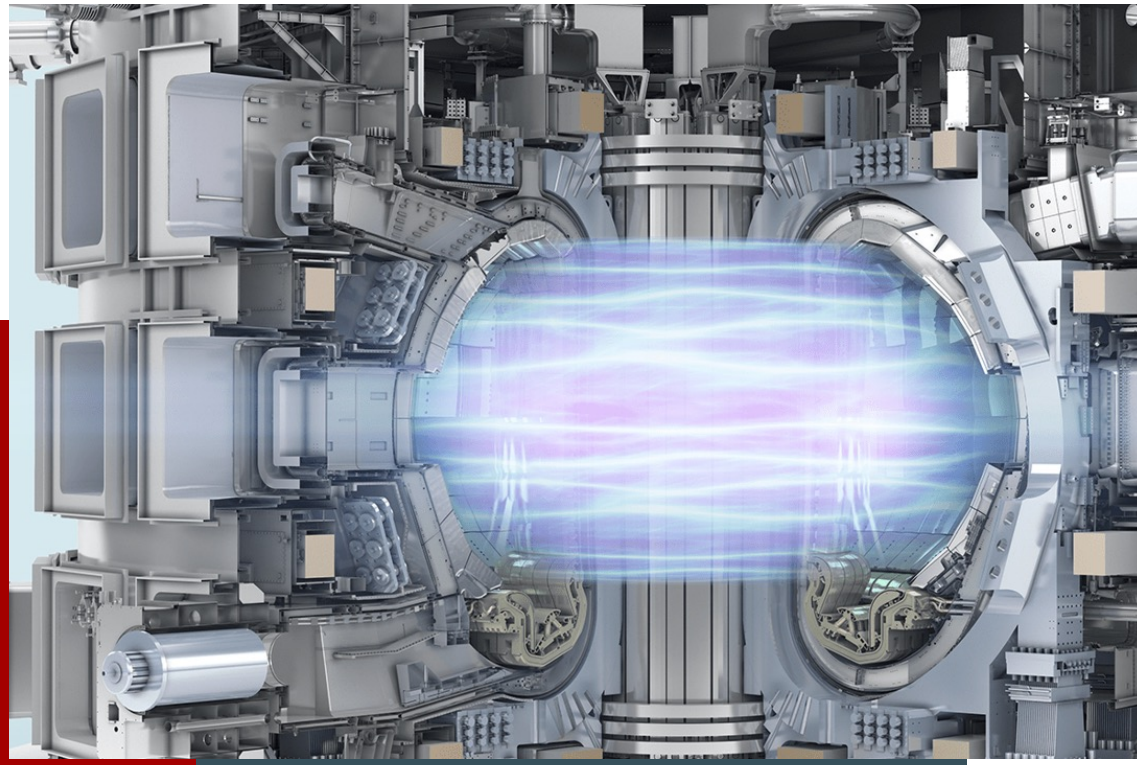
INPROCAP

Training 5 Practical training on innovation procurement for ILOs and BSO staff



Key Components of Building a Business Case

What is a Business case

A **business case** is a decision-making tool. Its purpose is to:

- **Evaluate** the economic impact of launching a **Pre-Commercial Procurement (PCP)** project
- **Provides Economic justification** — cost-benefit analysis to decide whether innovation procurement makes sense
- Help public buyers or stakeholders **justify** the investment to upper management by highlighting the **value it adds** to their organization

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Where does the business case fit

EAFIP Step-by-Step Methodology — Preparatory Phase:

1. ✅ Needs Assessment
2. ✅ State-of-the-Art Analysis
3. ✅ Open Market Consultation
4. → **Business Case & Value Calculations** ← *We are here*
5. Procurement Strategy

The business case uses evidence gathered in all previous steps to **justify the investment** and **design the procurement** for maximum impact.

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Cost-Benefit Analysis: The core of every business case

At the heart of every solid business case is a **Cost-Benefit Analysis (CBA)**.

It asks a simple but powerful question: *"Are the benefits worth the investment?"*

Before giving any project the green light we compare:

Costs

- Money
- Time
- Resources
- effort

Benefits

- Quantitative (like revenue or savings)
- Qualitative (like better user experience, or social value)

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Step 1: Understand the status quo

Before looking ahead, **start by understanding the current situation**:

- What are the **existing costs** of the current process or system?
- What are the **drawbacks of doing nothing**?
- What **risks grow** if we maintain the status quo?

A good business case doesn't just say *"Here's the solution"* — it first asks:
"What happens if we do nothing?"

- Staying with the status quo might seem safe, but in many cases **doing nothing comes at a cost** — inefficiency, missed opportunities, rising operational expenses, or growing demand the current system can't handle.

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Step 2: Identify the benefits

Internal Benefits (for your organisation)

- **Cost reductions** — reducing operational, maintenance, or personnel costs
- **Efficiency improvements** — faster processes, fewer errors, less manual work
- **Quality improvements** — better service delivery, higher performance
- **Risk reduction** — fewer incidents, accidents, or compliance failures

External Benefits (wider impact)

- **Environmental** — reduced emissions, energy savings, waste reduction
- **Social** — improved safety, public health, community welfare
- **Economic** — job creation, market stimulation, EU competitiveness

Tip: Always strive to assign a **monetary value** to qualitative benefits. Even rough estimates make the business case stronger.

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Example of benefits

Example: Niguarda Hospital PCP (Lombardy, Italy)

- *Need:* Automated hospital bed movers to replace manual 2-person operation
- *Benefit:* Estimated savings of **€921,600/year** in personnel costs alone
- *Additional:* Reduction of 10+ workplace injuries per year (15–20% invalidity rate)
- *ROI:* Investment of €750,000 recovered in **less than 1 year** after PCP completion

Example: Transport for London PPI (LED Lighting)

- *Need:* Replace fluorescent lighting in the London metro
- *Benefit:* **50% total cost savings** over 8 years (worth millions of pounds)
- *Key insight:* Biggest savings were not from energy but from **reduced labour costs** (cleaning, installation, maintenance)
- *Strategy:* Start with highest-impact locations (escalators) → use savings to fund remaining deployment

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Step 3: Idenfity the costs

1. Project & Procurement Costs

- Prior art analysis, OMC, tender preparation
- Contract management, evaluation of offers
- Often covered by EU funding in PCP projects
  - *decide than if to include in computation*

2. Capital Expenditure (CAPEX)

- Equipment purchase
- R&D investment (PCP phases)
- Hardware, software, infrastructure
- Intellectual property acquisition

3. Operating Expenditure (OPEX)

- Staff salaries and training
- System maintenance and support
- Licensing, subscriptions, connectivity
- Recurring costs over the solution's lifetime

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Example: INTERCEPT PCP — Remote Vehicle Stopping Technology

Cost Category (short list)	Baseline	What it covers (detailed)
PCP procurement cost (R&D from suppliers; from RFI)		**One-off PCP budget** to procure R&D services from suppliers (the PCP contracts).
Implementation package (training + software + transition)		**One-off go-live costs**: initial training + software development/integration + transition/deployment/change management.
Hardware (devices, in-vehicle units, installation)		**One-off equipment**: remote-stopping devices, in-vehicle units, installation kit, initial deployment hardware.
Operations & support (maintenance + operating costs)		**Recurring run costs** to keep the solution operational: maintenance plus general operating expenses beyond maintenance.
People (new team members + system operators)		**Recurring staffing**: new team members plus dedicated operators in control rooms (where required by the operating model).
Digital running costs (SaaS/cloud + connectivity)		**Recurring digital services**: licences/subscriptions plus data plans, VPN, and other connectivity costs.
Assurance & lifecycle (cybersecurity + spares + insurance + storage + upgrade roadmap)		**Recurring assurance and lifecycle**: cyber monitoring/audits, spare parts, insurance, evidence/data storage, and planned upgrades.

Step 4: Value Calculation

Net Present Value (NPV)

NPV compares the present value of all benefits minus present value of all costs over the project's lifetime.

Rule of thumb:
NPV > 0 = project creates value (financially attractive).
NPV < 0 = project destroys value (reconsider).

Formula:

$$\mathrm{NPV} = \sum_{t=0}^{n} \frac{B_t - C_t}{(1+r)^t}$$

Where:
Bt = benefits in year t
Ct = costs in year t
r = discount rate
t = year (0…n)

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Step 5: Risk Assessment

A complete business case must address risks:

Risk Type	Examples
Technical	Solution doesn't meet requirements, integration failures
Financial	Cost overruns, exchange rate changes, budget cuts
Operational	Staff resistance, training gaps, deployment delays
Market	No suppliers can deliver, single vendor dependency
Political/Legal	Regulatory changes, compliance issues

For each risk, evaluate:

1. **Likelihood** of occurrence (Low / Medium / High)
2. **Impact** if it occurs (Low / Medium / High)
3. **Mitigation strategy** — what can you do to reduce it?

PCP advantage: The phased, competitive approach inherently reduces R&D risk — sequential elimination with multiple suppliers competing.

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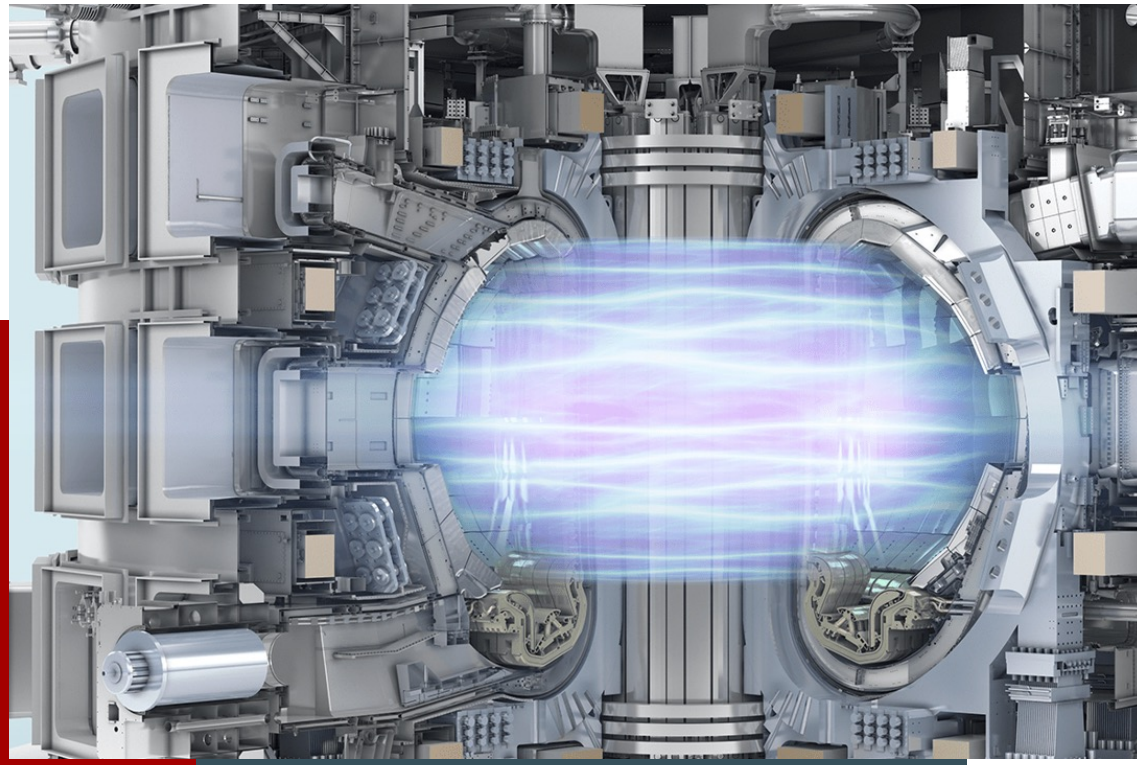

Business case exercise

Business case exercise

All groups work on the **same scenario**: **Adaptive Legionella Control at CERN**

Objective:

- Build a **business case** that would justify CERN management approving an **innovation procurement** for this challenge

Instructions:

- Open your group's number **Google Sheet** (onsite same/online based on received number)

https://docs.google.com/spreadsheets/d/1UCgnYkUnvdEFxmPrhv_xICikVehqfLUoV70xBSiBmTU/edit?usp=sharing

- Work only in your sheet.
- **Fill in the input cells only** (do not change formulas).
- Use the **Year 0–8 timeline** in the sheet:
  - **Years 0–2: PCP (R&D procurement)**
  - **Year 3: PPI (deployment procurement + implementation)**
  - **Years 4–8: Operations**

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Business case exercise

What to deliver:

Your sheet must show:

- Completed **Costs** table (Years 0–8)
- Completed **Benefits** table (Years 0–8)
- Automatic result: **NPV** (discount rate is pre-set at **3.5%**)

Time plan:

- **30 min** fill in the sheet
- **4 min presentations - 4 min per group**

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Assumptions

Use this timeline for your sheet:

- **Years 0–2: PCP (R&D procurement)**
  - Put PCP supplier R&D contract payments here (plus buyer-side procurement/management effort).
  - In most cases, assume **no benefits yet** during PCP.
- **Year 3: PPI / deployment procurement + implementation year**
  - Put rollout costs here: integration, hardware, training, change management.
  - Benefits may start late in the year. For simplicity, you can start benefits in Year 4.
- **Years 4–8: Operations**
  - Put recurring OPEX here (support, maintenance, licences, staffing).
  - Benefits are typically strongest here.

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Assumptions

- **Year 0 is NOT buying an already developed solution.**
- With this exercise setup, **Year 0 is the start of the PCP**, meaning you are paying for **R&D and testing**.
- The “buying/rolling out” step happens later (here: **Year 3 PPI/implementation**).

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Scenario: Data-Driven Legionella Treatment in Cooling Towers

Scenario	Data-Driven Legionella Treatment in Cooling Towers
BSO	CERN
Context	CERN operates water-based cooling systems at 40–55 °C — a temperature range optimal for recovering waste heat but also favourable for Legionella growth. Current treatment relies on chemical biocides and is not data-driven, leaving room for optimisation in terms of reducing unnecessary maintenance stops, chemical usage, and environmental impact.
Requirement	A measurement system and ecological population model to enable adaptive, AI-based Legionella treatment strategy. The solution should predict Legionella risk, optimise chemical dosing based on actual conditions, and reduce both costs and environmental impact while ensuring safe operation at flow rates exceeding 150 m^3/h — entirely without chemical additives if possible.
Challenge	Conventional chemical mitigation carries environmental and operational drawbacks. No existing commercial system combines real-time monitoring, predictive modelling, and adaptive dosing for Legionella control in large-scale research infrastructure cooling towers. Technologies of interest (UV-LED, ultrasonic, antimicrobial surfaces, hydrodynamic cavitation) have not been validated at this scale.

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Business case exercise

Group presentations and discussion:

- Each group presents 4 minutes summary

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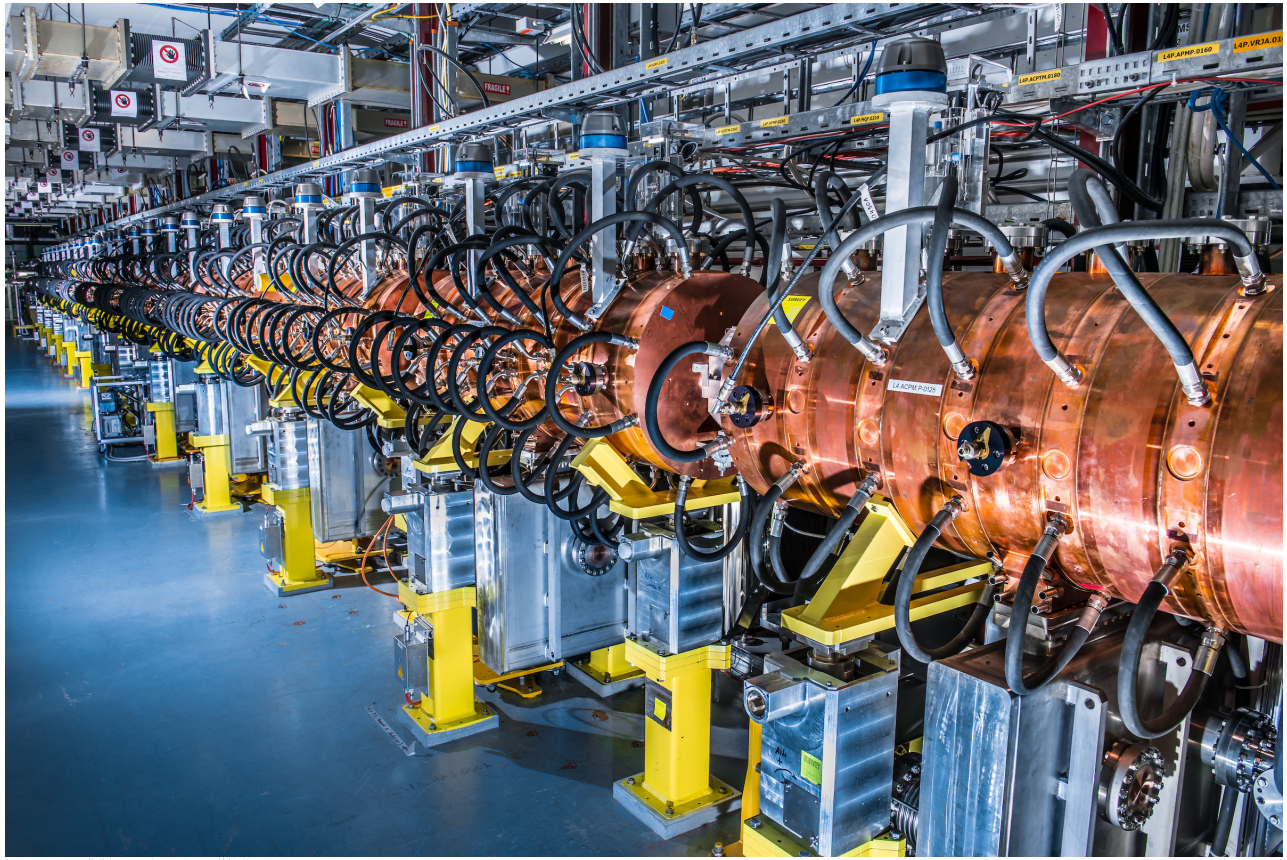

QUESTIONS?

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Question

What's the most valuable insight you gained today? (word cloud) – insert only one word

Go to .....Mentimeter.com
Use code.....**4598 6826**

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Delivery plan of trainings

- webinars 2025–2026, hybrid events, on-site intensive training
- INPROCAP website Knowledge section and online toolbox; recordings available

	Date	Format	Title	Priority Audience
6	23rd of April 2026	webinar	Pre-commercial procurement and public procurement of innovative solution	BSO Priority + companies
7	11th of May 2026	webinar	Innovation partnership	BSO Priority + companies
8	June 2026	webinar	Methods and approaches for the procurement process to promote innovation	BSO Priority + companies
9	30th of June	Training	Onsite training for BSO staff on innovation procurement procedures	BSO priority /ILOs
10	September 2026	webinar	Competitive dialogue	BSO Priority
11	October 2026	webinar	Competitive procedure with negotiation	BSO Priority
12	November 2026	webinar	Management of Intellectual Property Rights	BSO Priority

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Share your feedback with us

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THANK YOU

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