**Manufacturing Sector**

* maximize their revenue
* The floor runs 24 hours a day so that packaging continues nonstop
* 7 step process to create chips
* Taking 10 -12 weeks, hoping for 6 -8 weeks for production
* Cameras record at 30-35 FPS (Frames Per Second)
* Each factory lane belt has a camera
* image processing task to be completed five times per second.
* repurpose the system to address a second issue
* second task requires run inference on the video stream very quickly
* two industrial belts on shop floor
* the system would also need to be flexible so that it can be reprogrammed and optimized to quickly detect flaws in different chip designs.

**Retail Sector**

* would like to save as much as possible on his electric bill.
* does not have much money to invest in additional hardware
* Most of the store's checkout counters already have a modern computer, each of which has an Intel i7 core processor.
* Currently these processors are only used to carry out some minimal tasks that are not computationally expensive.
* The total number of people in the checkout queue ranges from an average of 2 per queue (during normal daily hours) to 5 per queue (during rush hours).

**Transportation**

* peak hours they currently have over 15 people on average in a single queue outside every door in the Metro Rail.
* But during non-peak hours, the number of people reduces to 7 people in a single queue.
* 7 CCTV cameras on the platform
* These are connected to closed All-In-One PCs that are located in a nearby security booth
* The CPUs in these machines are currently being used to process and view CCTV footage for security purposes
* no significant additional processing power is available to run inference.
* Ms. Leah's budget allows for a maximum of $300 per machine
* she would like to save as much as possible both on hardware and future power requirements. CPU, VPU, FPGA