MSc Business Analytics – Exam 2

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Instructions:

Answer ALL questions. Use clear analytical reasoning, cite frameworks where relevant (e.g., network-effects taxonomy, AI adoption S-curve). Time allowed: 120 min.

Question 11:

Answer:

Every disruption forces organizational structures to evolve; what was once rigid must become fluid to handle waves of new entrants ("campers"). Floods of innovative startups and technologies pressure firms to rethink hierarchy, decision rights, and cross-functional teams. Those organizations that adapt their design—by decentralizing authority and embracing agile squads—cope better with relentless change. In essence, organizational flexibility becomes a competitive advantage under constant transformation.

Question 12:

Answer:

Social reputation management network effects arise when a user's standing on a platform increases its value for both them and others. As peers see high-reputation profiles, trust in the ecosystem grows, attracting more participants and reinforcing reputational dynamics. For instance, professional networks like LinkedIn leverage endorsements and badges to drive engagement through status signals. Thus, the management of reputation acts as a powerful lever in building and sustaining two-sided markets.

Question 13:

Answer:

First-mover advantage is not a guarantee of market dominance; often, later entrants learn from early mistakes and deliver better user experiences. In the platform age, second movers like Facebook or Google learned from predecessors (MySpace, AltaVista) to overtake them. They applied superior business models, network design, and data insights to achieve scale faster. Consequently, success depends more on execution, continuous innovation, and leveraging data network effects than on being first to launch.

Question 14:

Answer:

Data is the raw fuel for machine learning: without it, predictive models cannot be trained or validated. However, data by itself remains static until analytics transforms it into actionable insights—only then can organizations refine algorithms and iterate product features. This iterative learning loop—collect, analyze, apply, and repeat—is key to achieving step-function improvements. Without applying insights back into the system, the data never evolves into more intelligent, adaptive solutions.

Question 15:

Answer:

The two levers of change—technological capability and user adoption—define the impact of any disruption. Any economic analysis must quantify both the rate of tech improvement (e.g., Moore's Law, AI frontier shifts) and diffusion curves (e.g., S-curve of adoption). By modeling these variables jointly, firms can forecast adoption milestones, cost reductions, and competitive timing. Ignoring either dimension leads to incomplete forecasts and poor strategic decisions.

Question 16:

Answer:

Abstraction allows us to distill complex ideas into frameworks, facilitating memory and application across contexts. By grouping similar phenomena under a conceptual umbrella, we reduce cognitive load and speed up analysis. For instance, the Technology Adoption Lifecycle abstracts diverse user segments into innovators, early adopters, etc., guiding go-

to-market strategies. Thus, abstraction not only aids learning but also supports systematic decision-making in analytics.

Question 17:

Answer:

Network externalities describe the latent potential of a network—the more participants, the greater the value created—while network effects represent the strategic activation of that potential via products or platforms. In practice, platforms like Zoom don't just connect users; they design data-products (e.g., meeting analytics, integrations) that harvest externalities and turn them into tangible user benefits. Recognizing this distinction helps managers deliberately engineer artifacts that amplify network value.

Question 18:

Answer:

Gregory et al. (2019) highlighted that data network effects depend on platform capabilities—speed, prediction accuracy, stewardship, and legitimacy. As these capabilities improve, user trust and engagement grow, creating a virtuous cycle of data collection and refinement. Platforms that invest in governance and user-centric design outperform competitors by generating higher-quality insights. Thus, modern network effects hinge not only on scale but also on technical excellence and ethical data practices.

Question 19:

Answer:

Afuah (2013) reframed network effects around connectivity and interaction feasibility, emphasizing that more users broaden interaction scope. In today's digital platforms, each additional user increases the diversity of possible connections and content creation, enhancing overall utility. For example, increasing users on a marketplace not only expands supply and demand but also generates richer transaction data for better matching algorithms. Hence, user growth directly translates into compounded value through layered network interactions.

Question 20:

Answer:

Translating broad benefits into shared and individualized outcomes is crucial for adoption. While general network effects attract users to a platform, tailored incentives (e.g., personalized dashboards, group discounts) ensure each stakeholder sees direct, relevant value. This dual focus—on macro-level growth and micro-level personalization—drives sustained engagement. Essentially, successful platforms align collective scale economies with targeted benefits for distinct user groups.