

- 1 A new sales approach, such as offering products via location based advertising is an example of:
  - a) Product innovation
  - b) Process innovation
  - c) **Marketing innovation (table 1.5)**
  - d) Service innovation
  
- 2 An example of tacit knowledge is:
  - a) **Being competent without being able to give a theoretical account of our actions (p.27)**
  - b) Having a company's knowledge collected in a knowledge database
  - c) How an organization transforms external knowledge to competence via skills and routines
  - d) What multifunctional design teams discuss, but do not report
  
- 3 For a new product it should be carefully considered that there is a positive interdependence between the new product and existing products. This is because:
  - a) The relative advantage of the new product determines its adoption
  - b) The compatibility of the new product determines its adoption
  - c) **Both a. and b. (lecture I, sheet 23)**
  - d) The size of the existing product's installed base determines its adoption
  
- 4 To measure innovativeness on country level, the following indicator is suitable:
  - a) R&D expenditure as a function of sales
  - b) **Public R&D expenditure as function of GDP (p.66)**
  - c) Cost of university education
  - d) % sales of new products
  
- 5 Organizational characteristics that facilitate innovation are:
  - a) Growth orientation and functional focus
  - b) **Space for creativity and strategy towards innovation (p.84)**
  - c) Both a. and b.
  - d) Neither a. nor b.
  
- 6 A gatekeeper keeps informed of related developments that occur outside of the organization.
  - a) True, and provides a team with leadership and motivation
  - b) **True, and serves as an information source for others in the organization (p.93)**
  - c) False, this is the typical role of a product champion
  - d) False, this is the typical role of a technical innovator

- 7 The virtuous circle of innovation:
  - b) **Shows how an organization builds competitive advantage**
  
- 8 Triggers for really new innovations are:
  - a) The EFQM excellence model and TQM
  - b) Quality circles and improvement teams
  - c) Both a. and b.
  - d) **Neither a. nor b. (lecture 3, sheet 12)**
  
- 9 In a car manufacturing company, customers of the operational value stream are:
  - a) The development value stream and end-users
  - b) Dealers
  - c) End-users
  - d) **Dealers and end-users**

Philips Electronics, the Dutch conglomerate, said on Monday that it had created a joint venture with TPV Technology, a manufacturer based in Hong Kong — a new company that will own the Philips television unit.

“The partnership will help create the scale and focus needed for our television business to return to profitability,” Frans van Houten, the Philips chief executive, said in a statement. The company also reported an after-tax loss of 87 million euros (\$125 million) for the first quarter from the television unit.

Philips will own 30 percent of the new business, while TPV will hold the rest. The venture will continue to produce televisions under the Philips brand for at least five years, and after six years Philips has the right to sell the rest of its stake to its partner.

The size of the deal is not yet known; TPV will make a deferred purchase, paying four times the venture’s annual earnings before interest and taxes over several years to come.

The deal is expected to close before the end of the year, pending shareholder and regulatory approval.

The TV division employs about 3,500 people, down more than one thousand from a year earlier. Philips reported that net income fell to 138 million euros in the first quarter from 201 million euros in the period a year earlier.

“We expect headwinds in 2011 due to the Japan tragedy, impacting our revenue and supply chain,” the company said.

TPV Technology, listed in Hong Kong and Singapore, makes desktop monitors and LCD televisions. In March, it reported revenue of \$11.6 billion for 2010, and profit of \$163 million.

TPV and Philips have a long-standing relationship. TPV bought Philips’s LCD computer monitor unit in 2004 in a similar deal, and in January it signed an agreement with Philips to make the group’s LCD televisions and distribute them in China.

- 10 The dominant reason(s) for Philips to join the strategic alliance with TPV Technology is/are:
- a) Standardisation
  - b) By-product standardisation
  - c) Improve access to capital and reduce R&D costs
  - d) **None of the above mentioned answers (table 7.1)**
- 11 In the strategic alliance of Philips and TPV Technology,
- a) **There appears to be a significant amount of process trust (table 7.2)**
  - b) Philips appears to have an exploration intent
  - c) TPV appears to have risk of losing competencies
  - d) None of the above mentioned answers
- 12 Philips allows TPV Technology to use the Philips brand name in China. This is an example of:
- a) Loss of brand equity
  - b) A possible infringement of the “not cause confusion with previous trademarks” principle that trademarks should have
  - c) **Licensing of a trademark (p.164)**
  - d) Brand extension
- 13 The effectiveness of an innovation process is best measured by:
- a) **Number of patents granted (table 4.4)**
  - b) Number of personnel involved in innovation
  - c) Number of abandoned projects
  - d) Percentage of sales on R&D spend
- 14 These criteria must be met by a patent application (to benefit from legal protection)
- a) **Novelty, industrial application, inventive step (p.150)**
  - b) Distinctiveness, not confusing, novelty
  - c) Both a. and b.
  - d) Neither a. nor b.
- 15 “Patent blocking” means:
- a) **Prevent others from using technology (p.159)**
  - b) Encouraging internal innovation
  - c) Stopping patent infringements
  - d) Using patents for negotiation

- 16 According to the research of Calantone *et al.* (2006), the profitability of a new product is directly influenced by:
- a) Product innovativeness and relative advantage
  - b) **Product relative advantage and compatibility (Lecture 1, sheet 23)**
  - c) Product innovativeness and compatibility
  - d) Product technology and compatibility
- 17 In order to cross Moore's chasm, a development team could:
- a) Not do anything, this is a typical marketing issue
  - b) Work on a faster time to market
  - c) Work on a better protection of proprietary technologies
  - d) **Work on finding ways to improve trialability (Lecture 1, sheets 20-22)**
- 18 Organic (flexible) organization structures support innovation more effectively than mechanistic ones because:
- a) Authority for decision is based on hierarchical decision rather than individual expertise
  - b) A decrease in procedures and rules will result in a decrease in innovative capacity
  - c) **There is a more open innovation flow**
  - d) They provide a higher intensity of IT support
- 19 One of the latest phases of e-commerce in operations activities is:
- a) Electronic Data Interchange (EDI) with suppliers
  - b) Making sales information present on the web
  - c) Using email in manufacturing environment
  - d) **Having potential suppliers quote via e-auctions (p.130)**
- 20 *The reliance on outside providers can be problematic. Not only because key areas of expertise may be gradually lost to the outsourcing organization, but also because outside providers may not have the desired leading edge expertise over the long term. Or they may spread their expertise among many clients so that it degrades from "best in the world" to "mere industry standard."* At the centre of this dilemma lies the problem of:
- a) Strategic outsourcing
  - b) Traditional outsourcing
  - c) The prisoner's dilemma
  - d) **Information leakage**

- 21 Typical R&D spend as percentage of sales range between 2 and 15%. Pharmaceuticals and biotechnology industries belong to the higher percentage category.
- a) **True, and this is why these industries protect their patents fiercely: they need to recover their R&D investment (p. 256)**
  - b) True, because these industries need to equip state-of-the-art laboratories
  - c) False, electrical and electronics industries have the highest percentage because these industries need to equip state-of-the-art laboratories
  - d) False, chemical process industries have the highest percentage as they need to build expensive plants
- 22 A fast follower strategy is more likely to work in a dynamic than in a static market.
- a) True, as the first mover often meets adoption problems in the market
  - b) True, as it is a variant of the “product leadership” strategy of Treacy and Wiersema (1995)
  - c) **False, as in a static market the expected change in technology base is less than in a dynamic market (lecture 3, sheet 36)**
  - d) False, as in a dynamic market all competitors know each other and can prepare for introductions
- 23 At Toyota, the use of Quality Function Deployment:
- a) Resulted in a “lean development” approach
  - b) Helped translating technical specifications into customer requirements
  - c) **Reduced the startup and preproduction costs considerably (Lecture 2, sheet 35)**
  - d) Replaced the ‘Voice of the Customer’
- 24 Design of Experiment (DoE) is a method to
- a) Capture the needs of customers in every stage of the development process
  - b) Involve customers in product testing
  - c) **identify and control parameters that impact process performance (sheet 3: 33)**
  - d) Reduce the variation in a production process
- 25 If the level of understanding of the technology by external parties is high,
- a) **Seeking strategic R&D alliances might be a good alternative to conducting internal R&D (Fig. 9.1)**
  - b) It is not wise to purchase or license a patent
  - c) External R&D contract possibilities should be explored
  - d) R&D outsourcing options should not be explored

- 26 The recent strategic alliance between Nokia and Microsoft perfectly illustrates that:
- a) Tough times even drive former competitors into alliances
  - b) Also in R&D two can do more than one
  - c) Open source innovation has the future
  - d) **Technology transfer benefits drive strategic alliances (Sheet 4:33-36)**
- 27 The Net Promotor Score is a measure for
- a) The success of a new product's promotion campaign
  - b) **How well a product is recommended to others (sheet 1:20)**
  - c) The difference between successful and less successful products
  - d) R&D performance
- 28 According to the classification of Perrow, R&D-activities are an example of dominant:
- a) Routine technology
  - b) **Non-routine technology (sheet 2:14)**
  - c) Engineering technology
  - d) Craft technology
- 29 According to the classification of Perrow, R&D-activities are best coordinated by an organizational structure that has the following characteristics:
- a) **Low formalization, low centralization, moderate to narrow span of control (sheet 2:15)**
  - b) High formalization, high centralization, wide span of control
  - c) High level of reciprocal interdependence
  - d) Low level of reciprocal interdependence
- 30 The statement "Incrementalism is an enemy of innovation" is attributed to Tom Peters (1997) as well as Nicolas Negroponte (MIT, 2005) and means:
- a) **Focusing on incremental innovation detracts from performing radical innovations (Lecture 3, sheet 10)**
  - b) Companies should not work on product re-positionings and costprice reductions
  - c) Managers who embrace step-by-step growth strategies are not the best innovation managers
  - d) Incremental innovations should be carried out by production engineers rather than by development engineers

- 31 A technologies S-curve plots:
- a) Technology sales against time
  - b) **Rate of technology progress against effort (Fig. 6.4)**
  - c) Cumulative technology adopters against time (*adoption plot – Fig. 2.5 – has the same shape*)
  - d) Technology effort against time
- 32 The resource-based view assumes that:
- a) Firms within an industry are identical in terms of their resources
  - b) Firms within an industry differ systematically in terms of their resources
  - c) **Firms within an industry differ systematically in terms of their resources and these differences are relatively stable (sheet 3:20)**
  - d) Recourses offer a competitive advantage if they are valuable, rare and imperfectly imitable
- 33 A defensive innovation strategy requires a firm to focus on competencies in:
- a) R&D and marketing, as the firm needs to launch many new products into the market ahead of the competition
  - b) **Agile design and development, manufacturing and marketing, as the firm needs to respond quickly to competitors which are first in the market**
  - c) Manufacturers and process engineering, as the firm's success depends on economies of scale in manufacturing
  - d) Marketing and process engineering, as the firm has to meet the customer's requirements as precisely as possible
- 34 In the resource based view of Peteraf (1993), a competitive advantage is ensured by "heterogeneity", "imperfect mobility", "ex post limits to competition", and:
- a) **Ex ante limits to competition (sheet 3:23)**
  - b) Resource position barriers
  - c) Isolation mechanisms
  - d) Industry dynamics
- 35 A firm's acquisition of new external technology and the application of this technology in commercially successful products is a perfect illustration of a(n):
- a) Capability
  - b) Core capability
  - c) **Absorptive capability**
  - d) Dynamic capability

- 36 The knowledge-based view of the firm:
- a) **considers knowledge as a firm's most strategic resource**
  - b) emerged because the resource-based view of the firm was considered to be a relative static perspective
  - c) both a. and b.
  - d) neither a. nor be.
- 37 A joint venture is a type of strategic alliance that usually refers to a:
- a) Geographic concentration of interconnected companies
  - b) **Separate legal identity**
  - c) Form of licensing
  - d) Virtual company
- 38 The highest amount of R&D is required if a business is labelled as:
- a) Survival
  - b) Competitiveness
  - c) Technology masters
  - d) **break the mold**
- 39 The knowledge base of an organization can be defined in terms of:
- a) The accumulation of individual knowledge bases and social knowledge, embedded in relationships between these individuals
  - b) The accumulation of projects and individual, technological, administration and external assets
  - c) Organizational heritage
  - d) **All of the above-mentioned answers**
- 40 ?
- 41 According to Croonen (2005), the dynamics of a strategic alliance can be explained by:
- a) The perceived strategic and operational compatibility of the two partners
  - b) The perceived attractiveness of alternative partners and the perceived switching costs
  - c) **Both a. and b. (sheet 4:39)**
  - d) Neither a. nor b.



- 42 The case illustrates inward technology transfer of Microsoft. Currently they are in the state of:
- a) Awareness
  - b) Association
  - c) **Assimilation**
  - d) Application
- 43 Co-optition:
- a) Could influence the technological developments and standards of an industry
  - b) Could be defined as simultaneous pursuit and competition
  - c) Could be driven by technological challenges and opportunities, firm strategies and superior and relevant partner resources
  - d) **All of the above mentioned answers**
- 44 The technology explosion during the last 55 years, the shortening of the technology life cycle and the globalization of technology:
- a) Caused the shift in emphasis within industrial R&D from an internal to an external focus
  - b) Increased the importance of external linkages and absorptive capacity of firms
  - c) **Both a. and b.**
  - d) Neither a. nor b.
- 45 Growth orientation, acceptance of risk and receptivity are all:
- a) R&D project evaluation criteria
  - b) Factors that drive the external organization of R&D
  - c) **Organizational characteristics that facilitate innovation**
  - d) Determinants of the degree of organizational integration of technology
- 46 A correct sequence of stages in the extended product life cycle is:
- a) **Applied research, development, introduction, growth**
  - b) Introduction, basic research, applied research, growth
  - c) Applied research, introduction, development, maturity
  - d) Growth, development, maturity, decline
- 47 Which of the following models or methods attempt “to find those ideas that “fit” with the business strategy [...] and consider a business’s entire set of projects, rather than viewing new research projects in isolation”
- a) **portfolio selection models**
  - b) financial screening methods
  - c) benefit measurement models
  - d) relative weight models

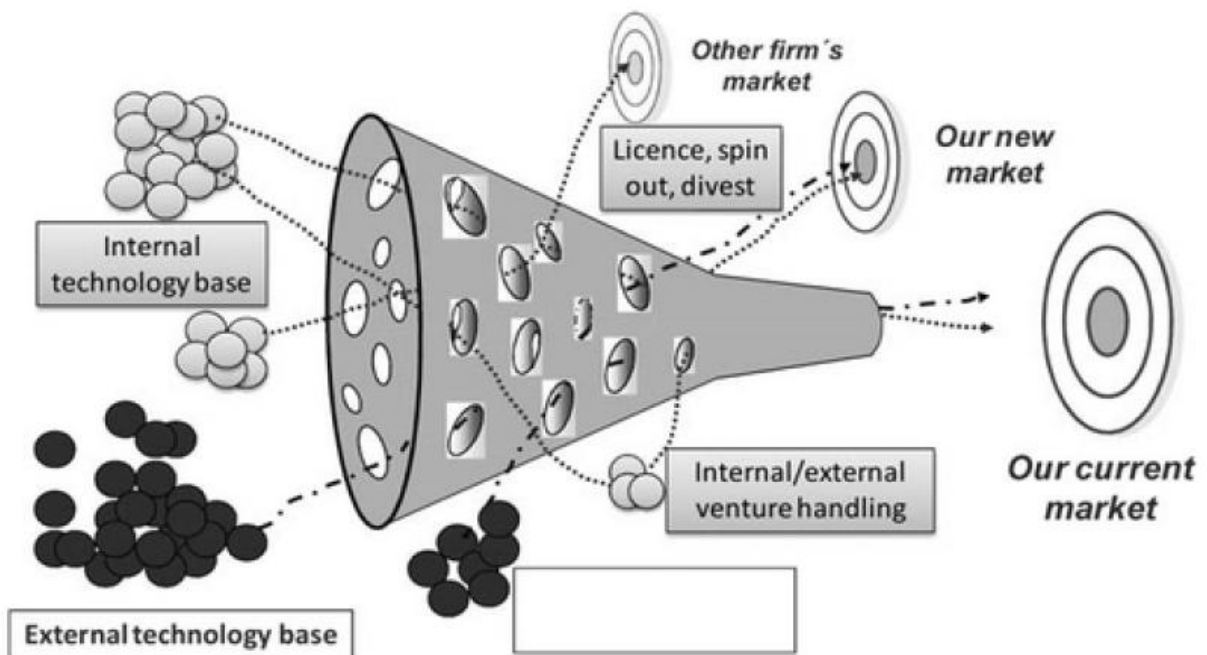
48 When it comes to open innovation:

- a) The increased openness in R&D could lead to slower and more costly product development projects
- b) The paradigm could be considered a repackaging and representation of earlier concepts and findings
- c) The shift from a closed model towards an open model of innovation could be equally relevant for traditional as for high-tech industries
- d) **All of the above-mentioned answers**

		Relative market share	
		High	Low
Market growth rate	High	1	2
	Low	3	4

49 Based on their position in the product life cycle and their corresponding cash flow:

- a) Projects in categories 1 & 2 will be able to fund projects in categories 3 & 4
- b) Projects in categories 1 & 3 will be able to fund projects in categories 2 & 4
- c) **Projects in categories 3 & 4 will be able to fund projects in categories 1 & 2 (sheet 4:16)**
- d) Projects in categories 2 & 4 will be able to fund projects in categories 1 & 3



50 To complete the essentials of open innovation, the empty box should mention the concept of:

- a) **External technology insourcing (sheets 4:28)**
- b) Inside – out (outbound)
- c) Outside – in (inbound)
- d) Technology transfer