# 5.4 Crisis management, research and development, and information systems

Name: _____ Class: _____ Date: _____ **Total: 30 marks**

**KEY WORDS** crisis management • contingency planning • research and development • intellectual property • big data • cybersecurity

## Objective

Build the skills to answer exam questions on **crisis management** and contingency planning, **research and development** and innovation, and **management information systems** .

**You must be able to:**

- distinguish crisis management and contingency planning, and explain transparency, communication, speed and control in a crisis
- explain the importance of R&D, types of innovation, and adaptive and innovative creativity
- explain intellectual property protection: patents, copyrights and trademarks
- explain data analytics, databases, cybersecurity, artificial intelligence, big data and the internet of things in business
- evaluate the ethical issues of collecting and using data

## 1 Key knowledge and worked examples

### Crisis management and contingency planning

A **crisis** is a sudden, unexpected event that threatens the firm (a product recall, a fire, a data breach). **Crisis management** is how the firm responds as the crisis happens. **Contingency planning** prepares in advance for possible crises (what to do, who is responsible). Effective crisis management needs **transparency** (honest information), **communication** (clear, fast messages to all stakeholders), **speed** and **control** (a clear leader and plan). Contingency plans cost time and money and may not fit the actual crisis, but they speed up the response and protect reputation.



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### Research and development (R&D)

R&D creates new products and processes. **Types of innovation: product** (a new or improved good), **process** (a better way of making it), **positioning** (presenting an existing product in a new way), **paradigm** (a change in a whole industry, e.g. streaming). **Adaptive creativity** improves what exists; **innovative creativity** creates something new. R&D is costly and risky but gives a competitive advantage. **Intellectual property** is protected by **patents** (inventions), **copyrights** (creative work such as music, software) and **trademarks** (brand names and logos).

### Management information systems

| tool | use in business |
|---|---|
| **data analytics, big data** | find patterns in sales and customer behaviour |
| **databases, customer loyalty programmes** | store customer details and purchases; target offers |
| **artificial intelligence, machine learning** | forecast demand, set prices, answer customers (chatbots) |
| **internet of things** | sensors track machines, stock and deliveries |
| **virtual reality** | training, product design, showing products |
| **cybersecurity** | protect data and systems from attack |

**Critical infrastructure** (power, networks, cloud services) must be protected. **Digital Taylorism** uses data to monitor and control workers closely. **Ethics:** privacy, consent, data protection laws, bias in algorithms, surveillance of staff.

**Answer shapes:** identify the issue → stakeholders affected → method or tool → benefit and risk → judgement.

## 2 Practice

**2.1** Distinguish between crisis management and contingency planning. [2]




**2.2** State **two** ways a firm can protect its intellectual property. [2]



**2.3** Explain **one** benefit and **one** cost of contingency planning for an airline. [4]



**2.4** Distinguish between product innovation and process innovation, with an example of each from a car maker. [4]







**2.5** A supermarket collects data through its loyalty card. Explain **two** ethical issues this raises. [4]





## 3 Exam-style questions

**3.1 FreshFarm** sells packaged salads to supermarkets. A food-safety test finds bacteria in salads from one of its factories, and several customers become ill. News spreads quickly on social media. FreshFarm has no contingency plan.

(a) Explain **two** factors that make crisis management effective. [4]




(b) Discuss how FreshFarm should manage this crisis. [10]



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