Fit and technologies

You order a pizza in an app. The app works perfectly: you pay, you get a confirmation. Twenty minutes later the restaurant calls you because the order never reached the kitchen. The app was digital. The kitchen was a printer that had run out of paper.

Digitalising one area does not help if the next area cannot receive what it sends. And choosing a technology because it is fashionable, instead of because an area needs it, can be very expensive. Between 2011 and 2018 the supermarket chain Lidl tried to replace its inventory system with SAP. According to the business press, it stopped the project in July 2018 after about **500 million euros**: Lidl valued its stock at purchase prices, the standard software at retail prices, and instead of changing the process, the software was bent to fit it.

What you will learn

- Describe how a digitalised area **fits** with the others using an **interface table**
- Spot the **frictions** where a digital area meets one that still works on paper
- Tell **present** needs from **future** ones, and back a future need with a real figure
- Build an **area × technology matrix** that starts from needs and reuses D2, D3 and D4
- Avoid the trap of choosing the technology first and then looking for somewhere to put it

The roads between neighbourhoods

In the city-builder, you can renovate a neighbourhood beautifully. If the road that leaves it is still a dirt track, the traffic jams right at the border.

> An **interface** is the point where two areas hand something to each other: data, a document, a product, an order.

> A **friction** is an interface that wastes time or causes errors: someone retypes data, a format does not match, the same customer exists twice with different addresses.

For each digitalised area, ask four questions: **what does it receive, from whom, in what format, and what does it hand to whom?**

From	To	What they exchange	Friction
Orders (digital: B2B portal)	Bakery floor (not digital)	Quantities per product and day	The floor manager prints the list and copies it onto the night-shift whiteboard
Orders (digital)	Administration (ERP)	Delivered orders to invoice	A manual export every week: errors and late invoices
Ovens (digital: IoT meters)	Maintenance (not digital)	Alerts about abnormal consumption	The alert goes by email to a person who is not on shift

Typical frictions: retyping data by hand, incompatible formats, duplicated data that contradict each other, and depending on a single person who “knows how it is done”.

> **Careful: “we digitalise the area and that’s it”**
> Digitalising an isolated area only moves the problem to its border. Every friction you find must have an answer in your plan: digitalise the other side too, connect the two systems, or accept it and say why.

Today and tomorrow

> A **present need** hurts today. A **future need** will appear in one to three years, because of the company’s goals or because the sector is moving.

Present (hurts today)	Future (1–3 years)
Orders by phone get lost or misunderstood	Serve the new hotels of the season without hiring more office staff
Nobody knows how much each oven consumes	Large customers will ask suppliers for emissions data
Temperature logs on paper	Health inspections may ask for digital records and traceability

A future need must be backed by something outside your head. The **INE** (Spain’s national statistics institute) surveys every year how companies use technology. Its press release of **22 October 2026** says that **33.6%** of Spanish companies with 10 or more employees used artificial intelligence in the first quarter of 2026, and **39.4%** paid for cloud services. If your company’s sector is moving there, keeping up is a future need.

A choice that solves today but breaks tomorrow must be justified or changed. This is where scalability and pay-per-use, from D3, come in.

From need to technology

In the city-builder, the tech tree shows what you have unlocked. You have unlocked a lot this year: the enabling technologies of D2, the cloud of D3 and the AI of D4. Now you pick from that menu.

> An **area × technology matrix** lists, for each priority area, the need, the technology that answers it, the goal it serves and the chapter of the dossier it comes from.

The rule is one line: **from need to technology, never the other way round.**

Area	Need	Technology	Goal	Comes from
Orders	Receive orders in writing, without errors	B2B ordering portal as a service (SaaS), connected to the ERP	Online orders	D2, D3
Ovens	Know the consumption of each oven and shift	IoT energy meters and a dashboard	Energy	D2, D3
Orders	Predict how much bread the hotels will need	Demand forecasting model on the order history	Waste	D4
Quality	Reliable temperature records	Sensors in the cold rooms with alarms (edge at the bakery)	Waste	D2, D3

Name the **type** of solution (“a B2B portal as a service”). If you name a specific product, say why that one.

> **Discarding is a decision too**
> Your D2 probably covered technologies that do not fit any goal: a bakery hardly needs blockchain or augmented reality. Write one discarded technology and the reason. It shows that you chose, instead of copying a catalogue.

In class: sector figure, interfaces and matrix

Step	Do this	You should see
1 · alone	Find **one** external figure about your company's sector that backs a future need: the INE press release on ICT in companies, Ibestat, a sector report or a news item	A figure, its source with date and link, and the goal it connects to
2 · group	In the shared spreadsheet, the interface table: for each priority area, what it exchanges with at least two other areas (one digital, one not), in what format, and the friction	Three or more rows, each with a friction
3 · alone	Fill **two rows** of the area × technology matrix: area, need, type of technology, goal, chapter it comes from	Two rows that start from a need
4 · group	Add one discarded technology and why	One row with a reason

Hand in on Classroom (individual class activity): your future-need card and your two matrix rows, with the group's interface table attached. Generative AI is not allowed, even if your plan proposes AI for the company.

For your project

This lesson builds **section 2 · Fit, needs and technologies** of D6 · Transformation plan (criteria d, e and f). The technologies come from your D2, D3 and D4; this section is where you choose among them.

Key takeaways

- An **interface** is where two areas hand something to each other; a **friction** is an interface that wastes time or causes errors.
- Digitalising one area alone moves the problem to its border. Every friction needs an answer.
- **Present needs** hurt today; **future needs** come from the goals and the sector. Back them with a real figure, such as the INE survey.
- The **area × technology matrix** goes from need to technology, never the other way round, and reuses D2, D3 and D4.
- Bending a process to a tool, or a tool to a process, without checking the **fit** can cost a fortune: Lidl's SAP project was stopped in 2018 after about 500 million euros.

Quick check

1 What is a friction between two areas?

- **A** Any disagreement between two department heads
- **B** An exchange between areas that wastes time or causes errors, such as retyping data
- **C** A security gap in the network between two offices
- **D** The cost of a new technology

2 The orders area is now digital, but the bakery floor still works from a printed list. What happens?

- **A** Nothing: the orders area is already digital
- **B** Someone has to copy the data by hand, so there is a bottleneck and a risk of errors at the border
- **C** The bakery floor becomes digital automatically
- **D** The orders portal stops working

3 Which of these is a future need, rather than a present one?

- **A** Orders by phone are getting lost
- **B** Nobody knows how much each oven consumes
- **C** Large customers will start asking suppliers for emissions data
- **D** Paper temperature logs are hard to read

4 A group writes: “We will use blockchain. Now let’s find an area for it.” What is wrong?

- **A** Nothing: every enabling technology must appear in the plan
- **B** Blockchain is illegal in the European Union
- **C** They start from the technology instead of the need; the matrix goes from need to technology
- **D** Blockchain can only be used by banks

5 Where should the technologies of the matrix come from?

- **A** From the chapters you already wrote: D2 (enabling technologies), D3 (cloud) and D4 (AI)
- **B** From a list generated with an AI chatbot
- **C** From the most popular products of the year
- **D** Only from D5

6 According to the business press, why did Lidl’s SAP project run into trouble?

- **A** SAP refused to sell the software to Lidl
- **B** Lidl’s process (stock at purchase prices) did not fit the standard software, and the software was adapted instead of the process
- **C** The servers were stolen
- **D** The project was finished early and under budget

7 A hotel chain wants to receive 30% more guests in two years. Which two choices are better justified by that future need?

- **A** A booking and check-in system that scales with demand, paid per use
- **B** A server bought today with exactly today’s capacity
- **C** Automating repetitive guest questions so the same staff can serve more people
- **D** Keeping check-in on paper because it works today

The areas fit and have their technologies. Every new technology brings new data and new doors to lock. Next: Security, data and integration.

Solutions

1. B · A **friction** sits at an **interface**: the point where two areas hand data, documents or products to each other. Retyping, mismatched formats and duplicated data are the classic ones.

2. B · Digitalising an isolated area **moves the problem to its border**. Your plan has to answer that friction.

3. C · The first, second and fourth hurt **today**. The third will appear in the coming years: it is a **future need**, and it should be backed by a source.

4. C · The rule is **from need to technology, never the other way round**. A technology without a need is a discarded technology, and saying so is a good justification.

5. A · You unlocked the tech tree during the year: **D2, D3 and D4** are the menu. And generative AI is not allowed in assessed work.

6. B · The process and the tool did not **fit**, and adapting the software made it slower and more expensive until the project was stopped in July 2018. Fit is a decision criterion, not a detail.

7. A, C · A **future need** justifies choosing now something that **scales**. A fixed server or paper solve today and break tomorrow.