CHAPTER IV

CONCEPTUAL AND CONTEXTUAL ANALYSIS OF THE THEORY OF MANAGEMENT OF WORKING CAPITAL

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4.1 : INTRODUCTION

The management of working capital is an integral part of overall corporate management. In simple terms, working capital is the amount of funds which a small scale industry must have to finance its day-to-day operations. It may also be regarded as that portion of an industry’s total capital which is employed in short term operations. The management of working capital is concerned with the management of assets such as cash, marketable securities, accounts receivable, investor prepaid expenses, and the current assets, also liabilities such as accounts payable, wages payable, and accruals working capital is short term capital by nature.

The accounting principles board of the American Institute of Certified public accountants USA has defined working capital as follows: “working capital sometimes called net working capital, is represented by the excess of current assets over current liabilities and identifies the relatively liquid portion of total enterprise capital which constitutes a margin of buffer for maturing obligations within the ordinary operating cycle of the business”.¹

Working capital management is the process of planning and controlling the level and mix of the current assets of the firm as well as financing these assets. Specifically, working capital management requires financial managers to decide what quantities of cash, other liquid assets, accounts receivable and inventories the firm will hold at any point in time. In addition, financial managers must decide how their current assets are to be financed. Financing choices include the mix of current as well as long-term liabilities.

Profitability and solvency are the twin objectives of working capital management, and these can be achieved by striving to maintain a correct ratio between working capital and fixed capital. Such a ratio will ensure a smooth and rapid flow of funds and enhance the efficiency and profitability of the enterprise. A proper management of working capital synchronises the cash receipts and cash outlay and unit may function with minimum cash reserve.

4.2 : CONCEPTS OF WORKING CAPITAL

There are two concepts of working capital—gross and net.

**Gross Working Capital** refers to the firm's investment in current assets. Current assets are the assets which can be converted into cash within an accounting year and include cash, short-term securities, debtors, (accounts receivable or book debts) bills receivable and stock (inventory).

**Networking Capital** refers to the “difference between current assets and current liabilities”. Current liabilities are those claims of outsiders which are expected to mature for payment within an accounting year and include creditors (accounts payable), bills payable, and outstanding expenses.

Networking capital can be positive or negative. A positive net working capital will arise when current assets exceed current liabilities. A negative net working capital occurs when current liabilities are in excess of current assets.

The two concepts of working capital, gross and net are not exclusive, rather they have equal significance from the management viewpoint.

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4.3 : OPERATING CYCLE

The term operating cycle generally applies to a manufacturing enterprise. Operating cycle is the time duration required to complete the following sequence of events.

Conversion of cash into raw material
Conversion of raw material into work in progress.
Conversion of work in progress into finished goods
Conversion of finished goods into debtors and bills receivables through sale
Conversion of debtors and bills receivables into cash.

This process of the cycle will continue to repeat time and again and it can be represented in a Chart 4.1 as follows:

Chart- 4.1 : Operating Cycle of Manufacturing Enterprise

“The working capital is needed by a company as the payments and realizations (i.e. production, sales, and cash flows) are not instantaneous.” Again the enterprise needs cash to purchase raw materials and pay expenses as between cash inflows and outflows there may not be perfect matching. The company may also retain cash to meet probable exigencies. Raw materials are kept in stock to keep the operations going to avoid the risk of work stoppage for non-availability of raw material at a particular point of time. In the same way the stocks of finished goods are to be maintained to meet the customer’s demands as also to meet the sudden rush of demands sometimes. Bulk of sales are currently made on credit basis because of competition in business with the result that for smooth and uninterrupted production and sales process adequate funds are to be invested in current assets. In this way the current assets have a circulating nature and so working capital is sometimes also called as circulating capital.

4.4 : KINDES OF WORKING CAPITAL

Working capital can be divided into two categories on the basis of necessities – 1)Permanent Working Capital and 2)Variable Working Capital

1. Permanent Working Capital

The permanent working capital may again be classified into regular working capital and reserve margin.

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Regular Working Capital

Regular Working Capital is the minimum amount which should always be therein the business to carry out its activity. "Regular working capital is the minimum amount of liquid capital needed to keep up the circulation of capital from cash to inventories to receivables and back again to cash. As business expands the requirements of regular working capital also increase"."4

Reserve Margin

Reserve margin working capital represents the excess amount over the need for regular working capital. This working capital should be provided for unexpected and extraordinary needs.

2. Temporary or Variable Working Capital

Working capital with volume of business is called variable working capital. It includes the amount of liquid capital needed to take care of the expansion of production to meet increased sales and seasonal needs. In the words of Butchest and Hicks "working capital which is temporarily or intermittently employed should be called variable working capital, Variable working capital is the additional amount of current assets, particularly cash, receivables and inventories which is required during the more active duration of business."

Kinds of working capitals is shown in chart 4.2

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Chart - 4.2: Kinds of working capital

![Diagram showing Working Capital, Permanent Working Capital, Variable Working Capital, Regular Working Capital, Reserve Margin]

4.5 : IMPORTANCE OF WORKING CAPITAL

“The management of working capital plays an important role in maintaining the financial health of the firm during the normal course of business”.\(^5\) It is a significant part of business decisions & accomplishment of value maximization goal depends essentially on prudent working capital decisions. “Working capital is managed in such a way as to maximize profitability of the firm without impairing its liquidity”.\(^6\) Working capital management is particularly more important to the small firm. A small firm may reduce its fixed assets requirements by renting or leasing plant and equipment, but there is no way it can avoid an investment in current assets. Further, owing to limited access to the capital market, small firm has to rely heavily on trade credit and short term bank loans.

“Therefore, the management of working capital is one of the most important facets of the overall financial management of a firm”\(^7\). If the firm cannot maintain a satisfactory level of working capital, it is likely to become insolvent and may even be forced into bankruptcy. A firm is

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required to carry adequate amount of working capital so as to carry on
the productive and distributive activities smoothly. Thus holding
adequate amount of raw materials in stocks ensures uninterrupted
production activity. Sufficient stock of finished goods has also to be
maintained in anticipation of future demand for this purpose the firm
would need funds. Goods usually sold on credit do not return cash
immediately. The firm will have to arrange for funds to finance
accounts receivables for the period until they are collected. Alongside
this, a minimum level of cash is required for the ordinary operations of
the enterprise, for availing the business opportunities and for absorbing
shocks of business vicissitudes. However, these assets will have to be
maintained at appropriate level because both surfeit or shortage of
working capital is detrimental to the financial health of the enterprise.

"The firm should maintain a sound working capital position. It
should have adequate working capital to run its business operations.
Both excessive as well as inadequate working capital positions are
dangerous from the firms point of view. Excessive working capital
means idle funds which earn no profits for the firm. Shortage of
working capital not only impairs the firms profitability but also results
in production interruptions and inefficiencies".8

Working capital should be adequate for the following reasons.

Adequate working capital enables a company to operate its
business more efficiently because there is no delay in obtaining
materials, as there is no credit difficulties. It enables a business to
withstand periods of depression smoothly. "Adequate working capital
ensures to a greater extent the maintainance of a company’s credit
standing and provides for such emergencies as strikes, floods, fibres,
etc. It protects a business from the adverse effects of shrinkage in the

values of current assets. Adequate working capital enables a company to extend favourable credit terms to customers. It is possible to pay all the current obligations promptly to take the advantage of cash discounts. Adequate working capital permits the carrying of inventories at a level that would enable a business to serve satisfactorily the needs of its customers.

A firm may have to face the following problems from inadequate working capital. Inadequate working capital stagnates the growth of the firm. It becomes difficult for the firm to undertake profitable projects for non-availability of working capital funds. It becomes difficult to implement operating plans and the firm’s profit goal may not be achieved. Fixed assets are not efficiently utilized for the lack of working capital funds, Thus lowering the rate of return on investments in the process. operating inefficiencies creep in when it becomes difficult even to meet day to day commitments. Attractive credit opportunities may be lost due to paucity of working capital. The firm loses its reputation when it is not in a position to honour its short term obligations, As a result, the firm faces tight credit terms.

Excessive working capital raises the following problems.

Excessive working capital encourage the tendency to accumulate inventories for making speculative profits causing a liberal dividend policy which become difficult to maintain when the firm is unable to make speculative profits. It results in unnecessary accumulation of inventories. Thus increases the chances of inventory mishandling, waste and theft. Excessive working capital makes management complacent which lead to managerial inefficiency. It may provide an undue incentive for adopting too liberal a credit policy and slacking of

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collection period, causing a higher incidence of bad debts which adversely affects profits.

An enlightened management should, therefore, maintain the right amount of working capital on a continuous basis.

Financial and statistical techniques should be used to predict the quantum of working capital needed at different point of time.

4.6 : COMPOSITION OF WORKING CAPITAL

"Working capital management includes both the management of current assets and management of current liabilities. The following are the constituent parts of working capital"\(^\text{10}\).

Current Assets

Current assets are those assets which are convertible into cash within a period of one year and are those which are required to meet the day-to-day operations of the business. These include:

- Cash and bank balances
- Temporary investments
- Short term advances
- Prepaid expenses
- Receivables
- Inventory of raw materials, stores, and spares
- Inventory of work-in-progress
- Inventory of finished goods

Current Liabilities

Current liabilities are those claims of outsider which are expected to mature for payment within an accounting year. These include

\(^{10}\) R.M.Kishore., Financial Management, Tax man allied services, (P) Ltd New Delhi, 2005, P.289.
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• Creditors for goods purchased
• Outstanding expenses
• Short term borrowings
• Advances received against sales
• Taxes and dividends payable
• Other liabilities maturing within a year.

“The purpose of working capital is to achieve cash realization”.11

4.7 : FINANCING OF WORKING CAPITAL

One of the important decisions in the field of working capital management is the financing of different kinds of current assets both permanent and temporary with diverse source of working capital. To quote OM Joy “In comparing financing plans we should distinguish between three different kinds of financing, long term financing, negotiated short term financing and spontaneous short term financing”12. Working capital of a concern is financed by spontaneous current liabilities and long term sources. Spontaneous current liabilities are trade creditors, bank over draft, short term loans and provisions. Long term sources are mainly share capital, debentures, and long term loans.

There are a number of approaches to determine an appropriate financing mix. The three basic approaches are (1) conservative approach (2) matching approach and (3) aggressive approach.

1. Conservative Approach

The financing policy of the firm is said to be conservative when it depends more on long term funds for its financing needs. It relies heavily on long term financing and therefore is less risky.

2. Matching Approach

Long term finance is used to finance fixed assets and permanent portion of current assets and short term borrowings are used to finance variable. In other words, the firm adopts a financing approach which involves the matching of expected life of assets with the expected life of the source of funds raised to finance assets.

3. Aggressive Approach

An aggressive policy is said to be followed by the concern when it uses more short term funds in the financing of current assets and a part of their fixed assets.

Of the three financing approaches, return on equity is the highest in case of aggressive plan and lowest under the conservative plan. The aggressive plan is the most risky because short-term funds is maximum in this scheme. While short term funds to total funds is minimum in the conservative plan and is less risky. In framing the financial liquidity it needs to be examined carefully. The financing of working capital depends on this liquidity structure and risk taking.

According to Hampton, the firm must have long term sources as a major portion of its working capital. The standard 2:1 current ratio and 1:1 liquidity ratio allow for a large part of current assets to be financed by long term sources of funds. For 2:1 current ratio, half the working capital is financed by long term loan or owners fund. For the 1:1 liquidity ratio, the entire inventory which is normally one half of the current assets is financed by long term funds and owned funds.
4.8 : DETERMINANTS OF WORKING CAPITAL NEEDS

A company as a general policy, wants to hold in balance as small a quantity of working capital as possible so long as undue solvency risks are not imposed on it. Quantitative amounts of working capital can hardly be set for individual firms. The corporate management has to consider the various factors in making decision regarding balances. An appraisal of these would provide guidance to management in estimating prospective needs.

"The total working capital management of a firm is determined by a number of factors these factors can be categorized into two groups viz internal factors and external factors".13

A. Internal Factors are as follows

Nature of Business

The need for working capital will depend upon the nature of the business of a firm and the industry to which it belongs, Public utilities require a small amount of working capital because of the cash nature of their business and partly of their selling a service instead of a commodity and there is no need of maintaining big inventories. On the contrary trading concerns require relatively large amount of working capital because they have to invest proportionately high amounts in current assets as they have to carry stock in trade, accounts receivable and liquid cash. The industrial units also require a large amount of working capital, though it varies from industry to industry because of the lack of uniformity in the asset structure of various industries.

Size of Business

Firm's size, either in assets or sales has an important impact in its working capital needs. Small firms having cash inflows from relatively fewer services are required. More working capital due to non-payment by customers in time, so to employ additional current assets as a cushion against cash flow interruptions. Large firms with many sources of funds may require less working capital in relation to total assets or sales.

Firm's Production Policy

A firm following a uniform production policy will have to pile stocks of materials during the off-season periods and thus incur greater inventory costs and risks. The effect of seasonal fluctuations upon working capital can be upset by pursuing the policy of adjusting production plans to seasonal changes. In this case, inventories are kept at minimum levels, obviously, working capital needs of a firm with a level production plan will be higher than the one with varying production plan.

Manufacturing Process

If the manufacturing process in an industry entails a longer period because of its complex character, more working capital is required to finance that process. The longer it takes to make an approach and the greater its cost, the larger the inventory tied up in its manufacture and therefore higher the amount of working capital. Often companies acquire heavy machinery and equipment to minimize their investment in inventory or working capital by requiring advance payment from customers as work proceeds on their orders.
Turn-over of circulating capital

The speed with which the circulating capital completes its round, i.e., conversion of cash into inventory of raw material and stores, inventory of raw material and stores into inventory of finished goods, inventory of finished goods into book debts or accounts receivables, and book debt into cash account, plays an important and decisive role in judging the adequacy of working capital.

Firm's Credit Policy

A firm following liberal credit policy and accordingly granting credit facilities to all customers without evaluating in detail their credit worthiness will require plenty of funds to carry book debts. On the contrary, the firm adopting strict credit policy and grant credit facilities to customers enjoy high and unflinching credit standing will require less amount of working capital as the funds locked in receivables will be released soon for further uses.

Access to Money Market

"The working capital requirement of a firm are conditioned by the firms access to different sources of money market. Thus, the firm with readily available credit from banks and trade credit facilities at liberal terms will be able to get by with less working capital than a firm without such facilities".14

Growth and Expansion of Business

Working capital requirements of an enterprise tend to increase in correspondence with growth in volume of sales. Growth industries generally require more working capital than those are static, other things being equal. It is also stated that the need for increased working

capital funds does not follow the growth in Business activities but precedes it. It must be emphasized that if a firm does not make a provision for the necessary working capital while embarking upon expansion or new projects its investment in fixed assets may remain idle for lack of working capital. Thus it is imperative that while planning for working capital requirement, one should take care of this aspect in order to ensure the smooth and profitable functioning of a firm.

**Profit Margin and Dividend Policy**

Magnitude of working capital in a firm is dependent upon its profit margin and dividend policy. As a matter of fact, a high net profit margin reduces the working capital requirements of the firm because it contributes towards the working capital pool. To the extent, net profit has been earned in cash, it becomes a source of working capital. The availability of net profits for working capital purposes depends essentially upon the dividend policy pursued by the company where the management follows conservative dividend policy and retains larger portion of net profits, the company’s working capital position is strengthened.

**Depreciation Policy**

Depreciation is merely an allocation of expired cost. Therefore, to the extent depreciation provision exceeds the current capital expenditure, The working capital position would be improved and vice versa when no capital expenditure is incurred during the period under consideration and the amount of depreciation is not invested outside. The fund equivalent to depreciation provision is likely to be utilized as working capital. Thus while planning the working capital requirement of a firm, the impact of its depreciation policy on the same should also be ascertained.
Operating Efficiency of Firm

Operating efficiency of the firm results in optimum utilization of resources at minimum cost. If a firm successfully controls operating costs, it will be able to improve net profit margin which will, in turn, release greater funds for working capital purposes.

Co-ordination of Activities in Firm

Where production and distribution activities are co-ordinated, pressure on working capital will be minimized. In the absence of co-ordination in production and distribution policies demand for working capital is reduced.

B. External Factors are as follows

Business Cycle Fluctuations

"Requirements of working capital of a company vary with the business variation. At a time when the price level comes up and boom condition prevail, the psychology of the management is to pile up a big stock of raw material and other goods likely to be used in the business operations as there is an expectation to take advantage of the lower prices. The expansion of business units caused by the inflationary conditions creates demand for more and more capital usually the working capital under such conditions increases"\(^{15}\). A business during depression may give a misleading appearance of financial strength except where substantial operating losses are incurred with recovery the cash position may decline and a shortage of working capital may develop.

Technological Developments

Technological developments in the area of production can have sharp effects on the need for working capital. If a firm move towards a new

manufacturing process and installs new equipments with which it is able to cut period involved in converting raw materials into finished goods, permanent working capital requirements of the firm will decrease. If the new machine can utilize less expensive raw materials, the inventory needs may be reduced.

**Transport and Communication Developments**

If the means of transport and communication are not well developed, industries may need additional funds to maintain big inventory of raw materials and other accessories which would otherwise not be needed where the transport and communication systems are highly developed.

**Import Policy**

Import policy may also have its bearing on the levels of working capital of the enterprises since they have to arrange funds for importing goods at specified times.

**Taxation Policy**

Working capital needs of business enterprises are affected sharply by taxation policy. In the event of regressive taxation policy, they are left with very little profits for distribution and retention purposes consequently, they have to borrow additional funds to meet their increased working capital needs. Pressure on working capital is minimized particularly when liberal taxation policy is followed.

4.9 : CONTROL OF WORKING CAPITAL

Control of working capital depends on the control of inventory, receivable and cash.

**Inventory Control**

The term inventory control relates to a set of policies and procedures by which an organization determines the materials, it will hold in stock
and the quantity of each that it will carry. The objective of inventory management is to have the appropriate amount of materials in the right place at the right time and at low cost. Inventory control is important for the financial health of the corporation.

The American production and inventory control society has defined inventory control as “the technique of maintaining stock, keeping items at desired level, whether they may be raw materials, work in process, or finished products”\(^\text{16}\).

Various inventory control systems have been developed by business concerns to control their inventory. Some of the inventory control systems are as follows.

**ABC Analysis**

“ABC approach is a managerial technique of determining the degree of control to be exercised over various items of inventories. This is done by analyzing the stock usage patterns by money value of importance”\(^\text{17}\). The term ABC (Always Better Control) means that the high value items are considered in the A category, medium value in the B category and low value in the C category. The most rigorous degree of control should be followed for A items, it should be minimum for C items and moderate for B value items.

**VED Analysis**

VED analysis is mostly used for spare items of the inventory. According to this analysis the inventory items are grouped into three categories namely (i) V - Vital items, (ii) E - Essential items, (iii) D - Desirable items. The vital items constitute such items of the inventory without which production would come to halt. Essential items are the

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items that can dislocate the production work in their absence. Desirable items do not have any immediate impact on the production. Thus, VED analysis does not consider the utility of the inventory items on the basis of value but on their impact on the production.

**Minimum – Maximum System**

One of the widely used methods of controlling inventory involves the determination of minimum and maximum inventory levels. Under this system, the stock is always brought back to a pre-determined maximum figure when the minimum is reached. The minimum level determined in advance is the reorder point. The minimum stock is consumed during lead time under this system. The order quantity is not fixed as in the bin reserve system. However, economic order quantity is generally adopted by the manufacturing concerns for this purpose.

**Perpetual Inventory System**

Under this system, stock record cards are maintained. The card maintains a perpetual balance between withdrawals and receipts. When the material falls below a predetermined minimum level (re-order point), the order is placed for a further quantity of stock.

**Economic Order Quantity**

"EOQ refers to the level of inventory at which the total cost of inventory comprising acquisition/ordering/setup costs and carrying costs is minimal. The economic order quantity may be defined as that level of inventory order that minimizes the total cost associated with inventory management".\(^{18}\) The economic order quantity may be ascertained through the following approaches.

The long analytical approach or trial and error approach.

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and the short cut or simple mathematical approach.

Just-in-time (JIT) Inventory Management Systems

JIT inventory management systems are part of a manufacturing approach that seeks to reduce the company’s operating cycle and associated costs by eliminating wasteful procedures. “JIT inventory systems are based on the idea that all required inventory items should be supplied to the production process at exactly the right time and in exactly the right quantities”.19

The just in time approach works best for companies engaged in repetitive manufacturing operations. A key part of just in time techniques is the replacement of production in large batches with a continuous flow of smaller quantities.

Receivables Control

“Credit sales which may appear as accounts receivable, also known as notes receivables, bills receivables, book debts, and sales receivables – constitute a large proportion of the working capital of a firm”20. Traditionally, two methods have been commonly suggested for monitoring accounts receivable viz, days sales outstanding and ageing schedule, these methods are popularly used.

1. Day’s Sales Outstanding

The day’s sales outstanding (DSO here after) at a given time ‘t’ may be defined as the ratio of accounts receivable outstanding at that time to average daily sales figure during the proceeding 30 days, 60 days, 90 days or some other relevant period.

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\text{DSO}_t = \frac{\text{Accounts receivable at time 't'} \times \text{Average daily sales}}{}
\]

According to this method, accounts receivable are deemed to be in control if the DSO is equal to or less than a certain norm. If the value of DSO exceeds the specified norm, collections are considered to be slow.

2. Ageing Schedule

The ageing schedule (AS) classifies outstanding accounts receivables at a given point of time into different age brackets. The actual as of the firm is compared with some standard as to determine whether accounts receivable are in control.

Collection Matrix

To overcome the limitation of the traditional methods, the collection matrix approach has been suggested. It is influenced by the sales pattern as well as the payment behaviour of the customers. If sales are increasing, the average collection period and the ageing schedule will differ from what they would be if sales are constant. This holds even when the payment behaviour of customers remains unchanged. This reason is simple, a greater portion of sales is billed currently. Similarly, decreasing sales lead to the same results. The reason here is that a smaller portion of sale is billed currently. From the collection pattern, one can judge whether the collection is improving, stable, or deteriorating. A secondary benefit of such an analysis is that it provides a historical record of collection percentages that can be useful in projecting monthly receipts for each budgeting period.
Cash Control

"Cash management techniques aim at accelerating of cash inflows and declaration of cash outflows. Cash management will be successful only through speedy collection of accounts receivables and by delaying disbursements of accounts payables. The important techniques used for cash management are as follows.

Accelerating Collections

Credit to customers is inevitable. No business can function without it. The business, however, can adopt such policies which ensure early retrieval of cash from customers. Earlier discount is one such strong persuasive factor and a business following a policy of offering discount will get early payments from customers. In addition to such policies, there are some cash management techniques which accelerate speedy collection of receivables. The important cash collection techniques are as follows.

Concentration Banking

Normally, the customers of a business are required to dispatch their remittances to the head office. This way cash is pooled and disbursed centrally facilitating effective cash control and efficient monitoring. But if the size of the business is very big and customers are scattered over a large area, considerable time will be consumed in raising bills and processing cheques. To avoid this and reduce the deposit float, the system of concentration banking is adopted. Under this system cash collection is centralized by the receipts from decentralized cash collection centers.

Lock Box System

Lock box system is the oldest technique for speedy collection of receivables till today, it is the most commonly adopted technique of cash collection in developed countries, under this system a business hires special post office boxes in the area having maximum concentration of its customers. The post office boxes are special in the sense that these are hired by the business but operated by bank. The customers are advised to remit the remittances to the post office boxes. The local banks at the respective places are authorized to open the post office boxes, collect the cheques and process them for realization while processing the cheques for collection the bank sends the statement detailing amounts received by the business along with original envelopes and invoices. This serves as a proof as well as record for according necessary accounting treatment to the receivables.

Decelerating Disbursements

Techniques involved in slowing release of payments to suppliers is as effective an instrument of cash control as methods involved for accelerating collection of receivables. Both the techniques are concerned with reducing the cash requirements of the business.

Float

A business at times deals with two balances associated with its bank account one, the balance appearing in its own books of accounts and the other the actual cash balance as displayed in books of the bank. The reasons for the difference in these two balances can be many. The two most prominent reasons are,

1. Cheques presented by the business but not yet collected and
2. Cheques issued by the business but not yet presented.
The sum total of these two is known as 'float'. The former is known as collection float and the latter as disbursement float.

**Collection Float**

The collection float is represented by the aggregate of the amounts of the cheques which have been deposited in the bank but are in the process of collection by the bank. As soon as the cheques are deposited in the bank, the amount is debited to the bank accounts appearing in the books of the business. But the bank accords the credit to its customer when it realizes the amounts from the banks of the customers. The time lag in the two results in the difference of balances known as collection float. As a matter of fact collection float is part of overall "Deposit Float" which additionally covers mailing float and processing float mailing float accrues due to time lag involved in the issue of cheques by customers and their receipts by the recipients processing float is an account of time taken by the business for processing the cheques for presentation to the bank. Close monitoring of all the three is important for speedy collection of receivables.

**Disbursement Float**

Disbursement float is sum total of all the cheques which have been issued to suppliers but are in the process of being presented to the bank for payments. The bank account in the books of the business is credited as soon as cheques are drawn on it and sent to suppliers but the bank would debit the account of its customer only on the receipt of the cheques from the bankers of suppliers. The difference between the two balances is known as disbursement float. The disbursement float is used as an item for delaying payments by adopting the technique of riding the float. Cash management techniques fall into two functional areas accelerating collections and decelerating
disbursements. In both, the areas, efforts are made to exploit their respective floats to the maximum. Collection float assists in quickening the pace of cash inflow and disbursement float helps the business in delaying the cash outflow.

4.10 : ADVANCED CONCEPTS AND TECHNIQUES OF WORKING CAPITAL

"A variety of advanced concepts and techniques have been suggested for managing different facets of the working capital. These have emanated in different disciplines like economics, operations research, production management, statistics, and computer sciences"22. The important concepts and techniques are as follows.

Working Capital Leverage

Working capital leverage reflects the sensitivity of return on investment (earning power) to changes in the level of current assets.

Analysis of working capital components

The operating cycle analysis focuses only on the time dimension of investment. It shows the durations of various components of the operating cycle. This analysis can be extended to take into account differential magnitudes of investment at different stages of the operating cycle. Viz raw material stage, work in process stage, finished goods stage, and accounts receivable stage such extended analysis lead to the calculation of what may be referred to as the weighted operating cycle. Viz, which is more useful in working capital analysis.

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Cash Budget Simulation

The cash budget prepared by a business firm is based on single value estimates of various factors like sales, distribution of sales between cash and credit sales, and so on. The financial manager responsible for the preparation of the cash budget is aware that some of these factors are subject to considerable variability. Hence, realism demands that the impact of variability characterizing these factors is properly examined. For this purpose the technique of simulation may be employed.

The procedure of simulation consists of three broad phases (i) model development (ii) specification of probability distributions of exogenous variables and (iii) running of the model.

Cash Management Models

The cash budget of the firm indicates period when the firm is expected to have a shortage or surplus funds. If a shortage is expected, ways and means of overcoming the shortage must be explored. On the other hand if a surplus is projected, it has to be determined how it should be split between marketable securities and cash balances.

Several cash management models have addressed the issue of splitting surplus funds between marketable securities and cash holdings. William J. Baumol proposed a model which applies the Economic Order Quantity (EOQ) concept commonly used in inventory management, to determine the cash conversion size (which in turn influences the average cash holding of the firm). The purpose of such an analysis is to balance the income forgone when the firm holds cash balances (rather than investing in marketable securities) against the transaction costs incurred when marketable securities are converted into cash.
Expanding on the Baumol model, Miller and Orr consider a stochastic generating process for periodic changes in cash balance. As against the completely deterministic assumptions of the Baumol model, Miller and Orr assume that the changes in cash balance over a given period are random in size as well as direction. As the number of periods increases, the cash balance changes from a normal distribution.

**Discriminant analysis and customer classification**

Discriminant analysis is a statistical tool helpful for classification purposes. It has applications in several areas of financial analysis. The steps involved in discriminant analysis are as follows:

i) Estimate the discriminant function.

ii) Choose the cutoff point for the discriminant function and

iii) Examine the predictive ability of the discriminant function.

**Advances in Inventory Management**

Many advances have occurred in the field of inventory management. The more important ones are as follows

**Materials Requirements Planning (MRP)**

Materials Requirements Planning (MRP) is essentially a computerized planning and control system for the effective management of production and control in a manufacturing environment. The objective of the MRP system is to order just the right parts in the right quantity at the right time.
Just-In-Time System (JIT)

Under this production system no raw materials are purchased until they are needed. The JIT inventory systems are also referred to as zero inventory or stockless production systems.

Quality is absolutely essential for a JIT system unlike conventional systems where inventory is treated as an asset the JIT system views inventory as the root of all evil. In traditional organizations, a high level of inventory is held to cover up the problem areas related to quality, vendor, delivery machine breakdowns etc. The JIT system is the opposite the inventory level is lowered to expose the real organizational problems and attempts are made to solve the problems at their points of incipience. Under the JIT system workers need a broad range of skills, the layout of the plant has to be different, quality is absolutely essential, and vendor relations are radically different.

Electronic Data Interchange and Bar Coding

The electronic data interchange (EDI) is the direct computer to computer exchange of information, Such communication results in timely and accurate information, greater administrative efficiency and improved quality of decision making.

Bar coding identifies products using machine-readable codes. The bar code technology allows faster and more accurate data entry better document tracking, and reduces inventory cost.