CHAPTER – II

CREDIT MANAGEMENT BY BANKS
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CREDIT MANAGEMENT BY BANKS

Credit is the life blood of commerce. India being a developing country and being poor in the formation of capital depends heavily on the banking system to mobilize finance for growth of the economy. The banking system in turn mobilizes deposits from the savings of the public and makes these funds available for investors. This process of intermediation enables the banking system to multiply deposits and credits. By this turnover, deposits create loans and loans create deposits'. The investors/borrowers are expected to repay the loans either in installments or in lump sum and also pay interest thereon, i.e., a cost on the borrowed funds. These earnings by the banks are again made available to the investors/borrowers by way of credit. Thus, the fast and frequent recycling of fund through fresh credit creation contributes to the banking survival, efficiency and profitability. The system's profit is the difference between the interest that it pays on deposits and what it earns in making loans. The system's success is greatly linked to deposit money with them. The problem that the system encounters is that while the deposits have to be paid back their money on demand or after a term, the funds made available to borrowers. Investors may not come back on due date or may not come back in full or may come back after inordinate delay or may not come back at all. Similar is the case with interest on money lend. This situation results in a mismatch between maturities of deposits and advances, which has to be taken care of by banks' themselves borrowing funds from the market. The market loans often cost more than the deposits, thus increasing the average cost of funds to the banks and consequently increasing the cost on loans extended to their borrowers.

In order to ensure the soundness of the banking system and protect depositors' interests, Reserve Bank of India, as Bankers' Bank has been entrusted with the responsibility of regulating and supervision the banking system in terms of Reserve Bank of India Act 1934, and Banking Regulation Act, 1949 (B.R. Act). As a regulatory measure, Reserve Bank of India has prescribed certain minimum reserve requirements which the banking system has to statutorily comply with. Accordingly Cash Reserve Requirements (CRR) and Statutory Liquidity Requirements (SLR) have been specified as a charge on the banking system's not demand and time liabilities. These requirements are subject to change from time to

1. Gopal Swaroop, Banking in India (Del) Himalaya, 1987. p.6
2. Ibid. p 36
time as the money supply position in the economy would demand. While Cash Reserve Requirements ensure liquidity to the banking system, they also indirectly influence the money supply and stabilize the price levels. Statutory liquidity requirements ensure safe and sound investment of part of bank funds in Government Securities and other approved Securities and hedges the liquidity risks of the banking system and continue to ensure the ability of the banking system to meet the liability to the depositors as and when they arise.

➤ **Cash Reserve**

The banking system also has the social responsibility to develop the rural economy and alleviate the poverty of the masses. This is done by requiring the system to invest 40 per cent of its net bank credit in priority sector areas (agriculture, small scale sector and tiny sector) as prescribed by Reserve Bank of India. The banking system has also been under obligation to provide export credit up to a specified level and to charge lower interest in recognition of the country's need to earn foreign exchange through exports thus, the banking system has to earmark for every Rs 100 of deposit received, Rs 4.75 towards CRR, Rs 25 towards SRLR. Further, the net banking credit, priority sector advances will cover 40 per cent, export credit 12 per cent and food procurement operations of Government of India, roughly 10 per cent at comparatively lower rate of interest. After meeting all these statutory requirements, since the funds available for normal commercial lending are very limited and their contribution to capital is insignificant compared to operations, the banking system after resorts to borrowings from the markets to supplement its resources. This situation compels the banks to charge higher rate of interest on other categories of borrowers.

➤ **Factors governing cash reserve:**

One of the main defects of Indian Banking system is the week and vulnerable capital of many banks. The fact is evident that during the years 1934 to- 1945, as many as 715 banking companies were liquidated or wound up due to very poor capital base. Section 11 of the Banking Regulation Act, 1949 takes care of this aspect. Under Sub-section 2 of Section 11, Foreign Banks have to deposit with the Reserve Bank of India Rs. 15 lacs, and if, they want to operate in Bombay or Calcutta, or both, Rs. 20 lacs. This amount can be deposited either in cash or in unencumbered security -or in both. Besides, they have to deposit 20 percent of their profit for each year earned from the business in India with the Reserve Bank of India. In case, the foreign bank closes down its
business in India, these deposits will be used for meeting the liability of the Bank, in India."

Sub-section 3 of the Section 11 deals with the paid-up capital and reserves of Indian banks. It lays-down that minimum capital and reserve should be Rs. 5 lacs for businesses in more than 1 state, and, if it also operates in Bombay, Calcutta or both, Rs. 10 lacs.

If the business is confined to just 1 state and does not include Bombay and Calcutta, capital can be just Rs. 1 lacs for its each place of business + Rs. 10,000/- for each of its other place of business 'at the same district + Rs. 25,000/- for each place of business situated elsewhere in the state (the total not exceeding Rs. 5 lacs). However, for the companies opened after enactment of the act, the paid up capital has to be a minimum Rs. 5 lacs.\(^2\)

> **Minimum reserve required by law**

**Banking Company Incorporated in India Aggregate Value of Paid-up**

(i) If it has places of business in more than one state Rs. 5 lacs

(ii) If any such place/places of business is/are situated in Mumbai or Calcutta or both Rs. 10 lacs

(iii) If it has all its places of business in one state none of which is situated in the city of Mumbai or Calcutta :

   (a) In respect of its principal place of business plus Rs. 1 lac

   (b) In respect of each of its other places of Business Rs.10, 000 plus situated in the district of principal business Rs. 25,000

   (c) In respect of each place of business situated elsewhere in the state outside the same district Subject to a total of Rs. 5 lacs

(iv) If it has only one place of business Rs. 56,000

(v) If it has all its places of business in one state, one or more of which is or are situated in the city of Mumbai or Calcutta in respect of each place of business situated outside the city of Mumbai or Calcutta subject to a total of Rs.10 lacs
Credit Management by Banks

The above-mentioned requirement relates to the value of paid-up capital and reserves of a banking company. The term 'value' has been defined in Sub-section (5) so as to mean the 'real' or exchangeable value, and not the nominal value, which may be shown in the books of the banking company. The Sub-section also lays down that if a dispute arises in computing the aggregate value of the paid-up capital and reserve of any banking company, the determination of the name by Reserve Bank shall be final for the purpose of the Section.

The banking company can issue only ordinary shares and not preferential shares, except in cases where they were issued before 1st July, 1944.

As per Section 12(l) of the Banking Regulation Act, 1949, the subscribed capital has to be minimum one half of the authorized capital, and paid up capital will be not less than one half of the subscribed capital. Even where the capital is increased, this requirement will have to be complied with.

➤ Loans and advances:

The banking system has to be very prudent in the management of credit portfolio, to ensure that every rupee lend/invested brings viable returns. The performance of the bank is therefore, primarily judged on the quality and viability of its advances. Therefore, loans and advances have to be on a sound basis and the funds invested profitably, ultimately keeping in view benefit of shareholders and the interests of depositors. The banks have at the same time to serve the legitimate credit needs of the community, for productive and other desirable purposes and also ensure that priority sectors and weaker sections are adequately financed as per the directions of the regulator, without diluting the credit appraisal standards.

In laying down the lending policy, consideration must be given to the individual bank’s available financial resources, preferred market segmentation and seccotral flows as also personnel capabilities, infrastructure facilities and organization set up attuned to expeditious dispensation of credit as also future growth potential. A Determination of who will receive credit and of what type, at what price and at which point of time must be made. Other internal factors to be considered include who will grant the credit, in what amount and what organization structure will be used to ensure compliance with the bank’s own guidelines and procedure. As authority is delegated throughout the organization, the bank must have efficient systems for monitor ring
adherence to established guidelines. This can best be accomplished by
an internal control and reporting system which adequately informs the
Board/Senior management of how the polices are put in action and
which also provided them with information sufficient to evaluate the
performance of lower echelon officers and the conditions of the loan
portfolio in relation to Credit Appraisal, Sanction, Monitoring and
Follow-up.

➤ General principles governing advances:

Bank's ordinary business is lending using the deposits (public funds)
mobilized from public, which involves taking risk. Credit risk is the
major risk and banks' productivity, efficiency, and profitability, as also
the overall soundness would depend on assessing the credit risk and
expanding the credit portfolio. Appraisal of credit proposal requires
understanding and identifying the nature of the risk, measuring the risk,
monitoring the risk and finally managing the risk. Banks should have
well-trained and experienced staff to efficiently handle the credit
portfolio. Risk assessment techniques and management guidelines have
to be formulated and put in place under continuous supervision and
monitoring to ensure expansion of credit on sound lines. Expertise to
understand sophisticated risk assessment models and acting on them
without ignoring the basic principles of lending has to be developed.
Sound lending policies and excellent appraisal standards will ensure
good quality of advances, abinito minimum level of Non Performing
Advances and higher levels of profit.

The discretionary powers to sanction are to be exercised by functionaries
at different levels including the Chief Executive Officer and must be
subjected to review by the next higher level in the organization. The
reporting system should be such that the review takes place without
delay. Exceeding the discretionary powers or undertaking unauthorized
business should be discouraged. If required to be undertaken under
exceptional circumstances in the larger interest of the bank, such action
must be immediately reported to the appropriate authority for
confirmation. Complete record of instructions/sanctions should be
maintained. The supervisory system has to look into cases of abuse of
discretionary powers. The business of lending money has an inherent
business risk of some debts turning bad, thus causing loss to the lender.
Losses cannot be eliminated altogether, but can be minimized through
an efficient and effective system of pre-sanction appraisal and post-
sanction follow up.
Different Kinds of loans:

The credit facilities generally advanced by the banks are classified broadly into Working Capital and Term Loans. This conventional classification has no relevance now. Now the banks have started extending loans to each and every purpose of the public. Apart from that a few banks have also started a scheme of 'No purpose loan'. As far as a modern bank is concerned every purpose is a bankable purpose. The major areas where the banks extended their credit are as here under.

(a) Working Capital:-

Working Capital is the excess of current assets over current liabilities. Current assets are those assets are those assets which will be converted into cash within the current accounting period or within the next year as result of the ordinary operations of the business. They are cash or near cash resources. Those include:-

i) Cash and bank balance
ii) Inventory – Raw materials, Work-in-process, Finished Goods
iii) Receivable
iv) Prepaid expenses
v) Short term advances
vi) Temporary investment

Current liabilities are the debts of the firms that have to be paid during the current accounting period or within a year. These include:-

i) Creditors for good purchased
ii) Outstanding expenses due but not paid
iii) Short term borrowings;
iv) Advance received against sales
v) Taxes and dividends payable
vi) Other liabilities maturing within a year.

Working capital is also known as circulating capital, fluctuating capital and revolving capital. The magnitude and composition keep on changing continuously in the course of business.
Credit Management by Banks

Generally the working capital has its significance in two prospective - `Gross working capital' and `Net working capital', refers to the firm's investment in current assets. The term `Net Working Capital' refers to the excess of current assets over current liabilities. These gross working capital and net working capital are called Balance Sheet approach of working capital.

(b)Term loan:-

Term loans are the facilities granted by the banks for a fixed period. It could be long term or short term. The short term loans include finances on small and the medium project here as the long term loans relate to infrastructural projects. One of the major areas of term loan in recent years is the Housing Loans. In India, growth of housing finance segment has accelerated in recent years. Several supporting policy measures (like tax benefits) and the supervisory incentives instituted had played a major role in this market.

Housing credit has increased substantially over last few years, but from a very low base. During the period 1993-2004, outstanding Housing loans by scheduled commercial banks and housing finance companies grew at a trend rate of 23 per cent. Recent data reveal the non-priority sector housing loans outstanding as on February 18, 2005 were around Rs. 74 thousand crore. Direct housing loans up to Rs. 15 lakh irrespective of the location now qualify as priority sector lending.

(c)Retail/Consumer Credit:-

The issue of retail consumer credit is extremely important and topical. Banks are awash with liquidity. Prime corporate do not borrow from banks, except at sub PLR rates. There are no longer any regulatory hurdles. Consumer goods, which in turn helps the manufactures. Consumer credit has been a spectacular innovation in the commercial banking sector in recent years. The growth of retail lending, is attributable to the rapid changes in the evolving macroeconomic environment, financial market reform, and several micro-level demand and supply side factors.
Retail loan is estimated to have accounted for nearly one-fifth of all bank credit. Housing sector is experiencing a boom in its credit. The retail loan market has decisively got transformed from a sellers market to a buyers market. Gone are the days where getting a retail loan was somewhat cumbersome. All these emphasize the momentum that retail banking is experiencing in the Indian economy in recent years.

The typical products offered in the Indian retail advances segment are housing loans, consumption loans for purchase of durables, auto loans, credit cards and educational loans. The loans are marketed under attractive brand names to differentiate the products offered by different banks. The loan values of this retail lending typically range between Rs.20, 000 to Rs.100 lakh. The loans are generally for duration of five to seven years with housing loans granted for a longer duration of 15 years.

(d) Foreign Trade Finance:-
It is popularly known as export finance. It is extended in two legs namely:

1) Pre shipment 
2) post shipment finance

1) Pre shipment Finance (PCL):-

Pre shipment (Packing) credit loan is a working capital advance granted to the Exporter for financing purchase of raw material, processing and packing of the goods on the strength of letters of credit or Firm Orders established in favour of the Exporter.

P.C.L. can be granted by way individual accounts wherein packing credit/s against each LC/Firm Order are shown separately in the register and proceeds of the relative export bills under a LC/Firm Order will go towards liquidating the individual packing credit/s relating to the same LC/Firm Order.

From 14th March, 1992, banks are also authorized to grant PCl under the ‘Running Account’ facility, without insisting
on prior lodgment of LC/Firm Order. In a Running Accounts facility, PCLs are granted on a continuous basis and are not marked against any particular LC/Firm order. Realization of the PCL takes place on the basis of the First in First out (FIFO) principal i.e. the first PCL is realized out of the proceeds of the first export bill. The account will operate more or less like an overdraft facility. However, care should be taken to have a system which will monitor the receipt of LCs/Firm Orders after a reasonable period from the date of extending the PCs, the future orders on hand and the shipments have already been executed. This will ensure that the continuity of business and receipt of orders is there, to justify the extension of the 'Running Account' facility. Normally the running account facility is extended taking into account the following:-

1. The need for the running account facility has been explained and justified by the Exporter to the satisfaction of the Bank.
2. Running Account Facility will be extended only to those exporters whose track record has been good.
3. As stated earlier LCs/Firm Orders should be produced within a reasonable time.

Procuring raw materials/purchasing/manufacturing/processing/transporting/warehousing/packing and shipping of the goods.

Packing Credits will have different nomenclatures depending upon the purpose, security, state of the advances etc. For instance when PCs are granted on a clean basis which will result in procurement of raw materials/inventory at a letter stage it is called PCL (Clean), when the goods arrive and are hypothecated to the bank the PCL (Clean) gets converted into PCL (Hypothecation) gets converted into PCL (Pledge) and when the goods are duly packed and are in the process of being shipped the PCL (Pledge) will become converted into shipping Loan.

(2) Post shipment Finance:-

Post shipment finance can be in the form of:-
Credit Management by Banks

1. Negotiation/Payment/Acceptance of export documents under Letter of Credit.
2. Purchase/Discount of export document under Confirmed orders/export contracts etc.
3. Advances against export bills sent on collection.
4. Advances against export on consignment basis.
5. Advances against undrawn balance on exports.
6. Advances against receivables from Govt of India.

Major exchange control regulations -

1. Exporter should have I E Code No. and each shipment should be accompanied by the relevant export declaration form (GR/SDF/PP/SOFTEX) from in which the value of the export will be declared and duly certified by the Customers authorities.

2. Shipping Documents along with the relevant export declaration form should be submitted to the AD within 21 days from the date of shipment. If the delay for submission is genuine, AD can condone the delay and accept the documents even after 21 days.

3. Payment should be received in an approved manner within the prescribed time.

Post shipment finance is basically financing against export receivable after the date of shipment till the date of realization of the export bill. As the advance is granted against evidence of export shipment and the document of title to goods are handed over, the advance is normally self liquidating.

➢ New concept of Bank lending:

Before lending money a bank has to assess all-important factors that have a bearing on the financial soundness of the borrower, the prime focus being on the purpose and need of the credit and the ability of the borrower to repay the advances as per terms of the loan. The borrower's character, experience and competence to manage the business and to
utilize the funds for the purpose for which they are lent are normally taken into account. The project or activity proposed to be financed should be capable of generating sufficient surplus so that the loan is serviced and repaid. The quantum of advance (term loan and/or working capital) should also be sufficient to meet the genuine needs of the borrower in time. Lending either too little or too much in relation to need may cause problems.

An effective system to obtain the statements/reports regularly and scrutinize them is a necessary concomitant to sound lending. While disbursing loans, the banks have to ensure that all the required documentation is complete. Banks have a tendency to be complacent in these matters because of familiarity with the borrowers or sometimes even lack of properly trained staff. Ineffective internal audit and supervision also contribute to the laxity and ultimately the borrowers take full advantage of lapses, causing the banks to suffer.

Apart from compliance with terms and conditions of sanction of the facility, the lending banks have to ensure end-use as also safety of funds lent. It is imperative for the banks to keep a close watch on the affairs of the borrowers throughout the currency of the advances so as to take appropriate remedial measures, in case the borrowers’ ability to repay and to service the advances show signs of deterioration.

In a highly cut-throat competitive environment, banks are chary of exchanging credit information while granting credit facilities to the borrowers, their associates and sister concerns. The quantum of credit availed by various units, purpose for which credit is granted, end use of funds, etc. are not generally made transparent and shared among the lenders and with the result some groups of borrowers circumvent the credit discipline by establishment of several smaller concerns and avail large funds from different units of the banking system for the ultimate benefit of their parent company. Banks, while granting credit facilities afresh or extending additional facility to any units belonging to a particular group are invariably required to make enquiries and satisfy themselves about the conduct of the companies in the group, with different banks. This is often not complied with for fear of loss of business. Such lapses result in the over drawal of credit or excessive credit without the backing of adequate securities.
Non-observance of laid down credit norms and policy has often led to serious problems for banks loans sanctioned. Major sources and causes of failure of loans include.

(i) Connected Lending:- Although BR Act restricts connected lending, there are a significant number of problem credits in the form of over-extension of credit made on unsound basis to directors or large share holders, or to their interests, to obtain funds in the form of unjustified loans. The management often vigorously defends such unsound loans. In a connected lending, both the sources and the cause of the problem originate within the bank. The observations made by Sri. Venkitaramanan in regard to the melody of connected lending are significant. The Indian public banking system is a miraculous, money machine. It is not an exaggeration to say that we see here cardinal sin of connected lending, which occurs whenever the owner of a bank takes loans from the deposits it raises.

(ii) Anxiety for Income:- the loan portfolio of a bank is usually the most important revenue-producing asset. The earnings factor, however, must never be permitted to outweigh that of soundness so that credits that carry undue risks or unsatisfactory repayment terms are not encouraged. Unsound loans usually result in cost, which are far more than the revenue produced.

(iii) Compromise of Credit Principles:- Bank managements, for various reasons, may grant loans carrying undue risks or unsatisfactory terms, knowing fully well the violation of sound credit principles involved. The reasons for compromise on basis credit principles may include, deposit oriented advances, loans under political pressure/influence, evergreening of advances to cover up the lapses, familiarity lending and competitive pressures.

(iv) Inadequate Credit Information:- Complete credit information is the only acceptable and reasonably accurate method for assessing a borrower's integrity and financial capacity. Character, competence and credit worthiness should be subject to review at periodical intervals through market intelligence. The lack of supporting credit information like availability of reliable financial statements and other statistical data is often an important cause of problem credits. Other essential information regarding purpose of the borrowing, the intended
Credit Management by Banks

plan and source of repayment, progress reports, inspections and memoranda of outside information and loan conferences, should be available on record and factored into credit appraisal and proper credit administration.

(v) Failure to Comply with Terms and Conditions Attached to the Loans Repayment:- Loans released without a clear agreement governing repayment are in violation of fundamental banking principles. Such loans turn sticky. More common (and generally as bad) is the case where the bank has an agreement with the borrower regarding the repayment or progressive liquidation of his loan but fails to collect the principal payments when due and in the manner laid down. A study of loan losses will show that, in many cases, amortization never equaled the repayments of principal the borrower agreed to make. It is sound axiom that good lending and good borrowing both require regular liquidation.

(vi) Familiarity and Complacency:- Banks often tend to be complacent and fail to effectively supervise the loan accounts particularly relating to familiar and long time borrowers. Even if some signals are received about such borrower or his business, banks often ignore to take cognizance of the information and extend undue support with or without the knowledge of internal supervisory authorities. Many loans that are sound at inception have developed problems and resulted in losses, because of lack of effective supervision and follow-up. Ineffective supervision is also invariably the result of a lack of knowledge of the borrower's affairs over the lifetime of the loan.

(vii) Lack of Expertise and Technical Incompetence:- Professionalism in the approach to credit sanctioning has been found wanting. Lack of proper analysis of financial statements and not obtaining and evaluating other credit information, often leads to loan losses.

Modern system of lending requires a proper analysis of balance sheet. A model analysis is given hereunder.

**STRUCTURE AND ANALYSIS OF BALANCE SHEET**

<table>
<thead>
<tr>
<th>BALANCE SHEET</th>
<th>SCHEDULES</th>
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<tbody>
<tr>
<td>Liabilities/Sources of Funds</td>
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</table>
### Share Holders Funds

<table>
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<tr>
<th>Share Capital</th>
<th>Authorized / Issued / Subscribed / Called up Capital</th>
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### Paid Up Capital

<table>
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<tr>
<th>Equity Share Capital</th>
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<td>Redeemable Preference Share Capital</td>
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<th>Share Application Money</th>
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<th>Reserves and Surplus</th>
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<tr>
<td>General Reserve</td>
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<tr>
<td>Capital Reserve</td>
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<tr>
<td>Share /Securities Premium Account</td>
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<tr>
<td>Investment Fluctuation Reserve</td>
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<tr>
<td>Revaluation Reserve</td>
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<tr>
<td>Credit Balance in Profit and Loss Account</td>
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### Loan Funds

<table>
<thead>
<tr>
<th>Secured Loans</th>
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<table>
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<tr>
<th>Unsecured Loans</th>
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### 3. IFST Deferral/Deferred Tax Liability

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### Total Funds Employed / Total

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<table>
<thead>
<tr>
<th>Liabilities</th>
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<th>Application of Funds/ Assets.</th>
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<tbody>
<tr>
<td><strong>1. Fixed Assets</strong></td>
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<tr>
<td>Gross Block</td>
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<tr>
<td>Less: Depreciation</td>
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<tr>
<td>Net Block +</td>
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<tr>
<td>Capital Works in Progress</td>
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</tbody>
</table>

Fixed assets are grouped as Land, Building, Plant & Machinery, Furniture & Fixtures, Vehicles, Office equipments etc and the gross and depreciated value of each group are shown

<table>
<thead>
<tr>
<th><strong>1. Investments</strong></th>
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Govt. Securities  
Long Term  
Trade  
Quoted Investments  
Unquoted  
Shares  
Bonds

<table>
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<tr>
<th><strong>3. Current Assets Loans &amp; Advances</strong></th>
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<tbody>
<tr>
<td>Inventories</td>
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<tr>
<td>Raw material</td>
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<td>Work in Progress</td>
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<tr>
<td>Finished Products</td>
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<tr>
<td>Goods in Transit</td>
</tr>
<tr>
<td>Stores/Spare/Consumables.</td>
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</tbody>
</table>

Debtors outstanding for more than 6 months of which Considered Good  
Considered Doubtful  

Sundry Debtors/Receivables  
Provision for Doubtful Debts  
Balance +  
Other Debtors considered good  
Bills receivable

<table>
<thead>
<tr>
<th>Loans and Advances</th>
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</table>
| Advances Recoverable in Cash or kind for value received  
Advance Tax Payments etc |

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<tr>
<td>Cash in Hand</td>
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<tr>
<td>Cash &amp; Bank Balances</td>
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<td>---------------------------------------------------------</td>
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<tr>
<td>**Less Current Liabilities &amp;</td>
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<tr>
<td><strong>Provisions</strong></td>
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<tr>
<td>Current Liabilities</td>
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<tr>
<td>Provisions.</td>
</tr>
<tr>
<td>Net Current Assets</td>
</tr>
</tbody>
</table>

| **4. Miscellaneous Expenses**                            | Goodwill, Patents etc |
|                                                           | Preliminary and Preoperative Expenses |
|                                                           | Deferred Revenue Expenses |
|                                                           | Debit Balance in Profit & Loss account. |

| **Total Assets.**                                        |                      |

Other Points:

1. Read Auditors Report and Note to accounts carefully and ensure there are no major adverse comments. Obtain clarification wherever necessary and incorporate in the appraisal note.
2. Analyze the contingent liabilities reported in the notes to accounts and incorporate major adverse impact, if any, on the financials of the company in the appraisal note.
3. Tangible Net worth (TNW) is Capital PLUS Reserves other than Revaluation Reserves MINUS - Intangible Assets.
4. Net Working Capital (TNW) is the contribution from Long Term Sources to Working Capital Requirements (Current Assets).ie. Long Term Liabilities MINUS All Assets other than Current Assets. Or Current Assets MINUS Current Liabilities

**Profit & Loss Account- Structure & Analysis**
Credit Management by Banks

1. Sales/Income
   • Sales – Income from Operations
   • Other Income
   • Stock adjustments

2. Expenditure
   • Cost of Goods Sold- Raw Material Consumed and other Direct Expenses
   • Sales & Administrative Expenses
   • Financial Charges
   • Depreciation

3. Profit before Taxation
   • Taxation

4. Net Profit after Tax +
   Balance B/F from Previous Year

5. Total Profit available for Appropriation
   • Dividend
   • Dividend Tax
   • Transfer to Various Reserves
   • Balance Transferred to Balance Sheet

(See Schedules to P&L Account for income/expenditure included under various heads)

Analysis of Profit and Loss Account

• Analyze major variation, if any, in each head & obtain clarification wherever necessary.
• Read Notes to P&L account and Analyze comments of auditors affecting net profit such as -
• Changes effected during the period in the method of accounting Income and Expenditure
• Changes in the Method of Calculating Depreciation
• Statutory dues/Employees’ benefits etc not provided for
• Transfer from Reserves to Profit and Loss Account.
Assess the total impact of such comments on the working result – obtain clarification wherever necessary. Have considered opinion on the profitability of the unit - mention your observation in the appraisal note where ever necessary.

Some important figures from P&L A/c required for appraisal of the proposal/credit rating
Credit Management by Banks

- Sales/ Income from Operation
- Other Income
- Cost of goods consumed
- Net Profit after Tax
- Depreciation
- Interest on Term Loan & Working Capital
- Tax
- Cash Profit - Net Profit After Tax Plus Depreciation
- PBIT- Profit Before Interest and Taxes
- PBDIT- Profit before Interest Depreciation and Tax

Ratio Analysis &
Credit Rating Assessment on Financial Parameters

Financial Ratios

Debt Equity Ratio
- Without Quasi Equity
  Total Outside Liabilities (TOL)
  Tangible Net Worth (TNW)

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2.00</td>
<td>2.00 to less than 3.00</td>
<td>3.00 to less than 4.00</td>
<td>4.00 and above</td>
</tr>
</tbody>
</table>

- With Quasi Equity
  Total Outside Liabilities other than Quasi Equity
  Tangible Net Worth + Quasi Equity

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1.50</td>
<td>1.50 to less than 3.00</td>
<td>2.00 to less than 4.00</td>
<td>3.00 and above</td>
</tr>
</tbody>
</table>

Current Ratio

<table>
<thead>
<tr>
<th>Current Assets</th>
<th>Current Liabilities</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.33 and above</td>
<td>1.25 and above but less than 1.33</td>
<td>1.10 and above but less than 1.25</td>
<td>Less than 1.10</td>
</tr>
</tbody>
</table>

Percentage of TNW invested in Associate Concerns

Investments in Associate Concerns x 100
Tangible Net Worth
### Performance Ratios

**Rate of Growth in Sales or Gross Income – (%)**

\[
\text{(Sales of a year minus Sales of Previous Year) \times 100}
\]

**Sales of Previous Year**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% and above</td>
<td>10% and above but less than 20%</td>
<td>5% and above but less than 10%</td>
<td>Less than 5%</td>
</tr>
</tbody>
</table>

**Net Profit to Sales-(%)**

\[
\text{Net Profit after Tax \times 100}
\]

**Net Sales**

**General**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>4% and above</td>
<td>2.50% and above but less than 4.00%</td>
<td>Less than 2.50%</td>
<td>Loss</td>
</tr>
</tbody>
</table>

**Traders**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 5.00%</td>
<td>More than 2.00% up to 5.00%</td>
<td>More than 1.00% up to 2.00%</td>
<td>1.00% and below</td>
</tr>
</tbody>
</table>

**Cash Profit Ratio-(%)**

\[
\text{Cash Profit \times 100}
\]

**Net Sales**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00% and above</td>
<td>5.00% and above but less than 12.00%</td>
<td>Less than 5.00%</td>
<td>Loss</td>
</tr>
</tbody>
</table>

### Interest Service Coverage Ratio (No. of Times)

**Profit before Interest, Depreciation and Tax**

**Interest**

**General**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 4.00</td>
<td>More than 3.00 up to 4</td>
<td>More than 2.50 up to 3.00</td>
<td>2.50 and below</td>
</tr>
</tbody>
</table>

**Traders**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 4.00</td>
<td>More than 3.00 up to 4.00</td>
<td>More than 2.00 up to 3.00</td>
<td>2.00 and below</td>
</tr>
</tbody>
</table>

### Inventory+ Receivables/ Sales (No. of Days)

\[
(\text{Inventory} + \text{Receivables}) \times 365
\]

**Sales**
### Credit Management by Banks

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 90 days</td>
<td>90 days and above but less than 120 days</td>
<td>120 days and above but less than 180 days</td>
<td>180 days and above</td>
</tr>
</tbody>
</table>

**Return on Capital Employed (%)**

*Profit Before Interest* and Tax x100

*Capital Employed

*Interest, if any, paid on the Capital.

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.00% and above</td>
<td>5.00% and above but less than 15.00%</td>
<td>Less than 5.00%</td>
<td>Loss</td>
</tr>
</tbody>
</table>

**Sales to Fixed Assets (No. of Times)**

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Fixed Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.00 and above</td>
<td>2.00 and above but less than 4.00</td>
<td>1.00 and above but less than 2.00</td>
<td>Less than 1.00</td>
</tr>
</tbody>
</table>

**Gross Profit Ratio (%)**

*Gross Profit* x100

*Sales

**Rate of Growth in Gross Profit (%)**

(Gross Profit of the year minus Gross Profit of Previous Year) x100

*Gross Profit of Previous Year

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.00% and above</td>
<td>10.00% and above but less than 20.00%</td>
<td>5.00% and above but less than 10.00%</td>
<td>Less than 5.00%</td>
</tr>
</tbody>
</table>

**Debt Service Coverage Ratio (DSCR)- No. of Times**

*Net Profit after Tax + Depreciation + Interest on Term Loan

*Yearly Installment & Interest of Term Loan (Yearly Repayment Commitment

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>Very High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75 and above</td>
<td>1.60 and above but less than 1.75</td>
<td>1.50 and above but less than 1.60</td>
<td>Less than 1.50</td>
</tr>
</tbody>
</table>

**Turn Over Ratio**

**Inventory Turnover Ratio (No. of Times)**

*Sales

*Inventory

**Receivables (No. of Days) – Debtors Velocity**

*Sundry Debtors x 365
Sales
Creditors (No. of Days) - Creditors Velocity.
Creditors x 365
Purchases

Assessment of Credit requirements

There are mainly 3 methods for assessing the credit requirements
1. Turn Over Method for Credit Limits up to Rs. 5.00 Crore
2. Indirect method of Lending for Credit Limits above 5.00 Crore

Turn over Method:

Under this Method the Working Capital Requirement is assessed based on the PROJECTED SALES TURNOVER (PST). Therefore we have to ensure that the sales turnover projected by the applicant is realistic, based on past trend and attainable. If the PST is not based on past trend, the reason for giving such a high projection should be ascertained. The acceptance of the projection must be subject to convincing reason - otherwise the projection has to be reworked and reduced to an acceptable/attainable level. Once the projection is accepted the credit requirement is to be calculated as follows:

Working Capital Requirement: 25% of PST
Minimum Margin: 05% of PST
Bank Finance: 20.00 % of PST

DP can be regulated taking usual safeguards, level of Current Assets etc. This method may not be suitable to industries having long processing time. If the requirement under traditional method is more than the eligible Bank Finance under Turnover Method limit may be sanctioned under traditional method.

Second Method of Lending:

Under this method credit requirement is calculated based on the level of current assets and liabilities. It is to be ensured that the unit is not holding stock more than the required level and that non current assets are not included in the current assets.
Under this method the minimum margin (NWC) is 25% of the current assets. No margin is required for Export Receivables and LC bills discounting. If bills discounted with banks are treated as contingent liability and not included in the assets and liabilities disclosed in the balance sheet, this amount should be added back with receivables and
bank borrowing for working capital while analyzing balance sheet and calculating the credit requirements

➢ **Method of Calculation**

A. Total Current Assets  
B. Less Current Liabilities Other than Bank Borrowings  
C. Working Capital Gap- WCG (A-B)  
D. Minimum Margin (Minimum NWC) - 25% of Current Assets Excluding Export Receivables & LC Bills Discounted  
E. Actual NWC (Current Assets minus Current Liabilities including Bank Finance)  
F. C minus D – ie. Working Capital Gap minus Minimum Margin (Minimum NWC)  
G. C minus E- ie Working Capital Gap minus Actual NWC  
H. MPBF- F or G whichever is less.  
(No margin requirement for LC bills Discounting)

➢ **Cash Flow Method.**

For Seasonal Industries, finance under MPBF worked out as per the above two methods may not be sufficient.

In such cases their peak level requirement may be assessed and monthly permissible bank finance may be calculated based on cash flow/ cash budget.

**Deciding Nature of Facility:-**

MPBF is calculated based on total current assets and current liabilities. It may not be possible to create charge on some of the current assets - eg. Loans and Advances, Pre-paid Expenses, etc.

So the nature, amount and margin of credit facilities have to be decided based on the nature and amount of chargeable current assets like Inventory, Receivables etc.

**Pre sale working Capital Facility:-**

Credit limits like Packing Credit, ODH, ODP etc sanctioned against the pledge/hypothecation of inventory are pre sale working capital limit. **Overdraft on Book Debts and Bill Discounting facility** sanctioned against Receivables are Post Sale Working Capital Limit.
For ODBD facility we generally insist 50% margin and Debtors not older than 90 days only are accepted as security. Margin has to be fixed based on the value of security asset and limit sanctioned, subject to minimum stipulations.

Grant of loans towards working capital, without having any relevance to the equity investment of the borrower, his net worth and repaying capacity, without ensuring end-use of funds lent, etc., result in the funds becoming difficult to recover. The concern for recovery also lays down emphasis on properly securing the loan portfolio. The main modes of security by banks are discussed hereunder.

➢ **Secured loans:-**

There are many customers of a bank, who, are not so well placed and whose financial responsibility or income is not sufficiently strong to justify unsecured credit, or the amount of the credit the borrower would like to obtain is out of proportion to his net worth. It is usual for borrowers in this category to strengthen their credit obligations by judgment of some approved tangible security to support the loan. The bank may sell in the event of the borrower failing to pay his loan at the appointed time. We have, therefore, the collateral loan. AM in the latter case, it is not the borrower's credit that is the pivotal point, but the quality of the collateral.3 The question of security of loans are discussed below:-

Loans are secured for several reasons:-

1. The financial condition of the applicant for loan is not strong enough to justify an advance without security.
2. Some customers would borrow on a collateral basis rather than divulge to the bank their financial condition.
3. The borrower may feel that he has an obligation to honor and he may be forced to reply the loan.
4. Sometimes a security is furnished so that more favorable rate of interest may be obtained by the borrower.

➢ **Unsecured Loan:-**

An unsecured loan is granted by the bank after consideration has been given to the credit standing of the applicant and after the bank has been satisfied that the prospective borrower will be able to make repayment of the loan in a reasonable period of time which is usually determined at the time the loan is sanctioned. In
the case of unsecured advances the banker relies on the personal goodwill of his customer while his security depends upon the present condition and future prospects of the business of the borrower.²

In the USA, a large proportion of the loans made by commercial banks are unsecured. The American banks lend either for the manufacture or for the purchase of merchandise and the banks are repaid when the merchandise is sold.

In Great Britain, advances against the personal securities of the borrower supported by a guarantee are common and the experience of English banks in such types of advances has not been unsatisfactory.

In India however, unsecured advances constitutes not a large proportion of the advances made by banks. In the minds of Indian bankers, there has always existed a bias against unsecured advances and, therefore, they hesitate to run risks to any large extent. Even the Reserve bank of India has not favored clean advances to businessman enjoying cash credit limits against certain controlled commodities.³

In considering applications for clean advances the banker must satisfy himself:

(a) that the purpose for which the loan is required is likely to be remunerative and the product readily saleable,
(b) that the amount and period of the loan applied for and time of the application are appropriate to the purpose,
(c) that the applicant understands his business and the co-obligates, if any, are credit-worthily,
(d) that he has sufficient resources of his own for the expansion of the business and is not over-trading,
(e) that he owns sufficient landed and immovable property in the locality where he carries on business,
(f) that the applicant has no speculative tendencies and is reported to be a good pay master, and
(g) that the borrower will be able to return the money in short period and the loan will be able to return the money in short period and the loan will be used for genuine trade purpose.

In addition to the points mentioned above, the banker should satisfy himself on the following points:

(a) that the borrower has the legal capacity,
Credit Management by Banks

(b) if the borrowing is sought by an agent on behalf of his principal the agent has authority in the matter, and
(c) the purpose of the loan is within the terms of the Government's current credit policy as expressed in Reserve Bank's directive issued to banks from time to time.

One of the most important considerations in every advance is the position of the borrower, it is particularly important in the case of the unsecured advance. A banker requires security as a protection against unexpected default in the payment by the customers.¹

When a bank obtains a promote from a client whether single or joint, he is not obtaining any more than a promise from the client to the effect that he will make repayment on a given date, and the bank has to trust in the good faith of such client.²

➢ **Special Banking Services**:

Over the centuries, banking has evolved by deftly adopting to the needs of the time. The course of banking history from Lombardy to London is replete with instances of its willingness and ability to cope with new developments in the environment. One such coping strength of banking is its acceptance of automation in full measure.

Banks are not islands. They are an integral part of the society they serve. Consequently, banks in advanced countries are complex organization characterized by highly advanced countries are complex financial systems, very much a replica of advanced economic. Of necessity, banks respond to demands made on them together, process, analyze, financial information contained in trillions of data every day and make quick decisions. Banking is almost a daily necessity for a vast majority of any industrially developed society. The need for highly efficient, flawlessly effective, extremely fast (in most cases, instant real time money movements), and reasonable priced banking service can be met only through automation of banking operations.²

The sheer volume of transactions, the time value of money in wholesale banking (where the smallest unit may be US S 1 million) and the analysis of lending proposals of giant corporations based on applications of quantitative methods—all point to only one direction, i.e., automation of banks.

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² *Ibid*.
Banks have successfully used computers, micro electronics and telecommunication, to store, analyze and retrieve financial information in the form of pictures, words, impulses and digits, representing money. Telecommunications, to store, analyze and retrieve financial information in the form of pictures, words, impulses and digits, representing money or information relating to money, more reliably, quickly and economically.

The automation in the thirties was confined to adding machines and simple cash dispensers. The real computers were introduced in banks in the fifties and sixties. By the mid-sixties, almost all banks in developed countries had moved into the computer-banking era. Decimalization of currencies in most of the developed countries further accelerated the process of automation. Leading banks introduced on-line branch terminals-linked to their mainframe-instead of off-line terminals.\(^3\)

In terms of technological process, initial automation was essentially mechanical. Over the decades, it graduated to electrical devices. The third stage is that of electronic banking.

Automation in banks in advanced countries is omnipresent - be it retail banking (Personal market segment) or wholesale banking: be it acceptance of deposits or direct debits and payments. Computerization of accounts is not confined to large corporation borrowers or depositors. Today, it covers small business, wage earner and no-so-simple transactions like establishing letters of credit, syndication of loans, Euro Currency lending’s, investment banking, futures and options in forex business.

Cash dispensers popularly known as automated teller machines (ATMs) are the commonest and apparent manifestation of highly advanced automation in banks today. Using ATM, customers can withdraw specified amounts in cash from these machines round the clock. These machines have been installed outside the branch premises or at convenient public places. In some countries, the banks' customers can ascertain the balance and entries in their accounts, which are displayed in the visual display screen.

In collaboration with telephones and telecommunication authorities, some banks have introduced new telecast communication systems, called 'Videotext'. Through this system, member banks offer to their constituents, through the use of their (Customers') telephone and/or

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television screen, real time information on money and investments, securities, loans and other banking services. Customers, by linking this 'Videotext' to the bank's computer, can find out the balances and details in their account.

P.O.S. or 'Point of Sale' is yet another milestone in automation of personal segment banking. Bank customers while retail shopping at chain stores, supermarkets and petrol pumps, etc. need not pay cash or give cheques for goods and services purchased. All they need to do is to authorize an electronic transfer of the purchase amount from their (buyers') bank account to the sellers' banks account.

During the sixties, in the United Kingdom, introduction of M.I.S.R. (Magnetic Ink Character Recognition) on cheques helped a great deal in sorting out cheques in clearing. For credit vouchers, O.C.R. (Optical Character Recognition) was successfully used. Later, many countries the world over adopted these applications.'

B.A.C.S. (Bankers Automated Clearing Services) enabled bankers to settle their clearing transactions without recourse to papers and vouchers. At present, B.A.C.S. cover transactions like salary credits, bill payments, standing orders, direct debits, payment of insurance premia, rates subscription and mortgage repayments, etc.'

C.H.P.S. (Clearing House Auto Payment System) provides the facility of same day clearance in the banks. S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunication) system provides the unique facility of real time instant transfer of funds among a vast number of banks spread all over the world.'

V.D.U. (Visual Display Units) has revolutionized the decision-making process and capabilities of the bankers in developed countries. Foreign exchange dealers can, at a push of a button, see on their V.D.U. screen, foreign exchange spot and forward rates in different time zones, as far apart as London, New York, Tokyo, Frankfurt, Zurich, Singapore, Hong Kong, Bahrain or any other major financial nerve centre. Likewise, an investment banker, a lending banker or for that matter a merchant banker can call on the screen verified data, -comparative information, analyzed conclusions and programmed appraisals.

Automation in assets, funds and cash management of large corporate borrowers, depositors and investors is yet another steps forward: Computers now constantly process and analyze the flow of funds, yields assessment and comparative risk analysis; automatically withdraw the
lowest yielding securities below a pre-determined cut-off point, transfer
invertible released amounts to portfolio above an acceptable level of risk
and/or return.

All kinds of memory cards have taken banking by storm. The plastic
cards with indelible or crossable memory along with their
microprocessors, have enabled banks to pay their customers pre-
determined and allocated amounts against revolving limits or pay
amounts against prepaid amounts, Euro-card, Master Charge (U.S.
Credit Card), Access (British Credit Card), are few examples of extremely
successful applications of this concept.'

The growth of technology has changed the payment systems world over
during past decades. The introduction of Automatic Teller Machines has
given facility to the bank customers for banking beyond the banking
hours.

An ATM is a device located on or off the bank's premises to receive and
dispense cash round the clock. Customers can also use ATMs for
depositing cash, cheques, obtaining balance, obtaining statement of last
few transactions in his account, requesting cheques books, and payment
of card bills and for transferring funds from one account to another.

A customer who wishes to utilize the service of ATMs will have access to
it only with an ATM card. The ATM card consists of a personal
identification number (PIN), which is known only to the customer: A
customer who wishes to transact through the ATM will have to place the
ATM card in the slot before starting his operation and he will be able to
transact his business through interactive visual display unit and the
keyboard.2

There are two types of ATMs: (1) Exterior ATMs and (2) Interior ATMs
-Exterior ATMs are located in various places like shopping centers,
airports, railway stations with or without drive in facility, while the
interior ATMs are located within the bank premises. ATMs, which are
directly interactive with the Bank's Computers, are known as on-line
ATMs and the others are known as off-line ATMs. On-line ATMs require
the support of effective telecommunication facility.

In some foreign Bank's ATMs the conversion of currency is also possible.
Interactive and voice recognizer ATMs are also installed to facilitate the
customers to interface in multi-language.3

The Internet is a global network of networks. It is a conglomeration of

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1. Ibid.
smaller networks and other connected machines. Internet allows information about almost every topic, be it books, encyclopedias, countries, people, organizations, etc. In short, it is a system of smaller networks and other connected machines. Internet allows information about almost every topic, be it books, encyclopedias, countries, people, organizations, etc. In short, it is a system of computers, which allow user Computers the exchange of data, message, files, etc. with any of the millions of computer the world over having connectivity to Internet.

Internet has been around in different forms since late 1960s. Its precursor ARPANET was originally designed by the U.S. Department of Defense, in association with universities and research facilities. Initially, ARPANET was used mainly for communication technology related research and development, with scientists at various sites all over the world using this network to share their information. Through the next two decades it evolved into several other networks mainly used for military purposes. In 1989, these networks created for military purposes were dismantled and were replaced by NSFNET, the network of National Science Foundation and the infrastructure for these networks was made available to public at large. Now, the Internet is available around the globe to almost everybody. There are backbone computer networks, all over the world, which operate at very high speed and carry the bulk of the traffic. Other smaller networks are connected to these backbones systems. Therefore, Internet is not a physical place of brick and mortar but is an electronic link to the world of information through computers communicating with one another throughout the world.'

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but is an electronic link to the world of information through computers communicating with one another throughout the world.'

The information on the Internet and the opportunities to use these are growing at a very fast rate. Last few years have witnessed phenomenal growth in its use. There were approximately 5,00,000 computers or hosts connected to the Internet in 1990 which grew upto 4.8 million by 1995. At present about 60 million people are using it, which is expected to grow upto 300 million by the year 2002.

The VSNL has its main Internet Access Node at Mumbai. It is connected to the Internet Node at USA via Satellite Media. This Node is also connected to Internet Node in Europe via sub-marine Cable Media.

The VSNL Nodes at New Delhi, Calcutta, Chennai, Bangalore, Pune, Chandigarh, etc. are connected to the Internet Access Node at Mumbai through DOT provided inter-city links. The Internet Access Node of VSNL at Mumbai is also connected to VSNL's Gateway Switched Service (GPSS). Since, this GPSS is connected to Dot's. Remote Area Business Message Network (RABMIN), Domestic Packet Switched Network I-NET and high speed VSAT network. VNET, subscribers of all these networks also have an access to full range of Internet services.²

In addition to usual facilities like the electronic mail, Internet is a way which allows broadcasting information about organization/individuals, etc. It is a superb mode for disseminating information and allows easy access to the prospective customers.

With the use of specially created Web page(s), the banks can sell their products like Credit Cards, Home Loans, and their schemes; Internet saves a lot of money on long distance calls. It also helps in projecting an organization, improving public awareness about the products like some of the banks have been using it for propagating their Capital Issues. Essential information in areas like statement of policy, service information, etc. can be accessed by an employee on line from anywhere with the help of a simple browser. Interactive feedback forms can be designed and published over the web to gather customer information and feedback on various services.

Some of the banks are providing on-line account opening facilities to NRIs over the Internet. Recently, a new concept 'Cyber banking emerged which refers to the payments through Cards engineered by purchasers/buyers of products/services over interest.
Smart Cards:

Smart cards are prepaid cards giving entitlement to use of goods or services. Each time the card is used, the value of the goods or services received is decremented from the value on the card.

It is possible to combine all the above functions and offer an all-purpose card to the customer. It will be still more beneficial to the customers as well as the banks concerned, if banks in India choose to issue cards under a common banner, say, "INDIA CARD". One of the main reasons for the success of the NETS of Singapore was the coming together of the five major banks that dominated the domestic banking sector, which is worth emulating.²

The Smart Card looks exactly like, any other plastic card or an ATM card with an integrated circuit (IC Chip) installed. The IC contains memory, may contain a processor, and communicates with the external world through 4-5 contacts on the surface of the card. The size, position and utility of the contracts are specified by an international standard (ISO 7816), so that card can interact with a variety of equipment.

There are two main types of smart cards: Intelligent Memory Chip and microprocessor cards. Memory smart cards have been around for several years, being used in pay phones, identification, access control, voting, and other applications. There are used to store a value, which is counted down until the card is exhausted and then thrown away. Recharging the card for reuse is not usually allowed, as then the financial security of the system may be compromised. The main security risk is from counterfeiting.

Processors smart cards are the most advanced, and are ideally suited for banking and financial applications where reuse of the card is allowed. These cards have a built-in memory and the processor; along with an operating system perform' the financial operations. As in the cards intelligence is built-in, they can protect themselves against fraudulent operations. This protection is based on the Data Encryption Standard (DES), which is accepted by the International Standard Organization as safe enough for protecting electronic funds transfer (EFT) transactions. For Smart Cards ISO 781.6 defines the physical -features and the communication protocols. ISO 10202 defines the security features.

The card has space for several "electronic purses", each for the storage of an amount. These can be used for different types of accounts of the user. In addition there is space for -user data such as address, branch where the user has his account, and even the last 30 to 50 transactions.³
In India, the scope for the development of this advanced technology is vast because we do not have the telecommunications infrastructure to support it fully on-line system. In addition we do not have a large installed base of the obsolete magnetic strip based ATMs and EFTPOS terminals that would force us to persist in using that technology.

★ Credit Card:

Generally, a bank enters into an agreement with its customer and issues the customer a credit card. A credit card is small plastic card around 8.5 cm. by 5.5 cm. It has the name and the account number of the holder embossed on it. In addition, the date up to which the card is valid will also be embossed and a specimen signature panel on the reverse. The card issuer should normally get the card holder to sign on the specimen signature panel in his presence before parting with the credit card. A card holder is also given the list of shops and reverse. The card issuer should normally get the card holder to sign on the specimen signature panel in his presence before parting with the credit card. A paper contains self-carbonizing chemicals. Imprinting serves two main card holder is also given the list of shops and establishments in each city where the card will be accepted in lieu of cash. The limit up to which the card holder can make purchases in a month is also informed to the card holder; this limit is called the card-limit. When a card holder purchases or uses the service of an ME, he or she gives the card to the shopkeeper at the time of payment. The ME verifies the card for validity date and then check the booklet called "Hot list Bulletin". This "Hot list Bulletin" consist of all cards which have been lost, stolen, surrendered by customer or invalidated by the issuer. If the card is not hot listed, the ME will proceed to make a bill for purchases made. Each ME has a limit below which he can accept payment without seeking "Authorization". Such a limit is called ME's floor limit. The floor limit varies from ME to ME depending on their nature and location of the business. However, the card holder need not know the floor limit, nor does the ME have to know the card holder's limit. If the transactions exceed the floor limit, the ME calls up the card issuer who may authorize the transaction or may not. If the card issuer refuses to authorize the transaction, the ME may advise the card holder of the refusal of the issuer and may accept only cash instead of the card. The reasons for authorization refusal may be because of having intimation of the card having been stolen or lost, or the total value of transaction exceeding the card limit, arrears or default in payment by card holder and so on.'

Once authorization is received, along with the authorization code, or if the transactions value is below floor limit, the Mc will prepare the credit card voucher called charge-slip, which is a detailed bill of the purchases
made or services availed. This voucher, which is in triplicate, win have to be signed by the card holder. When the signature is being taken on the vouchers, the ME will retain the card with him. This is to avoid forgery in case the card is stolen, since it is difficult even for a skilled forger without a copy of the signature in front of him. After the credit card voucher is signed, the ME should verify whether the 'signature on the panel matches with the signature on the voucher:

The ME can refuse to part with the goods if the signature does not tally. After it is signed the ME will part with the goods along with a copy of the charge-slip. The ME uses what is known as an imprinter. Imprinted means that the image is transferred to the paper by applying pressure and passing the roller over on the card with the paper below it. While the roller passes with pressure over the card, impression of the name and account number is transferred to the voucher. Although the charge-slip is in triplicate, no carbon paper needs to be used as one side of purposes—one to avoid the mistakes in writing the names and account numbers (usually 12 or 16 digit long) and the second is to ensure that the voucher is indeed prepared using a card and is not a fictitious

The credit card holder should be vigilant and take care to note that the ME does not prepare multiple vouchers, which can be misused later. This is possible since the signature of the card holder will be available on one of the vouchers, which can be used for forging signatures on the remaining vouchers.'

The ME will collect all the charge-slip and present it to the issuing bank, which after verification, will credit the ME's account or pay cash, depending on the agreement between them. The issuing bank will retain the original copy of the credit card voucher signed by the customer. At the end of the month all the credit card vouchers are accumulated and arranged branch wise, customer wise, and their accounts debited with the total amount of their credit card Vouchers. The customers are then informed of the debit and requested to deposit cash or credit their account in a specified time, generally 10 to 15 days. Generally, the task of collecting the credit card vouchers and informing the respective branches of the extent of the use of the credit card is done at a centralized department. This is because the credit cards can be used at ME's all over the country irrespective of which branch the customer has an account and issued him/her the credit card. The other reason is that for authorizing transactions above the floor limit, the authorizing department needs to have information at a central place so that it has the required information for taking an appropriate decision as an

1. Ibid.p.196
incorrect refusal can lead to serious repercussions on customer service. Many card issuers being banks also allow withdrawals of cash for emergency purposes and levy a service fee for such withdrawals ranging from 24 p.a. to 36 p.a. Many banks also have credit cards which double up as ATM cards, thereby offering the credit card holder the availability of cash 24 hours a day at a reasonable service charge, which can become very handy in case of emergency. There are different types of credit cards such as charge card, debit card, credit card, smart card or chip card and restricted card/member card.

Use of Expert System:-

In the past few years, research in artificial intelligence has led to the development of "expert systems". An expert system is a high performance special-purpose system, which is produced by "capturing" and codifying the skill and knowledge of an expert using a computer language. The idea is that the resulting computer system can then provide the same level of service to a user as the original expert.

The most important component of an expert system is the knowledge-base (K-base), which contains all the "knowledge" in the domain used for making inferences. Waterman (1986) has pointed out that knowledge for an expert system can be acquired in several ways. One way is to adopt an observational approach, and analyze sources such as textbooks, examples and case studies. A second approach is to adopt an intuitive perspective, and have human experts analyze their own cognitive processes and derive a set of rules of thumb (or heuristics) for making decisions have human experts analyze their own cognitive processes and derive a set of rules of thumb (or heuristics) for making decisions.

There are problems in the implementation of each of these two approaches. The problem with the intuitive approach is its dependence on the expert to describe his or her knowledge in an easily understood manner. In practice, many experts make decisions based on intuition, and most of them find it difficult or impossible, to explain the decisions they make in a problem solving situation.

On the other hand, adopting an observational approach means that only a limited proportion of the problem space receives attention. This essentially means that other potential sources of expert knowledge are ignored. Even so, this approach does provide an accessible and easily codified source of decision rules that can form the basis from which more industry-specific expert systems can be developed. Industry-specific knowledge, usually in the form of heuristics, can be added to the K-base
of the general expert system so that the expert system constructed can be used to solve specific problems in the industry.'