Notes for Market section Entrpreneurship:

* Questions we need answers to:
  + Can we implement our software in any camera (cant with ring cameras…)
* Secondary research
  + <https://www.marketsandmarkets.com/Market-Reports/ai-camera-market-235818146.html> - market research for ai cameras pertaining to:
    - Market size
    - Opportunities in the AI market
    - Driver:
      * AI camera integration with IoT for smart homes/buildings
    - Restraint/risk:
      * Data security
      * Where is the recorded stream going, how is it being stored securely, how is it being destroyed once no longer needed
    - Things to note:
      * **Computer vision technology for AI cameras is expected to hold the highest CAGR during the forecast period**
      * Asia pac highest cagr for AI cameras
      * Key market players include: sony, Panasonic, Hangzhou Hikvision, Samsung, axis xommunications, etc…
      * Market size estd: 7.6 billion USD
      * Projected market size of 22.1 billion USD
      * CAGR of 23.9% - CAGR stands for Compound Annual Growth Rate. It's a calculation that shows how much an investment grew on average each year over a set period of time. CAGR is also known as a "smoothed" rate of return.
      * In September 2024, security solutions company Dahua Technology has released its latest AI-supported technology, AcuPick 2.0, for its camera range, including its three-in-one camera. AcuPick 2.0 allows users to quickly and accurately locate and track targets throughout multiple locations, distinguishing between humans, vehicles and animals. The search capabilities extend to attribute target search, instead of solely filtering by location or timestamp.
* Which people have we approached, how, why and outcome
* Main competitors, how are they positioned(pros and cons), What is our USP
  + Smartcameras.services
    - Security based
    - Use ONVIF
    - Consulting firm that implements smart cctv ai cameras greenfield or brownfield
    - B2B and B2C
    - Use cases: perimeter detection, stranger detection, area protection, object theft, anti social behaviour alerts, car parking alerts
  + Pelco.com
    - Security ai cameras
    - Provide their own camera range
    - They operate in more than 15 industries and have over 100000 clients
    - B2B
  + Adlinktech.com
    - Own proprietary camera
    - Use cases: worker safety, contact lense triage, robot hazard prevention, SOP compliance
  + Aicam – anh-app.com
    - Uses mobile devices and is an installable app
    - You manually select alert triggers
    - Basically just like ring camera, it notifies you and records any movements
    - Use cases: home security, Baby monitoring, elderly care, pet monitoring
    - Only works on mobile devices and laptops TRASH
  + Hikvision
    - Generally security cameras
    - Quite expensive, found one for sale at about $500
  + Our USP:
    - Is the fact that we can do all of these use cases in one, for a lower price and a better UI

What evan wanted:

* AI camera revenue models typically involve selling the hardware itself, alongside recurring subscription fees for advanced AI features and data analytics, often delivered through a cloud-based platform, allowing companies to monetize the vast amounts of data generated by the cameras, catering to specific industry needs like facial recognition, anomaly detection, and predictive maintenance with tailored pricing tiers based on feature usage and data access levels.
* Prices range from $100 to $5000 depending on the function, build quality and software
* **Scenario 1: Just Storing the Frames**
* 🔹 **Approach:** Capture frames from the camera, upload them to cloud storage (e.g., AWS S3, Google Cloud Storage, or Azure Blob Storage). No real-time processing.  
  🔹 **Costs:**
* **Compute:** None or minimal (could use a lightweight cloud function to upload).
* **Storage:**
* **8.6GB/day (~258GB/month)**
* AWS S3: **$5.90/month** (at $0.023/GB)
* Google Cloud Storage: **~$5.80/month**
* **Data Transfer:** Free if accessed within the cloud; **~$0.09/GB for egress** if downloading.  
  🔹 **Total Estimated Cost:** **$5–$10/month** (excluding downloads).  
  🔹 **Best for:** Archiving footage, later analysis.
* **Scenario 2: Real-Time Processing + Storage**
* 🔹 **Approach:** Capture frames, process them (e.g., object detection, motion detection), then store the results.  
  🔹 **Costs:**
* **Compute:**
* AWS Lambda (if lightweight) → Could be **$1–$5/month**.
* Virtual Machine (e.g., AWS t3.small) → **$15–$25/month**.
* GPU instance (if running deep learning) → **$100+/month**.
* **Storage:**
* **Raw Frames (258GB/month)** → **$5.90/month**.
* **Processed Data (e.g., metadata, cropped images)** → Adds some extra cost.
* **Data Transfer:** Similar to scenario 1, **egress costs apply**.  
  🔹 **Total Estimated Cost:** **$20–$150/month**, depending on compute needs.  
  🔹 **Best for:** Real-time alerts, AI-based monitoring (e.g., anomaly detection, face recognition).