SUGGESTED SOLUTIONS

22404 – Business Strategy and Knowledge Management

CA Professional (Strategic Level II) Examination
December 2012

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF SRI LANKA

Answer No. 01 – Case Study

(a) Advice DS on the Motives, Incentives, and Resources for diversification and how they support the diversification strategy to be a successful corporate strategy as oppose to single business strategy

(13 marks)

A firm implements diversification strategy as their corporate-level strategy for many reasons. Among them are to enhance strategic competitiveness of the entire company, to gain market power relative to competitors. When a diversification strategy does enhance strategic competitiveness, the firm's total value which is created through either related diversification or unrelated diversification is increased.

Motives to enhance Strategic Competitiveness

- Economies of scope (related diversification) – includes sharing activities, and transferring core competencies. Cost savings attributed to transferring the capabilities and the competencies developed in one business to a new business without significant additional costs. Shared activities create interrelationships that affect the ability of both businesses to achieve strategic competitiveness.

- Market power (related diversification) – includes blocking competitors through multipoint competition, and vertical integration. Market power exist when a firm is able to sell its products the above the existing competitive level or reduce the costs of its primary and support activities below the competitive level, or both. Multipoint competition exists when two or more diversified firms compete in the same product areas or geographic markets. These firms compete head to head in each market, will not create potential gains; instead, it will generate excessive competitive activity. Over time these firms refrain from competition and in effect realize mutual forbearance (creates value for each company through less competitive activity). Vertical integration exists when a company is producing its own inputs (backward integration) or owns its own sources of distribution of outputs (forward integration). A company pursuing vertical integration is usually motivated to strengthen its position in its core business by gaining market power over competitors. This is done through savings on operations costs, avoidance of market costs, better control to establish quality, and possibly, protection of technology.

- Financial economies (unrelated diversification) – includes efficient internal capital allocation and business restructuring. Financial economies are cost savings realized through improved allocations of financial resources based on investments inside or outside the firm. Financial economies are critical to attempt to earn above average returns. Stakeholders have lower cost of reducing their risk through diversification of their own investment portfolios. Successful implementation of an unrelated diversification strategy requires that a firm incur fewer costs to reduce an individual investors risk as compared to the cost that investor would experience to diversify his or her own portfolio.

Incentive and Resource for Diversification – diversification is often undertaken with the expectation that doing so will prevent a firm from reducing its value. Incentive provides reasons to diversify; they come from both the external environment and a firm's internal environment. The term incentive implies that managers have some choice whether to pursue the incentive or not. Incentive external and internal to the firm includes;

- Antitrust regulations
- Tax laws
- Low performance
- Uncertain future cash flows
- Firm risk reduction
- Tangible resources
- Intangible resources

Resources for Diversification

Although incentives to diversify may exist, a firm must possess the resources required to make diversification economically feasible. Tangible, intangible, and financial resources may facilitate diversification. Resources vary in their utility for value creation, however, because of differences in rarity and mobility; that is, some resources are easier for competitors to duplicate because they are not rare, valuable, costly to imitate, and non-substitutable. For instance, free cash flows may be used to diversify the firm because financial resources such as free cash flows are more flexible and common.

Why a diversification to be a successful corporate strategy as oppose to single business strategy

The big risk of remaining concentrated on a single business, of course, is putting all of a firm's eggs in one basket. If the market becomes saturated, competitively unattractive, or is eroded by the appearance of new technologies or new products or fast shifting buyer preferences, then a company's prospects can quickly dim. It is not unusual for changing customer needs, technological innovations, or new substitute products to undermine or wipe out a single-business firm.

Therefore factors such as;

- Diminishing growth prospects in its present business,
- Opportunities to add value to its customers or gain competitive advantage by broadening its present business
- Attractive opportunities to transfer its existing competencies and capabilities to new business
- Cost-saving opportunities that can be exploited by diversifying on to closely related businesses
- Financial and organizational resources to support a diversification effort,

Provides a clear signal as to when a diversification be a successful corporate strategy oppose to s single business strategy.

Further, diversification strategy is justified against a single business strategy due to the shareholder value it creates. Though the shareholders can easily diversify their risks on their own synergic effect created through diversification ensures, better business performance under a single corporate umbrella consolidating through activity sharing and transferring core competency.

(b) Recommend why Strategic Outsourcing should be considered for his garment manufacturing business proposition instead of setting up of the operation (7 marks)

Strategic outsourcing focus on a fewer number of value-creation activities in order to strengthen its business model. It focuses on noncore or non strategic activities in order to determine if they can be performed more effectively and efficiently by independent specialized companies.

Further, strategic outsourcing allows one or more of a company's value-chain activities or functions to be performed by independent specialized companies that focus all their skills and knowledge on just one kind of activity. Relying on outside specialist to perform certain value chain activities offers a number of strategic advantages;

- Obtaining higher quality and/or cheaper components or services than internal sources can provide.
- Improving the company's ability to innovate by interacting and allying with "best-in-world" suppliers who have considerable intellectual depth and innovative capabilities of their own.
- Enhancing the firm's strategic flexibility should customer need and market conditions suddenly shift
- Increasing the firm's ability to assemble diverse kind of expertise speedily and efficiently.
- Allowing the firm to concentrate its resources on performing this activities internally that it can perform better than outsiders and/or that it needs to have directly under its own strategic control.
- Initial investment could be used for existing business effectively.
- Relieve the core management team from the decision making process of the new garment business if <u>major part</u> of operation is outsourced.

Thus, which value chain activities should be brought within the boundary of the firm and which value chain activities should be outsourced need to carefully thought and realized by DS to engage his resources more efficiently toward achieving the ultimate objectives.

(Total 20 marks)

<u>Answer No. 02</u>

The world economy is globalizing at an increasing pace as countries hitherto closed to foreign companies open up their markets, as the internet shrinks the importance of geographic distance, and as ambitious growth minded companies race to stake out competitive positions in the markets of more and more countries. Therefore, catering to the global customer needs becomes the dream of every business irrespective of the size and form of that business.

One of the ways in which a firm can gain competitive advantage in competing multinationally involves efficient and effective transfer of competitively valuable competencies and capabilities from its domestic markets to foreign markets. Companies can pursue competitive advantage by locating activities in the most advantageous countries. Examine three (3) issues that companies tend to confront when their activities are in a limited number of locations.

(6 marks)

To use location to build competitive advantage, a company must consider two issues, (1) whether to <u>concentrate each activity it performs in a few selected countries or</u> to disperse performance of the activity <u>to many nations,</u> and (2) in <u>which countries to locate particular activities</u>. Companies tend to concentrate their activities in a limited number of locations;

- **When the <u>cost of manufacturing</u> or <u>other activities are significantly lower</u> in particular geographic location than in others** – e.g. much of the world's athletic footwear is manufactured in Asia (China and Korea) because of the low labour cost. Much of the motherboard for PC's is located in Taiwan because of both low cost and high caliber technical skills of the Taiwanese labour force.

- **When there are significant scales of economies in performing the activity** – the presence of significant economies of scale in components production or final assembly means that a company gain major cost savings from operating a few superefficient plants as opposed to a host of small plants scattered across the world. Important marketing and distribution economies associated with multinational operations can also yield low cost leadership. In situations where some are intent on global dominance, being the world-wide low cost provider is a powerful competitive advantage. Similarly, achieving low cost producer status often requires a company to have the largest worldwide manufacturing share (as distinct from brand share or market share) with production centralized in one or few world-scale plants in low-cost locations.

- **When there is steep learning or experience curve associated with performing an activity in a single location** – in some industries experience curve effects in parts manufacture or assembly are so great that a company establishes one or two large plants from which it serves the world market. The key to riding down the experience curve and achieving lower costs is to concentrate production in a few locations to increase the accumulated volume at a plant as rapidly as possible.

- **When certain locations have superior resources, allow better coordination of relocated activities, or offer other valuable advantages** – a research unit or a sophisticated production facility may be situated in a particular nation because of its pool of technologically trained personnel.

  Samsung became a leader in memory chip technology by establishing a major R& D facility in Silicon Valley and transferring the knowhow gained back to headquarters and its plants in South Korea. Where just-in-time inventory practices yield big cost saving and/or where the assembly firm has long-term partnering agreements with its key suppliers, parts manufacturing plants may be clustered around final assembly plants.

(b) Describe what Multi-country competition and Global competition is and its strategic importance for sustainable growth.

(9 marks)

There are important differences in the pattern of international competition from industry to industry.

Multi-country or ***multi-domestic*** competition is where each country market is self contained, buyers have different expectations and like different styling and features, competition in each national market essentially independent of competition in other national markets, and the set of rivals comprising the selling side of the market differ from country to country. Because each country market is separate in multi-country competition, a company's reputation, customer base, and the competitive position in one nation have little or no bearing on its ability to compete successfully in another. As a result power of company's strategy in any one nation and any competitive advantage it yields are largely confined to that nation and do not spill over to other countries where it operates. *With multi-country competition there is no international or global market, just a collection of self contained country markets*. Industries characterized by multi-country competition include beer, life insurance, apparel, metal fabrication, many types of food products (coffee, cereals, canned goods, frozen foods) and many types of retailing.

Global competition is where prices and competitive conditions across country markets are strongly linked together and the term international or *global market* has true meaning. In a globally competitive industry, a company's competitive position in one country both affects and is affected by its position in other countries. Rival companies compare against each other in many different countries, but especially so in countries where sales volumes are large and where having a competitive presence is strategically important to building strong global position in the industry.

In global competition a firm's overall competitive advantage grows out of its entire worldwide operations, the competitive advantage it creates at its home base is supplemented by advantages growing out of its operation in other countries (having plants in low-wage countries, being able to transfer expertise from country to country). *A global competitor's market strength is directly proportional to its portfolio of country based competitive advantages.*

An industry can have segments that are globally competitive and segments where competition is country by country. In the Hotel-motel industry, for an example, the low and medium-priced segments are characterised by multi-country competition because competitors mainly serve travelers within the same country. In the business and Luxury segments, however competition is more globalised.

Companies like Nikki, Marriot, Sheraton, and Hilton have hotels at many international locations and use worldwide reservation systems and common quality and service standards to gain marketing advantage in serving business people and other travelers who make frequent international trips.

Strategic Importance for Sustainable Growth

The question of which of these two strategies to pursue is the foremost strategic issue firms face when they compete in international markets.

The need for a multicountry strategy derives sometimes from the vast differences in cultural, economic, political, and competitive conditions in different countries. The more diverse national market conditions are, the stronger the case for a multicountry strategy, where the company tailors its strategic approach to fit each host country's market situation. Usually, but not always, companies employing a multicountry strategy use the same basic competitive theme (low-cost, differentiation, or best cost) in each country, making whatever country specific variations are needed to best satisfy customers and to position themselves against local rivals.

The bigger the country to country variations, the more a company's overall international strategy becomes a collection of is individual country strategies. But country to country variation still allow room to connect the strategies in different countries by making an effort to transfer ideas, technologies, competencies, and capabilities that work successfully, in one country market to other country market.
Multicountry strategies are best suited for industries where multicountry competition dominates and a fairly a high degree of local responsiveness is competitively imperative while global strategies are best suited for globally competitive industries. A global strategy is one where the company's approach is mostly the same in all countries. Although minor country to country difference in strategy do exist to accommodate specific competitive conditions in host countries, the company's fundamental competitive theme (low-cost, differentiation, best-cost, or focused) remains the same worldwide.

A global strategy involves;

1. Integrating and coordinating the company's strategic moves worldwide and
2. Selling in many if not all nations where there is significant buyer demand.

A global strategy because it is more uniform from country to country, can concentrate on building the resource strength to secure a sustainable low-cost or differentiation based competitive advantage over both domestic rivals and global rivals racing for world market leadership. Whenever country –to-country differences are small enough to be accommodated within the framework of global strategy, a global strategy is preferable to a multicountry strategy because of the value of uniting a company's efforts worldwide to create strong, competitively valuable competencies and capabilities not readily matched by rivals.

(Total 15 marks)

Answer No. 03

A company's strategy consist of the competitive efforts and business approaches that managers employ to please customers, compete successfully, and achieve organizational objectives. The changes in external and internal environment dictate that a company's strategy changes and evolve over time. Faster a company's external and internal environment changes, the more frequently that its short run and long-run strategic plans have to be revised and updated.

(a) Examine why Strategic Management is considered an ongoing process and not a start-stop event

(4 marks)

Forming a strategic vision, setting objectives, crafting a strategy, implementing and executing a strategic plan, and evaluating performance portray what strategic management involves. They are never final and making adjustments are normal and necessary parts of the strategic management process.

The choice of whether to continue or change the company's vision, objectives, strategy and implementation approaches always present itself. Managers have an ever present responsibility for detecting when new developments require a strategic response and when they don't. Their job is to track progress, spot problems and issues early, monitor the winds of market and customer change, and initiate adjustments as needed.

Managers performing these tasks are not so cleanly divided into separate, neatly sequenced compartments.

- First, there is much interplay and recycling among the five tasks. Deciding on a company mission and vision shades into setting objectives (both involve directional priorities). Objectives setting entails considering current performance, the strategy options available to improve performance, and whether the organization has resources and capabilities to achieve stretch objectives when pushed and challenged. Clearly, the direction-setting tasks of developing a mission, setting objectives, and crafting strategy needs to be integrated and done as package not individually.
- Second, these five strategic management tasks have to be done alongside managers other duties and responsibilities, administering day-to-day operations, dealing with crises, going to meetings, reviewing information, handling people problems, and taking an special assignment and civic duties.
- Third, crafting and implementing strategy make erratic demands on a manager's time. Change does not happen in an orderly or predictable way. Events can build quickly or gradually, they can emerge singly or in rapid-fire successions; and their implications for strategic change can be easy or hard to diagnose.
- Last, the most time-consuming aspect of strategic management involves daily efforts to get the best strategy-supportive performance out of every individual in the organization and trying to perfect the current strategy by refining its content and execution.

b) Identifying company competencies and capabilities plays an important role in overall corporate strategy formulation. Core competencies recognize through a competency analysis stand as a valuable company resource. Explain what the Core Competence is and its role in corporate strategy formulation. (5 marks)

Identifying and evaluating what a company is really good at doing and what capabilities it has for competing is a critical component of assessing a company's situation. One of the most valuable resources a company has is the ability to perform competitively relevant activity very well. A competitively important internal activity that a company performs better than other competitively important internal activities is termed core competency.

While core competence is something a company does well internally, what makes it a ***core*** competence as opposed to just a competence is that it is central to a company's competitiveness and profitability rather than peripheral. A company's core competence can relate to any of several aspects of its business: expertise in building networks and systems that enable e-commerce, speeding new or next generation products to market, good after-sale service, skills in manufacturing high-quality product etc.,

A company may have more than one core competence in its resource portfolio but rare is the company that can legitimately claim more than two or three core competencies. A core competence gives a company competitive capability and thus qualifies as a genuine company strength and resource.

Most often, a company's core competence resides in its people and in its intellectual capital, not in its assets on the balance sheet. Core competencies tend to be grounded in cross-department and cross-functional combinations of skills, resources, and technologies. A company's core competence represents a *distinctive competence* depends on how good the competence is relative to what competitors are capable of. A distinctive competence is something a company does well in comparison to its competitors. A core competence becomes a basis for competitive advantage only when it is a distinctive competence.

(c) Companies and managers approach the task of crafting a strategy in a variety of ways. At one extreme, strategy emerges as chiefly the product of one person – the CEO, a visionary founder of the business, or an enterprise's current owner. Identify and describe the approaches in crafting a business Strategy

(6 marks)

- ***The Chief Architect Approach*** – the owner CEO assumes the role of chief strategist and chief entrepreneur, singlehandedly shaping most or all of the major pieces of strategy. This does not mean that one person is the originator of all the ideas underlying the resulting strategy or does all the background data gathering and analysis. But it does mean that one person functions as strategic visionary and chief architect of strategy, personally orchestrating the process and putting his or her imprint on what strategy to pursue. The chief architect approach to strategy formation is characteristic of companies that have been founded by the company's present CEO (e.g. Michael Dell at Dell Computers).

- ***The Delegation Approach*** – here the manager in charge delegates big chunks of the strategy making task to trusted subordinates, down the line managers in charge of key business units and departments, a high-level task force of knowledgeable and talented people from many parts of the company, self-directed work teams with authority over a particular process or function, or, more rarely, a team of consultants brought in specifically to help develop new strategic initiatives. Delegating the brainstorming, analysis and crafting of major strategy components and certainly most of the detailed pieces of an enterprise's strategy allows for broad participation from many managers and personnel with specialized expertise.

- ***The Collaborative or Team Approach*** – this is a middle approach whereby a manager with strategy making responsibility enlists the assistance and advice of key peers and subordinates in hammering out a consensus strategy. Strategy teams often include line and staff managers from different disciplines and departmental units, a few handpicked junior staffers known for their ability to think creatively, and near retirement veterans noted for being keen observers, telling it like it is, and giving sage advice. Collaborative efforts are usually led by the manager in charge, but the result is the joint product of all concerned. Such an approach is well suited situations where strategic issues cut across departments, product lines, and businesses, and there is a need to tap strategic thinking of people with different expertise, experiences, and perspectives.

- ***The Corporative Entrepreneur Approach*** – under this approach top management encourages individuals and teams to develop and champion proposals for new product lines and new business ventures. The idea is to unleash the talents and energies of promising corporate entrepreneurs, letting them try out business ideas and pursue new strategic initiatives. Utilising the corporate entrepreneur approach successfully requires having an organization populated with ambitious, entrepreneurial people who want the chance to take on strategic and managerial responsibility for a new product or business. With this approach, the total strategy of a company is the collective sum of all the championed initiatives. This approach works well in enterprises where technological advances are coming at a fast and furious pace compelling new opportunities are opening up in a variety of areas.

(Total 15 marks)

Answer No. 04

(a) What evidence or factors do you observe in the given description itself to justify the statement made by the business analyst that the "stock market value partly depends on the organisational knowledge"? List five (05) such evidence or factors and justify why you listed each one of them.

(10 marks)

1. smart management: contributes to the improvement of the organisation (hence stock market value), but depends on the knowledge that the management gather dynamically regarding employees (for HRM), changing business environment, etc., hence the knowledge systems are necessary
2. business intelligence: contributes to strategic decision making that gives a guarantee to the stock trading clients, but depends on gathered knowledge and the support of expert systems
3. excellence in service delivery: will win the hearts of customers, and their feedback increases the stock market value, but requires the knowledge of customers, their demands, streamlining services, etc., that depends kn KM systems
4. CRM: argument can be same as above (CRM itself is a knowledge contributor to KMS), and a CRM improves service delivery
5. human aspect was not improved in the past, and this may have led to lower stock market value: human aspect covers training, interaction with customers, motivation, etc. Dissatisfaction of customers leads to lower stock market value, and therefore to increase it, human aspect need to be improved
6. vast customer base: in the past customer base increased, but the service does not seemed to have scaled accordingly. Better systems are needed for a service improvement, thereby increasing the stock market value

(b) It was identified that the knowledge and skills of newly appointed staff was not up to the expected level of the customers. Therefore, it was suggested to reward and keep many experienced staff who have worked for more than 10 years and use them to train the new staff. Do you think that this is a good strategy? Explain. Give examples to illustrate your points.

(10 marks)

a. Experienced staff has tacit knowledge, and they can be used to train new staff.
b. Although experienced staff is good to be used to train, what is more important is to capture their knowledge, codify them and store them, and then make available to the other relevant staff.
c. Just a measure of 10 years is not a criteria to find out experts. Need to assess their expertise and see the relevance to the problem that young staff have. Mere rewarding based on 10 years can lead to more problems.
d. Environment changes. Competition has come in. Adaptation and training the staff to face new challenges is more necessary.
e. Regulatory frameworks, frameworks for international collaborations, etc., need to be taken into account in training.
f. KMSs should be in place to train new staff, KMSs will use gathered knowledge. They may have forums, wikis, blogs, journals, etc. that make the system more interactive for new staff.
g. CRMs are quite useful as the issue is related to customer complains. New staff should be trained to gather information from CRMs and use them to give a better service to customers.
h. New technologies and mechanisms need to be explored and the new staff should be given an exposure.

In addition to the above, any valid suggestions to improve the knowledge of new staff can be accepted. Total marks should not exceed 10 marks, as some candidates may describe more than 5 points.

(Total 20 marks)

<u>Answer No. 05</u>

(a) It was found that the bank can get more revenue from loans and leasing facilities than the core banking operations such as current and savings accounts. Therefore, the management decided to invest on an information system to facilitate these services, and this system uses Artificial Intelligence (AI) to help banking staff to determine various parameters related to offering these services. In what way can the AI based techniques be helpful for the banking staff? Explain giving an example.

(5 marks)

Analysis of past data, determining under what situations the customer behaved favourably to the bank, etc., can be the output of the AI based techniques that can help the banking staff decide the parameters of the loan or lease. Past data can be used to train the AI based systems. (3 marks for this type of explanation with reasons)

(Note to the marking examiner: part of the answer is the actual example itself, for which 2 marks are to be given. The other part (3 marks) is for describing how AI techniques can be used by the system (or how the systems can be trained) using the past data so that the system will be helpful in a situation similar to the example quoted. Students should show how AI techniques are used by the system to help the banking staff. If the overall description contains these points, consider giving marks).

(b) What current situation in the bank may hinder the proper operation of the above AI based system? Briefly state why.

(2 marks)

(c) This bank has a large branch network. When the branch managers are involved, decision making becomes a difficult process. What solution would you suggest to overcome this situation, and why? Briefly explain four (04) facilities in such a system, and show how they are used in a decision making process. (8 marks)

Answer:

Groupware includes many important services for collaboration. They include:

- Sharing of calendars
  Allow users to keep tract of their schedules and plan meetings with others.
- Collective writing
  Can perform collaborate writing, Example: One report can be written by many employees collaboratively.
- E-mail handling
  Allow user to send and receive messages.
- Shared database access
  All the employees within the organization can access the database.
- Electronic meetings
  Video conferencing and information sharing makes if similar to face to face meetings.
- Assigning task
  Tasks can be assigned to employees. Status of t asks is updated on the task list.
- Group scheduling
  Meetings can be scheduled based on the availability of individuals.
- Public folders
  Public folders can be created to collect information from others as well as share information with others.
- Workflow management
  Workflow management refers to passing information, documents, and tasks from one employee or machine within a business to another. This is automated through groupware.

(Total 15 marks)

<u>Answer No. 06</u>

(a) Briefly explain the CRISP-DM (Cross Industry Standard Process for Data Mining). You need to touch upon at least 5 aspects of the model.

(10 marks)

Answer:
The CRISP-DM (Cross Industry Standard Process for Data Mining) knowledge discovery process model consists of six steps.

1. **Business understanding**
   This step is for understanding of objectives and requirements from a business perspective. The step consists of sub-steps such as determination of business objectives, assessment of the situation, determination of data mining goals, and generation of a project plan.

2. **Data understanding**
This step starts with initial data collection and familiarization with the data. Specific aims include identification of data quality problems, initial insights into the data, and detection of interesting data subsets. Data understanding is further broken down into sub-steps such as collection of initial data, exploration of data, and verification of data quality.

3. **Data preparation**
This step covers all activities needed to construct the final dataset. The final dataset constitutes the data that will be fed into Data Mining tools in the next step. It includes table, record, and attribute selection; data cleaning; construction of new attributes; and transformation of data. It is divided into the sub-steps of selection of data, cleansing of data, construction of data, integration of data, and formatting of data.

4. **Modeling**
At this point, various modeling techniques are selected and applied. Modeling usually involves the use of several methods for the same data mining problem type. The input parameters are adjusted to optimal values. Since some methods may require a specific format for input data, often moving into the previous step is necessary in some situations. This step is subdivided into steps as selection of modeling techniques, generation of test design, creation of models , and assessment of generated models.

5. **Evaluation**
After one or more models have been built that are of high quality from a data analysis perspective, the model is evaluated from a business context. A key objective is to determine whether any important business issues have not been sufficiently considered. At the end of this phase, a decision about the use of the data mining results should be reached. The key sub-steps in this step include evaluation of the results, process review, and determination of the next step.

6. **Deployment**
Now the discovered knowledge must be organized and presented in a way that the customer can be used to integrate in the decision making process. Depending on the requirements, this step can be as simple as generating a report or as complex as implementing an iterative Knowledge Discovery Process. This step is further divided into the sub-steps of plan deployment, plan monitoring and maintenance, generation of final report, and review of the process.

(b) Briefly describe two (02) emerging technologies that may be integrated to knowledge management systems to make them more efficient and effective.

(5 marks)

SOAP
SOAP originally defined as Simple Object Access Protocol, is a protocol for exchange of information in a decentralized, distributed environment. Thus, it is a specification for exchanging structured information in the implementation of Web Services in computer networks. SOAP can be used in combination with a variety of other protocols such as most notably Hypertext Transfer Protocol (HTTP) and Simple Mail Transfer Protocol (SMTP). For message negotiation and transmission.

Social Information Filtering
Social Information filtering can exploit similarities between the tastes of different users to recommend (or advise against) items. It relies on the fact that people’s tastes and preferences are not randomly distributed; rather, there are general trends and patterns within the taste of a person and as well as between groups of people.

Social Information filtering automates the process of “world-of-month” recommendations. A significant differences is that instead of having to ask a couple friends about a few items, a social information filtering system can consider thousands of other people, and consider thousands of different items, all happen in autonomously and automatically.

Web 2.0

It is a collection of web based communities and services. This consists of social networking sites, wikis, blogs, forums, video sharing, and folksonomies etc. of which the progress and adding of content are done by the users rather than the system administrators. This facilitates a new way of knowledge sharing through online user collaboration.

The advantage of using Web 2.0 is the ability of sharing knowledge among users who have not seen each other and who are in different parts of the world. Creative solutions for problems and new ideas can be shared across the world. Also it can be used as a way of broadcasting messages, ideas, and events to different parties in different geographical.

Semantic Web

The semantic web is a web of data integrated in such a way that it can easily be processes by machines, on a global scale. We can think of it as a more efficient way of representing data on the World Wide Web (WWW), or as a globally linked database. What is the rationale for building Sematic Web as we have World Wide Web? In WWW, data is usually represented in HTML files.

They can be useful in some contexts, but not in others. The problem with the majority of data on the Web that are in HTML format is that it is difficult to use them on a large scale and also the way we want. At present, there is no global system for publishing data in such a way as it can be easily processed by anyone. Semantic Web tries to give a solution for this problem Sematic Web focuses on two things. First, it is about common formats for integration of data and second, combination of data drawn from diverse sources, whereas WWW mainly concentrated on the interchange of documents.

Ubiquitous computing

Ubiquitous computing (often abbreviated to ‘ubicomp’) refers to a new type of computing in which the computer integrates into everyday objects and activities of the user. In ubiquitous computing, computers become a helpful but invisible force, helping the user to meet his or her needs.

Small computers that communicate wirelessly provide a necessary infrastructure for ubiquitous computing. The ubiquitous computing aims to make computers more helpful and easier to use. In ubiquitous computing, computers should be able to foresee the user’s needs correctly and accommodate the user’s natural communication modes and styles. When compared with the desktop computing which is limited to a single user in a single restricted location, this ubiquitous computer paradigm engages in many computational devices and systems simultaneously.

Enterprise 2.0

The term Enterprise 2.0 (E2.0) describes a collection of organizational and information technology constructs that enable more flexible work models, knowledge sharing and community building. It is not something new, but, it represents the evolution and maturation of best practices for collaboration and knowledge management. Enterprise 2.0 calls attention for social software and platforms that organisations might deploy to increase the productivity and performance of their knowledge workers. Enterprise 2.0 tools make it easier for knowledge workers to author links and tag information.

Micro –blogging
After Twitter became successful in Web, many enterprise collaboration suites re incorporating micro-blogging into their platforms. Experts in social media space have been thinking about how businesses might adopt enterprise micro-blogging tools in knowledge management arena. When enterprise micro-blogging is used internally then there are different usages of it.

Activity streams
Activity streams allow publishing live streams of persons which may be related to working learning etc. It can be used as a means of disseminating knowledge. The activity stream is visible to other participants and they can acquire knowledge by participating to it. The activity streams are better in knowledge sharing, answering questions and identifying or recognizing competencies of various workers.

Knowledge search engines
The normal search engines provides the search results based on the words or phrases that are used to perform the search without looking at any semantics. However, the knowledge search engines do searching by considering the semantics of the entered phrase and it tries to match a meaningful context to the search and give the results. There are different knowledge search engines available on the World Wide Web and they can be used to search for knowledge o different problems in different contexts.

General intelligence
Most researchers working in the area of artificial intelligence expect their work to eventually be incorporated into a machine with general intelligence. This machine should meet or exceed human abilities at most of all of them. Consequently, this particular system should have a far better knowledge than a human and should be able to solve problems using an approach that humans used in similar situations.

(Total 15 marks)

Notice of Disclaimer

The answers given are entirely by the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) and you accept the answers on an "as is" basis.

They are not intended as "Model answers', but rather as suggested solutions.

The answers have two fundamental purposes, namely:

1. to provide a detailed example of a suggested solution to an examination question; and

2. to assist students with their research into the subject and to further their understanding and appreciation of the subject.

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