Paper 17 -Strategic Performance Management (SPM)

Section – A
[Question No. 1 and 2 are compulsory and any 2 from the rest]

1 Read the following caselet and answer the following questions:

Atlas Industries produces tool and die machinery for manufacturers. The company expanded vertically in 2004 by acquiring one of its suppliers of alloy steel plates, Jindal Steel Company. To manage the two separate businesses, the operations of Jindal are reported separately as an investment center.

Atlas monitors its divisions on the basis of both unit contribution and return on average investment (ROI), with investment defined as average operating assets employed. Management bonuses are determined on ROI. The average cost of capital is 11 percent of operating investment.

Jindal's cost of goods sold is considered to be entirely variable, while the division's administrative expenses are not dependent on volume. Selling expenses are a mixed cost with 40 percent attributed to sales volume. Jindal contemplated a capital acquisition with an estimated ROI of 11.5 percent; however, divisional management decided against the investment because it believed that the investment would decrease Jindal's overall ROI. The 2012 operating statement for Jindal follows. The division's operating assets employed were ₹ 1,57,50,000 at November 30,2012, a 5 percent increase over the 2011 year-end balance.

Jindal Steel Division
Operating Statement
For the Year Ended November 30,2012 (₹ 000 omitted)

Particulars	₹	₹
Sales revenue		25,000
Less expenses;		
Cost of goods sold	16,500	
Administrative expenses	3,955	
Selling expenses	2,700	23,155
Income from operations before income taxes		₹1,845

Required:

(a) Calculate the unit contribution margin for Jindal Steel Division if 14,84,000 units were produced and sold during the year ended November 30,2012.

(b) Calculate the following performance measures for 2012 for the Jindal Steel Division:

(i) Pretax return on average investment in operating assets employed (ROI).

(ii) EVA calculated on the basis of average operating assets employed.

(c) Explain why the management of the Jindal Steel Division would have been more likely to accept the contemplated capital acquisition if EVA rather than ROI had been used as a performance measure.

(d) The Jindal Steel Division is a separate investment center within Atlas Industries. Identify several items that Jindal should control if it is to be evaluated fairly by either the ROI or EVA performance measures. [3+(3+3)+3+3]

Answer of 1:

(a)

Particulars	₹
Sales	2,50,00,000
Less : Cost of goods sold	(1,65,00,000)
Selling expenses (₹27,00,000 x 40%)	(10,80,000)
Total contribution margin	74,20,000

Unit contribution margin = ₹74, 20,000/14,84,000
= ₹ 5

(b)

(i) ROI = Income before taxes/Average operating assets
= ₹ 18,45,000/₹ 1,53,75,000
= 12%

Average operating assets
= (₹ 1,57,50,000 + ₹ 1,50,00,000 *) / 2
= ₹ 1,53,75,000

*November 30, 2011, operating assets = $\frac{₹1,57,50,000}{1.05}$
= ₹1,50,00,000

(ii) EVA = ₹18,45,000 – (0.11) (₹153,75,000)
= ₹18,45,000 – ₹16,91,250
= ₹1,53,750

(c) The management of Jindal Steel would have preferred to accept capital acquisition if EVA was used as the performance measure because the investment would have increased both the division's wealth and the management bonuses. In case ROI is used as a performance measure, the management of Jindal is likely to reject any investment that would lower the overall ROI (12 percent in 2012), even though the return is higher than the required minimum, becasue this would reduce bonuses.

(d) Jindal steel must be able to control all items related to profits and investment if it is to be evaluated fairly as an investment centre using ROI or EVA as performance measures. Jindal must control all elements of the business except the cost of invested capital, that being controlled by Atlas Industries.

2. Read the caselet and answer properly:
Case Study: ESPN Drives Fan Value through Customer Intelligence

Situation: ESPN suffered from an absence of Customer Knowledge

Several years ago, ESPN recognized that it lacked a consistent view of its customers. For example, it housed registration, product purchase, and online behavioral data in separate data repositories. Meanwhile, many business units were running their own data warehouse and decision engines to power their marketing communications. As a result, ESPN didn't just lack a consistent view of its customer; it also lacked a cohesive view of how fans were interacting with the overall business. Because it lacked a consistent view of customers, it didn't know which customers were more valuable, how the more valuable customers interacted with the company, and which customers were most likely to engage with the company in specific ways.

Best Practice: ESPN turns customer data into intelligence

Under the tutelage of Scott Keating, senior director of fan relationship marketing (FRM), ESPN established a simple yet powerful mission to "know our fans well enough at any point in time or place to serve them better." To deliver on this mission, Keating and his team, working with Quaero, a CSG solution, set out to:

- ***Create a holistic view of fans:*** **During the past three years, ESPN has invested significantly in how it captures and manages customer data. The company integrates fan data from product purchases and enrollments, registration, online behavior observed through Omniture, and third-party data including census and retail co-op data and Mosaic clusters. However, as Keating highlights, "It's not just about cramming the data together in a single repository. We want to understand the correlation between the different data sets to draw insights from each that we couldn't get by looking at them in isolation."**

- ***Understand how fans interact with the company:*** **ESPN quickly moved beyond looking at the demographic profile of customers within specific products and dove into differences in site navigation and digital platform usage to see if it could determine interests by observing behavior. This not only allowed ESPN to promote offers based on behavior and affinities but also to understand cross-channel behavior-an increasingly important need in light of mobile visitors and new initiatives such as ESPN Networks.**
- ***Understand the relative value of fans:*** **Once ESPN successfully integrated its various data sources, it began to evaluate the relative value of fans, considering both indirect revenue from online advertising and direct revenue from premium products such as ESPN Insider, ESPN Shop, and prize-eligible fantasy games. Today, fan value drives a wide range of activity including content strategies, channel strategies, network cross promotions, and even the prioritization of house ads.**

Best practice: ESPN Uses customer intelligence to Drive business value

By continuing to evolve its data capture and analysis initiatives, ESPN leverages fan intelligence and its understanding of fan value to improve its marketing and business performance. Specifically, ESPN uses fan knowledge to:

- ***Enhance the customer experience:*** **ESPN focuses on the fan experience in several ways – it leverages customer knowledge to improve the relevance of its messaging; it uses behavioral and product usage insight to tailor any cross-sell and up-sell efforts; and it uses deep customer knowledge to segment and target fans at a micro level. The company can also test product development and personalization with high value fans to ensure new initiatives has the most relevance for ESPN's primary digital audience. As a result, it ensures that new initiatives, and as many of its contact touches as possible, enhance the fan's experience with the company.**

- ***Develop marketing into a profit generator:*** **Leveraging the knowledge developed by Keating and his team, ESPN introduced ESPN Select, a premium advertising product that allows advertisers to target ESPN.com visitors based on attributes such as affluence, age ranges, and sport interests. The team can also provide advertisers with mid-campaign reports that allow the advertiser to adjust a campaign or to increase the exposure to certain segments or creative based on performance to date. As such, Keating's FRM team evolved from a cost center to a revenue driver by offering targeted inventory at premium CPM. In some cases where ads were targeted against multiple attributes, inventory commanded a significant premium.**

  (a) What is Customer Intelligence?
  (b) State the benefits of Customer Intelligence.
  (c) Discuss the challenge face by the ESPN for non- availability of Customer Intelligence data.

(d) How does ESPN turn Customer Intelligence to drive Business Value?
(e) How does ESPN turn Customer data to Customer intelligence?

[3x5 =15]

Answer of 2:

(i) Customer intelligence (CI) is information derived from customer data that an organization collects from both internal and external sources. The purpose of CI is to understand customer motivations better in order to drive future growth. The application of business analytics to customer data is sometimes called customer data mining.

So, we can say, **Customer intelligence** (CI) is the process of gathering and analyzing information regarding customers; their details and their activities, in order to build deeper and more effective customer relationships and improve strategic decision making.

(ii) Benefits

Customer Intelligence provides a detailed understanding of the experience customers have in interacting with a company, and allows predictions to be made regarding reasons behind customer behaviors. This knowledge can then be applied to support more effective and strategic decision making.

(iii) Several years ago, ESPN recognized that it lacked a consistent view of its customers. For example, it housed registration, product purchase, and online behavioral data in separate data repositories. Meanwhile, many business units were running their own data warehouse and decision engines to power their marketing communications. As a result, ESPN didn't just lack a consistent view of its customer; it also lacked a cohesive view of how fans were interacting with the overall business. Because it lacked a consistent view of customers, it didn't know which customers were more valuable, how the more valuable customers interacted with the company, and which customers were most likely to engage with the company in specific ways.

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3 (a) "Competitive intelligence is a process of gathering data, creating information and making decisions. Management accountants are trained to gather data, assimilate data into information and make decisions based upon information, frequently with their management counterparts." – Justify the statements.

(b) What is Process Analysis? Describe the objectives of Process Analysis.

(c) Describe the limitations of Value Chain Analysis. [5+5+5]

Answer of 3 :

(a) The above statement is related to the Role of Management Accountant in Competitive Intelligence.

Competitive intelligence may also be viewed as a competitiveness audit, a concept that management accountants are familiar with. Management accountants' training and experience make them well-suited to the requirements of the competitive intelligence process.

Management accountants may be actively involved in introducing a competitive intelligence process in several ways:

(i) Identifying the need for a new or improved competitive intelligence process;
(ii) Educating top management and other senior managers about that need;
(iii) Developing a plan along with cross-functional team members for designing, developing and implementing the new, improved competitive intelligence practice, including its underlying architectures;
(iv) Identifying the appropriate tools and techniques for conducting competitor analysis;
(v) Providing financial input, analysis and expertise to the competitive intelligence effort;

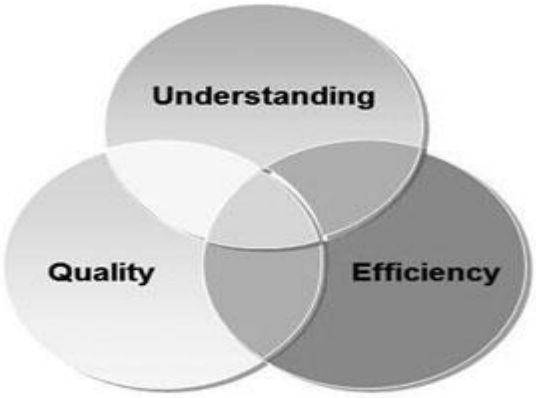
(vi) Contributing to and using competitive intelligence in target costing;
(vii) Ensuring that the competitive intelligence efforts are tied to the firm's goals, strategies, objectives and internal processes, as appropriate; and,
(viii) Continually assessing the new, improved competitive intelligence process and its implications for the organization and continually improving the process.

(b) Process analysis is an approach that helps managers improves the performance of their business activities. It can be a milestone in continuous improvement. Process analysis approach consists of the following steps:
(i) Definition of the scope and the objectives of the study,
(ii) Documentation of the status quo and definition of performance measures,
(iii) Assessment and performance evaluation, and
(iv) Development of recommendations.

Objectives of Process Analysis

For many organizations their goals and objectives are fulfilled once they complete the review process and the Process Capture project stops at that point. For others it is important to move beyond the basic process documents and analyze the data collected and documents. In working with many organizations over 20 years, a good strategy with analysis is to look at the process through three angles to analyze and identify areas for change.

These are **Understanding**, **Quality** and **Efficiency**. By systematically reviewing the process through each of these steps, a much improved and comprehensive analysis will result.



The objectives of analyzing the process include:
(i) Identify what makes maps difficult to understand and use
(ii) E valuate completeness
(iii) Isolate bottlenecks
(iv) Find redundancies
(v) Examine resources allocation
(vi) Measure process times

(c) A value chain is the sequence of business functions in which utility is added to the products or services of the firm. Through proper analysis of each segment of the value chain, customer value is enhanced. No-value creating activities are eliminated.

In value chain analysis, each of the business functions is treated as an essential and value contributor and is constantly analyzed to enhanced value relative to the cost incurred. Like business functions, in value chain approach also, it is important that the efforts of all functions are integrated and co-ordinate to increase the value of the products or services to the customers.

Limitations of Value Chain Analysis are given below:

(i) Non availability of Data	Internal data on costs, revenues and assets used for Value Chain Analysis are derived from financial of a single period. For long term strategic decision- making, changes in cost structures, market prices and capital investments etc. May not readily available.
(ii) Identification of stages	Identifying stages in an industry's value chain is limited by the ability to locate at least one firm that participates in a specific stage. Breaking a value stage into two or more stages when an outside firm does not compete in these stages is strictly judgment.
(iii) Ascertainment of costs of Revenues and Assets	Finding the Costs, Revenues and Assets for each value chain activity poses/gives rise to serious difficulties. There is no specific approach and much depends upon trial and error and experiments methods.
(iv) Identification of cost Drivers	Isolating Cost Drivers for each value creating activity, identifying Value chain Linkages across activities and computing supplier and customer profit margins present serious challenges.
(v) Resistance from employees	Value chain Analysis is not easily understandable to all employees and hence may face resistance from employees as well as managers.

4 (a) State the components of performance Management

(b) Explain the role of the Management Accountant in Value Chain Analysis.

(c) State the objectives of Supply Chain Management. [6+5+4]

Answer of 4 :

(a) Any effective performance management system includes the following components:

(i) **Performance Planning:** Performance planning is the first crucial component of any performance management process which forms the basis of performance appraisals. Performance planning is jointly done by the appraise and also the review in the beginning of a performance session. During this period, the employees decide upon the targets and the key performance areas which can be performed over a year within the performance budget, which is finalized after a mutual agreement between the reporting officer and the employee.

(ii) **Performance Appraisal and Reviewing:** The appraisals are normally performed twice in a year in an organization in the form of mid reviews and annual reviews which is held in the end of the financial year. In this process, the appraise first offers the self filled up ratings in the self appraisal form and also describes his/her achievements over a period of time in quantifiable terms. After the self appraisal, the final ratings are provided by the appraiser for the quantifiable and measurable achievements of the employee being appraised. The entire process of review seeks an active participation of both the employee and the appraiser for analyzing the causes of loopholes in the performance and how it can be overcome. This has been discussed in the performance feedback section.

(iii) **Feedback on the Performance followed by personal counseling and performance facilitation:** Feedback and counseling is given a lot of importance in the performance management process. This is the stage in which the employee acquires awareness from the appraiser about the areas of improvements and also information on whether the employee is contributing the expected levels of performance or not. The employee receives an open and a very transparent feedback and along with this the training and development needs of the employee is also identified. The appraiser adopts all the possible steps to ensure that the employee meets the expected outcomes for an organization through effective personal counseling and guidance, mentoring and representing the employee in training programmers which develop the competencies and improve the overall productivity.

(iv) **Rewarding good performance:** This is a very vital component as it will determine the work motivation of an employee. During this stage, an employee is publicly recognized for good performance and is rewarded. This stage is very sensitive for an employee as this may have a direct influence on the self esteem and achievement orientation. Any contributions duly recognized by an organization helps an employee in coping up with the failures successfully and satisfies the need for affection.

(v) **Performance Improvement Plans:** In this stage, fresh set of goals are established for an employee and new deadline is provided for accomplishing those objectives. The employee is clearly communicated about the areas in which the employee is expected to improve and a stipulated deadline is also assigned within which the employee must show this improvement. This plan is jointly developed by the appraise and the appraiser and is mutually approved.

(vi) **Potential Appraisal:** Potential appraisal forms a basis for both lateral and vertical movement of employees. By implementing competency mapping and various assessment techniques, potential appraisal is performed. Potential appraisal provides crucial inputs for succession planning and job rotation.

(b) Role of the Management Accountant in Value Chain Analysis

Management Accountants should recognize that the traditional, functional, internally oriented information m is inadequate or the Firm engaged in global competition. In order to facilitate Value Chain Analysis, should be a change in focus for Management Accounting. The Management Accountant's role will be scant in the following areas-

(i) **Need for education, training and awareness:**

Management Accountants should bring the importance of customer value to the forefront of Management's strategic thinking. They should take the initiative to bring the Value Chain message to major players in the Firm through seminars, articles, Value Chain examples and Company-specific applications.

(ii) **Exploring for information:**

VCA requires expertise in internal operations and information and also remands a great deal of external information. Management Accountants must seek relevant financial and non-financial information from sources outside the Firm.

(iii) **Creativity:**

Management Accountants must integrate databases and potential sources of timely information on competitive forces confronting the business. This calls for innovation and creativity in gathering and analyzing information for management decisions.

(iv) **System design:**
Designing internal and external information systems to assist managers in planning, monitoring and improving value-creating processes is another challenge facing Management Accountants.

(v) **Cooperation:**
Management Accountants should solicit support from all senior managers for allocating resources to develop and improve Value Chain-oriented Information Systems. The Management Accountant should ensure that the Top Management is committed to Value Chain Analysis and the organizational changes necessary for its successful implementation.

(c) Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufactures, warehouses and stores, so that merchandise is produce and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.

Objective of Supply Chain Management:

(i) Supply chain Management takes into consideration every facility that has an impact on cost and plays a role in making the product conform to customer requirements: from supplier and manufacturing facilities through warehouses and distribution centers to retailers and stores.

(ii) The supply chain management is to be efficient and cost –effective across the entire system; total system wide costs from transportation and distribution to inventories of raw materials, work – in-process and finished goods are to be minimized.

(iii) Finally, supply chain management revolves around efficient integration of suppliers, manufacturers, warehouses and stores; it encompasses the firm's activities at many levels, from the strategic level through the tactical to the operational level.

5. (a) A Finance Manager is considering drilling a well. In the past, only 70% of wells drilled were successful at 20 meters depth in that area. Moreover, on finding on water at 20 meters, some persons in that area drilled it further up to 25 meters but only 20% struck water at that level. The prevailing cost of drilling is Rs. 500 per meter. The Finance Manager estimated that in case he does not get water in his own well, he will have to pay Rs. 15,000 to buy water from outside for the same period of getting water from the well. The following decisions are
Considered:
(i) Do not drill any well;
(ii) Drill up to 20 meters, and
(iii) If no water is found at 20 meters, drill further upto 25 meters.
Draw an appropriate decision tree and determine the Finance Manager's optimal strategy.

(b) You are the manager of Raj paper Mills and have recently come across a particulars type of paper, which is being sold at a substantially lower rate (by another company Raju Ltd) than the price charged by your own mill. The Value Chain for one use of tone of such paper for Raju Ltd is: Raju Ltd. $\rightarrow$ Merchant $\rightarrow$ Printer $\rightarrow$ Customer.

Raju Value sells this particular paper to Merchant at the rate of ₹ 2,466 per Tonne. Raju Ltd pays for the Freight which amounts to ₹130 per Tonne. Average returns and Allowances amount to 4% of sales and approximately equals ₹160 Tonne.

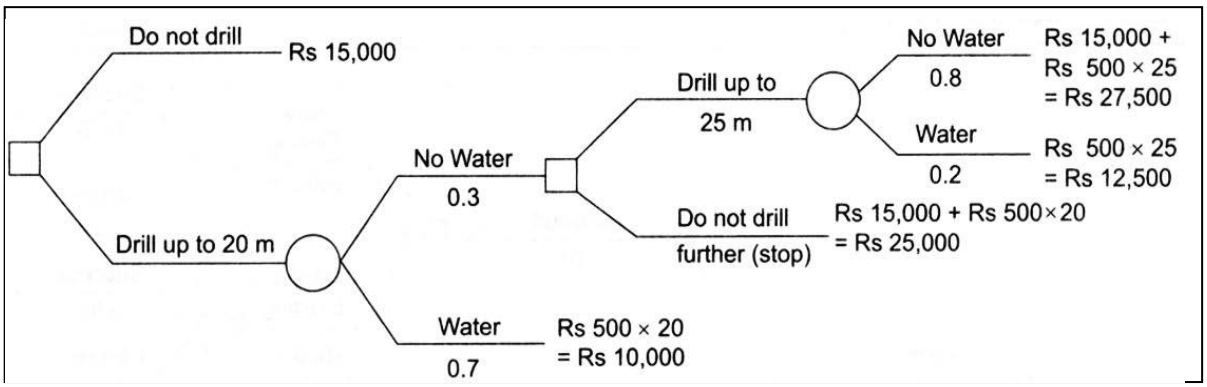
The value chain of your Company, through which the paper reaches the ultimate customer is similar is to that of Raju Ltd. However, your Mill does sell directly to the Merchant, the latter

receiving the paper from huge Distribution centre maintained by your Company at Haryana. Shipment Costs from the Mill to the Distribution centre is ₹ 111 per Tonne while the operating Costs in the distribution center are estimated at ₹ 125 per Tonne. The return on Investment required by the Distribution centre for the investments made, amount to an estimate ₹158 per Tonne.

Calculate the "Mill Manufacturing Target Cost" for this particular paper for RAJ Ltd. Assume that the return on the investment expected by Raj Ltd is ₹220 per tonne of paper.

Answer of 5:

(a) Based on the given information, the decision tree is shown in Figure



Decision Tree: Drilling Problem.

The analysis of the tree is given in Table

Decision Node	Options	Expected Cost	Decision
1	Drill up to 25 meters	0.8 x 27,500 + 0.2 x 12,500 =₹ 24,500	
	Stop	₹ 25,500	Drill up to 25 meters
2	Do not drill	₹ 15,000	
	Drill up to 20 meters	0.3 x 24,500 + 0.7 x 10,000 = ₹14,350	Drill up to 20 meters

From the analysis table, it may be observed that decision at node 2 implies that if it is decided to drill up to 20 meters and water is not found, then drilling up to 25 meters should be done. At node 1, the decision taken is to drill up to 20 meters as it involved lower expected cost. Thus, the optimal strategy is to drill up to 20 meters and if water is not struck then drill further to 25 meters.

(b) **In the books of Raj Ltd.**

Particulars		Amount (₹ in tonne)
Sale Price of Raju Ltd to Merchant		2,466
Less: Reduction towards – Freight paid by Raju Ltd	130	
Returns and Allowances (given)	160	190
Target sales price for Raj paper Mills		2,176
Less: target Profit margin for Raj paper Mills = Overall return on Investment Expected (given)		220
Target Cost for Raj paper Mills (Overall, i.e. Mill + Distribution)		**1,956**
Less: Value Addition at distribution centre Level(a) Shipping + Operating Cost 111 + 125=236		
(b) return on Invt for distribution centre = 158		394
Target cost Mill Level i.e. Mill manufacturing target cost for Raj Paper Mills		**1,562**

6 (a) Describe the advantages and disadvantages of Return on investment.

(b) A market is characterized by two sellers and many buyers (duopoly) and demand curve is $p = a - bq$, $q = q_1 + q_2$ where the cost of production is zero.
(i) Generate the market output and show that it is two thirds of competitive output and monopoly output is three fourth of duopoly output if a, b >0
(ii) If 3 more sellers enter the market what would be the market output?
(iii) Show that if several sellers are now in the market i.e. a situation of competitive market, we will get competitive output. [7+8]

Answer of 6:

(a) Advantages of Return on Investment:

ROI has the following advantages

(i) It relates net income to investments made in a division giving a better measure of divisional Profitability.
(ii) It can be used as a basis for other ratios which are useful for analytical purposes.
(iii) It is easy to understand as it is based on financial accounting measurements.
(iv) It may be used for inter firm comparisons, provided that the firms whose results are being compared are comparable size and the same industry.

Disadvantages of Return on Investment:

ROI has the following limitations:

(i) Satisfactory definition of profit and investment are difficult to find. Profit has many concepts such as profit before interest and tax, profit after interest and tax, controllable profit, profit after deducting all allocated fixed costs. Similarly, the term investment may have many connotations such as gross book value, net book value, historical cost of assets, and current cost of assets, assets including or excluding intangible assets.

(ii) While comparing ROI of different companies it is necessary that the companies use similar accounting policies and methods in respect of valuation of stocks, valuation of fixed assets, apportionment of overheads, treatment of research and development expenditure etc.

(iii) ROI may influence a divisional manager to select only investments with high rates of return (i.e. rates which are in line or above his target ROI). Other investments that would reduce the division's ROI but could increase the value of the business may be rejected by the divisional manager. It is likely that another division may invest the available funds in a project that might improve its existing ROI (which may be lower than a division's ROI which has rejected the investment) but which will not contribute as much to the enterprise as a whole. These types of decisions are sub-optimal and can distort an enterprise's overall allocation of resources and can motivate a manager to make under investing in order to preserve its existing ROI.

(b)

(i) Given $TC = 0 \Rightarrow MC = 0$

$\therefore \pi_1 = TR_1 - TC = TR_1 = pq_1 = [a - b(q_1 + q_2)]q_1$

For maximum profits $\frac{d\pi_1}{dq_1} = 0 \Rightarrow a - 2bq_1 - bq_2 = 0 \ldots\ldots\ldots(1)$

Again, $\pi_2 = [a - b(q_1 + q_2)]\, q_2$

For maximum profits $\frac{d\pi_2}{dq_2} = 0 \Rightarrow a - bq_1 - 2bq_2 = 0 \ldots\ldots\ldots(2)$

Adding (1) & (2), $2a - 3bq_1 - 3bq_2 = 0 \Rightarrow 2a - 3b(q_1 + q_2)$

$\Rightarrow q_D = \frac{2a}{3b}$ which is the duopoly output.

Under perfect competition P = MC $\Rightarrow a - bq = 0 \Rightarrow q_c = \frac{a}{b}$

$\therefore q_D = \frac{2}{3} q_c$

As $q = a - bq \Rightarrow MR = a - 2ba$

For monopoly MR = MC $\Rightarrow a - 2bq = 0 \Rightarrow q_m = \frac{a}{2b}$

$\therefore q_m = \frac{3}{4} q_D$

(ii) For 2 sellers we have $q = \frac{2}{3} x \frac{a}{b} = \left(\frac{2}{2+1}\right)\frac{a}{b}$

If 3 more sellers join the market, total sellers are 5.

$\therefore q = \left(\frac{5}{5+1}\right) x \frac{a}{b}$

(iii) For n sellers in the market, $q = \left(\frac{n}{n+1}\right)\frac{a}{b}$ .....(3)

$\Rightarrow q = \left(\frac{1}{1+1/n}\right)\frac{a}{b}$ .....(4)

As the number of sellers increases i.e. as n tends to infinity

$Q = \frac{a}{b}$ i.e. competitive output from (4)

Section – B

[Answer any One]

7 (a) Explain Technical and operational factors of E-commerce.

(b) Explain the following terms:-
(i) Business 2 Business, (ii) Business 2 Customer, (iii) Customer to Business, (iv) Customer to Customer.

(c) Discuss the importance of Decision Support Systems for gaining the Competitive Advantage. [6+(4x2)+6]

Answer of 7:

(a) Technical and Operational Factors of E-commerce

(i) Protocol (Standards) Making Process
A well-established telecommunications and Internet infrastructure provides many of the necessary building blocks for development of a successful and vibrant e-commerce marketplace.

(ii) Delivery Infrastructure
Successful e-commerce requires a reliable system to deliver goods to the business or private customer.

(iii) Availability of Payment Mechanisms
Secure forms of payment in e-commerce transactions include credit cards, checks, debit cards, wire transfer and cash on delivery.

(iv) General Business Laws

The application of general business laws to the Internet will serve to promote consumer protection by insuring the average consumer that the Internet is not a place where the consumer is a helpless victim.

(v) Public Attitude to E-commerce

The public attitude toward using e-commerce in daily life is a significant factor in the success of ecommerce.

(vi) Business Attitude to E-commerce

The willingness of companies to move away from traditional ways of doing business and develop methods and models that include e-commerce is essential.

(b)

(i) Business to Business (B2B)

Business to Business or B2B refers to e-commerce activities between businesses. These transactions are usually carried out through Electronic Data Interchange or EDI. This allows more transparency among business involved; therefore business can run more efficiently.

(ii) Business to Customer (B2C)

Business to Customer or B2C refers to e-commerce activities that are focused on consumers rather than on businesses.

(iii) Customer to Business (C2B)

Customer to Business or C2B refers to e-commerce activities, which uses reverse pricing models where the customer determines the prices of the product or services. There is increased emphasis on customer empowerment.

(iv) Customer to Customer (C2C):

Customer to Customer or C2C refers to e-commerce activities, which uses an auction style model. This model consists of person-to-person a transaction that completely excludes businesses from the equation.

(c) In a world of constant flux, informed and thoughtful decision-making is the cornerstone of business success. As a manager, you must make decisions that affect your business every day, some critical and some not so important. Decision Support Systems allow faster decision making, identification of negative trends, and better allocation of business resources all to the benefit of you and your organization.

Decision Support Systems (DSS): DSS are a specific class of computer-based information systems that support your decision-making activities. A decision support system analyzes business data and provides interactive information support to managers and business professionals during the decision-making process, from problem recognition to implementing your decision. Decision Support Systems use (1) Analytical models, (2) specialized databases, (3) a decision maker's own insights and judgments, and (4) an interactive, computer-based modeling process to support semi-structured business decisions.

A key component to any DSS is Business Intelligence reporting tools, processes, and methodologies. These provide you with rich reporting, monitoring, and data analysis, which are necessary for effective and fast decision-making.

Gain competitive advantage with Decision Support Systems In today's competitive business environment, what you need for maximum performance is to achieve competitive advantage. Without competitive advantage, your company will not be able to operate and will eventually cease to exist.

One way of gaining competitive advantage is through the use of computerized Decision Support Systems. The simplest and most tangible benefit of a Decision Support System is the ability to help you toward making better decisions. Your decisions are better in the sense that, once they are implemented, they have such effect as reducing costs, using assets more efficiently, increasing revenue, reducing risks, improving customer service, and so on. However, Decision Support Systems can provide your company with many other benefits including:

- Speeding up process of decision making
- Increasing organizational control
- Speeding up problem solving in an organization
- Helping automate managerial processes
- Improving personal efficiency
- Eliminating value chain activities

8 (a) "It may be useful for development organizations to consider the many issues involved before embarking on an e-commerce initiative, in relation to the organization's mandate, development goals, and organizational structure. The primary issues involved would include: (i) Resource Expansion, (ii) Capital Costs, (iii) Marketing etc" – Discuss the three points.

(b) Describe the objectives of Management Information Systems.

(c) List the steps to start of Total Productivity Management. [(3x4)+5+3]

Answer of 8:

(a) It may be useful for development organizations to consider the many issues involved before embarking on an e-commerce initiative, in relation to the organization's mandate, development goals, and organizational structure. The primary issues involved would include:

- **Resource Expansion** – Is the main goal of selling goods and services online the generation of revenue to offset operational costs? If so, how much revenue does the organization expect/wish to generate? These strategic questions will allow the organization to assess how much funding will go toward e-commerce activities. If the organization is approaching e-commerce as a means of covering not only the costs of producing the goods and services and disseminating development-focused products, but wishes to expand its revenue base to support other project costs, then it may want to develop an e-commerce platform and strategy that can attract customers. The organization may have to approach e-commerce as a resource expansion activity that uses business strategies and a full marketing approach. This leads to the question of whether this fits in with the development mandate of the organization and its charitable organization status. Will e-commerce activities distort the tax-free status of the development organization? Is the organization liable in the case of legal conflicts? Most development organizations have already faced these questions if they sell publications and other products by "traditional" means.

- **Capital Costs** – How much funding is the organization willing to put into e-commerce activities? E-commerce platforms can be high priced, depending on the level of sophistication. A development organization undertaking e-commerce activities should consider whether it wants to incur higher costs, with the possibility of cost

recovery from an expected higher level of sales. What are the possibilities of receiving financial assistance from donor agencies or partner organizations for this activity? Development organizations pursuing e-commerce activities may have to decide between varieties of options for their online selling activities, depending on their financial capacities. These options can be divided into 1) technical hardware and 2) site design and maintenance. The organization will have to decide whether it wants to invest in setting up its own in-house server, depending on the organization's size and computing requirements, or find a third party that is willing to host the site on its server. Is the third party another development-focused organization, or is it a private company/ISP? Regarding design and maintenance of the e-commerce site, is the organization able to hire in-house technical personnel to handle design, development, and maintenance, or is it more cost effective to hire an outside party to handle these tasks? Developing an e-commerce site that generates high levels of revenue will have to respond to the changes in e-commerce platforms in the commercial sector. The development organization may want to consider using security encryption software for credit card payment, increasing costs to an extent yet benefiting from increasing customer confidence in the transaction process. Will the site be eye-catching, with the hope of attracting customers, possibly increasing site development costs for higher level graphics and design? Pan Partners currently do not have to bear all of the above-mentioned capital costs, but may one day have to consider them when they initiate an e-commerce site on their own.

- **Marketing** – As evident from the discussion above, a good marketing strategy forms the basis of the operational strategy, in order to attract customers to the e-commerce site and ensure a steady pattern of sales. Development organizations often need not employ capital-intensive marketing programs in order to have a successful marketing campaign. The marketing strategy can be divided into two main categories: 1) online markets and 2) offline markets.

(b) Management Information System is a systematic process of providing relevant information in right time in right format to all levels of users in the organization for effective decision making. MIS is also defined to be system of collection, processing, retrieving and transmission of data to meet the information requirement of different levels of managers in an organization.

According to CIMA-

MIS is a set of procedures designed to provide managers at different levels in the organization with information for decision making, and for control of those parts of the business for which they are responsible.

MIS comprises of three elements viz., management, information and system.

Objectives of MIS :

- To provide the managers at all levels with timely and accurate information for control of business activities
- To highlight the critical factors in the operation of the business for appropriate decision making
- To develop a systematic and regular process of communication within the organization on performance in different functional areas
- To use the tools and techniques available under the system for programmed decision making
- To provide best services to customers
- To gain competitive advantage
- To provide information support for business planning for future

(c) Total Productivity Management:

Total Productive Management (TPM) provides a system for coordinating all the various improvement activities for the company so that they contribute to the achievement of corporate objective. Starting with a corporate vision and broad goals, these activities are developed into supporting objectives, or targets, throughout the organization. The targets are specifically and quantitatively defined. This seminar therefore emphases how to improve the competitiveness of products and services in quality, price, cost and customer responsiveness, thereby increasing the profitability, market share, and return on investment in human, material, capital, and technology resources.

Steps to start TPM are Identifying the key people

- Management should learn the philosophy.
- Management must promote the philosophy.
- Training for all the employees.
- Identify the areas where improvements are needed.
- Make an implementation plan.
- Form an autonomous group.

Section – C

[Answer any One]

9. (a)"Risk management process refers to the process of measuring or assessing risk and then developing Strategies to manage risk. In the risk management, the following steps are taken up to minimize the risk"- Discuss the steps which are taken to minimize the risk.

(b) Explain about the Total Loss Distribution and Probability of Ruin.

(c) Describe the Transition Risk in the context of Corporate Risk. [6+(4+5)+5]

Answer of 9:

(a) Risk management process refers to the process of measuring or assessing risk and then developing strategies to manage risk. In the risk management, the following steps are taken up to minimize the risk:

Step 1: Risk Identification and Assessment

This step involves event identification and data collection process. The institution has to put in place a system of capturing information either through key risk drivers (KRIs) or through a rating system. Once risks are identified, combine like risks according to the following key areas impacted by the risks — people, mission, physical assets, financial assets, and customer/stakeholder trust.

Step 2: Risk Quantification and Measurement

The next step is to Quantify and Measure risks. This means risks according to probability and impact. Various standard tools are used by financial institutions to measure risk and understand their impact in terms of capital or its importance to the organization through a scoring technique.

Step 3: Risk Analysis, Monitor and Reporting

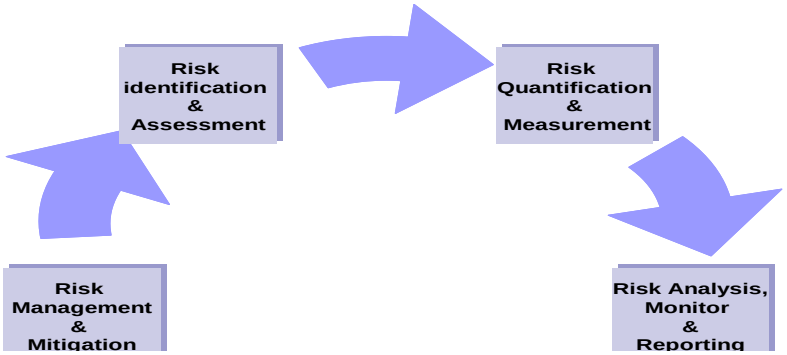
The next step is risk analysis, monitoring and reporting. This will help one to get the big picture and decided on the approach to risk management.

Step 4: Capital Allocation

Risk Analysis, Monitoring & Reporting sends information to the top management of the organization to take strategic decisions. Capital allocation plays key role in management decision making.

Step 5: Risk Management and Mitigation

After the above step, the last step is to make strategic decisions to manage the risk in order to mitigate the risk.



(b) Total Loss Distribution

Probability distributions can be very useful tools for evaluating the expected frequency and/or severity of losses due to identified risks. In risk management, two types of probability distribution are used: empirical and theoretical. To form an empirical probability distribution, the risk manager actually observes the events that occur, as explained in the previous section. To create a theoretical probability distribution, a mathematical formula is used. To effectively use such distributions, the risk manager must be reasonably confident that the distribution of the firm's losses is similar to the theoretical distribution chosen.

Three theoretical probability distributions that are widely used in risk management are: the binomial, normal, and poison.

Probability of Ruin

Ruin theory also known as collective risk theory, was actually developed by the insurance industry for studying the insurers vulnerability to insolvency using mathematical modeling. It is based on the derivation of many ruin-related measures and quantities and specifically includes the probability of ultimate ruin. This can be also related to the sphere of applied probability as the techniques used in the ruin theory as fundamentally arising out of stochastic processes. Many problems in ruin theory relate to real-life actuarial studies but the mathematical aspects of ruin theory have really been of interest to actuarial scientists and other business research people.

Normally an insurers' surplus has been computed as the net of two opposing cash flows, namely, cash inflow of premium income collected continuously at the rate of c and the

cash outflow due to a series of insurance claims that are mutually independent and identically distributed with a common distribution function P(y). The path of the series of claims is assumed to respond to a Poisson process with intensity rate λ which would mean that the number of claims received N(t) at a time frame of t is controlled by a Poisson distribution with a mean λ_t. Therefore, the insurer's surplus at any time t is represented by the following-formula:

$$X(t) = x + ct - \sum_{i=0}^{N(t)} Y_i$$

Where, the business of the insurer starts with an initial level of surplus capital.

X (0) = x under probability measure as explained in the previous paragraph.

Towards the end of the 20th century, Garbur and Shiu introduced the concept of the expected discounted penalty function derived from the probability of ultimate ruin. This concept was utilized to gauge the behaviour of insurer's surplus using the following formula:

$$m(x) = E^x \left[e^{-\delta T} K_T \right]$$

where, δ is the discounting force of interest, K_T is a general penalty function representing the economic costs of the insurer at the time of ruin and the expectation relates to the probability measure. Quite a few ruin-related quantities fall into the category of the expected discounted penalty function.

In short, this theory of the probability of ruin is applied in the case of risk of insolvency of a company with diversified business activity. For the purpose of study, resources between diversified activities are allowed to be transferred and are limited by costs of transaction. Terminal insolvency happens when capital transfers between the business lines are not able to compensate the negative positions. Actuarial calculations are involved in the determination of ultimate ruin as discussed.

(c) Transition Risk

Risk usually arises when technological obsolescence suddenly overtakes the company. This risk can be traced partly to the complacencies developed by the firms in certain industries under a protected economy when a favorable import duty structure is levied by the Government so that the indigenous industry is able to thrive. However, these approaches have led to a state where these protected companies, become secure due to their continuing profitability and do not recognize the obsolescence of their technology as they are insulated from the onslaught of new technology.

Many industrial estates in India that thrived during the middle of the 20th century came to grief towards the end of the century when globalization and liberalization gained pace hand in hand. This was because the state-of-the-art technology that was espoused by advanced nations helped place their products with better quality at lower prices. This phenomenon has also happened in the IT field when new products were introduced very frequently based on new technology. The life of a technology which had been normally a decade or more, today suddenly finds itself reduced to a period of less than five years. This unexpected change of events in the history of IT has posed a transition risk for many industries. Technology

has made many factors of productions namely men, machinery, and capital suddenly redundant.

As the time frame required for a turnaround or transition from one technology to another differs, companies face transition risk, according to their preparedness and their position in the life cycle. In addition, consumer behaviour has become an enigma clue to the wide variation and aspiration of different customers. This wide variety in the requirements of customers is also one of the factors leading to the extinction of technology that is no longer relevant to the customer, such as the case of black and white televisions.

10 (a) "Several techniques have been developed to help in prediction why companies fail." – Describe the Altman: Z Score Model in this regard.

(b) Describe the causes of corporate failure and their examples.

(c) "Just as diseases are identified by certain symptoms; industrial sickness can be identified by the following symptoms. These symptoms act as leading indicators of sickness, and if immediate remedial actions are not taken, the sickness will grow to the extent that the organization will find its natural death." – Justify the statements. [6+10+4]

Answer of 10:

(a) The Z-Score model is a quantitative model developed by Edward Altman in 1968, to predict bankruptcy or financial distress of a business. The Z-score is a multi variate formula that measures the financial health of a company and predicts the probability of bankruptcy within 2years. This model involves the use of a specified set of financial ratios and a statistical method known as a Multiple Discriminant Analysis. (MDA). The real world application of the Altman score successfully predicted 72% of bankruptcies two years prior to their failure.

The model of Altman is based on a linear analysis in which five measures are objectively weighted and summed to arrive at an overall score that then becomes the basis for classification of companies into one of the two a priori groupings that is bankrupt or non-bankrupt. These five indicators were then used to derive a Z-Score. These ratios can be obtained from corporations' financial statements.

The five Z-score constituent ratios are:

(i) Working Capital/Total Assets (WC/TA):- a firm with negative working capital is likely to experience problems meeting its short-term obligations.
(ii) Retained Earnings/Total Assets: - Companies with this ratio high probably have a history of profitability and the ability to stand up to a bad year of losses.
(iii) Earnings Before Interest & Tax/ Total Assets: - An effective way of assessing a firm's ability to profit from its assets before things like interest and tax are deducted.
(iv) Market Value of Equity/ Total Liabilities: - A ratio that shows, if a firm were to become insolvent, how much the company's market value would decline before liabilities exceed assets.
(v) Sales/Total Assets: - A measure of how management handles competition and how efficiently the firm uses assets to generate sales.

Based on the Multiple Discriminant Analysis, the general model can be described in the following form:

Z=1.2WC/TA + 1.4 RE/TE + 3.3 EBIT/TA + 0.6 MVE/TL + 1.0 SL/TA

Probability of failure according to the Z-Score result:

Z-Score	Probability of Failure
Less than 1.8	very High
Greater that 1.81 but less than 2.99	Not Sure
Greater than 3.0	Unlikely

Calculation of the Z-Score for a fictitious company where the different values are given to calculate the Z-Score.

Sales	25,678
Total Assets	49,579
Total liabilities	5,044
Retained earnings	177
Working Capital	-1,777
Earnings before interest and tax	2,605
Market value of Equity	10,098
Book value of Total Liabilities	5,044

The calculations of the ratios are as follows:

1. Working Capital/Total Assets (-1,777/ 49579) = -0.036
2. Retained Earnings/Total Assets (177/ 49579) =0.004
3. Earnings Before Interest & Tax/ Total Assets (2605/ 49579)= 0.053
4. Market Value of Equity/ Total Liabilities (10098/ 5044)= 2.00
5. Sales/Total Assets (25978/ 49579)=0.52

Thus according to the formula the answer should be:
Z=1.2(-0.036) + 1.4 (0.004) + 3.3 (0.053) + 0.6 (2.0) + 1.0(0.52)
Z= -0.04+ 0.01+0.17+1.20+0.52
Z=1.86
According to Altman, this company may or may not fail as it is greater than 1.81 but less than 2.99, which situates it neither on the safe side nor on the failure side.

(b) Causes of Corporate Failure:

(i) Technological causes

Traditional methods of doing work have been turned upside down by the development of new technology. If within an industry, there is failure to exploit information technology and new production technology, the firms can face serious problems and ultimately fail.

By using new technology, cost of production can be reduced and if an organization continues to use the old technology and its competitors start using the new technology; this can be detrimental to that organization. Due to high cost of production, it will have to sell its products at higher prices than its competitors and this will consequently reduced its sales and the organization can serious problems.

This situation was seen in the case of Mittal Steel Company taking over Arcelor Steel Company. Arcelor Steel Company was using its old technology to make steel while Mittal Steel Company was using the new technology and as a result, Mittal Steel Company was able to sell steel at lower price than Arcelor Steel Company due to its low cost of production. Arcelor Steel Company was approaching corporate failure and luckily, Mittal Steel Company

merged with Arcelor Steel Company and became Arcelor Mittal Steel Company, thus preventing Arcelor from failure.

(ii) Working capital problems
Organizations also face liquidity problems when they are in financial distress. Poor liquidity becomes apparent through the changes in the working capital of the organization as they have insufficient funds to manage their daily expenses.

Businesses, which rely only on one large customer or a few major customers, can face severe problems and this can be detrimental to the businesses. Losing such a customer can cause big problems and have negative impact on the cash flows of the businesses.

Besides, if such a customer becomes bankrupt, the situation can even become worst, as the firms will not be able to recover these debts.

(iii) Economic Distress
A turndown in an economy can lead to corporate failures across a number of businesses. The level of activity will be reduced, thus affecting negatively the performance of firms in several industries. This cannot be avoided by businesses.

The recent economic crisis in the USA led to many cases of corporate failures. One of them is the insurance AIG insurance company. It is facing serious problems and it might close its door in the near future.

(iv) Mismanagement
Inadequate internal management control or lack of managerial skills and experience is the cause of the majority of company failures. Some managers may lack strategic capability that is to recognize strengths, weaknesses, opportunities and threats of a given business environment. These managers tend to take poor decisions, which may have bad consequences afterwards.

Furthermore, managers of different department may not have the ability to work closely together. There are dispersed department objectives, each department will work for their own benefits not towards the goal of the company. This will bring failure in the company. One example can be WorldCom, where the finance and legal functions were scattered over several states and communication between these departments were poor.

(v) Over-expansion and diversification
Research has shown that dominant CEO is driven by the ultimate need to succeed for their own personal benefits. They neglect the objective set for the company and work for their self-interest. They want to achieve rapid growth of the company to increase their status and pay level. They may do so by acquisition and expansion.

The situation of over expansion may arise to the point that little focus is given to the core business and this can be harmful as the business may become fragment and unfocused. In addition, the companies may not understand the new business field. Enron and WorldCom can be an example for this situation where the managers did not understand how growing overcapacity would influence its investment and therefore did not comprehend the risks associated with it.

(vi) Fraud by management
Management fraud is another factor responsible for corporate collapse. Ambitious managers may be influenced by personal greed. They manipulate financial statements and accounting reports. Managers are only interested in their pay checks and would make large increase in executive pay despite the fact that the company is facing poor financial

situation. Dishonest managers will attempt to tamper and falsify business records in order to fool shareholders about the true financial situation of the company. These fraudulent acts or misconduct could indicate a serious lack of control. These frauds can lead to serious consequences: loss of revenue, damage to credibility of the company, increased in operating expenses and decrease in operational efficiency.

(vii) Poorly Structured Board

Board of Directors is handpicked by CEO to be docile and they are encouraged by executive pay and generous benefits. These directors often lack the necessary competence and may not control business matters properly. These directors are often intimated by dominant CEO and do not have any say in decision making. Example Enron and WorldCom where poorly structured board was a contributor towards their failure.

(viii) Financial distress

Firms that become financially distressed are found to be under- performing relative to the other companies in their industry. Corporate failure is a process rooted in the management defects, resulting in poor decisions, leading to financial deterioration and finally corporate collapse. Financial distresses include the following reasons also low and declining profitability, investment Appraisal, Research and Development and technical insolvency amongst others.

A firm may fail, as its returns are negative or low. A firm that consistently reports operating losses probably experiences a decline in market value. If the firm fails to earn are turn greater than its cost of capital, it can be viewed as having failed. Falling profits have an obvious link with both financial and bankruptcy as the firm finds it is not generating enough money to meet its obligations as they fall due.

Another cause that will lead the company to fail is the investment appraisal. Many organizations run into difficulties as they fail to appraise investment projects carefully. The long-term nature of many projects means that outcomes are difficult to forecast and probabilities are usually subjective. "Big project gone wrong" is a common cause of decline. For example, the acquisition of a loser company, this has happen in the case for the failure of Parmalat Co Ltd of Italy, which made the acquisition of several losses making company where Inappropriate evaluation of the acquired company, its strengths and weaknesses.

(c) Above statement relates to Leading Indicator of Sickness in the perspective of Leading Indicator of sickness. Industrial sickness can be identified by following symptoms:

- Continuous reduction in turnover.
- Piling up of inventory,
- Continuous reduction of net profit to sales ratio.
- Short term borrowings M high interest rate,
- Continuous cash losses leading to erosion of tangible net worth,
- Default in payment of interest on borrowings and default in repayment of term loan installments.
- The 'sundry debtors' as well as the 'sundry creditors' keep growing and reaching a disproportionately high level.
- Approaching the banker for temporary overdraft at frequent intervals.
- High turnover of personnel, especially at senior levels,
- Change in accounting procedure with to view to window dressing.
- Delay in finalization of accounts

These symptoms act as leading indicators of sickness, and if immediate remedial actions are not taken, the sickness will grow to the extent that the organization will find its natural death.