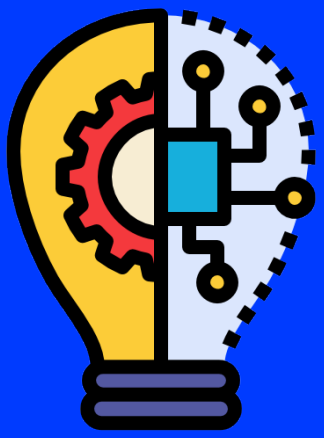
{EPITECH}

INNOVATION TRACK_

< WORKSHOP - COSTING & TECHNICAL SIZING />



INNOVATION TRACK

Goals

The objective of this workshop is to demonstrate the **economic viability of your technical architecture**. You must move beyond the code and address the reality of deploying a production-grade solution.

You must answer two fundamental questions:

1. **What resources** (Hardware & Software) are strictly necessary to run the project?
2. **How much does it really cost** to operate the service (MVP) and to scale it?

Part 1: Resource Identification

Before estimating costs, you must identify **every single technical asset** required for your project to function. Do not rely on "Free Tiers" for your long-term strategy.

1. Infrastructure & Services (Cloud/SaaS)

List all dematerialized services required:

- ✓ **Compute:** Virtual Machines, Containers, Serverless functions (e.g., EC2, Droplets, Lambda).
- ✓ **Storage & Database:** Object storage, SQL/NoSQL databases, Backups (e.g., S3, RDS, MongoDB Atlas).
- ✓ **Network:** Load Balancers, CDN, Static IPs, Domain names.
- ✓ **External APIs:** OpenAI, Google Maps, Stripe, SendGrid, Authentication services (Auth0).
- ✓ **DevOps & Tooling:** CI/CD pipelines costs, Monitoring (Datadog, Sentry), Apple/Google Developer accounts.

2. Hardware & Physical Equipment

If your project involves physical interaction, IoT, or specific display technologies, list the hardware:

- ✓ **IoT/Embedded:** Microcontrollers (ESP32, Raspberry Pi), Sensors, Batteries, PCBs, 3D printing materials.
- ✓ **User Devices:** VR/AR Headsets, Tablets for kiosks, Specific smartphones for testing.
- ✓ **On-Premise Servers:** If you are not using the cloud, list the physical servers and networking gear required.

Pro Tip: Don't forget the **"Hidden Costs"**:

- ✓ Data Egress fees (paying for data leaving the cloud).
- ✓ Storage costs for daily backups.
- ✓ VAT (Value Added Tax).
- ✓ Overage fees if a quota is exceeded.

Part 2: Financial Benchmark

You cannot simply choose a provider because it is ”popular.” You must justify your technical choices through an economic lens.

Activity: Compare at least 2 or 3 providers/solutions for your critical cost drivers.

- ✓ *Example 1 (Hosting):* Compare **AWS** vs **OVH** vs **Vercel**.
  - Criteria: Price per GB of RAM, Bandwidth costs, Ease of scaling, Location of data centers (GDPR).
- ✓ *Example 2 (Hardware):* Compare **Raspberry Pi 4** vs **Orange Pi** vs **Custom PCB**.
  - Criteria: Unit price, Power consumption, Availability (supply chain), Durability.

The goal is to calculate the Performance/Price ratio.

Part 3: The Budget (CAPEX & OPEX)

You must structure your budget into two distinct categories.

1. CAPEX (Capital Expenditure) - Acquisition

These are **one-off costs** required to launch the project.

- ✓ Buying physical devices (Headsets, Test phones).
- ✓ Buying Hardware components for prototypes.
- ✓ One-time setup fees or lifetime licenses.

2. OPEX (Operational Expenditure) - Running Costs

These are **recurring monthly costs** required to keep the project alive.

- ✓ Monthly Cloud bills.
- ✓ SaaS subscriptions.
- ✓ API usage fees.

3. Scaling Scenarios

Your budget must present two realities:

1. **The MVP Cost:** How much does it cost to run the Alpha/Beta (few users)?
2. **The Scale Cost:** How much will it cost if you reach **1,000 or 10,000 users**?
   - ✓ *Does the architecture hold up financially?* (e.g., If using Google Maps API costs $5 per user/-month, your business model might be broken).

Deliverables

At the end of this workshop, your repository/slide deck must include:

1. Cost & Sizing Table

A clear, itemized list distinguishing CAPEX and OPEX.

2. Comparative Study (Benchmark)

A synthetic document (or slide) justifying your main technical choices.

- ✓ Why this Cloud provider?
- ✓ Why this specific hardware component?
- ✓ Proof that you selected the most cost-effective solution for your specific needs.

v 0.2