UNIVERSITY OF MSILA – MOHAMED BOUDIAF UNIVERSITY
Faculty of Mathematics and Computer Science
Department of Computer Science
Academic Year: 2025/2026
Examination Session: Normal

Module: Entrepreneurship and Startups (**SOLUTION**).
Level: 2ed Year Master in Computer Science (IDO/IA/SIGL/RTIC)

ملاحظة هامة : تُعطَى **نسخة واحدة فقط** من ورقة الامتحان. لن يتم تصحيح أي سؤال تم العبث به أو شطبه.

First name: . . . . **Family name:** . . . .

Speciality: . . . . **Group:** . . . .

Question 1: Business Models & Financial Viability

Compare and contrast **two different revenue models** commonly used in tech businesses (e.g., SaaS subscription vs. transaction fee). Explain the importance of **unit economics** (LTV and CAC) and state the "golden rule" for a sustainable business model.

1. **Comparison of Revenue Models:**

A- SaaS Subscription Model:
Customers pay a recurring fee for ongoing access (e.g., Slack, Netflix).
Pros: Predictable revenue, strong customer retention.
Cons: Requires continuous value delivery; high churn risk if not meeting needs.

B- Transaction Fee Model:
Company takes a percentage of each transaction (e.g., Airbnb, Uber).
Pros: Scales with usage, aligns with customer success.
Cons: Dependent on transaction volume; susceptible to market fluctuations.

2. **Unit Economics & Golden Rule:**

- LTV (Customer Lifetime Value): Total profit from a customer over their relationship.
- CAC (Customer Acquisition Cost): Cost to acquire one customer.
- Golden ***Rule:*** For a sustainable and scalable business, **LTV must be > 3x CAC.** If CAC exceeds LTV, the business loses money per customer and is not viable long-term.

Question 2: The Entrepreneurial Process & Environment

Explain the key stages of the entrepreneurial process as outlined in the course. Then, using either **PESTEL or Porter's Five Forces**, analyze the environment for a tech company of your choice (e.g., Netflix, Tesla, or a startup). **(You have to give B: PESTEL or C: Porters 5 forces)**

A- Key stages of the entrepreneurial process:

1. Idea Generation & Identification – Recognizing an unmet need or problem.
2. Opportunity Evaluation – Assessing feasibility, market size, and competition.
3. Business Planning – Creating a strategic plan (e.g., Lean Canvas or Business Plan).
4. Resource Mobilization – Securing financial, human, and physical capital.
5. Venture Launch & Establishment – Legally forming the company and acquiring first customers.
6. Growth Management – Scaling the business and entering new markets.
7. Harvesting (Exit) – Realizing value through IPO, acquisition, or succession.

B- PESTEL Analysis for Tesla:

1. **Political**: Government incentives for EVs, trade policies affecting battery materials.
2. **Economic**: Rising fuel costs boosting EV demand, inflation impacting production costs.
3. **Social**: Growing environmental awareness, shift toward sustainable transport.
4. **Technological**: Advances in battery tech, autonomous driving software, AI integration.
5. **Environmental**: Push for zero emissions, regulations on carbon footprint.
6. **Legal**: Safety regulations, intellectual property laws, autonomous vehicle legislation.
7. Tesla's success is heavily influenced by technological innovation and favorable environmental policies, though it faces legal and supply chain risks.

C- Porter's Five Forces Analysis for Netflix:

1. Threat of New Entrants (Medium-High):
   a. *Barriers*: Extremely high capital requirements for creating original content and licensing a vast library. Strong brand recognition and proprietary recommendation algorithms are significant advantages for incumbents.
   b. *Ease*: However, the rise of streaming technology has lowered distribution barriers. New niche players (e.g., Crunchyroll, Mubi) and large tech giants (Apple, Amazon) can enter by leveraging existing ecosystems and financial resources.
2. Bargaining Power of Suppliers (Medium):
   a. *Content Creators & Studios*: Power is shifting. Major studios (Disney, Warner Bros.) have pulled content to launch their own services, increasing their bargaining power. Top-tier producers and A-list talent can command high prices.
   b. *Technology & Infrastructure*: Low power. Netflix relies on cloud services (AWS), but there are many alternative providers.
3. Bargaining Power of Buyers (High):
   a. *Switching Costs*: Very low for subscribers. They can easily cancel and switch to a competitor (Disney+, HBO Max, Hulu) with a few clicks.
   b. *Price Sensitivity*: High. With many nearly identical alternatives, even a small price increase can trigger significant customer churn. Buyers have abundant choices.
4. Threat of Substitute Products (High):
   a. *Direct*: Other streaming services (Prime Video, YouTube Premium).
   b. *Indirect*: All forms of entertainment competing for attention and time, including social media (TikTok, YouTube), video games, traditional cable, and even reading.
5. Rivalry Among Existing Competitors (Very High):
   a. *The* streaming industry is intensely competitive, characterized by a "content war."
   b. *Competitors* are numerous and well-funded (Disney, Amazon, Apple, Comcast).
   c. *Differentiation* is costly and temporary, as competitors quickly replicate features (e.g., downloads, multiple profiles) and invest heavily in original content.