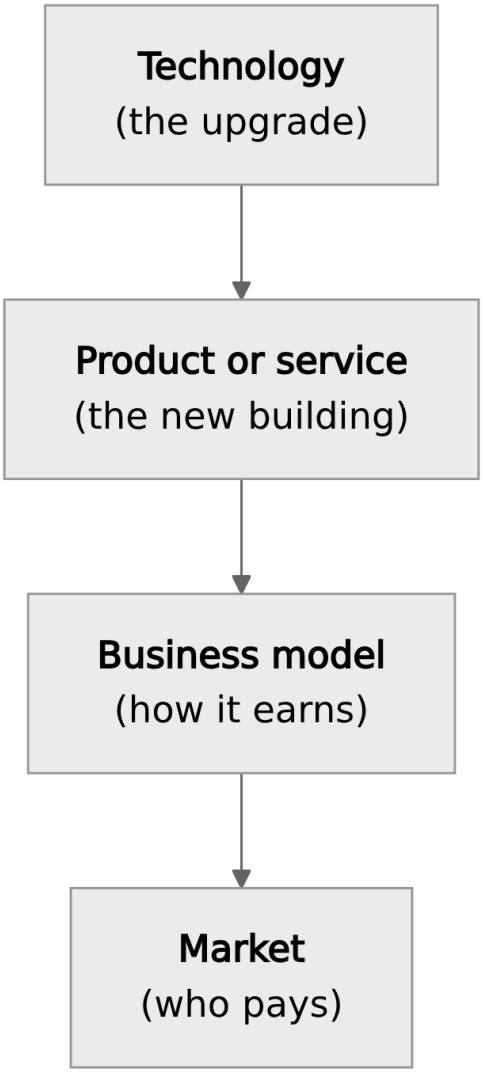
> **Careful: a business model is not a technology**
> "Our business model is the cloud" is a wrong sentence. The cloud is a technology; **pay per use** or **subscription** is the business model it makes possible. In the report, always say both: which technology, and how the company would charge.

Markets that did not exist

Some markets were born with these technologies: cloud services; mobile apps and app stores; wearables and digital health; the connected home; shared mobility; mobile payments and fintech; cybersecurity as a service; and, very close to you, **travel tech**.

Mallorca has a travel-tech sector made of platform businesses. Two real examples:

Company	What it does	Model
Hotelbeds (HBX Group, headquartered in Palma)	Connects hotels and other travel providers with travel agencies and tour operators, business to business	Platform
Habitissimo (founded in 2009 in the Balearic Islands; part of the HomeServe group since 2017)	Connects private customers with renovation professionals	Platform



Neither is a factory. Their product is a piece of software that puts two sides of a market in touch, and their market did not exist before the internet.

In class: business model detective

Two parts, handed in on Classroom as one document (class activity, individual). **No AI tools.**

Part 1 — Read a real pricing page. Pick one real digital product from your company's sector, or one of these: Canva, Google Workspace, Holded (a Spanish cloud ERP), Habitissimo, Hotelbeds.

Step	Do this	You should see
1	Open its official website and find the pricing or "how it works" page	Plans, fees or commissions
2	Name its business model (one or two of the four) and say why	"Freemium + subscription: free plan with limits, paid plan per user"
3	Name two enabling technologies the product needs	"Cloud (it runs in the browser), AI (it suggests designs)"

Step	Do this	You should see
4	Calculate what it would cost your company in a year, with a number of users you justify	"8 office workers × price per user per month × 12 = …" with the date you read the price
5	Cite the page	Author or company. (Year). *Title*. URL, and the date you read it

Prices change: what matters is that your number comes from the real page and says when you read it.

Part 2 — A new product for your company. For each technology of your section of Deliverable 2, write one sentence: which product or service it would enable or improve, and which of the four changes it is. Then, in the last minutes, the group picks the most promising one and writes its pitch in this fixed format:

> *For* (customer), *who* (need), *we offer* (product or service), *thanks to* (technologies), *and we charge* (business model).

For your project

Part 2 gives field 4 of each of your technology sheets in Deliverable 2 (criterion b). The group pitch is the seed of the **new market** section of the group part (criterion d): does it open a new market for the company, or improve its position in the one it already has? Facts about the company need a source; the product is your proposal, so say clearly that it is one.

Key takeaways

- Enabling technologies change products in four ways: **connected products**, **personalisation**, faster development and **servitisation**.
- **Servitisation** sells the use or the result instead of the product: Rolls-Royce's engines paid per flying hour, Adobe's move to subscription.
- A **business model** is how a company earns money: **subscription**, **pay per use**, **platform** or **freemium**, often combined.
- Data about how customers use a product are an asset in themselves.
- New markets were born with these technologies, such as travel-tech **platforms** in Mallorca.
- Behind almost every new digital business model there is software somebody has to write.

Quick check

1 What does servitisation mean?

A Hiring more people for customer service
B Moving from selling a product to selling its use or its result as a service
C Moving the company's servers to the cloud
D Giving the product away for free

2 Under Power-by-the-Hour, why does the engine maker fill its engines with sensors?

A Because the law forces it
B Because it is paid only while the engine works, so it needs to prevent breakdowns
C To sell the sensor data to other airlines
D Because sensors make engines lighter

3 A design app has a free version with limits and a paid version per user per month. Which models is it using?

- **A** Platform only
- **B** Pay per use only
- **C** Freemium combined with subscription
- **D** Servitisation of hardware

4 What does a platform (marketplace) business do?

- **A** It manufactures the products it sells
- **B** It connects supply and demand and earns a commission or a fee
- **C** It rents servers by the hour
- **D** It only sells advertising

5 A classmate writes in the report: “The business model of our proposal is artificial intelligence.” What is wrong?

- **A** Nothing: AI is a valid business model
- **B** AI is a technology; the business model is how the company would charge for the product AI enables
- **C** Business models only exist for big companies
- **D** The report should not mention business models

6 Which of these markets exists thanks to enabling technologies?

- **A** Selling fresh fish at the town market
- **B** Wearables for digital health, such as smartwatches that measure your heart rate
- **C** Renting deckchairs on the beach
- **D** Selling paper road maps

7 A water company installs smart meters and offers businesses a paid service that sends an alert to their phone when it detects a leak at night. Pick the two true statements.

- **A** It is a new service built on IoT and data analysis
- **B** It is a freemium model because the water is not free
- **C** It could be charged as a subscription added to the water bill
- **D** It is servitisation because the company stops selling water

Technologies make new products possible, but at what cost for the planet, and where in the company do they act? Next: Sustainability, business and plant.

Solutions

1. B · With **servitisation** the customer pays for the use (hours, litres, results) and the maker keeps the product working, like Rolls-Royce’s engines paid per flying hour.

2. B · When you are paid per flying hour, every hour on the ground costs **you**. IoT sensors and predictive maintenance protect the maker’s own income.

3. C · The free basic version is **freemium**; the monthly fee for the full version is a **subscription**. Real products often combine models.

4. B · Like Hotelbeds (hotels and travel agencies) or Habitissimo (customers and renovation professionals), a **platform** puts two sides of a market in touch.

5. B · A **business model** answers “how do we earn money?”: subscription, pay per use, platform, freemium. The technology answers “what makes it possible?”. The report needs both.

6. B · **Wearables** need sensors (IoT), the cloud and data analysis. The other three markets existed long before any of these technologies.

7. A, C · The meter data (**IoT**) analysed for anomalies create a new **service**; a monthly fee would make it a **subscription**. The company still sells water, so it is not servitisation of its main product.