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A PROCESS ANALYSIS OF LENDERS' USE OF  
FAS 95 CASH FLOW INFORMATION

DISSERTATION

Presented to the Graduate Council of the  
University of North Texas in Partial  
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Cheri L. Reither, B.S., M.S., CPA, CMA

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This study uses concurrent verbal protocol analysis to examine the decision processes of lenders as they evaluate the financial information of a loan applicant. Of specific interest is the lenders' use of Statement of Financial Accounting Standards Board No. 95 (FAS 95), Statement of Cash Flows, in that decision process.

The decision processes of eight subjects from two Dallas banks are examined. Subjects were presented with a loan package containing the financial information and other pertinent data of a commercial applicant applying for a working capital loan. Subjects were asked to think out loud during their decision process.

Of the eight subjects evaluated, only one failed to refer to or use cash flow information during his decision process. Of the seven subjects that used cash flow information, only two recalled that information during their final decision phase.

No significant patterns emerged to signify that lenders are using cash flow information in any standard way. However, one major finding is that lenders are not using FAS

95 cash flow information in conjunction with other financial statement data. The lenders did not compute any ratios incorporating cash flow data with itself or with other financial variables. Furthermore, the banks' software systems did not provide any ratios incorporating cash flow data. It seems that the cash flow statement is being regarded as an independent financial statement.

Seven of the eight subjects exhibited a sequential information processing strategy (i.e., they examined financial information in the order in which it was provided). These subjects did not actively seek out cash flow information, but instead processed cash flow information as part of their sequential processing of other financial statement data. The subject that used a directed search strategy was the only subject that actively looked for cash flow information during his decision making process.

Since this study is exploratory, the results should be perceived as a first step towards gaining an understanding of how cash flow information is being used by lenders. Furthermore, the results could be a function of the characteristics of the company used as a loan applicant.

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## CHAPTER 1

### INTRODUCTION TO THE STUDY

In November 1987 the Financial Accounting Standards Board (FASB) issued FASB Statement No. 95 (FAS 95) "Statement of Cash Flows." The primary purpose of a statement of cash flows is to provide relevant information about the cash receipts and cash payments of an enterprise during the period (FAS 95, para. 4). If used in conjunction with related disclosures and information in other financial statements, the cash flow statement should help investors, creditors, and others assess the enterprises's ability to 1) generate positive future net cash flows, 2) meet its obligations, and 3) pay dividends.

Accounting researchers have used empirical methodology to examine the usefulness of cash flow information in three major decision contexts: (1) capital market effects of cash flow data, (2) predicting future cash flows, and (3) predicting financial failure.<sup>1</sup> Few studies have incorporated an analysis of the usefulness of FAS 95 data.

Although researchers have demonstrated that cash flow information is or could be "useful," there is still a lack

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<sup>1</sup>For a comprehensive review of the literature on the usefulness of cash flow data see Neill et.al. "The Usefulness of Cash Flow Data: A Review and Synthesis." *Journal of Accounting Literature*, Vol. 10, 1991, pp. 117-150.



of understanding on how major user groups actually incorporate cash flow information into their financial decisions. Therefore, a fundamental question of interest in this research is: "How is cash flow information actually used?" Although there are other user groups, creditors will be the focus because to insure the return of their initial investment, as well as a return on that investment, creditors must rely on a firm's ability to generate positive future cash flows (Klammer and Reed 1990). Thus, the major purpose here is to examine how FAS 95 cash flow information is used by creditors. Ideally, the requirements of FAS 95 should aid creditors in their decision on a client's credit worthiness. If not, information on how cash flow information is, or could be used, could help by providing suggestions for modifications of the cash flow statement.

Concurrent verbal protocol analysis will be used to examine the decision processes of lenders as they evaluate a potential debtor. Protocols consist of verbalizations of mental activities and observations of other activities by individual decision makers during problem solving (Newell and Simon 1972). Lenders will be provided with the financial information of a hypothetical loan applicant and will be asked to think aloud while they evaluate the information. The tape-recorded protocols will be evidence of the lenders' decision making behavior.

The remainder of this dissertation will proceed as follows. Chapters 2 and 3 consist of literature reviews. Chapter 2 provides a review of cash flow research in accounting, while Chapter 3 presents an examination of the literature in the commercial lending area as it relates to FAS 95. These literature reviews are followed by Chapter 4 which contains an explanation of the motivation behind the research. In Chapter 5, verbal protocol analysis is explored and why it is an appropriate methodology to use explained. Next, Chapter 6 provides a description of the study and is comprised of: (1) research questions, (2) explanation of theory, (3) development of the coding scheme, and (4) research design. This is followed by Chapters 7 and 8 which provide the results of the research and conclusions, respectively.

## CHAPTER 2

### CASH FLOW RESEARCH IN ACCOUNTING

Accounting researchers have focused on three major issues relating to the usefulness of cash flow information. These issues can be divided into three research areas: (1) capital market/information content studies, (2) cash flow prediction studies, and (3) financial failure prediction studies. All three areas will be reviewed below.

#### Capital Market/Information Content Studies

Prior to 1986, at least three studies examined the relative association of cash flows and earnings with security returns. Since cash flow measures were not provided in financial statements, the authors of these studies developed surrogates for cash flow variables. For the most part, these early studies failed to detect information content in cash flow data.

Ball and Brown (1968) and Beaver and Dukes (1972) measured operating cash flows as accrual operating income plus depreciation, depletion, and amortization. Ball and Brown found that cash flow, as compared to net income and EPS, was not as successful in predicting the signs of stock return residuals. Similarly, Beaver and Dukes found that the association between security returns and unexpected earnings is higher than that between security returns and

the surrogate for unexpected cash flow. These studies have been criticized for the surrogate that was used to measure cash flow and for the failure to test for the incremental information content of cash flows.

Using a cash flow surrogate based upon working capital, Patell and Kaplan (1977) tested for the incremental information content of cash flows relative to accrual earnings. The percentage change in working capital from operations was used as a measure of unexpected cash flows. Results failed to demonstrate information content of this measure beyond accrual earnings. This study has been criticized by Christie et al. (1984) who suggest that results which show insignificant incremental information content may be attributable to the high correlation between working capital from operations and earnings.

The stock return association studies of 1986 and later years have generally concluded that earnings provide information that is not contained in cash flows alone. To overcome the weaknesses of previous studies, the authors used refined definitions of cash flows and alternative income disaggregations in their examination of incremental information content.

Wilson (1986) used data from the Statement of Changes in Financial Position adjusted for current accruals to measure cash flows. He investigates the incremental information content of accruals over cash flow for the 1981-

82 period by updating cash flow expectations for the year-end earnings announcement. Using daily returns, Wilson measures the cross-sectional market response to incremental cash flow information released at the 10K filing date. Wilson finds incremental information content for current, but not for long-term accruals, beyond that contained in operating cash flow data alone.

In a later study, Wilson (1987) investigates whether "accrual and funds" components of earnings released around the annual report/10-K SEC filing date have incremental information content beyond earnings. He finds incremental information content when funds are defined as cash flow from operations, but not when funds are defined as working capital from operations. In addition, Wilson finds that for a given amount of earnings, the market reacts more favorably the larger (smaller) are cash flows (accruals).

Rayburn (1986) addresses the question of whether accruals provide information to aid investors' estimation of future cash flows over and above the cash flow information contained in financial statements. Rayburn asserts that if accruals have no association with security returns, given the association of returns with operating cash flow, then one may question whether the accrual adjustment process significantly enhances investors' ability to assess the future cash flows of an enterprise as asserted by the FASB in "Statement of Financial Accounting Concepts (SFAC) No. 1

and 5." Cross-sectional results for the twenty-year period 1963-82 show that there is an association between cash flows and abnormal returns, as well as an association between aggregate accruals and abnormal returns.

Bowen, Burgstahler, and Daley (1987) examine the incremental information content of cash flows and accruals from two different perspectives. In the first perspective, they focus on accrual accounting and investigate whether cash flows provide incremental information beyond accruals. In the second perspective, they focus on cash flows and investigate whether accruals provide incremental information beyond cash flow information. From the accrual perspective, results suggest that cash flow data does have incremental information content 1) relative to that contained in earnings and 2) in addition to that contained in earnings and working capital from operations. From the cash flow perspective, results suggest that accrual data, jointly and separately, have incremental information content in addition to that contained in cash flow data alone.

Bernard and Stober (1989) extend Wilson's (1987) study by extending the test period from the fourth quarter of 1981 and 1982 to the fourth quarters of 1977-1984. Bernard and Stober find Wilson's discovered "preference" of cash flows over accruals to be period specific. They conclude that the disaggregation of net income into cash from operations and

accruals does not provide additional information content beyond net income.

Livnat and Zarowin (1990) are the first to examine the information content of the three components of cash flows prescribed by FAS 95. Specifically, they investigate whether the components of operating, investing, and financing activities exhibit differential associations with stock returns. Using data reported on the balance sheet, the income statement, and the statement of changes in financial position, Livnat and Zarowin estimate cash flow components of operating, investing, and financing activities required by FAS 95. These estimates are used to assess the association between the unexpected components of cash flows (scaled by market value of equity at the beginning of the year) and security returns. Data is obtained for the period 1973-1986 for firms with December 31 fiscal year ends.

In contrast to earlier research discussed above, Livnat and Zarowin find that the disaggregation of net income into cash from operations and accruals does not contribute significantly to the association with security returns beyond the contribution of net income alone. However, they find that there is informational content in the disaggregation of net income into accruals and components of cash flows from investing, financing, and operating activities as compared to the information content of earnings alone. Further disaggregation of financing and

operating cash flows into their individual components (e.g., cash outflows for principle payments, cash inflows from customers) significantly improves the degree of association. In contrast, Livnat and Zarowin find no evidence of differential association across components of investing cash flows.

Livnat and Zarowin's study is limited because they were forced to approximate the FAS 95 cash flow variables by using pre-FAS 95 income statement, balance sheet, and statement of changes in financial position data provided by Compustat. If these approximations are not representative of actual FAS 95 data, their results must be considered inconclusive. In addition, their study conforms only to the "direct" method in FAS 95 of presenting cash flows from operating activities. This focus on the direct method eliminates extension of their results to companies employing the indirect approach. Under the direct method, gross cash inflows and outflows from the main operating activities of the enterprise are reported to arrive at cash flow from operating activities. Examples of operating cash flows are inflows from customers and outflows to suppliers and employees. In contrast, under the indirect method net income is adjusted for such things as noncash items, and changes in receivables and payables, to arrive at cash flow from operating activities.



To summarize, early capital market researchers employing crude cash flow measures consistently failed to detect incremental information content [e.g., Ball and Brown (1968), Beaver and Dukes (1972), Patell and Kaplan (1977)]. By using more refined cash flow definitions and more sophisticated empirical methodologies, later researchers found mixed evidence regarding incremental information content for cash flow measures [e.g., Wilson (1986, 1987), Bowen Burgstahler, and Daley (1987), Bernard and Stober (1989), Livnat and Zarowin (1990)].

#### Cash Flow Prediction Studies

Financial statement users are interested in an enterprise's cash flows primarily as they affect their future cash flows. The FASB (1978, para. 37) relates the dependence of users' cash receipts on the cash flows to the firm as follows:

Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds of the sale, redemption, or maturity of securities or loans. The prospects for those cash receipts are affected by an enterprise's ability to generate enough cash to meet its obligations when due and its other cash operating needs, to reinvest in operations, and to pay cash dividends and may also be affected by perceptions of investors and creditors generally about that ability, which affect market prices of the enterprise's securities. Thus, financial reporting should provide information to help investors, creditors, and others assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise.

The FASB (1978, para. 49) further states that accrual earnings are useful in predicting future firm cash flows, and are also a better predictor of future firm cash flows than are current cash flows. Thus, the FASB is prescribing a relation between earnings and future firm cash flows, as well as a relation between earnings and future investor cash flows. Researchers studying the predictive abilities of cash flows have set out to test the FASB's assertion by ascertaining whether accrual-based earnings numbers or current cash flow numbers are better predictors of a firm's future cash generating abilities.

Bowen, Burgstahler, and Daley (1986) and Greenberg, Johnson and Ramesh (1986) use firm cash flow and earnings to predict future firm cash flow. Bowen et al. (1986) test the FASB's assertion that accruals are superior to historical cash flow in predicting future cash flow by testing the performance of alternative predictors of future cash flow. They include among definitions of cash flow both "traditional" measures that include simple adjustments to earnings data [i.e., net income plus depreciation and amortization (NIDPR) and working capital from operations (WCFO)] as well as "alternative" measures that incorporate more extensive adjustments [i.e., cash flow from operations (CFO), cash flow after investment but before financing (CFAI), and change in cash (CC)]. Using each of the cash flow variables (i.e., NIDPR, WCFO, CFO, CFAI and CC), Bowen

et al. compare the ability of the variable to predict itself (i.e., random walk model) with the ability of other flow variables to predict the variable. They find that for four out of five cash flow variables (NIDPR, WCFO, CFAI, and CC) random walk models (i.e., using the variable to predict itself) predict the cash flow variable as well as (and often better than) models based on other flow variables. An exception to the general pattern is that NIDPR and WCFO appear to be better predictors of CFO than CFO is of itself. Overall, the authors conclude that their findings do not support the FASB's assertions that earnings provide better forecasts of future cash flows than do cash flow measures.

Greenberg et al. (1986) predict CFO one to five years into the future by using current CFO and NI as alternative predictors. For each sample firm, two ordinary least squares regression prediction models were constructed. The first used earnings and the second used CFO based on the FAS 95 indirect method to predict CFO one to five years into the future. The results show that in four of the five prediction intervals, NI outperformed CFO in a statistically significant manner. This result was confirmed in additional tests on a reduced sample constructed to alleviate autocorrelation problems. In addition, Greenberg et al. examined the performance of two multiyear predictive models. One model used the two prior years and the second employed three prior years in the prediction of CFO. The NI models

outperformed the CFO models in both the two- and three-year time horizons. Therefore, Greenberg et al.'s findings support the FASB's position that earnings numbers provide better forecasts of future cash flows than do cash flow numbers.<sup>2</sup>

Studies assessing the ability of current cash flows and earnings to predict a firm's future cash flows have produced inconsistent results. According to the FASB, earnings are a better predictor of cash flows than cash flows are of themselves. Bowen et al.'s (1986) research provides evidence inconsistent with the FASB while Greensberg et al.'s (1986) position is consistent with the FASB. Although these studies do address the general usefulness of cash flows for decision making, they do not address the question of decision usefulness in any particular decision context.

#### Financial Failure Prediction Studies

Cash flow information has received considerable attention in the literature on prediction of financial failure. Insolvency, the concept underlying failure events, is a cash concept (Neill et al. 1991). Quite simply, firms are deemed insolvent when they have insufficient cash to pay their obligations that are due. Beaver (1966), using net income plus depreciation to approximate cash flow, used dichotomous classification and likelihood ratio tests to

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<sup>2</sup>This conclusion seems logical given that net income is a smoother of cash flow numbers.

examine the predictive ability of 30 common financial ratios. His sample consisted of matched pairs of 79 failed and nonfailed firms. Beaver found that cash flow divided by total liabilities is a statistically significant univariate predictor of failure.

Largay and Stickey (1980) were the first to use CFO in the context of failure prediction (Neill et al. 1991). They performed a case study of W.T. Grant and Company which included an examination of trends in CFO, NI, and WCFO prior to its bankruptcy. They found that CFO was a more timely indicator of the subsequent bankruptcy petition because it revealed a declining trend several periods before NI and WCFO.

Casey and Bartczak (1984, 1985) examined 60 bankrupt firms drawn from the years 1971-82. A control group of 230 firms was randomly selected within matched industries for the same test period. Using discriminate analysis and logistic regression bankruptcy prediction models, Casey and Bartczak tested the significance of CFO, CFO divided by current liabilities, and CFO divided by total liabilities. The 1984 study focused on the univariate predictive ability of the three CFO ratios. The results failed to show that CFO measures are useful univariate predictors of bankruptcy. The 1985 study focused on the marginal contribution of the CFO ratios in a model with six traditional accrual-based financial ratios. The inclusion of CFO ratios improved

explanatory power, but did not increase the model's predictive accuracy.

Gentry, Newbold, and Whitford (1985a) examined a sample of 33 bankrupt or liquidated firms during the 1970-81 period and a control sample of 33 nonfailed companies matched by industry, size, and sales. Using logit, the joint ability of a seven-component cash flow model to predict failure one, two, and three years in advance was investigated. They found the resulting logit model to be statistically significant. However, a dividend cash flow component was the only statistically significant variable. CFO is the sum of three components that collectively generated insignificant results. These results, which demonstrate a lack of predictive ability of CFO, are consistent with those of Casey and Bartczak (1984, 1985).

In two follow-up studies, employing the same sample used earlier, Gentry, Newbold, and Whitford (1985b, 1987) examine the predictive ability of a 12-component cash flow model and a model comprised of nine traditional financial ratios. Consistent with their earlier study, Gentry, Newbold, and Whitford find dividends to be the only statistically significant cash flow predictor of bankruptcy for one, two, and three years prior to failure. They find the capital investment and receivables cash flow components to be significant one year prior to failure. In analyzing incremental effects, it is revealed that the cash flow

variables contribute more to a combined model's descriptive ability than do the traditional accrual-based financial ratios.

Gombola *et al.* (1987) examine 77 bankrupt and 77 nonbankrupt firms during the period 1967-1981. Noting the lack of significance demonstrated in prior research, Gombola *et al.* were interested in whether the usefulness of CFO in predicting failure depends on the time period examined. Using a one to four year prediction interval, they examine one CFO ratio and eight traditional ratios. Comparing CFO's contribution in models containing traditional ratios in early years (1967-1972) and later years (1973-1981), Gombola *et al.* find that CFO does not contribute explanatory power or predictive ability to the models during either time horizon.

Bahnson and Bartley (1991) are the first to use the requirements of FAS 95 in a failure prediction study. They define failure as insolvency and include bankruptcy, troubled debt restructuring, and other default events. Firms that had technically defaulted on debt covenants were treated as a separate category in their analysis. Bahnson and Bartley examine the predictive ability of an eight-variable cash flow model that contains both current year and trend measures for operating, investing, and financing cash flows.

Bahnson and Bartley use a sample consisting of 1,754 solvent firms and 119 firms that had experienced one or more of the failure events. The performance of the Bahnson and Bartley eight variable cash flow model was compared with two benchmark models. One benchmark model was developed from a long list of traditional financial ratios. The other benchmark model was the one used by Casey and Bartczak (1984, 1985). It was determined that the Bahnson and Bartley eight variable cash flow model offers a superior fit and outperforms both benchmark models in terms of predictive ability when known costs of misclassification are considered. In addition, operating, financing, and investing cash flow variables were found to be statistically significant in the cash flow model.

In a comprehensive review of several failure prediction studies, Neill et al. (1991) find that, CFO by itself is an inadequate predictor of failure. Casey and Bartczak (1984) explain that CFO does not predict well in a univariate setting due to the large number of firms that have poor cash flow but do not fail. However, multivariate settings have produced mixed results. In those settings, CFO's usefulness depends on the other variables used as predictors and on the definition of failure employed. Positive CFO results appear only when failure is defined more broadly than bankruptcy and when nontraditional financial measures are also included as predictors.



Neill et al. (1991) find that other cash flow components offer much stronger evidence than CFO. For example, investment and dividend cash flows provide consistent, statistically significant results in the studies of their ability to predict financial failure. Other funds flow measures, such as NI and NI plus depreciation, also generate fairly consistent positive evidence and cannot be dismissed when listing useful financial predictor variables.

Since the failure prediction studies examine the usefulness of cash flow information in a specific decision context, they could be relevant to creditors in lending decisions. However, the aggregation of firms and the use of summary cash flow variables may cause these studies to be somewhat unrealistic in actual lending scenarios.

#### Summary

Overall, the above empirical accounting studies have provided mixed evidence concerning the usefulness of cash flow information. In fact, the capricious findings in the cash flow literature have prompted researchers to investigate reasons for the inconsistencies. After a literature review, Neill et al. (1991) conclude that while operating cash flow data "has been shown to be useful in several studies, . . . the inconsistency of the evidence suggests that the usefulness of cash flow data may be highly contextual." They further suggest that the condition of the

economy and the state of the firm influence the usefulness of operating cash flow data.

Recently, Reed, Klammer, and McGowen (1991) offer an alternative explanation for the inconsistent empirical results appearing in the cash flow literature. They suggest that the method used by researchers to calculate operating cash flows has introduced an element of noise into the data which has contributed to the observed inconsistencies. Their results indicate that while calculating operating cash flows creates no persistent positive or negative bias, errors of a material nature can be prevalent. A change in the reporting entity, created by either an acquisition of a new subsidiary or the divestiture of an old component of the company could be one possible cause of misspecifications in operating cash flow variables. Finally, they posit that the noise factor created by misspecified variables is significant enough to raise questions about the validity of many of the prior cash flow usefulness studies.

While all of the studies examined above address the issue of the usefulness of cash flow information, they fail to determine how and if investors, creditors, and others actually use cash flow information. Furthermore, they do not attempt to determine if users believe that cash flow information is useful.

## CHAPTER 3

### CASH FLOWS AS THEY RELATE TO COMMERCIAL LENDING

This chapter consists of a review of selected commercial lending literature published subsequent to FAS 95. Articles from The Journal of Commercial Lending will be reviewed to gain an understanding of the type of information that lenders desire. This literature also provides information about lenders' perception of the decision usefulness and relevance of cash flow data.

Kemp and Overstreet (1990) used a questionnaire to examine the information needs of commercial lenders. Kemp and Overstreet posit that bankers have information needs which they share with other user groups, including equity investors, but they also have unique needs. In a commercial lending decision lenders must have information so that they can assess whether the bank can expect to be repaid, when that repayment will occur, and whether there is sufficient security if the loan is not repaid. According to Kemp and Overstreet (1990):

The banker must first understand the borrower's current earnings/cash generating process, including details on the borrower's operations, assets, and financing. Second, the banker must understand how the earnings/cash generating process might change in the future. Third, like all users of information, the banker must understand the accounting definitions and the

accounting processes and procedures that generate the information.

Kemp and Overstreet found that the most important information from the lender's perspective is the current debt position of the borrower and the flow of funds (i.e., sources and uses of funds-working capital/sources and uses of funds-cash) to meet these obligations. The nature and character of the borrower's liquidity, cost of inventories, and allowance for doubtful accounts are also important to the lender. The quality of inventories and receivables can be a collateral or risk issue but, more important, affects the firm's cash flow through realization and collection of sales.

Other important factors found by Kemp and Overstreet in rank of importance are change in accounting method, consolidation information, marketable securities, depreciation, and breakdown of inventories. Based on the importance of these factors, Kemp and Overstreet assert that lenders concerns go beyond the liquidity element of marketable securities. It appears that lenders are also concerned with the methodology of the financial statements as they struggle to understand a borrower's true economic status.

Finally, Kemp and Overstreet found that the least important pieces of information were employee morale, nonaudit auditor services, number of employees, description of major plants, maintenance and repair expenditures, and

company directors. Intangible factors which affect the value-generating process of the borrower indirectly appear less important than some of the more tangible, direct factors such as inventories. Although these intangible items affect a firm's performance, they are often difficult to interpret in loan decisions. In addition Kemp and Overstreet found that commercial lenders had relatively little interest in management forecasts, budgets, and expenditure plans. In other words, commercial lenders primarily use accounting information to evaluate the present and past operations of the borrower as opposed to using it in evaluating the borrower's future.

In contrasting lenders' needs with investors' needs, Kemp and Overstreet found that commercial lenders view earnings as a residual which only indirectly affects the loan decision. Kemp and Overstreet base this conclusion on a comparison of the results of their study with results of Chandra (1974) and Buzby (1974). In Kemp and Overstreet's study bankers ranked primary and fully diluted EPS 34th out of 48 pieces of information. In the Chandra and Buzby studies, investors ranked these same items 9 out of 39 and 7 out of 38, respectively.

In conclusion, Kemp and Overstreet state that "given the importance of the commercial loan decision, it is important that the accounting profession better understand and meet lenders' particular information needs."

Richardson (1991) begins by emphasizing the financial failure of W.T. Grant Co. In 1975, W.T. Grant, this nation's then largest retailer, declared bankruptcy. The company had shown a net profit every year from 1970-1973 and had shown a positive accrual cash flow (i.e., traditional cash flow of net income plus depreciation, amortization, and deferred taxes). However, it also had a negative cash flow from operations for 1970-1973. Richardson posits that if W.T. Grant Co. had provided cash flow information based on the direct method as suggested by FAS 95, that the potential bankruptcy would have been more evident before it actually occurred.

The major purpose of Richardson's article is to explain the requirements of FAS 95 to lenders. She presents advantages of both the direct and the indirect methods. Advantages of the direct method are the ability to compare like operating income and expenses of similar companies and the ability to better compare those items annually. Advantages of the indirect method are its highlighting of the differences between net income and net cash from operating activities and the general perception of its being less expensive to implement. Richardson concludes by stating that regardless of whether the direct or the indirect method of reporting cash flows from operations is used, the financial statement user is being far better

served by FASB Statement No. 95 than users of financial statements have ever been before.

Sliwoski (1991) highlights the use of the statement of cash flows as a powerful tool for analyzing ongoing financial operations of small to medium-sized closely held business. Since closely held businesses usually obtain their long-term financing from lenders, while large publically traded corporations can obtain their financing in organized equity markets, Sliwoski chooses to focus on the former.

Sliwoski believes that the major financial issue in small to medium-sized closely held businesses is cash flow management. He stresses that a basic understanding of the operating cycle, gross cash flows, permanent working capital, matching of cash sources and uses, and the competing business needs for cash generated is critical to understanding the finances of a closely held business and to evaluating the cash flow management abilities of business owners.

In discussing FAS 95, Sliwoski states that he prefers the indirect method of cash flow presentation over the direct method. According to Sliwoski, the indirect method shows separately the absolute amount of cash generated from operations during the period, or gross cash flow (Profit after taxes + depreciation and other noncash changes). Once gross cash flow is computed, he believes that the statement

shows the extent to which the five competing business needs for cash are satisfied: (1) permanent working capital, (2) seasonal working capital, (3) net fixed assets, (4) principal payments on debt, and (5) dividend payments to owners.

In summary, the commercial lending literature highlights the importance of information that enables lenders to assess the cash generating ability of borrowers. Furthermore, the desire for cash information ranks higher for lenders than for other users of financial information. This lends credence to the use of lenders in the study of the usefulness of FAS 95 cash flow data.



## CHAPTER 4

### MOTIVATION FOR THE STUDY

Based on the cash flow studies in accounting and the commercial lending literature, it cannot be disputed that cash flow information is important. Accounting studies have provided evidence of the usefulness of cash flow information [e.g., Wilson (1986,1987), Rayburn (1986), Bowen Burgstahler and Daley (1987), Livnat and Zarowin (1990)]. Commercial bank journals have published articles requesting the accounting profession to provide cash flow information and have commended the FASB on the issuance of FAS 95 [e.g., Kemp and Overstreet (1990), Richardson (1991), Sliwoski (1991)]. However, to date, there is virtually no evidence about the actual use of cash flow information in particular decision contexts. If cash flow information is useful, it must be used, but how?

This study is motivated by the virtual absence of very basic information regarding the use of cash flow information by lenders. It should not be assumed that lenders actually use cash flow information according to textbook prescriptions. In a study using bank lenders and FAS 95 data, Klammer and Reed (1990) state that a limitation to their study is that measurement error may have occurred. They state:

The results reported in the study are to an extent a function of the cash flow questions asked the subjects. If the information pertaining to cash flows that is gathered from answering the questions is not relevant input into a bank analyst's decision-making model, then the results, however statistically significant they may appear to be, must be considered inconsequential.

Based on an examination of the actual credit granting decision processes of lenders, I will provide evidence regarding the use of cash flow information. Among other things, this evidence can be used to develop relevant variables for use in later experimental studies on the decisions made by lenders.

This study is also motivated by the shallowness of the commercial banking literature in regards to the use of cash flow information by lenders. For the most part, the literature simply describes the requirements of FAS 95 without any prescriptions for its use. Analysis might show that lenders are using cash flow information to its greatest potential and that the literature is just lagging behind actual use. However, if this is not the case, this study could provide lenders with some valuable insights as to the use of cash flow information in their lending decisions.

## CHAPTER 5

### METHODOLOGY: A REVIEW OF PROTOCOL ANALYSIS

Concurrent verbal protocol analysis (hereafter verbal protocol analysis) is chosen to examine how lenders use cash flow information in their lending decisions. As Libby and Fishburn (1977) observed, understanding how individuals make decisions has direct relevance for improving decisions. However, how does one research an individual's decision making processes? Larker and Lessig (1983) indicate that, "if the research goal is understanding a subject's cognitive processes, a process tracing procedure seems to be required." Verbal protocol analysis is one such process tracing procedure. Specifically, it is possible to use verbal protocols to trace the sequence of operations involved in information acquisition and to make inferences about the way the information is used (Klersey and Mock 1989).

Due to the lack of research in the area of lenders' use of cash flow information, this study is exploratory. As such, an appropriate methodology would be one that would not limit or control the number of variables. Limiting the variables in an exploratory study of this type could impair progress in the area of cash flow research. As Hoverland (1971) noted, the danger is that by limiting the variables,

the researcher also limits the responses. In such a case, the results are so limited that they are applicable only to a replicated study. Protocol analysis offers a possible solution to this problem.

Most quantitative methods that are popular in accounting research, would require first a definition and then controls for the cash flow variables provided to subjects. Traditionally, these "black box" strategies, such as the Lens Model [e.g., Brunswik (1952, 1956), Libby (1975), Ashton (1974), Libby and Lewis (1977)] have been employed to examine the stimulus-response patterns of decision makers (Klersey and Mock 1989). However, these models have circumvented the question of what actually goes on within the individual. Verbal protocol analysis can provide insights into decision processes as opposed to providing answers concerning decisions only.

Verbal protocol analysis can be criticized. Based on Ericsson and Simon (1984), Todd and Benbasat (1987) have identified three major criticisms of verbal protocol analysis: (1) veracity of protocols, (2) impact of collecting the protocols on the decision processes, and (3) the completeness of verbal protocols. In addition, a fourth criticism revolves around the degree of subjectivity of coding methods (Biggs and Mock 1983). These criticisms are discussed below.

### Veracity of Protocols

Nisbett and Wilson (1977) suggest that subjects do not have access to their higher order mental processes and cannot give accurate representations as to what they do, and more importantly as to why they do it. In short, they claim that people tend to tell more than they can know. Based on this argument, Nisbett and Wilson see little value in the use of such introspective methods as a tool to collect data about cognitive processes.

Nisbett and Wilson's argument is based on the analysis of several studies employing retrospective protocol analysis. Retrospective protocols require individuals to recall their processes *after* having performed a particular task. This retrospection results in difficulties of memory distortion, interpretation, and inability to recall facts which were not internalized in long term memory (Todd and Benbasat 1987). In contrast, concurrent protocols involve having subjects verbalize, or "think aloud," while engaged in a specific problem solving task. Therefore, in this study, Nisbett and Wilson's argument is diminished since concurrent protocol analysis will be used. Even so, concurrent verbalization is thought to be a more obtrusive method of collecting information on problem solving than are retrospective protocols (Russo 1978). This issue is addressed below.

### Impact of Collecting Protocols on the Decision Process

Nisbett and Wilson (1977) and Payne, Braunstein, and Carroll (1978) have argued that the act of verbalizing may change subjects' decision processes. Based on a review of the literature, Ericsson and Simon (1980) conclude that under specific conditions the use of concurrent verbal protocols will alter neither the problem solving process nor the time taken to solve the problem if collected in an unobtrusive "think aloud" manner. The basic condition is that the subject be required to report only the contents of short term memory (i.e., subjects are not required to explain why they are doing something). In addition, the task instruction must not require the subject to search for elements specified by the experimenter. The experimenter's role is to record the subject's verbalization of the process and intrude only at times when the subject becomes silent. This intrusion should simply be to remind the subject to verbalize his/her thought process.

In a more recent review of the literature assessing the reactivity and veridicality of verbal protocols, Russo, Johnston and Stephens (1986) find that in some instances verbalization lengthens response time. However, outcome measures of performance were not significantly affected. Their conclusions are based on seven studies that had a primary goal of testing whether concurrent verbal protocols significantly change a primary decision process.

In an accounting study Anderson (1985) tested whether the act of verbalizing would change subjects' decision processes. Fifteen subjects ranging in experience levels were asked to determine an offer price for each of a set of firms going public in the equity markets. Each subject completed 20 short cases, with 10 performed under verbalization instructions (verbal condition) and 10 in a silent manner (silent condition).

Anderson found that, on a primary task, as experience level increases, concurrent verbalization interferes less with ongoing problem-solving activity and performance. Subjects with less experience in solving a particular problem or doing a particular task seemed to experience a decline in performance when required to verbalize. This occurred even though the subjects were knowledgeable about the task itself. In addition, Anderson found that experienced subjects tended to verbalize more than less experienced subjects. Anderson found no relationship between experience and a slow-down effect on the process. All of the subject groups took longer, on average, to perform the task in the verbal condition as compared to the silent condition.

Experienced credit analysts and loan officers are used in this study. Therefore, Anderson's findings of an experience effect enhance the general findings that

verbalization does not have a significant effect on performance.

### Completeness of Protocols

Evidence cited by Ericsson and Simon (1980) indicates that under a variety of circumstances subject's verbal reports may omit information used to perform the task. Therefore, a considerable portion of the information utilized by the participant in making the decision will not be verbalized. Three factors that could affect the completeness of verbalization are: (1) the degree to which task processing is automatic, (2) the amount of cognitive strain imposed by the task, and (3) the need to recall information from long term memory in order to complete the task. Ericsson and Simon (1980) conclude that "incompleteness of verbal reports may make some information unavailable, but it does not invalidate the information that is present."

The automaticity argument is based on the observation that, with experience, the processes involved in a given task tend to become automatic, and are less subject to conscious control. Therefore, an automatic (overlearned) process has no intermediate results stored in short-term memory and thus the process steps cannot be verbalized (Todd and Benbasat 1987). Cognitive processes require that the outputs of intermediate operations be available in short-term memory, which allows them to be verbalized. To the



extent that a subject has automated processes prior to testing, the protocols will give an incomplete representation of the intermediate stages of problem solving.

Cognitive strain caused by a particular task may cause an individual to stop verbalizing or give very incomplete protocols. Norman and Bobrow (1975) assert that attempts to verbalize under these conditions will usually be evidenced by a gradual decline in performance rather than a complete overload of the processing system. This cognitive strain could cause a subject to become tired, hungry, and the like. Although these personal reactions could have some effect on the results obtained, they may make the task more representative of real behavior and task effects.

The third factor that has the potential for causing incomplete verbal protocols is the need to recall information from long-term memory. According to Ericsson and Simon (1984), such retrievals are fallible and highly dependent upon the cues that are given to initiate the recall. Accordingly, a task that relies extensively on detailed, unaided memory recall may be a poor candidate for protocol analysis. Therefore, to make this study more realistic, lenders will be permitted to use typical tools that aid them in long-term memory search (e.g. published industry financial ratios).

In summary, information contained in verbal protocols is based upon what is available from short-term memory. However, this criticism can be applied to virtually any method of self-reported data, including questionnaires and interviews both of which are accepted as valid data collection tools. Of all self-reporting data collection techniques, verbal protocols arguably provide more complete representations than most (Todd and Benbasat 1987). Verbal protocols should not be dismissed as irrelevant or inaccurate simply because they provide incomplete representations of problem-solving processes.

#### Subjectivity of Coding Procedures

Undoubtedly, coding of verbal protocols involves some elements of subjectivity. Simon (1979) has raised a number of theoretical and methodological problems associated with the objectivity and reproducibility of the coding of protocol data and the amount of effort required in coding. Several suggestions can be found in the literature for circumventing problems associated with coding.

First, there should be two (or more) coders. High intercoder agreement prior to undertaking any analysis of the data should be obtained (Payne 1976). Second, protocol coding schemes should be developed, at least in part, *a priori* to ensure that the findings of the study are not data-driven. Furthermore, protocols should be classified (coded) in the terminology of a theoretical model (Klersey

and Mock 1989). Finally, Todd and Benbasat (1987) suggest that coding is usually simplified by making multiple passes through the data when scoring. Examination of the protocol once for each operator in the coding scheme rather than making single passes to look for all data is suggested. Specific coding procedures for this study will be developed in Chapter 6.

### Summary

No methodology is without criticisms. Verbal protocol analysis provides important information helpful in understanding more about the processes used by subjects in making decisions. Traditional research methodologies are typically limited to the analysis of well-defined, well-structured tasks, whereas protocol analysis can be applied to ill-structured, ambiguous environments (Bouwman *et al.* 1987). One such environment is that of lenders as they wade through financial and other information provided by loan applicants.

In a review of auditing studies employing verbal protocol analysis, Klersey and Mock (1989) conclude by stating that "in spite of potential limitations, verbal protocol analysis is a useful tool which provides important insights (e.g., cues attended to and strategies used by auditors) into the understanding of audit judgment." I believe that this conclusion will also hold true in

understanding the decision processes used by lenders in the analysis of the credit worthiness of a potential debtor.

## CHAPTER 6

### THE STUDY

Klersey and Mock (1989) present a review of the use of verbal protocol analysis in auditing research. They reviewed seven studies which they grouped into three categories: (1) judgmental and decision process studies, (2) expert systems development studies, and (3) methodological studies. Klersey and Mock's critique of each study was centered around five basic questions:

1. Was the research problem clearly and adequately defined? And, were "scientific" hypotheses stated, either traditionally or as specific research questions?
2. Was the underlying theory presented, if such theory exists?
3. Were codes developed from general information processing theories?
4. Were standard research design principles employed? And, was the analysis appropriate to the study?
5. Did the research contribute to the fund of knowledge on audit judgment?

Klersey and Mock assert that this evaluation criteria is generic to any research project. However, question (3) is specific to studies employing protocol analysis. This study will be developed around Klersey and Mock's suggestions. Therefore, the following sections will be centered around Klersey and Mock's first four questions as

presented above. The contributions of the research are presented in Chapter 8. It should be noted that this study can be placed under the category of judgmental and decision process studies as reviewed by Klersey and Mock. Therefore, some of their suggestions from the critique of auditing decision process studies as they apply to the bank lending decision will be used.

### Research Questions

A major objective of financial reporting is to provide information that is useful in investment and credit decisions (SFAC 1, 1978). This objective requires a means of assessing the usefulness of information: What role does specific information play, and how does it help the user in arriving at a decision (Bouwman et al. 1987)? This study's research questions revolve around the usefulness of cash flow information to lenders in a bank lending decision. Campbell (1984) states that the task of measuring usefulness of information can be approached in numerous ways:

1. Studying perceptions of information usefulness or importance.
2. Studying the predictive ability of the information.
3. Studying the utilization of information items in decision processes.
4. Studying the value of information in the information economics sense, as measured by improvement in performance.
5. Studying "information content" as indicated by capital market reactions.

As discussed earlier, most accounting studies attempting to ascertain the usefulness of cash flow information fall into categories (2) and (5). There is a virtual absence of accounting studies focusing on the utilization of cash flow information in a lending decision (category 3). However, several studies [i.e., Stephens et al. (1980), Stephens (1980), Campbell (1984), and Bouwman (1990, 1992)] have used process tracing techniques, namely verbal protocol analysis, to study various aspects of the credit decision.

Using a process tracing approach, usefulness is defined in descriptive terms: a cash flow item is considered useful if it is used in a decision process. Based on that definition of usefulness, two research questions emerge:

**Research Question 1:** What cash flow information is used by lenders in the evaluation of the credit worthiness of a client?

**Research Question 2:** How do lenders use that cash flow information in their lending decisions?

In addition, an aggregate description of each subject's task behavior will be provided. This description will allow for an analysis of how cash flow information is integrated into the major phases of the decision process. In addition, the description will provide information on patterns of decision behavior as opposed to information on the more specific items of interest in research questions one and two.

### Theory

Klersey and Mock (1989) stress that any research study should be grounded in theory. Furthermore, studies employing verbal protocol analysis should use the underlying theory to develop coding schemes for data analysis. Many protocol studies interested in describing subjects' decision-making behavior have been based upon Newell and Simon's (1972) theory of human problem solving [e.g., Bouwman (1983), Biggs and Mock (1983), Stephens (1984), and Meservy et al.(1986)].

The Newell & Simon (1972) theory posits that decision makers utilize a "problem space" in the problem solving process. Newell and Simon (1972) describe the concept of a problem space as the space (1) where problem solving takes place and (2) that contains not only the actual solution but possible solutions that the problem solver might consider. According to Newell and Simon (1972), a problem space consists of:

1. A set of elements, which are symbol structures, each representing a state of knowledge about the task.
2. A set of operators, which are information processes, each producing new states of knowledge from existing states of knowledge.
3. An initial state of knowledge, which is the knowledge about the task that the problem solver has at the start of problem solving.
4. A problem, which is posed by specifying a set of final, desired states to be reached by applying operators from the set of operators.
5. The total knowledge available to a problem solver when he is in a given knowledge state, which includes (ordered from most transient to most stable):



- (a) *Temporary dynamic information* created and used exclusively within a single knowledge state.
- (b) The *knowledge state itself*--the dynamic information about the task.
- (c) *Access information* to the additional symbol structures held in long term memory (LTM) or external memory (EM) (the *extended knowledge state*).
- (d) *Path information* about how a given knowledge state was arrived at and what other actions were taken in this state if it has already been visited on prior occasions.
- (e) *Access information to other knowledge states* that have been reached previously and are now held in LTM or EM.
- (f) *Reference information* that is consistent over the course of problem solving, available in LTM or EM.

Newell and Simon emphasize that the concept of *available* in point 5 means that the information may be used in decision processes or in applying operators and will be forthcoming if it is called for. In point 5, they distinguish between the knowledge state itself, which is *directly available*, and the extended knowledge state, for which only access information is available. Similarly, the problem solver does not have available the information in the other knowledge states to which he might go if he were to abandon the current one, but he does have access information enabling him to recall them (if he did not, he could never get to them).

Newell and Simon have postulated a series of generalizations about the problem space. They define these generalizations as invariant features of problem spaces used by humans:

1. The set of knowledge states is generated from a finite set of objects, relations, properties, and so on, and can be represented as a closed space of knowledge.
2. The set of operators is small and finite (or at least finitely generated).
3. The available set of alternative nodes in the space to which the problem solver might return is very small; in fact it usually contains only one or two nodes.
4. The residence time in each particular knowledge state before generation of the next state is of the order of seconds.
5. The problem solver remains within a given problem space for times of the order of at least tens of minutes.
6. Problem solving takes place by search in the problem space--i.e., by considering one knowledge state after another until (if the search is successful) a desired knowledge state is reached. The moves from one state to the next are mostly incremental.
7. The search involves backup--that is, return from time to time to old knowledge states and hence the abandonment of knowledge-state information (although not necessarily of path information).
8. The knowledge state is typically only moderate in size--containing at most a few hundred symbols, more typically a few dozen.

Finally, the concept of problem space is useful for describing behavior only if the information accumulated during the course of the behavior remains pretty well confined within closed boundaries (Newell and Simon 1972). In addition, the structure of the problem space is largely determined by the structure of the task environment--more precisely, the task environment delimits the set of possible structures of the problem space (Newell and Simon 1972). However, it is virtually impossible to give an objective description of the task environment because of its dependence on the vantage point of the describer.

In summary, human problem solving is to be understood by describing the task environment in which it takes place; the space the problem solver uses to represent the environment, the task, and the knowledge about it that he gradually accumulates; and the program the problem solver assembles for approaching the task. The problem solver's program extracts some of the structural information that is embedded in the task environment in order to find solutions by means of a highly selective search through the problem space. In short, a problem space is a model of an individual's cognitive representation of a task. Of main concern in this study, is the subjects performance program via his search through the problem space.

Einhorn & Hogarth (1981) emphasize the importance of the problem space in understanding human behavior since different representations can lead to different decisions. They state that "it is now clear that the process of representation, and the factors that affect it, are of major importance in judgment and choice" (Einhorn and Hogarth 1981). Einhorn and Hogarth outline three interrelated subprocesses in decision-making behavior: (1) information acquisition, (2) evaluation/action, and (3) feedback/learning. They stress that these subprocesses interact and that their interaction is of great importance in the organization and coordination of decision making.

In their review of verbal protocol research in auditing, Klersey and Mock (1989) found that Newell and Simon's (1972) theory of human problem solving and Einhorn and Hogarth's (1981) framework of processes composing decision-making behavior were the two most often cited sources of support for studies about auditors' behavior. They found that protocol studies employing the Newell & Simon (1972) model (e.g., Biggs & Mock 1983, Biggs et al. 1987, and Biggs et al. forthcoming) were interested in describing decision-making behavior. However, the researchers were specifically interested in the three interrelated subprocesses detailed by Einhorn and Hogarth (1981). In effect, the researchers were able to "fine-tune" the Newell and Simon theory with the subprocesses provided by Einhorn and Hogarth.

Since the major purpose of this research is to examine the decision processes of lenders as they evaluate a potential debtor, the decision theories outlined above are applicable. Due to task complexity, incompatible objectives, or a number of other factors, the lending decision is consistent with situations in which optimal solutions are not evident. Therefore, even though it may be difficult to assess the correctness of the final decision outcome, it may be possible to evaluate the decision's individual components. This evaluation of the components, which will be made possible by the type of evidence

obtainable in a protocol study, could be an important first step in developing knowledge which will result in better focused nomothetic research in credit evaluation and ultimately in improved lender judgment.

#### Code Development

The decision making theories described above will form the basis for a major portion of the coding scheme in this study. Klersey and Mock (1989) assert that:

"Theory delimits a small portion of the universe of potentially observable behavior as relevant" (Ericsson et al. 1984). Theory in this sense serves to determine which verbalizations should be transcribed and how these reports should be coded (i.e. classified in the terminology of the theoretical model). The implication is that codes for verbalized behavior should be determined *a priori vis a vis* their more typical *a posteriori* development.

Klersey and Mock (1989) found that two different coding methods have been employed in auditing protocol studies. The first method does not require the analysis of meanings for the observed verbalizations. In this method, verbalizations are simply categorized into previously determined categories (e.g., specific items of cash flow information). The researcher using this method would most likely be counting occurrences of specific items of information. Bouwman (1983, 1985) refers to this method of analyzing protocol data as "scoring." Scoring is the process of tabulating the frequencies of certain key items of interest. It usually involves developing a coding scheme by which the protocols will be broken down, tabulating the

frequency of specific occurrences, and performing statistical testing on the results of the aggregation. According to Bouwman, this is an efficient and rapid method of protocol analysis. However, it is essential to ensure that all information relevant to specific research questions being answered is captured and coded accurately with no irrelevant information being included (Bouwman 1978). As mentioned previously, this implies that protocol coding schemes should be developed, at least in part, *a priori* to ensure that the findings of the study are not data-driven.

The second type of coding identified by Klersey and Mock (1989) **does** require the interpretation of meaning. In essence, each distinct concept, such as setting a goal, can be coded by mapping the verbalization to the concept (Ericsson *et al.* 1984). When using this type of coding, coding schemes should be (must be) developed according to existing theories. Bouwman (1983, 1985) refers to this method of analyzing verbal protocols as "global modeling". He defines it as the formulation of flowcharts and algorithms that capture the decision making process. Global modeling is dependent upon the initial scoring of the protocols. It involves a direct examination of the *processes* of problem solving. This approach shows not only which actions are taken during problem solving, but also the sequence of their execution. A flowchart of the problem-solving process is generally the result of this activity.

In this study both scoring and global modeling are used to analyze the decision processes of lenders. The scoring system is based upon the financial information presented to subjects. Scoring will allow for a tabulation of **what** items of cash flow information were used (i.e., research question 1).

The global modeling system is based upon the Newell and Simon (1972) and Einhorn and Hogarth (1981) theories described above. Modeling will provide insights into **how** cash flow information is used (i.e., research question two). It will also provide an overview of each subjects' decision making process. Since the development of the modeling system is much more complicated than that of the scoring system, it will be elaborated upon below.

#### Global Modeling System

Other accounting studies employing verbal protocol analysis have developed coding systems that are grounded in the theories of Newell and Simon (1972) and Einhorn and Hogarth (1981) [e.g. Biggs and Mock (1983), Stephens (1980), Stephens et al. (1980), Bouwman (1985), Bouwman et al. (1987, 1990)]. The most comprehensive coding system to date is one developed by Bouwman et al. (1987) for their investigation of financial analysts' decision making processes in the investment screening decision. Their system incorporates the coding schemes utilized by Biggs and Mock (1983) for the study of auditor's evaluation of internal control and

Stephens' (1980) and Stephens et al.'s (1980) examination of loan officers. In addition, Bouwman et al. (1990) utilized this same coding scheme for the examination of information processing by commercial bank loan officers. Therefore, instead of using an *ad hoc* coding scheme, the use of the Bouwman et al. (1987, 1990) scheme will contribute to and enhance the findings of this study.

Bouwman et al. (1987) used protocol analysis to analyze information processing by financial analysts in an investment screening decision. Bouwman, et al. cite Newell and Simon (1972) when they state "since human decision makers are poor at memorizing and manipulating large numbers of findings, there is a need for mechanisms that facilitate this process." According to Bouwman et al., complex tasks, such as that found in investment screening decisions, entail longer duration of the decision making process. Keeping track of what has been done, and what should be done, becomes a serious problem. Tasks of this length require some form of planning, which splits up the lengthy decision making into a series of small sub-tasks each aimed at the achievement of a specific, intermediate goal.

Bouwman, et al. (1987) developed a set of activity codes for the examination of the decision processes of financial analysts. Instead of generating *ad hoc* activity codes to fit the particular task of the investment screening decision, an attempt was made to employ codes that already



had been used in protocol studies of related tasks, such as Biggs and Mock's (1983) study of the auditor's evaluation of internal control, and Stephens' (1980) and Stephens *et al.*'s (1980) examination of loan officers. Although the tasks in these studies were quite different from investment screening, all shared the process of "examining information" followed by "evaluation." For a description of the coding schemes used by Biggs and Mock (1983) and Stephens (1980) and the schemes' relationship to and incorporation of the Newell and Simon (1972) and Einhorn and Hogarth (1981) theories refer to Appendix A.

Bouwman *et al.*'s (1987) "activity" codes are synonymous with what Biggs and Mock (1983) refer to as "operators" and with what Stevens (1980) and Stevens *et al.* (1980) refer to as "processes". The codes used by Bouwman *et al.* (1987) and their translation from the Biggs and Mock (1983) and Stephens' (1980) and Stephens *et al.* (1980) studies are presented below.

#### READING AND EXAMINATION CODES

1.	R*	Read information item
2.	PAR*	Paraphrase
3.	TREND**	Compute trend
4.	COMP**	Compute
5.	C*	Compare two items
6.	CI*	Compare with internal norm

#### REASONING CODES

7.	SUM*	Summarize evaluations
8.	INF+	Infer
9.	EXPL	Explain
10.	HYP+	Formulate problem-hypothesis
11.	CONF	Confirm problem-hypothesis

- |     |      |                      |
|-----|------|----------------------|
| 12. | AS** | State an assumption  |
| 13. | Q**  | Formulate a question |

#### GOAL CODES

- |     |      |                               |
|-----|------|-------------------------------|
| 14. | SG** | State goal                    |
| 15. | FG   | State (potential) future goal |
| 16. | GR+  | Select a specific report      |
| 17. | GI+  | Select a specific item        |

#### MEMORY ACCESS CODES

- |     |      |                                     |
|-----|------|-------------------------------------|
| 18. | SF   | Stress a specific observation       |
| 19. | RET+ | Retrieve information from<br>memory |

#### COMMENT CODES

- |     |     |                                       |
|-----|-----|---------------------------------------|
| 20. | COM | Comment re task content               |
| 21. | MC* | Comment re problem solving<br>process |

\*Codes also used by Stephen et al. (1980).

+Codes also used by Biggs & Mock (1983).

These activity codes along with the addition of two other codes to conform to this study are used to code each line of the verbal protocols. The two codes added are "CA," compare with industry average and "IO," interaction with observer. A more detailed description and definition of each code is presented in Appendix B. A final tabulation of each of the major categories (i.e. reading and examination, reasoning, goal setting, memory access, and commenting) for each of the subjects will be presented in the data analysis section. This tabulation will be compared to the results reported by Bouwman, et al. (1987).

#### Aggregate Decision Processes of Lenders

After coding the protocols, consecutive topic lines that share a common goal are linked together into

"episodes." An episode is a "succinctly describable segment of behavior associated with attaining a goal" (Newell and Simon 1972). Each subject's protocol can be viewed as a sequence of these episodes. According to Bouwman (1987, p.11)

"Identifying episodes means identifying goals. This can be done in a number of ways. Analysts frequently state goals explicitly. Activities such as 'getting a specific report' and 'getting a specific item' identify goals implicitly. In addition, a switch to a new goal frequently involves a break in the analyst's activity, as well as a desire for different information, both of which are easily observable in the protocol."

Bouwman (1992) identified a goal classification pattern from the analysis of the protocols of 10 loan officers en route to a credit decision. The goal classification was based on the type of activity triggered by the goal. This same classification was first used by Bouwman et al. (1987). The four major activities that were identified are familiarizing, scanning, exploring and reasoning. A description of each activity follows.

**Familiarizing** means becoming acquainted with the company. It involves the integration of findings into a "picture of the firm." Loan officers frequently refer to this activity as getting a feel for the company.

**Scanning** entails looking for something new or unusual. The loan officer does not have anything specific in mind. He or she is simply eyeballing the information.

**Exploring** involves directed search behavior. The loan officer has a specific objective in mind, such as satisfying his or her curiosity regarding a net worth decline or a covenant violation. He or she examines specific information to get the answers.

**Reasoning** involves analytical and summarizing behavior. It includes integrating observations, deciding what to do next, and formulating a final decision.

These activity types are used to aid in the preparation of flowcharts for each of the subjects. The flowcharts show in graphic form the linkages among the major episodes in each subject's behavior. This aggregate analysis highlights differences in the decision processes of subjects. Decision strategies are identified and analyzed to highlight the affect that particular strategies have on information search and acquisition.

#### Research Design

This study is a quasi-field study. The term "quasi-field study" is appropriate because the case that will be provided to subjects will be fictional. However, as explained below, the case will be tailored to meet the requirements of the lending institution of interest.

Most verbal protocol studies do not implement rigid experimental design features basically because the cost of doing so is generally prohibitive (Klersey and Mock 1989). The lack of rigid design features impact the study's internal validity. Several criticisms discussed earlier in the paper (i.e., veracity of protocols, impact of collecting the protocols on the decision processes, and the completeness of verbal protocols) focus largely on questions of internal validity.

In addition, complexity and time constraints impact the number of subjects which can be effectively studied using verbal protocol analysis (Klersey and Mock 1989). Also, the theories of judgment and problem solving being investigated are, in general, not specific enough to provide appropriate bases for the development of testable hypotheses (Biggs et al, forthcoming). Given these conditions, only a limited number of statistical requirements are applicable to the research.

#### Subjects, Sample Size, and Task

Subjects are senior credit analysts and loan officers from two major Dallas banks. The banks are identified as Bank A and Bank B. The subjects received a package of materials containing the type of information that they would typically use in the evaluation of a loan applicant and were instructed to "evaluate the loan applicant in the same manner and to the same point as you would in your normal practice." The formulation of the task was intentionally vague to allow the subjects to fit the task to his or her personal style and approach. Each loan package was tailored to the requirements of the bank of interest. Bank A's package included an instruction sheet, audited financial statements, RMA industry statistics, a listing of major stockholders, and a loan recap package produced from the bank's loan analysis software package. Included in the recap was a description of the company and its environment,

common size financial statements, ratios, an accounts receivable analysis, and an accounts payable analysis. Bank B's package included an instruction sheet, a description of the company and its environment, audited financial statements, an accounts receivable analysis, an accounts payable analysis, RMA industry statistics, a listing of major stockholders, and common size financial statements and ratios produced from the bank's loan analysis software package. The use of two separate and distinct packages served to eliminate any bias that could be introduced if subjects were required to analyze results from an unfamiliar loan package. The case materials presented to the subjects at Bank A and Bank B are included in Appendices B and C, respectively.

Each loan package described an undisguised but unfamiliar loan applicant. The description of the company as well as the financial information was derived from the prospectus of a company about to go public. However, the financial information was tailored to obscure the ensuing public offer. The criteria for choosing the company of interest was (1) amount of revenue, (2) availability of three years financial data, (3) audited financial statements prepared according to GAAP, (4) lack of consolidated financial data and (5) non-public ownership of stock. These criteria were developed after conversations with personnel at Bank A and Bank B. In short, the company was large

enough to require extended financial analysis, but not so large and diversified (e.g. Fortune 500 Co.) that it would pose little credit risk. In addition, the company was described as a "first time loan applicant" for the bank. This was to eliminate any potential bias that could result from the analysis of a "regular" bank customer.

Participants in the study included seven senior credit analysts and five loan officers from Bank A and B, respectively. Eight usable protocols were obtained from the original twelve participants resulting in a final sample of four senior credit analysts from Bank A and four loan officers from Bank B.<sup>3</sup> According to Klersey and Mock (1989):

Since the object of the work is to identify the process, strategy or information used by the subject and since a concern with inferences about population parameters per se is not of interest, the use of small samples does not adversely impact the analysis and the inferences.

Small sample sizes do impact the generalizability of results. Each protocol is individual, but the researcher is often interested in finding features common to larger classes of decision makers. Therefore, it is doubtful that

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<sup>3</sup>Out of the seven credit analysts one was eliminated because of an admitted lack of experience in the analysis of GAAP financial statements for large commercial lending clients, one was eliminated because the protocol was not audible on tape, and one was eliminated because his decision process exceeded the two-hour time frame by approximately thirty minutes, thereby resulting in an incomplete taped protocol. Out of the five loan officers one was eliminated because of tape recorder malfunction resulting in the majority of her protocol being unrecorded.

the results of this study will be generalizable to the entire population of bank lenders. However, the exploratory nature of this study makes the recognition of individual differences more important than generalizability of results. Future studies can be developed to enhance generalizability.

#### Data Collection

Protocols were collected from the subjects at their place of employment. It was thought that this provided a better environment in the sense of a more realistic context than if the subjects were brought to some central laboratory. The sessions began with an explanation of the purpose of the study. Subjects were assured of anonymity of participation.

I was present at each interview session to tape record the verbalizations of the subjects and to make notes about the subjects' nonverbal behaviors. As indicated above, the subjects were instructed to use their normal procedures in the evaluation of the credit request, just as if it had actually occurred in their organization. They were also directed to think aloud during the decision process. They were asked to verbalize whatever came to mind, whether or not it seemed relevant, and without any interpretation or modification. The thinking aloud instructions conformed to the requirements of what Ericsson and Simon (1980) call "Level One" verbalization, which minimizes interference with the subject's task performance while thinking aloud. If the



subjects fell silent, they were reminded to think aloud. The verbalizations result in literal transcripts, called concurrent verbal protocols, of the subjects' decision making behavior. The protocols provide the basis for this study.

After the analysis, each subject was asked: (1) What additional information would you have used had it been available? (2) If you could speak with a representative of the company, what questions would you ask? These questions were used to ascertain the completeness of the loan package. In addition, each subject was asked to complete a debriefing questionnaire.

#### Data Analysis

Subject's protocols were independently coded by myself and one other coder. The other coder, a senior undergraduate accounting major, had successfully completed Intermediate Accounting I and II. It was believed that the completion of these two upper level financial accounting courses provided her with adequate background to understand the unconsolidated corporate financial statements that were provided to the subjects in this study. Her lack of knowledge relating to bank lending practices provided her with an enhanced sense of independence (e.g., she did not have the ability to second guess what the subjects were doing). To eliminate bias, the independent coder was not present at the interview sessions nor did she listen to the

tape recordings of the subjects' protocols. However, before beginning the coding assignment she became familiar with the case materials and the task assignment.

To minimize discrepancies in the use of the codes, several pages from one of the unusable protocols was used as a sample. This sample protocol was independently coded by myself and the other coder. Once agreement as to the definition and use of the codes for this sample protocol was reached, the eight usable protocols were independently coded.

Intercoder agreement was measured by comparing the codes assigned to each protocol line. Agreements and disagreements were tallied, and a percentage of agreement was calculated. Based upon the twenty four detailed codes, the agreement was 60 percent. Collapsing the codes into the five major categories of reading and examination, reasoning, goal setting, memory access, and commenting resulted in 69 percent agreement. A majority of the discrepancies involved the independent coder's overzealous use of the comment code, MC. When the MC discrepancies are eliminated the agreement within the five major categories rises to 77 percent.

The analysis phase of this study is based upon major episode abstracts and not on individual lines of protocol data. Therefore, it is believed that the initial percentage of disagreements regarding the individual protocol lines does not hamper that analysis.

As a final step toward enhancing intercoder agreement, the initial coding discrepancies were reviewed by myself and the other coder. Agreement was reached about the proper classification of each phrase. No disagreements existed after this collaboration.

As discussed previously, analysis will take place by scoring responses and modeling the decision processes of the subjects. The modeling process will consist of a microlevel and macrolevel analysis. Although additional data will be collected, most of the analysis will be focused on information relating to the use of cash flow information.

## CHAPTER 7

### RESULTS OF THE RESEARCH

According to Bouwman (1992) the presentation of evidence from thinking aloud protocols is hampered by the fact that there are no convenient summary statistics. The essence and strength of protocol analysis lies in its ability to study behavior at a detailed level, thereby uncovering the subtle clues and events that direct the decision making process. Aggregation of protocol data would totally obscure that picture.

The remainder of this chapter will proceed as follow. First, a summary of the use of activity codes by the credit analysts and loan officers is presented. This summary will include a comparison to the results of the Bouwman, *et al.* (1987) study. This is followed by a summary of the use of financial information by the credit analysts and loan officers. Next, the decision processes of lenders will be examined through a detailed discussion of the behavior of each of the eight participants. Finally, the use of cash flow information and the role that it plays in each subjects' decision process will be discussed.

The analyses of decision processes and the use of cash flow information will be guided by the Episode Summaries prepared for each of the eight participants. Recall that an

Episode Summary is a graphical representation of the decision making process, showing the major phases and the relationships among those phases. Each block in the Episode Summary consists of one or more consecutive episodes that share the same activity type. The activity types are those identified by Bouwman (1992):

**Familiarizing** means becoming acquainted with the company. It involves the integration of findings into a "picture of the firm." Loan officers frequently refer to this activity as getting a feel for the company.

**Scanning** entails looking for something new or unusual. The loan officer does not have anything specific in mind. He or she is simply eyeballing the information.

**Exploring** involves directed search behavior. The loan officer has a specific objective in mind, such as satisfying his or her curiosity regarding a net worth decline or a covenant violation. He or she examines specific information to get the answers.

**Reasoning** involves analytical and summarizing behavior. It includes integrating observations, deciding what to do next, and formulating a final decision.

In the Episode Summaries, the numbers above the blocks denote the individual episodes in the decision making process. The lines between the blocks represent the nature of the relationship. A horizontal line indicates a causal relationship, where the second episode is a follow-up, or a direct consequence of the first one. Vertical lines represent temporal relationships; the two blocks just "happen" to follow each other in time. Blocks that are drawn with a double line (i.e., =) denote that the subject was using cash flow information during one or more episodes

within that block. The major processing phases within the decision making process are also identified. Appendices D and E present the Episode Summaries of the credit analysts and loan officers, respectively.

#### Summary of the use of Activity Codes

Table 7.1 presents the results of the detailed coding of each of the credit analysts protocol lines. In summary, the percentage of protocol lines falling into each of the major coding categories and the range within those categories for the credit analysts is as follows: 1) reading and examination, 40.2, range 34.7 to 45.6; 2) reasoning, 32.1, range 29.1 to 41.6; 3) stating goals, 10.9, range 4.8 to 13.7; 4) memory access, 3.7, range 2.3 to 5.3; and 5) commenting, 13.1, range 7.6 to 19.7.

Table 7.2 presents the results of the detailed coding of each of the loan officers protocol lines. In summary, the percentage of protocol lines falling into each of the major coding categories and the range within those categories for the loan officers is as follows: 1) reading and examination, 44.4, range 36.8 to 49.4; 2) reasoning, 29.5, range 27.2 to 33.1; 3) stating goals, 13.9, range 10.7 to 18.7; 4) memory access, 3.4, range 0 to 7.7; and 5) commenting, 8.8, range 5.1 to 15.2.

Table 7.3 presents a comparison of the Bouwman *et al.* (1987) results with those of this study. The Bouwman *et al.* study included an analysis of twelve financial analysts in

TABLE 7.1 ACTIVITY CODE FREQUENCIES CREDIT ANALYSTS-BANK A						
ACTIVITY		A1	A2	A3	A4	TOTAL
Reading and Examination	N %	124 34.7	93 37.3	174 45.6	89 42.6	480 40.2
Reasoning	N %	104 29.1	70 28.1	123 32.4	87 41.6	384 32.1
Formulating Goals	N %	49 13.7	27 10.8	44 11.6	10 4.8	130 10.9
Memory Access	N %	19 5.3	10 4.0	10 2.6	5 2.3	44 3.7
Commenting	N %	61 17.1	49 19.7	29 7.6	18 8.6	157 13.1
Total Coded Lines	N %	357 99.9*	249 99.9*	380 99.8*	209 99.9*	1195 100

\*Differs from 100% due to rounding error.

**TABLE 7.2**  
**ACTIVITY CODE FREQUENCIES**  
**LOAN OFFICERS-BANK B**

ACTIVITY		B1	B2	B3	B4	TOTAL
Reading and Examination	N	39	118	88	77	322
	%	42.4	47.8	49.4	36.8	44.4
Reasoning	N	25	70	59	60	214
	%	27.2	28.3	33.1	28.7	29.5
Formulating Goals	N	14	29	19	39	101
	%	15.2	11.7	10.7	18.7	13.9
Memory Access	N	0	6	3	16	25
	%	0	2.4	1.7	7.7	3.4
Commenting	N	14	24	9	17	64
	%	15.2	9.7	5.1	8.1	8.8
Total Coded Lines	N	92	247	178	209	726
	%	100	99.9*	100	100	100

\*Differs from 100% due to rounding error.



TABLE 7.3 ACTIVITY CODE FREQUENCY COMPARISON				
ACTIVITY		CREDIT ANALYSTS	LOAN OFFICERS	BOUWMAN ET AL. STUDY
Reading and Examination	N %	480 40.2	322 44.4	2,060 42.0
Reasoning	N %	384 32.1	214 29.5	1,177 24.0
Formulating Goals	N %	130 10.9	101 13.9	499 10.0
Memory Access	N %	44 3.7	25 3.4	209 4.0
Commenting	N %	157 13.1	64 8.8	1,021 21.0
Total Coded Lines	N %	1195 100	726 100	4,966 101*

\*Differs from 100% due to rounding error.

an investment screening decision. The comparison is used as an indicator of the consistency of the use of the coding scheme between the two studies. In the Bouwman *et al.* (1987) study interaction with observer was shown as a separate category. In this study interaction with observer is included as a comment item. Therefore, to be consistent with this study, the comment and interaction with observer categories from the Bouwman *et al.* study are combined.

The major differences in coding frequency are in the commenting category. The Bouwman *et al.* study shows a mean usage of the commenting codes at 21%, where this study shows a mean usage of commenting codes at 13.1% and 8%. The other major difference is in the use of reasoning codes. The Bouwman *et al.* study shows a mean usage of the reasoning codes to be 24%, where this study shows them to be 32.1% and 29.5%. The usage of other coding categories between the two studies appears to be very similar. However, it is not possible to determine if the codes were used differently in the two studies or if the decision processes of the credit analysts and loan officers did indeed differ from the decision processes of the investment analysts in the Bouwman *et al.* study. In order to make that determination, a detailed analysis of the coded protocols from the Bouwman *et al.* study would have to be undertaken.

### Summary of the Use of Financial Information

Tables 7.4 and 7.5 present summaries of the use of financial information by credit analysts and loan officers, respectively. The analysis was undertaken by counting the number of episode abstracts which contained references to various items of financial information. The financial information was broken down by reference to major financial statement and other financial reports. The breakdown is as follows: balance sheet, income statement, cash flow statement, ratios, notes to the financial statements, accounts receivable analysis, and accounts payable analysis. The number (N) references in the table denote the number of episode abstracts referring to a particular financial report. The percentage (%) references denote the percentage use of that financial report relative to the use of other financial reports. The total number of episode abstracts referencing financial reports is reported at 100%. The highest usage of financial reports is indicated by a ranking of 1 or 2.

References to the balance sheet, income statement, and cash flow statement do not distinguish between those reports contained in the audited financial statements and those contained in the reports produced by the banks' software systems. For example, if a subject was using the indirect method cash flow statement contained in the audited financial statements or one of the other cash flow reports

**TABLE 7.4**  
**BREAKDOWN OF CREDIT ANALYSTS' USE OF FINANCIAL**  
**INFORMATION BY EPISODE ABSTRACT FREQUENCY**

REPORT		A1	A2	A3	A4
Balance Sheet	N %	11 32.3 <sup>1</sup>	9 24.3 <sup>1</sup>	10 19.6 <sup>2</sup>	5 20.8 <sup>1</sup>
Income Statement	N %	5 14.7	7 18.9	8 15.7	5 20.8 <sup>1</sup>
Cash Flow Statement	N %	4 11.8	1 2.7	4 7.8	4 16.7 <sup>2</sup>
Financial Ratios	N %	9 26.5 <sup>2</sup>	8 21.6 <sup>2</sup>	12 23.5 <sup>1</sup>	3 12.5
Notes to Audited Financial Statements	N %	2 5.9	4 10.8	10 19.6	4 16.7 <sup>2</sup>
Accounts Receivable Analysis	N %	2 5.9	7 18.9	5 9.8	2 8.3
Accounts Payable Analysis	N %	1 2.9	1 2.7	2 3.9	1 4.2
Episode Abstracts Using Financial Information	N %	34 100	37 99.9*	51 99.9*	24 100

\*Differs from 100% due to rounding.

<sup>1</sup>Ranked first in overall usage of financial reports.

<sup>2</sup>Ranked second in overall usage of financial reports.

**TABLE 7.5**  
**BREAKDOWN OF LOAN OFFICERS' USE OF FINANCIAL**  
**INFORMATION BY EPISODE ABSTRACT FREQUENCY**

REPORT		B1	B2	B3	B4
Balance Sheet	N %	2 25 <sup>2</sup>	3 9.1	3 21.4 <sup>2</sup>	9 42.9 <sup>1</sup>
Income Statement	N %	0 0	3 9.1	3 21.4 <sup>2</sup>	4 19.0 <sup>2</sup>
Cash Flow Statement	N %	3 37.5 <sup>1</sup>	2 6.1	0 0	1 4.8
Financial Ratios	N %	0 0	6 18.2 <sup>2</sup>	1 7.1	4 19.0 <sup>2</sup>
Notes to Audited Financial Statements	N %	2 25 <sup>2</sup>	15 45.5 <sup>1</sup>	4 28.7 <sup>1</sup>	0 0
Accounts Receivable Analysis	N %	1 12.5	2 6.0	2 14.3	2 9.5
Accounts Payable Analysis	N %	0 0	2 6.0	1 7.1	1 4.8
Episode Abstracts Using Financial Information	N %	8 100	33 100	14 100	21 100

\*Differs from 100% due to rounding.

<sup>1</sup>Ranked first in overall usage of financial reports.

<sup>2</sup>Ranked second in overall usage of financial reports.

produced from the bank's software system, the use of information is coded as use of the cash flow statement.

Cash flow information was used by all of the subjects with the exception of loan officer B3. Relative to other financial reports, loan officer B1 references the cash flow statement in 37.5% of the episode abstracts in which he used financial information. This represents the highest utilization of cash flow information among all of the subjects. In addition, loan officer B1 utilizes the cash flow statement more frequently than any other financial report during his decision making process. Credit analyst A4 is the next highest utilizer of cash flow information. Credit analyst A4 references the cash flow statement in 16.7% of the episode abstracts in which she utilizes financial information. This ties for second place among the ranking of A4's utilization of financial reports.

With the exception of loan officer B1 and credit analyst A4, the cash flow statement does not rank in the top two positions for any of the other six subjects. Among the other subjects, the balance sheet receives the top ranking of utilization for credit analysts A1, A2, and A4 and for loan officer B4. The balance sheet ranks second for credit analyst A3 and loan officers B1 and B3. The only subject for which the balance sheet does not rank first or second is loan officer B2. Loan officer B2 utilizes the notes to the financial statements and the financial ratios most often.

It is interesting to note that the income statement only receives the top ranking of utilization for three of the eight subjects. Credit analyst A4's utilization of the income statement ranks first in her usage of financial information. However, this represents a tie with her utilization of the balance sheet. For loan officers B3 and B4 the income statement ranks second in their overall utilization of financial information.

#### Decision Processes of Credit Analysts

The four credit analysts from Bank A range in experience from 2 years to 4.5 years. The credit analysts were selected by bank management based upon their experience and willingness to participate.

The loan application package presented to the credit analysts was developed by management at Bank A. The loan package is a standard package that is prepared for all commercial loan applicants. It is referred to by the bank and in this study as the recap. In addition to the recap, the subjects were provided with the audited financial statements, RMA industry statistics, and a listing of key stockholders. The reader is referred to Appendix C for the case materials presented to the credit analysts at Bank A.

The remaining analysis is based upon each of the credit analysts Episode Summaries. The Episode Summaries are presented in Appendix E.

Credit Analyst A1

Credit analyst A1 has 2 years of experience as a credit analyst. His protocol consists of 357 lines divided into 60 episode abstracts. A1's total processing time is 50 minutes.

A1's first episode abstract reveals an outline of the process that he intends to use in the analysis of the loan applicant. A1's remaining Episode Summary reveals a predominately sequential character. His information usage begins with the bank recap sheets. The sequential processing of the recap sheets is easily interrupted by a number of causal explorations. However, the causal explorations rarely lead to new explorations. Instead, A1 returns to a systematic mode of sequentially processing the recap sheets.

A1's analysis is split into four distinct phases. The first phase, a familiarization phase, is concluded in episode abstract 40 where A1 begins reasoning against the loan. This reasoning episode is followed by a phase involving short exploration episodes leading to further reasoning episodes all of which conclude in A1 leaning against the loan. In episode abstract 49 A1 begins a scanning phase where he looks at the remaining information for reasons to change his mind as is evidenced by his protocol:

"I'm going to go ahead and try to look at everything and make sure I don't miss something that



could change my mind for me so I'm going to go ahead and go through all this package and look at the full picture before I put anything in stone."

This scanning phase begins with the ratio page of the recap and proceeds sequentially through the end of the recap package. As in the familiarization phase, the scanning phase is interrupted on occasion for explorations of short duration. The final exploration phase before A1 makes his decision is a directed search into the character of management. Finally, the evaluation process concludes in episode abstract 60 where A1 summarizes his findings and declines the loan.

#### Credit Analyst A2

Credit analyst A2 has 4.5 years of experience in lending. His protocol consists of 249 lines divided into 54 episode abstracts. His total processing time is 48 minutes.

A2's protocol is divided into five major phases. His first phase is a familiarization phase where he begins by reading through the recap sheets sequentially. His familiarization phase is not interrupted by any explorations until he begins examining the financial statements in the recap sheets. His first exploration is directed toward the footnotes in the audited financial statements where he looks for information on the firm's prior financing practices. This is followed by A2's immediate return to sequentially processing the recap sheets from the balance sheet through the end. This sequential processing is interrupted briefly

while A2 explores and reasons about using the accounts receivable as collateral.

A2's next identifiable phase is where he scans through the footnotes to the audited financial statements as well as the list of principle stockholders. This scanning phase is sequential in nature and is only interrupted once when A2 questions the company's R&D capitalization policy.

A2's next distinct processing phase begins in episode abstract 36 where he states:

"My initial concerns, its quite possible I've missed it in the reading, first of all I guess I'm trying to understand the true need when there's 5 million dollars in cash or cash equivalents."

This is the beginning of an exploration phase consisting of eight episode abstracts where A1 assesses the company's true need for financing.

This assessment phase is followed by a lengthy summarizing and reasoning phase where A1 evaluates the loan structure and formulates his final decision which is "I'm not willing to do anything until I understand what's going on in the receivables."

### Credit Analyst A3

Credit analyst A3 spends 70 minutes analyzing the loan applicant. Her protocol consists of 380 lines divided into 79 episode abstracts. A3 has 28 months of experience in bank lending.

Unlike A1 and A2, A3 does not begin with the recap sheets. Instead, she begins her familiarization phase by

looking through the audited financial statements from cover to cover. In episode abstract 16 A3 begins reading through the recap sheets. Sequential processing of the recap sheets continues through episode abstract 53. A3's familiarization phase is characterized by many exploration and reasoning episodes. She easily expounds upon information found in the recap sheets and formulates many questions and future goals during her familiarization phase.

The second identifiable phase of A3's decision making process is best identified by the second to the last episode abstract (no. 66) in that phase. In this phase A2 assesses the company's need for the line of credit. A2 begins this phase by examining the ratio page of the recap sheets. She compares the activity and liquidity ratios to the RMA industry averages and reasons that the company is "not acting like the industry". This leads her to several explorations where she examines ways for the company to change its position in order to "behave like the industry." She concludes that the company does not need the money that it is asking for.

The next phase, which covers eleven episode abstracts, is described as a scanning phase. A3 sequentially scans the remaining information contained in the recap. However, each scanning episode is followed by either an exploration episode or a reasoning episode. A3 is never satisfied to

look at an information item without expounding upon what she has found.

A3's final phase consists of only one episode abstract. This is where she makes her final decision on the loan which is that she supports making the loan but does not believe that the company has a true need for the financing. This decision phase consists of only five protocol phrases. This short decision phase is consistent with A3's overall decision strategy which is to examine information and immediately reason and or summarize.

#### Credit Analyst A4

Credit analyst A4 has 29 months of experience as a credit analyst. Her decision making process lasts for 50 minutes. It includes 209 protocol phrases divided into 44 episode abstracts. Five major processing phases are identified.

A4 begins the familiarization phase by examining the footnotes to the audited financial statements. She quickly reads through the notes without any directed explorations. She then moves to the recaps and proceeds sequentially with the information there. Her examination of the financial statements in the recaps leads her to only one directed exploration into officer compensation.

A4's second phase is a very obvious exploration phase where she stops sequential processing of the recaps and begins an assessment of the collateral and potential

alternatives to collateral. This phase is followed by a short scanning phase covering the loan pricing and list of key stockholders.

A4 then stops processing information and begins a fourth phase where she summarizes the pluses and minuses of the loan. This summarization phase consists of several short exploration episodes, reasoning episodes, and additional scanning activity. Her final decision phase covers three episodes in which she makes one additional exploration into machinery and equipment as potential collateral. Her final decision is a yes with several modifications to the loan structure.

#### Summary of the Decision Processes of Credit Analysts

One similarity noted among the four credit analysts is their sequential processing of the bank recap sheets. Although two of the analysts (A3 and A4) begin with the audited financial statements, the bulk of their decision process is directed toward the bank's recap package. This focus on the recap sheets could be indicative of the bank's training of credit analysts.

Analyst A3's decision process is the most active with several exploration and reasoning episodes directly resulting from blocks within the familiarization and scanning phases. These frequent exploration and reasoning episodes are evident in her final decision phase which contains a mere five protocol lines. Other analysts had a

tendency to explore but not reason during their decision making process. Instead they waited until the decision phase reason and summarize their findings.

The credit analysts at Bank A do not make the final decision regarding loan acceptance or rejection. However, they do make a recommendation to a loan officer who then takes the loan package and that recommendation to a loan committee. Therefore, the credit analysts' decisions should be viewed as recommendations to the loan officer and hence the loan committee. Each of the credit analysts reached different conclusions regarding the acceptance of the loan. A1 was the only analyst that declined the loan. His decision was based on lack of historical profitability, cash flow problems, high debt to worth, and average quality of assets. A2 was not willing to make a decision until he received additional information regarding the accounts receivable and the true need for the loan. Both A3 and A4 supported the loan. However, A4 changed the structure while A3 questioned the true need for financing. Whether these decisions/recommendations would persist after review by the loan committee is not known.

#### The Decision Processes of Loan Officers

The four loan officers from Bank B range in experience from 25 months to 10 years, 9 months. The loan officers were either self-selected or selected by bank management based upon their experience and willingness to participate.

The case materials presented to the loan officers consisted of a write up of the loan applicant, audited financial statements, the spread of the audited financial statements prepared by the bank, RMA industry statistics, an accounts receivable analysis, an accounts payable analysis, and a listing of key stockholders. The reader is referred to Appendix D for the case materials.

The following analysis is based upon each of the loan officers Episode Summaries. The Episode Summaries are contained in Appendix F.

#### Loan Officer B1

Loan officer B1 has 10 years of experience in bank lending. His decision process lasts only 15 minutes. It represents the shortest decision process out of all eight subjects. B1's protocol consists of 92 lines divided into 18 episode abstracts.

Three major phases are identified in B1's protocol. The first phase is a familiarization phase, the second phase is an exploration and reasoning phase, while the third phase is his decision phase. B1's familiarization phase is best described as a directed search into the case materials. He begins by reading the credit request and immediately explores the audited balance sheet to find reasons for the request. He then explores the audited cash flow statement which leads him to an exploration of the discontinued operations section of the footnotes. The remainder of B1's

familiarization phase involves a sequential examination of the remaining footnotes and the remaining audited financial statements. He concludes the familiarization phase by reading several selected sections of the write up.

B1's second phase is identified as a reasoning and exploration phase in which he searches for answers to specific questions. These questions involve the need for the line of credit, the potential collateral, and the company's prior funding of their operations.

B1's final phase includes four episode abstracts where he summarizes his findings and makes a final decision which is that he will need to have several questions answered before he can extend the loan. Specifically, he would ask management why they need the loan and how they expect to pay it back.

#### Loan Officer B2

Loan officer B2's decision making process lasts 60 minutes. It consists of 247 protocol lines divided into 50 episode abstracts. B2 has 2.5 years of experience in bank lending.

B2's decision process ensues a massive familiarization phase consisting of 34 out of 50 episode abstracts. He begins by sequentially processing the write up portion of the case materials. This leads him to the audited balance sheet where he explores the company's liquidity and equity. Once sequential processing of the write up is interrupted



with the directed exploration into liquidity and equity, B2 examines the remainder of the audited balance sheet. He then returns to sequentially processing the write up which is interrupted by only one short exploration phase. The remainder of the familiarization phase consists of a sequential processing of the audited financial statements beginning with the balance sheet and ending with the footnotes. This processing of the audited statements is interrupted by several reasoning and exploration episodes where B2 uses the spreads as well as the accounts payable analysis and the accounts receivable analysis.

Since B2 covers virtually every report during his familiarization phase, the only report left for scanning is the listing of key stockholders. The scanning phase is followed by an exploration phase in which B2 concentrates on the financial statement ratios and their comparison to the RMA statistics. B2's decision phase consists of six episode abstracts where he summarizes the "good news and the bad news" resulting from his analysis. He does not arrive at a final yes or no answer but instead enumerates the primary forces driving the credit decision.

#### Loan Officer B3

Loan officer B3's decision making process lasts 36 minutes and includes 178 protocol lines divided into 28 episode abstracts. He has 10 years, 9 months experience as a lender.

Four phases are identified in B3's decision making process. These phases are familiarization, scanning, exploring, and reasoning, respectively. B3's familiarization phase begins with a sequential processing of the writeup barring any interruptions. He then proceeds to the audited balance sheet and income statement where his processing is interrupted by several exploration and reasoning episodes. The familiarization phase covers all the available information with the exception of the accounts receivable analysis, the accounts payable analysis, and the stockholder listing. In phase 2, B3 scans these remaining reports without any significant findings or interruptions.

B3 compares selected ratios with RMA statistics during his exploration phase. His final reasoning and decision phase results in declining the loan. However, his decision is followed by an enumeration of ways that he would consider accepting the loan.

#### Loan Officer B4

Loan officer B4 has 14 months of experience in bank lending. His protocol consists of 726 lines divided into 38 episode abstracts. His decision making process lasts 35 minutes.

B4 begins his decision making process with a short exploration phase where he explores for specific reasons to turn down the loan (i.e. inadequate capitalization and unacceptable profitability). Once comfortable with the

capitalization and profitability of the applicant, he embarks on an extensive familiarization phase which includes 31 out of the 38 episode abstracts. B4 begins his familiarization phase by sequentially processing the writeup and the financial statements in the spreads. His processing is easily interrupted by several exploration and reasoning episodes. The only exception to his sequential processing of the financial statements in the spreads is his examination of the stockholder listing which leads him to exploration and reasoning episodes, respectively. B4 does not spend much time examining the financial statement ratios as is indicated by his protocol:

"Turning over to the ratios page. I have a pretty good handle on what they are just from looking at the balance sheet."

He then examines only the company's current ratio and the capitalization.

B4's final phase where he reasons and summarizes his findings includes 5 episode abstracts. He indicates that he would like the company to prepare proforma financial statements before he makes a final decision. However, considering the capitalization of the company and the quality of the assets supporting the credit line he recommends the loan.

#### Summary of the Decision Processes of the Loan Officers

With the exception of loan officer B1, all of the loan officers exhibit a sequential information processing

strategy. Recall that B1 exhibits a directed search strategy resulting in a comparatively short decision making session. Each of the loan officers familiarization phases are easily interrupted by exploration and reasoning episodes. However, the loan officers using a sequential information processing strategy then return to that strategy.

Only two of the loan officers make final yes or no decisions on the loan. B3 declines the loan based on a lack of historical profitability. B4 accepts the loan based on capitalization and quality of assets that would support the line. The other two loan officers, B1 and B2, would require more information before making their final decisions. B1 questioned the company's true need for financing and was most concerned about how the loan would be repaid. B2 raised concerns about the company's operating profitability and cash flow coming from one product, the minimum record of profitability, and intense competition in a tough industry. Bank B does utilize a loan committee in the loan decision. However, whether the decisions of these loan officers would ensue is not known.

Compared to the credit analysts, the loan officers do not focus their decision making process on the spreads produced by the bank's software system. Instead they are inclined to focus more attention the audited financial statements. Since there is no consistency among the final

decisions of the subjects, it is not known whether the focus on the audited financial statements versus the recap package impacted the final decision.

#### Credit Analysts' Use of Cash Flow Information

The credit analysts were provided with three different cash flow reports. The first report, the indirect method, was included in the audited financial statements. The recap package included two different cash flow reports. The first is a form of cash flow that the analysts refer to as the RMA cash flow report. It mimics the direct method of cash flow reporting in that it uses changes in balance sheet items along with accrual income statement figures to arrive at cash from sales, cash production costs, cash operating expenses, etc. This report will be referred to as the RMA cash flow. The second cash flow report in the recap package is a form of the indirect method cash flow statement. It is the same as the indirect method provided in the audited financial statements except for some reclassifications automatically made by the bank's software system. The reclassifications have the effect of decreasing cash flow from operations and increasing cash flow from investing activities.

#### Credit Analyst A1

A1 first uses cash flow information in the third phase of his decision making process which is identified as a scanning phase. In this phase A1 is looking for reasons to

not turn down the loan. Specifically, in episode abstracts 50 and 51 A1 examines the indirect method cash flow statement provided in the recap sheets. In episode abstract 51 A1 states that he prefers the FAS 95 indirect method over the RMA cash flow:

"My preference is...I guess I spent nine months in corporate lending...FASB 95 indirect is what I, although I understand this one [referring to the RMA cash flow], this one I think is ah much better."

A1 uses the operating section of the cash flow statement to identify a trend in cash provided by operations as is evidenced by the protocol contained in episode abstract 52:

"So I look at this cash provided by operations..."

"Negative in 91 and positive for the last 15 months."

"I guess we really need, golly we really need more information to decide on this but they are really negative there because in 91 they paid off their payable and accruals."

"They got a lot of collections in their receivables."

"92 your positive primarily due to net income...that's going to be the main driver."

"The receivables went up a lot...they used a lot of their cash so obviously they are a growing company."

"They're going to need a working capital facility."

A1 also looks at the investing section of the cash flow statement to determine if the company is selling off assets to finance operations. In addition, he examines the financing section (referred to by him as the short term/long term financing and equity section) and concludes that the

company is getting some type of injection to fund operations. In examining these two sections A1's protocol is as follows:

"If you're getting cash from that or you're using that to finance operations that's a real short term method and that, that just wouldn't be proper if you're selling off assets to finance, that just wouldn't work..."

"And down there in the short term/long term financing and equity section obviously you're getting some type of injection and that's short term."

"Ah, if they're increasing their line of credit to finance short term or a term debt or something like that...that's going to be something we can't work with either."

After examining the cash flow statement, A1 concludes that cash flow is "going to be rated pretty low."

A1 does not examine any other cash flow information during his decision making process. However, he does refer to the company's cash flow position in the decision phase of his protocol. Episode abstract 60 contains the reference:

"Losses in two out of three years, ah with only a year and a half profitability, and problems with cash flow, pretty high debt to worth ratio or above average anyway, and average quality of assets probably a little below average."

#### Credit Analyst A2

Credit analyst A2 only glances at the indirect method cash flow statement provided in the recap sheets and completely skips the RMA cash flow in the recap sheets. In episode abstract 22, which is a part of his familiarization phase, A2 states that he is going to cash flow. There are four protocol lines in this episode abstract:

"I'm going to cash flow."

"Our new indirect method, which is still different from the Hybernia [referring to a previous place of employment] cash flow."

"Well it doesn't appear that they would have a whole lot of problems repaying the debt."

"Cash flow is bumping along fairly decent at year end 92 and thus far in 93."

A2 never refers to or uses cash flow information again during his decision making process.

#### Credit Analyst A3

A3 first refers to the statement of cash flows in her familiarization phase. Specifically, during the examination of audited financial statements A1 looks at the audited indirect method cash flow statement and states "I don't see anything strikingly out of the ordinary given a start up year and operating profits in 1992."

In a later portion of her decision making process A3 uses cash flow information quite extensively. In Phase 2 of A3's decision making process where she is assessing the company's need for a working capital line she uses both the RMA cash flow statement and the indirect method cash flow statement provided in the recap sheets. In episode abstract 65 she examines the RMA cash flow:

"Gross cash profits are very good for all three periods looking at December of 91, December of 92, and March of 93."

"Cash after operations is good in the last two periods and for this being a quarter, cash-wise they are doing exceptionally well in 93."



"The same with net cash after operations."

"They were at 1.6 in December and within the first quarter they are already up to 1.4 million."

"They have no long term debt so cash after debt amortization being...they really have good, they really have a good cash flow position."

"And again the analysis I would do would be looking at the way they have their balance sheet structured...how that would change cash flow."

"If they diverted their cash towards using their, paying off their payables."

In episode abstract 66 A3 reasons that the company doesn't need the money that they are asking for. She states, "Their cash flow is...they have no long term debt, they've got a strong cash flow even after financing." She concludes that the company has the cash flow to support the 3 million dollar line of credit as well as the interest but they really don't need the money.

In episode abstract 67 A3 examines the indirect method cash flow statement provided in the recaps. She confirms that the company indeed does have strong cash provided by operations and that they pay off debt consistently each year. She examines the financing section and determines that the company received 2 million from the sale of stock. Again, she concludes, "I'm just not seeing the need for the line at all."

A3 does not refer to the cash flow information again during her decision making process. However, in her final

decision phase she reaffirms that the company does not need the line of credit.

Credit Analyst A4

Credit analyst A4 examines the two cash flow statements provided in the recap sheets as a part of her sequential processing of the financial reports. During her familiarization phase, A4 refers to the RMA cash flow and the indirect method cash flow in episode abstracts 16 and 17, respectively:

Episode Abstract 16:

"The cash flow...two types."

"The first RMA cash flow really shows cash after operations all over the place, there's no trend there."

"And they have no debt to amortize, so there's really no change after debt amortization."

"They've had capital expenditures or they've paid back on capital expenditures so that's...NO, they've spent a lot."

Episode Abstract 17:

"Looking at the FASB 95 indirect cash flow."

"Again, its all over the place, its very erratic, but it looks like its becoming profitable after a huge negative number in 91."

"They show two strong cash flow periods in 12 months of 92 and three months of 93, but interim cash flows are questionable."

"The largest changes that have occurred...again in the payables and accruals."

"Receivables are all over the place too."

"That's just the nature of the contracts...that's hard to track."

It appears that A4 is using the cash flow information to determine if there is a trend in cash flow. However, she reaches no conclusions in this first use of cash flow information.

Later in her decision making process A4 uses cash flow information as part of phase 2 where she is assessing collateral alternatives. In episode abstract 30 she seeks out cash flow information because she believes that the liquidation of collateral is questionable. She emphasizes that the company does have a significant amount of cash at this point in time, but "that could go away, but we're going to see signs before that happens if there is trouble." In examining the cash flow information she states:

"Its hard to tell if we could collect anything on their cash flow because they have a limited history and its all over the place, but it never reaches 3 million."

She concludes that the bank would have to liquidate collateral if there was a problem on loan collection. In other words, she is not comfortable enough to rely on the cash flow to determine whether or not the company can support a line of credit.

In A4's fourth phase, she returns to the cash flow information. She looks at the indirect cash flow statement and states, "Their cash flow...I don't know why that receivable number keeps jumping out at me." In addition, she indicates that the company has a lot of cash flow from

the proceeds of stock sales and that "you can't continue that way."

#### Loan Officers Use of Cash Flow Information

The loan officers were provided with two cash flow statements. The first statement is the indirect method that is part of the audited financial statements. It is the same audited statement that was provided to the credit analysts. The second statement is provided by the banks spreads of the financial statements. It mimics the FAS 95 direct method cash flow in that it uses accrual income statement figures along with corresponding balance sheet changes to arrive at cash collected from sales, cash production costs, cash operating expenses, etc. This cash flow statement is very similar to the RMA cash flow statement provided to the credit analysts. In Bank B's spreads this cash flow statement is referred to as the "Detailed Cash Flow".

#### Loan Officer B1

Recall that loan officer B1 employs a directed search strategy in analyzing the loan applicant. Within that directed search strategy, B1 actively seeks out cash flow information. Specifically, in the familiarization phase B1 explores the indirect method cash flow statement for identifiable sources of cash. Episode abstract 3 contains references to the indirect method cash flow statement:

"Now I turn to their cash flow statement."

"I see that their cash flow from operations after balance sheet changes was negative in 1991."

"And it looks like their cash flows before balance sheet changes is about...a little under 4 million dollars."

"It looks like they sold preferred and common stock in the last two years."

"Which is where they got most of their cash, I would suspect, that's on their balance sheet right now."

"And they also sold assets..."

With that B1 explores the notes to the financial statements for additional information on the sale of discontinued operations which is referenced in the cash flow statement.

B1 uses the cash flow statement again during the second phase of his decision making process which is identified as a reasoning phase. In episode abstract 11 he returns to the audited cash flow statement to examine the trends in the cash flow from operations. He notes that the negative trend has now gone positive in 1992 and "would want to know why I can expect that to continue to go positive for the foreseeable future." In episode abstract 14, B1 refers to information derived earlier in his examination of the cash flow statement. Specifically, B4 emphasizes that the company has a lot of liquidity now and reasons that it is due to the sale of operations, equity, and preferred stock; information that was obtained previously from the examination of the cash flow statement.

In B1's final decision phase he concludes that the company has been funding its operations through the sale of

unprofitable or discontinued companies and the sale of equity. He states, "so it looks like I get paid back, looking at it historically, from sales of equity, preferred and common stock."

#### Loan Officer B2

Loan officer B2 first refers to cash flow information during his extensive familiarization phase. When B2 reaches verbiage in the case stating that the company does not expect its capital expenditures to exceed one million dollars in 1993, he refers to the indirect method cash flow statement to examine cash spent on capital expenditures in previous years. He concludes:

"Cap X has traditionally, while its growing, been less than a million dollars, so a million dollars seems reasonable even given the growth environment."

Later, during B2's familiarization phase, he examines the cash flow statement as part of his sequential processing of the audited financial statements. Episode abstract 16 contains the references to the cash flow statement.

"Just going through the cash flow statement now."

"The company indicates a loss of 640 thousand for 1990."

"That was net of a gain from discontinued operations of just in excess of a million dollars."

"So, on an operating basis the company lost a million six, almost a million seven in 90 and almost 3 million one in 91."

"For an operating profit of 3 million on the income statement in 92."

"Losses were just financed through the preferred stock being sold."

It is interesting to note that B2 focuses on the accrual income lines of the cash flow statement. He only refers to true cash flow information when he indicates that the losses (accrual losses) were financed through the sale of preferred stock. B2 does not refer to cash flow information again during his decision making process.

#### Loan Officer B3

Loan officer B3 never refers to or uses cash flow information in his decision making process. Recall that B3's decision process included a sequential examination of the information provided in the loan package. However, this sequential processing excludes the audited cash flow statement as well as the cash flow statement provided in the spreads.

#### Loan Officer B4

Loan officer B4 is the only loan officer that refers to the cash flow statement provided in the spreads. However, this reference is very brief. It is contained in his familiarization phase in episode abstract 8. B4 explores the company's financing of their growth and refers to the cash flow statement to find out that they financed the growth with equity. That is the only reference to and use of cash flow information during his decision making process.

Summary of Loan Officers' and Credit Analysts'

Use of Cash Flow Information

Tables 7.6 and 7.7 provide summaries of the subjects' use of cash flow information in each of the major decision phases. The results are discussed below.

Only one of the eight subjects failed to use cash flow information in his decision process. Of the seven subjects that used cash flow information, only three used or recalled the information during their final decision phase. A1 concluded that the company had cash flow problems in general. Based on cash flow information A3 concluded that the company did not need a credit line even though they could support one. Finally, B1 concluded that the banks source of repayment would be in cash from equity sales; information that he had obtained from the cash flow statement.

Several subjects (i.e. A2, A4, and B1) looked for trends in the operating section of the cash flow statement. Only one subject (A3) scanned the statement to look for something out of the ordinary. A1, A4, B1, and B2 used the investing section to determine that the company had been selling assets. They concluded that these sales had been used to fund operations.

B1, B2, B4, and A4 identified the cash from equity sales and were concerned that the company could not and



TABLE 7.6 SUMMARY OF CREDIT ANALYSTS' USE OF CASH FLOW INFORMATION				
	FAMILIARIZING	EXPLORING	SCANNING	DECISION
A1	Cash flow information not used.	Cash flow information not used.	Uses FAS 95, indirect from recaps. Uses cash from operations to look for reasons to not turn down loan. Uses cash from investing to determine if the company is selling assets to finance operations.	Recalls that the company has cash flow problems.
A2	Uses FAS 95, indirect from recaps to identify cash flow trend. Concludes that the company has the ability to repay debt.	Cash flow information not used.	Cash flow information not used.	Cash flow information not used.
A3	Uses FAS 95, indirect from audit to scan for something "out of the ordinary."	Uses RMA cash flow to explore cash margins. Uses indirect method from recaps to assess company's need for a line. Concludes that the company does not need a line but could support one.	Cash flow information not used.	Reaffirms that the company does not need a line of credit.
A4	Uses the RMA cash flow to look for trend in cash flow from operations. Also uses the investing section in RMA cash flow. Uses FAS 95 indirect in recaps to look for trend in cash flow. Notices large change in payables and accruals.	Uses cash flow to assess collateral alternatives. Doesn't want to rely on cash flow because of limited history and lack of trend.	Uses indirect method cash flow. Identifies change in accounts receivable. Looks at cash from financing and finds that there is a lot of cash from stock sales. Concludes that the company cannot continue to operate that way.	Cash flow information not used.

TABLE 7.7 SUMMARY OF LOAN OFFICERS' USE OF CASH FLOW INFORMATION				
	FAMILIARIZING	EXPLORING	SCANNING	DECISION
B1	Uses FAS 95 indirect from audited statements. Uses cash flow from operations to identify sources of cash before balance sheet changes. Uses cash flow from financing to determine that most of the company's cash is from stock sales. Uses cash flow from investing to determine that the company sold assets.	Uses FAS 95 indirect from audited statements. Examines trends in cash from operations. Questions why he can expect the trend to continue in the future. Uses cash flow from financing and investing to determine that the company's liquidity is due to sales of operations and sales of equity	No scanning phase identified.	Concludes that the company has funded operations through sales of operations and sales of equity. The bank would get paid back from equity sales.
B2	Uses FAS 95 indirect from audited statements. Uses cash from investing to look for amount spent on capital expenditures in previous years to compare with this year's projections. Uses cash flow from financing to determine that the net losses have been financed through stock sales.	Cash flow information not used.	Cash flow information not used.	Cash flow information not used.
B3	Cash flow information not used.	Cash flow information not used.	Cash flow information not used.	Cash flow information not used.
B4	Uses cash flow information in spreads. Uses financing section to determine that the company has financed growth with equity sales.	Cash flow information not used.	No scanning phase identified.	Cash flow information not used.

should not continue to sell equity to finance operations. A4 was the only subject that used the balance sheet changes in the operating section. She was most interested in the change in accounts receivable, but did not specify why.

None of the subjects used cash flow information in conjunction with other financial statements. The cash flow statement was regarded as a stand alone source of information. The subjects did not attempt to compute any ratios from the cash flow information. In addition, neither of the banks' software systems produced any financial ratios from cash flow information.

The least used type of cash flow statement was the one that mimicked the direct method (referred to as the RMA cash flow and produced by the banks' software systems). It appears that the analysts and officers were not comfortable with that statement and, therefore, ignored it. In fact, out of the eight subjects only two (A3 and A4) referred to the RMA cash flow statement. However, they did not use the statement in any constructive way.

It is premature to conclude that the decision processes of the subjects impacted their use of cash flow information. However, the only subject that utilized a direct information processing strategy was also the only subject that actively sought out cash flow information. Furthermore, that cash flow information ranked over and above his use of any other financial statement information. Finally, his final

decision did incorporate his analysis of the company's cash flow position (i.e., he was most concerned about how the bank could expect to be repaid).

## CHAPTER 8

### CONCLUSIONS, LIMITATIONS, AND AREAS FOR FUTURE RESEARCH

The two major research questions in this study are (1) What cash flow information is used by lenders in the evaluation of the credit worthiness of a client? (2) How do lenders use that cash flow information in their lending decision? In addition, lenders' decision processes are evaluated.

Of the eight subjects evaluated, only one subject failed to refer to or use cash flow information in his decision making process. Three of the subjects used the operating section of the cash flow statement to identify trends in cash flow from operations. Four subjects used the investing section to determine that the company had been selling assets to fund operations. Four subjects identified the cash from equity sales in the financing section of the cash flow statement and were concerned that the company could not and should not continue to sell equity to finance operations. Finally, among the seven subjects that used cash flow information, only three used or recalled the information during their final decision phase.

Cash flow information was not used by any of the subjects in conjunction with other financial statement data. In addition, neither of the banks' software systems produced

any financial ratios from cash flow information. Furthermore, the subjects did not attempt to compute any ratios from the cash flow information. It appears that cash flow information is being regarded as a stand alone source of information by these lenders.

For the most part the subjects in this study used cash flow information as it became available during their sequential processing of the financial information. In other words, the subjects did not actively seek out cash flow information during their decision making process. The only subject that did actively seek out cash flow information was the subject that used a directed search strategy.

Both the loan officers and the credit analysts received forms of the indirect cash flow statement and a cash flow statement that mimicked the direct method cash flow statement (i.e., RMA cash flow statement). The RMA/direct method cash flow statement was ignored by all but two of the eight subjects. The two subjects that referred to this direct method statement did not use it in any constructive way. It appears that the subjects were not comfortable with the RMA/direct method cash flow statement and therefore, chose to ignore its existence.

Overall, no apparent patterns developed in the lenders' use of cash flow information. However, it did become apparent that cash flow information is not being used as

extensively as other financial statement information. This conclusion is based upon a ranking of the use of financial information. The cash flow statement ranked first or second in usage over other financial statement information for only two of the eight subjects. The most used financial statements were the balance sheet and the income statement. The balance sheet ranked first or second for seven of the eight subjects, while the income statement ranked first or second for three of the eight subjects.

Seven of the eight subjects exhibited a sequential information processing strategy in the evaluation of the credit applicant. The subject that exhibited a directed search strategy was also the subject that used cash flow information the most frequently relative to his use of other financial statement information. However, it is premature to conclude that the decision processing strategy did indeed affect subjects' utilization of cash flow information.

A question of interest is whether experience level affected processing strategy. All of the credit analysts, ranging in experience from 2 to 4.5 years, exhibited sequential information processing strategies. The four loan officers ranged in experience from 25 months to 10 years, 9 months. The loan officer exhibiting a directed search strategy had 10 years of experience in bank lending. However, the other three loan officers, including one with 10 years, 9 months of experience exhibited sequential

information processing strategies. Therefore, it appears that experience level did not affect processing strategy. However, this conclusion is premature due to the small number of subjects studied.

Another question that arises, is whether the banks' loan packages or training methods affect decision making. The credit analysts tended to focus their attention on the financial information produced from the bank's software system instead of focusing on the audited financial statements. Conversely, the loan officers were more apt to focus on the audited financial statements instead of the statements provided by the bank's software system. This is most likely a result of the training provided by the respective banks. The impact of the focus on the final decision of the subjects was not apparent. However, the credit analysts, on average, exhibited longer decision making processes than the loan officers. This appears to be a function of the size of the loan package presented to the credit analysts. However, it could also be indicative of bank training or of experience level. Further research will have to address that issue in more depth.

It is both interesting and disturbing to note the varied decisions made by the subjects in this study. All of the subjects evaluated the same loan applicant. Except for the output from the banks' software systems, the information provided to the subjects was virtually identical. No



pattern emerged indicating that the subjects used any type of standard checklist in the evaluation of the loan applicant. The results of this study indicate that the acceptance or rejection of a loan applicant might, in part, be a function of the credit analyst or loan officer assigned to the loan. Future research could investigate this point further.

There are many limitations to this study. However, many of these limitations can be resolved in part through future research endeavors. One of the major limitations of this study is the ability to generalize results. This is due to several factors. First, the small number of subjects makes the projection of the results to other lenders suspect. Second, the use of two banks in one geographic region makes the generalizability of results to other banks in other regions questionable. Third, the use of one company's financial information limits the results found here to companies of a similar nature. Finally, the lenders evaluated one type of loan, a working capital loan, which may have impacted the results found here.

Since this study is exploratory, the generalizability of results is not a major concern. This study is a small step towards gaining an understanding of the loan analysis process and the use of cash flow information in that process. Future studies should be aimed towards banks in various geographic regions, loan applicants from various

industries, and different types of loans. In addition, this study focuses on the use of cash flow information by one major user group, namely bank lenders. Future research could provide information regarding the use of cash flow information by other user groups, such as investors and management, for other types of decisions.

The inherent limitations of protocol analysis impact the results found here. However, protocol analysis provides a unique opportunity to examine the actual decision processes of subjects as opposed to examining the decision only. Methodologies other than protocol analysis could be employed to support and/or enhance the results found here.

The researcher had hoped to provide cash flow variables for use in other experimental studies with loan officers. However, the inability to find a pattern among the eight subjects in their use of cash flow information makes the suggestion of cash flow variables premature.

In addition, the researcher had hoped to find evidence on the use of cash flow information in order to provide feedback to standard setters, namely the FASB. The inability to generalize the results of this study would make any feedback to the FASB premature. However, the results of this study indicate that cash flow information is being underutilized by lenders. This could be an indication of the need for education in the use of the cash flow statement.

APPENDIX A

CODING SCHEMES USED IN OTHER ACCOUNTING  
STUDIES EMPLOYING PROTOCOL ANALYSIS

Biggs and Mock (1983)

Biggs and Mock (1983) developed a coding scheme for an investigation of auditor decision processes in the evaluation of internal controls and audit scope decisions. They performed two levels of data analysis: (1) a microlevel analysis and (2) a macrolevel analysis. The microlevel data analysis resulted in the identification of the following aspects of each subject's task performance: (1) information attended to, (2) operators used, (3) evaluation criteria used, and (4) the reasoning underlying final choices. The coding scheme used in the data analysis was based upon Newell and Simon (1972) and Einhorn and Hogarth (1981).

According to Biggs and Mock (1983), the essential task at the microlevel of data analysis is to search for evidence of the problem space identified by Newell and Simon (1972). Since the operators (point 2 above) represent the subjects' processes or actions, they were of primary concern in describing subjects' behavior. Biggs and Mock (1983) classified the operators used by the subjects into four general categories:

1. Task Structuring--these were operators that involved the subjects' processes as they gained understanding of the task and set various task goals and subgoals.
2. Information Acquisition--these were operators that involved the subjects' processes as they sought information contained in the client's audit workpapers and in professional literature.

3. Analytical--these were operators that involved the subjects' processes as they evaluated the information in terms of the assumptions and judgments they made.
4. Action--these were operators that involved the subject's processes as they generated alternatives and selected the final sample size for the required audit procedures.

The operators were coded on the basis of coding rules summarized below.

#### *TASK STRUCTURING CODES*

1. SG Set Goal. Subject specifies a goal to be accomplished in performing the task.

#### *INFORMATION ACQUISITION CODES*

2. IS Information Search. Subject searches the case materials for specific pieces of information
3. AC Algebraic Calculation. Subject makes a mathematical calculation.
4. IR Information Retrieval. Subject retrieves a previously stored piece of information from external memory (e.g., notes, calculations) or internal memory.

#### *ANALYTICAL CODES*

5. AS Assumption. Subject generates an arbitrary fact about the case.
6. CJ Conjecture. Subject makes an if-then or hypothetical statement.
7. CN Comparison. Subject makes a judgment based upon a comparative process.
8. E Evaluation. Subject makes a teleological judgment about the task based on some explicit or implicit criterion.
9. GQ Generate Query. Subject raises a question about the task.

*ACTION CODES*

10. GA Generate Alternative. Subject states, in a tentative form, an alternative sample size, audit procedure, or other task-related action.
11. DR Decision Rule. Subject specifies a method (including heuristics) of determining a sample size.
12. SS Sample Size Decision. Subject finalizes sample.
13. TSS Temporary Sample Size. Subject specifies a temporary sample size which is ultimately revised.
14. OD Other Decisions. Subject recommends actions to be taken other than a sample size decision.

At the macrolevel of data analysis Biggs and Mock (1983) developed an aggregate description of each subject's task behavior. Following Newell and Simon (1972) they prepared episode abstracts. An episode abstract is ". . . a succinctly describable segment of behavior associated with attaining a goal" (Newell and Simon 1972). The episode abstract is a revealing descriptive tool since it shows the sequence of goals set by the subjects and the major information-processing activities related to those goals. These episode abstracts were presented in the form of flowcharts which showed in graphic form the linkages among the major episodes in each subject's behavior.

Stephens (1980)

Stephens (1980) used protocol analysis to analyze the use of financial information in a bank lending decision. Stephens identified eight subgoals (components) that comprised the decision process of lenders. He noted that

segmenting the decision process into subgoals seems to be part of a heuristic procedure which facilitates human problem solving. This is referred to by Newell and Simon (1972) as "means-ends analysis." The eight subcomponents identified by Stephens are:

1. **Cash management:** the ability of the management of a firm to forecast cash needs of the company.
2. **Accounts receivable management:** the ability of a firm's management to set credit policies and collect credit extensions.
3. **Inventory management:** the ability of a firm's management to control their inventory.
4. **Accounts payable management:** the ability of the company to properly manage within constraints set by trade creditors, i.e., to maintain credit relationships with trade creditors.
5. **Working capital management:** the joint management of cash, accounts receivable, inventory, and accounts payable.
6. **Claims priority:** prior claims in assets of a firm.
7. **Equity cushion:** the amount of deterioration in asset values (from book historical cost) which can be sustained and still allow payment of creditors.
8. **Pricing management:** the ability of a firm's management to obtain margins consistent with its operating characteristics, debt repayments, and dividend requirements.

These subgoals are synonymous with the task structuring identified by Biggs and Mock. For example, a lender could set a goal (subgoal), such as analyzing cash management of a company, and proceed through the other phases of the decision process (e.g. information search, analytical, action) to reach the goal.

Stephens (1980) also performed an analysis by processes to determine how information items were used by lenders. He developed twelve categories to be used in this analysis by processes phase of his examination. These twelve categories were combined with the eight subcomponents identified earlier to analyze the aggregate decision processes of lenders. The analysis by processes categories are as follows:

1. **Read:** This is the basic reading process. Calls to this process take a wide range of times. That is to say, it is sometimes used to read a whole page and sometimes to read a line only.
2. **Paraphrase:** This process paraphrases the input from the read process.
3. **Query:** Processing generates a question.
4. **E(Query):** This is an elaboration of a query, specifying more about the reason for the query.
5. **Estimate:** A statement where assumptions are made.
6. **E(Estimate):** An elaboration of an assumption.
7. **Informal comment:** A comment relating to the specific task environment.
8. **Intention:** Subject states a plan for processing.
9. **Calculation:** Manipulation of quantitative data.
10. **Design:** Subject's suggestion for changes in the company's operations.
11. **Flag:** Initiation of changes in processing.
12. **Decision review:** A process where a decision is made and reviewed.



APPENDIX B  
DETAILED DEFINITION OF CODES

### READING AND EXAMINATION CODES

- R            Read information item.
- PAR         Paraphrase. Subject restates in different words something that was read. Subject interprets or expounds upon something that was read.
- TREND       Compute or identify a trend. This could just be a two year trend (e.g., net income has increased from 91 to 92).
- COMP        Compute. Subject makes a mathematical calculation either mentally or physically.
- C            Compare two items. Do not confuse with "TREND." This is a comparison of two different items (e.g., comparing bad debt expense with accounts receivable).
- CI           Compare with internal norm or standard. This could be a norm or standard that the subject has ingrained in his/her own mind or it could be a norm or standard of the bank. These types of comparisons will usually be implicit instead of explicit. (e.g., bad debt expense seems low; this is immaterial; that is not important).
- CA           Compare with industry average. The subjects used statistics from Robert Morris and Associates. They usually refer to this as RMA. Comparing with industry average should be quite obvious (e.g., the RMA working capital is 1.1 ours is 1.5).

### REASONING CODES

- SUM         Summarize evaluations or findings. This may be implicit (e.g., so far I haven't seen anything; well that gives me kind of a brief overview; but I definitely don't like the trends I'm seeing here).
- INF         Infer. Subject makes an inference. Per Webster Dictionary: to derive as a conclusion from facts or premises; guess, surmise; to point out, indicate, hint or suggest. This is usually arrived at by reasoning. It could be an educated guess or an implication. Do not confuse infer with assumption.

- EXPL Explain. Subject explains an observed fact. The subject makes plain or clear to himself in order to arrive at an understanding.
- HYP Formulate problem-hypothesis. Subject points out potential causes that might explain a finding (e.g., net income has gone up--that could be because the company has been cutting their R&D expenses). Notice the fact (net income has gone up) then the hypothesis (that could be because the company has been cutting their R&D expense).
- CONF Confirm problem-hypothesis. Compare hypothesis with actual observations. This could be quite passive (e.g., I see that R&D expense did go up as I thought earlier).
- AS State an assumption. The subject generates an arbitrary fact about the case. Per Webster Dictionary: the supposition that something is true; a fact or statement taken for granted. Do not confuse with hypothesis or inference. Assumptions in this coding scheme are very arbitrary (i.e., decisive but unreasoned).
- Q Formulate a question.

#### GOAL CODES

- SG State goal. Subject specifies a goal to be accomplished in performing the task (e.g., I am going to see why net income went up).
- FG State (potential) future goal. Subject specifies a future goal to be accomplished in performing the task (e.g., I will find reasons for that later).
- GR Select a specific report. This is not to be used when the subject is just reading through the financial information. This is used when the subject quite purposely chooses to go to or use a specific report in the problem solving process (e.g., I am going to go to the balance sheet to find out what the cash balance was in 92).
- GI Select a specific item. This is not to be used when the subject is just reading through the financial information. This is used when the subject quite purposely chooses to go to or use a specific item in the problem solving process

(e.g., I am going to look at the working capital ratio to determine how it is affected by inventory).

#### MEMORY ACCESS CODES

- SF Stress a specific observation. Subject pronounces an observation significant.
- RET Retrieve information from memory. This could be a retrieval from long term memory or short term memory (i.e., something discovered previously in the case).

#### COMMENT CODES

- COM Comment re task content. Subject make a comment regarding the provided case material (e.g., the company was established in 1974, but we only have 90 through 92 year end).
- MC Comment re problem solving process. Subject makes a comment concerning the way he/she is solving the problem (e.g., I scanned through this very roughly).
- IO Interaction with observer. The observer and the subject are exchanging words directly with each other.

APPENDIX C  
CASE MATERIALS  
BANK A

### Instructions

Attached you will find a short-term credit line request for Powersoft Corporation. As the credit analyst for Powersoft Corporation you are required to review the request and decide whether to recommend it, in whole or in part. You may attach any conditions to the request which you consider necessary. Please treat the situation described in the attached pages as if it occurred in your organization and required your recommendation. I further ask that you follow the normal practices and procedures you would use in making a recommendation of this type.

During the time you are considering this lending situation, and following your regular practices and procedures, I ask that you verbalize the thoughts and considerations that occur to you. Please do this, no matter how trivial the thoughts may seem to you. Verbalizing this thought process is critical to my research. The verbal comments you make will be tape recorded; your comments will be held in confidence and in no way attributed to you without your prior permission. I will be present during your decision period to make additional observations.

I wish to emphasize that I am interested in the process by which loan decisions are made, rather than the particular decision itself. Please note that, as in an actual lending situation, there is no correct answer.

You are provided with the following information for this lending decision. Please feel free to write on any of the materials.

1. Audited financial statements.
2. Recap package.
3. Principle stockholder listing.
4. RMA industry statistics.

Thank you.

**REPORT OF INDEPENDENT ACCOUNTANTS**

To the Board of Directors and Stockholders of  
Powersoft Corporation:

We have audited the accompanying balance sheets of Powersoft Corporation as of December 31, 1992 and 1991, and the related statements of operations, cash flows and stockholders' deficit for each of the three years in the period ended December 31, 1992. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Powersoft Corporation as of December 31, 1992 and 1991, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 1992, in conformity with generally accepted accounting principles.

COOPERS & LYBRAND

Dallas, Texas  
January 14, 1993

**POWERSOFT CORPORATION**  
**BALANCE SHEETS**  
(In thousands, except share amounts)

ASSETS	December 31,	
	1991	1992
Current assets:		
Cash and cash equivalents .....	\$ 659	\$ 4,364
Accounts receivable, net of allowances for doubtful accounts of \$10 and \$98 in 1991 and 1992, respectively .....	1,419	5,902
Inventory .....	195	500
Prepaid expenses and other current assets .....	43	304
Total current assets .....	2,316	11,070
Property and equipment, net .....	737	1,171
Deposits .....	106	126
Total assets .....	\$ 3,159	\$12,367
<b>LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)</b>		
Current liabilities:		
Accounts payable .....	\$ 784	\$ 1,596
Accrued liabilities .....	624	2,277
Deferred revenue .....	252	2,708
Net current liabilities of discontinued operations .....	1,175	—
Total current liabilities .....	2,835	6,581
Deferred rent .....	292	209
Net non-current liabilities of discontinued operations .....	804	—
Series A redeemable preferred stock, \$.01 par value, 20,000 shares authorized, issued and outstanding .....	2,000	2,000
Series B redeemable preferred stock, \$.01 par value, 18,163 shares authorized, issued and outstanding .....	2,844	2,844
Series C redeemable convertible preferred stock, \$.01 par value, 730,158 shares authorized, issued and outstanding .....	—	2,722
Commitments		
Stockholders' equity (deficit):		
Preferred Stock, \$.01 par value, 1,000,000 shares authorized; none outstanding (Note G) .....	—	—
Common stock \$.00167 par value; 12,500,000 shares authorized; 5,227,828, 5,436,082 shares issued and outstanding in 1991 and 1992, respectively .....	9	9
Additional paid-in capital .....	453	540
Accumulated deficit .....	(6,078)	(2,538)
Total stockholders' equity (deficit) .....	(5,616)	(1,989)
Total liabilities and stockholders' equity (deficit) .....	\$ 3,159	\$12,367

The accompanying notes are an integral part of the financial statements.



**POWERSOFT CORPORATION**  
**STATEMENTS OF OPERATIONS**  
(In thousands, except per share data)

	Year ended December 31,		
	1990	1991	1992
<b>Revenues:</b>			
License fees .....	\$ —	\$ 4,088	\$17,560
Services .....	55	626	3,633
<b>Total revenues</b> .....	<b>55</b>	<b>4,714</b>	<b>21,193</b>
<b>Costs and expenses:</b>			
Cost of license fees .....	—	253	1,227
Cost of services .....	29	698	2,404
Sales and marketing .....	303	4,188	9,952
Research and development .....	1,010	1,324	2,004
General and administrative .....	383	1,388	2,398
<b>Total costs and expenses</b> .....	<b>1,725</b>	<b>7,851</b>	<b>17,985</b>
Operating income (loss) .....	(1,670)	(3,137)	3,208
Other income, net .....	7	60	19
Income (loss) before income taxes .....	(1,663)	(3,077)	3,227
Provision for income taxes .....	1	5	227
<b>Income (loss) from continuing operations</b> .....	<b>(1,664)</b>	<b>(3,082)</b>	<b>3,000</b>
<b>Discontinued operations:</b>			
Income from discontinued operations .....	1,024	488	—
Gain (loss) on disposal including provision of \$598 in 1991 for operational losses during phase-out period .....	—	(147)	540
<b>Net income (loss)</b> .....	<b>\$ (640)</b>	<b>\$ (2,741)</b>	<b>\$ 3,540</b>
<b>Income (loss) per share:</b>			
Income (loss) per share from continuing operations .....	\$ (0.26)	\$ (0.41)	\$ 0.35
Income per share from discontinued operations .....	0.16	0.05	0.06
<b>Net income (loss) per share</b> .....	<b>\$ (0.10)</b>	<b>\$ (0.36)</b>	<b>\$ 0.41</b>
Weighted average number of common shares outstanding .....	6,411	7,558	8,570

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**STATEMENTS OF STOCKHOLDERS' DEFICIT**  
for the years ended December 31, 1990, 1991 and 1992  
(In thousands, except share amounts)

	Shares			Par Value			Additional Paid-in Capital	Additional Paid-in Capital Common Stock	Accumulated Deficit	Total Stock- holders' Deficit
	Class A Common Stock	Class B Common Stock	Common Stock	Class A Common Stock	Class B Common Stock	Common Stock				
Balance, December 31, 1989	2,368,238	1,482,360		\$4	\$2				\$(2,496)	\$(2,490)
Exercise of stock options		23,750					\$ 20			20
Preferred dividends accrued							(20)		(162)	(182)
Net loss									(640)	(640)
Balance, December 31, 1990	2,368,238	1,506,110		4	2				(3,298)	(3,292)
Preferred dividends accrued									(39)	(39)
March 19, 1991 financing and changes in capital structure	(2,368,238)	(1,506,110)	5,218,452	(4)	(2)	\$9		\$450		453
Exercise of stock options			9,376					3		3
Net loss									(2,741)	(2,741)
Balance, December 31, 1991			5,227,828			9		453	(6,078)	(5,616)
Common stock issuance			2,000					10		10
Exercise of stock options			206,254					77		77
Net income									3,540	3,540
Balance, December 31, 1992			5,436,082			\$9		\$540	\$(2,538)	\$(1,989)

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**STATEMENTS OF CASH FLOWS**  
(in thousands)

	<u>Years ended December 31,</u>		
	<u>1990</u>	<u>1991</u>	<u>1992</u>
<b>Cash flows from operating activities:</b>			
Income (loss) from continuing operations .....	\$(1,664)	\$(3,082)	\$3,000
Income from discontinued operations .....	1,024	341	540
Net income (loss) .....	(640)	(2,741)	3,540
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Loss on disposal of discontinued operations .....	—	147	—
Depreciation and amortization .....	99	122	299
Provision for doubtful accounts .....	160	32	88
Changes in operating assets and liabilities:			
Accounts receivable .....	(1,279)	2,019	(4,571)
Inventory .....	—	(195)	(305)
Prepaid expenses and other current assets .....	(92)	132	(261)
Deposits .....	(4)	(62)	(20)
Accounts payable and accrued liabilities .....	2,003	(2,803)	2,382
Deferred revenue .....	641	(874)	2,456
Net liability of discontinued operations .....	—	1,830	(1,979)
Net cash provided by (used in) operating activities .....	888	(2,393)	1,629
<b>Cash flows from investing activities:</b>			
Capital expenditures .....	(138)	(445)	(733)
Net cash used for investing activities .....	(138)	(445)	(733)
<b>Cash flows from financing activities:</b>			
Proceeds from sale of preferred and common stock .....	—	2,452	2,732
Principal payments under capital lease obligations .....	(21)	(191)	—
Proceeds from exercise of stock options .....	20	3	77
Net cash provided by (used for) financing activities .....	(1)	2,264	2,809
Net increase (decrease) in cash and cash equivalents .....	749	(574)	3,705
Cash and cash equivalents at beginning of year .....	484	1,233	659
Cash and cash equivalents at end of year .....	<u>\$ 1,233</u>	<u>\$ 659</u>	<u>\$4,364</u>
<b>Supplemental disclosures of cash flow information:</b>			
Interest paid .....	\$ 15	\$ 23	\$ 10
Income taxes paid .....	\$ 1	\$ 4	\$ 221

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS**

**A. The Company:**

Until 1991, Powersoft Corporation (the "Company") was engaged in the development and marketing of software applications for manufacturing data processing. In the fourth quarter of 1988 the Company began development of PowerBuilder, a software application development tool designed for use in the client/server computing environment. In December 1991, following the June release of PowerBuilder, the Company determined that it would divest itself of its manufacturing applications business segment to focus on PowerBuilder. The Company sold substantially all the assets of its manufacturing applications business in two transactions in January and May of 1992 (see Note C).

**B. Summary of Significant Accounting Policies:**

**Revenue Recognition**

Revenue is recognized from the perpetual license of software upon shipment to the end-user provided that no significant vendor obligations remain outstanding and collection of the resulting receivable is deemed probable. The Company receives a one-time fee for each program licensed. Training revenue is recognized as the services are performed. Subscription and support revenues are recognized ratably over the contract period.

The Company's revenue recognition policies for all periods presented are in conformance with the Statement of Position 91-1, "Software Revenue Recognition" promulgated by the American Institute of Certified Public Accountants.

**Cash and Cash Equivalents**

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. At December 31, 1991 and 1992, cash and cash equivalents include \$495,000 and \$2,523,000, respectively, which were invested in repurchase agreements and commercial paper, and are stated at cost plus accrued interest, which approximates market.

The repurchase agreements held at December 31, 1991 and 1992 bear interest at 2.75% and 2.25% respectively, and mature overnight.

**Inventory**

Inventories are stated at the lower of cost (first in, first out) or market.

**Property and Equipment**

Property and equipment are stated at cost and are depreciated by use of the straight-line method over the estimated useful lives of the related assets (3 to 5 years). Upon sale or retirement, the asset cost and related accumulated depreciation are removed from the respective accounts, and any related gain or loss is reflected in operations.

Leasehold improvements are amortized over the shorter of their estimated useful lives or the term of the lease. Repair and maintenance costs are expensed as incurred.

**Research and Development Costs**

Research and development costs are expensed as incurred. Costs of internally developed software which qualify for capitalization are immaterial.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

**Income Taxes**

The provision for income taxes includes United States federal, state and foreign income taxes, each currently payable and deferred, as determined in accordance with the provisions of Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes." Tax credits are recorded as a reduction in the provision for income taxes when utilized.

Deferred income tax assets and liabilities arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements that will result in taxable or deductible amounts in future years.

**Net income (Loss) Per Common Share**

Net income (loss) per common share is computed based upon the weighted average number of common shares outstanding. Common equivalent shares, using the treasury stock method, are included in the historical per-share calculations for fiscal year 1992 since the effect of their inclusion is dilutive.

**C. Discontinued Operations:**

In 1992, pursuant to the strategy adopted in the fourth quarter of 1991, the Company sold the technology and certain other assets of its manufacturing applications business segment to two separate and unrelated companies. In the first transaction the Company received a noninterest-bearing promissory note secured by substantially all of the assets of the purchaser in the amount of \$1,375,000, payable in four equal quarterly installments of \$187,500 commencing on April 30, 1992 and four equal quarterly installments of \$156,250 commencing on April 30, 1993. Because of the risk of collection, the Company recognizes this note as cash payments are received. The Company has netted against its loss on disposal of its discontinued operations the sum of \$1,250,000, consisting of a cash payment of \$250,000 received by the Company under an agreement for the second transaction. This agreement provides for royalties on the future retail sale of products incorporating certain of the sold technology and an additional \$1,000,000 of minimum royalties receivable in installments of \$250,000 in each of the years ended November 30, 1993, 1994, 1995 and 1996. Royalties earned in excess of the minimum will be recognized as earned and paid. Maximum aggregate royalties over the life of the agreement are capped at \$2,250,000.

The divested business is being accounted for as discontinued operations and, accordingly, the operating results are reported in this manner for all periods presented in the accompanying statements of operations. Revenues, recognized upon shipment, from discontinued operations were \$17,445,000, \$14,643,000 and \$733,000 for the years ended December 31, 1990, 1991 and 1992, respectively.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

The net liabilities of discontinued operations consisted of the following:

	December 31,	
	1991	1992
	(in thousands)	
Accounts payable and accruals .....	\$5,408	\$1,000
Less: Receivables .....	3,429	1,000
Net liabilities .....	<u>\$1,979</u>	<u>\$ —</u>

**D. Inventory:**

Inventory consists of the following:

	December 31,	
	1991	1992
	(in thousands)	
Finished goods .....	\$150	\$390
Raw materials .....	45	110
	<u>\$195</u>	<u>\$500</u>

**E. Property and Equipment:**

Property and equipment consists of the following:

	December 31,	
	1991	1992
	(in thousands)	
Computer equipment and purchased software .....	\$ 636	\$1,134
Office equipment and furniture .....	260	313
Leasehold improvements .....	262	444
	1,158	1,891
Less accumulated depreciation and amortization .....	(421)	(720)
	<u>\$ 737</u>	<u>\$1,171</u>

**F. Commitments:**

**Leases**

The Company leases certain office facilities, computer equipment and furnishings under lease agreements with various expiration dates through 1997. The corporate office facility lease, which contains an option to renew, is subject to escalation for increases in real estate taxes and operating expenses. The lease also granted the company free rent periods. Rent expense is reflected on a straight-line basis over the term of the lease in the statements of operations. Deferred rent represents the difference between expense reflected on a straight-line basis and payments due under the terms of the lease agreement.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

Future minimum payments under noncancelable operating leases as of December 31, 1992 are as follows:

	(in thousands)
1993 .....	\$1,230
1994 .....	1,179
1995 .....	302
1996 .....	151
1997 .....	25
Thereafter .....	—
Total future minimum lease payments .....	<u>\$2,887</u>

Certain of the leases contain renewal options at the end of the lease term. Rental expense for operating leases was \$1,171,000 in 1990, \$1,305,000 in 1991 and \$1,220,000 in 1992.

Capital lease obligations of \$176,130 were incurred during fiscal 1990. These noncash transactions have been excluded from the statement of cash flows.

In September 1991, the Company entered into a lease line of \$1,000,000. The line was used for non-cancellable operating leases of furniture, telephone and computer equipment as disclosed above. The Company was required to pay a commitment fee of .75% of the cost of the equipment or \$7,500. At December 31, 1992, the Company had fully utilized this line.

**G. Capital Structure:**

On November 20, 1992, the Board of Directors declared a 2-for-1 stock split, and approved a resolution to increase the authorized number of shares of Common Stock to 12,500,000, each of which the stockholders of the Company approved at a special meeting of stockholders on December 18, 1992. All share and per share data have been retroactively adjusted to reflect these changes. At the special meeting, the stockholders also authorized 1,000,000 shares of Preferred Stock, par value \$.01 per share, of which no shares were issued or outstanding at December 31, 1992.

On March 19, 1991 the Company sold \$2,500,000 of newly authorized Common Stock and Series A Preferred Stock, the proceeds of which are recorded net of financing costs of \$48,000. This financing caused significant changes in the Company's existing preferred and common stock accounts. The Class A and Class B Common Stock was combined into a single class of Common Stock and the Redeemable Preferred Stock was converted to Series B Redeemable Preferred Stock.

On March 17, 1992, the Company sold 730,158 shares of its newly authorized Series C Preferred Stock, \$.01 par value for \$3.78 per share pursuant to a purchase agreement. The proceeds of \$2,722,000 are recorded net of financing costs of \$38,000. In March 1992, approximately \$1,343,000 of the net proceeds was used to satisfy an existing vendor obligation which had been collateralized by the Company's assets at December 31, 1991.

The holders of the Series C Preferred Stock may convert each share of such stock into two shares of Common Stock at any time.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

The holders of the Preferred Stock (Series A, B and C) are not entitled to receive any dividends other than the unpaid dividends on the Series B Preferred Stock accrued prior to March 19, 1991 (\$1,027,139). In addition, holders of the Preferred Stock are not entitled to vote on any corporate matters, except those affecting their rights or interests as holders of Preferred Stock.

The holders of the Preferred Stock can notify the Company during the three months ended March 31, 1997 that they require the Company to repurchase up to 100% of their stock at a price of \$100 per share for the Series A Series and B Preferred Stock (plus the accrued dividends, in the case of Series B Preferred Stock) and at \$3.78 per share for the Series C Preferred Stock. Should the Preferred Stockholders make such a demand, the Company would be required to repurchase the shares offered in equal annual installments on March 31, 1997, 1998, and 1999.

**Warrants**

In conjunction with a lease line entered into in September 1991 (see Note F), the Company issued a warrant to purchase 61,828 shares of Common Stock at \$1.86 per share. The warrant is exercisable prior to the tenth annual anniversary date of the grant and contains registration and antidilution rights similar to those given to the holders of the Company's Preferred Stock.

**H. Stock Options:**

Under the 1984 Incentive Stock Option Plan, as amended, incentive stock options can be granted to certain employees entitling them to purchase shares of Common Stock within one to ten years from the date of grant at option prices equal to the fair market value as determined by the Board of Directors at the date of grant. The exercise price for incentive options may not be less than the fair market value of the Common Stock on the date of grant (110% of fair market value in the case of a greater-than-ten-percent-stockholder).



**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

Information with respect to options granted under the plan is as follows:

	Shares	Option Price
Outstanding at December 31, 1989 .....	738,300	\$ 0.375
Granted .....	34,000	0.375
Exercised .....	(23,750)	0.375
Canceled .....	(50,750)	0.375
Outstanding at December 31, 1990 .....	697,800	0.375
Granted .....	185,600	0.375
Exercised .....	(9,376)	0.375
Canceled .....	(44,624)	0.375
Outstanding at December 31, 1991 .....	829,400	0.375
Granted .....	1,180,800	0.375-10.50
Exercised .....	(186,254)	0.375
Canceled .....	(226,946)	0.375-10.50
Outstanding at December 31, 1992 .....	1,597,000	\$0.375-10.50
Available for grant, December 31, 1992 .....	134,436	

At December 31, 1992, options to purchase 406,800 shares were exercisable.

In March 1992, in conjunction with the financing described in Note G, the Board of Directors voted to increase the number of shares with respect to which options may be granted to 1,945,816.

In April 1991 and October 1991, the Board of Directors voted to grant nonqualified options to purchase 20,000 shares of Common Stock (which were fully vested at September 30, 1992) and 50,000 shares of Common Stock (none of which were vested at December 31, 1992) to non-employee directors. Each option is exercisable at \$.375 per share, the fair market value of the options, and is for a term of five years. On September 1, 1992 a non-employee director exercised an option granted in October 1987 to acquire 20,000 shares of common stock at an exercise price of \$.375 per share.

**1. Income Taxes:**

Effective January 1, 1992, the Company adopted Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes." There was no impact on prior year financial statements. Under this statement, deferred tax assets (net of any valuation allowance) and liabilities resulting from temporary differences, net operating loss carryforwards and tax credit carryforwards are recorded using a liability method. Deferred taxes relating to temporary differences and loss carryforwards are measured using the enacted tax rate expected to be in effect when they reverse or are realized.

The components of the net deferred tax amount recognized in the accompanying balance sheets are:

	1991	1992
Deferred tax assets .....	\$ 3,544,000	\$ 1,404,000
Deferred tax liabilities .....	(1,154,000)	—
Valuation allowance .....	(2,390,000)	(1,404,000)
	<u>\$ 0</u>	<u>\$ 0</u>

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

Due to the uncertainty surrounding the timing of realizing the benefits of its favorable tax attributes in future tax returns, the Company has placed a valuation allowance against its otherwise recognizable net deferred tax assets. The decrease in the valuation reserve during 1992 was primarily the result of the utilization of net operating loss carryforwards.

The approximate tax effect of each type of temporary difference and carry forward before allocation of the valuation allowance is:

	<u>1991</u>	<u>1992</u>
Deferred tax assets (liabilities):		
Net operating loss carryforwards .....	\$ 1,532	—
Accounts receivable reserves .....	87	328
Deferred revenue .....	(1,154)	—
Leases .....	796	156
Vacation and benefits reserves .....	320	88
Other liabilities and reserves .....	306	316
Tax credits and carryforwards .....	503	516
	<u>\$2,390</u>	<u>\$1,404</u>

The provision for federal and state income taxes for the year ended December 31, 1992 was offset as a result of the utilization of net operating loss carryforwards in the amount of approximately \$4,500,000. The Company has tax credit carryforwards of approximately \$516,000 expiring at various times through 2007. Future ownership changes may result in limitations on the utilization of research and development tax credit carryforwards.

A reconciliation of the statutory federal income tax rate to the Company's effective tax rate is as follows:

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Statutory federal income tax rate (benefit) .....	(34)%	(34)%	34%
Operating losses not benefited .....	34	34	—
Utilization of net operating loss carryforwards .....	—	—	(33)
State taxes, net of federal tax benefit .....	—	—	6
	<u>— %</u>	<u>— %</u>	<u>7%</u>

Income taxes related to discontinued operations after consideration of valuation allowances are not significant. Income tax provision for continuing operations includes the following:

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Current:			
Federal .....	\$ —	\$ —	\$125
State .....	1	5	102
	<u>\$ 1</u>	<u>\$ 5</u>	<u>\$227</u>

**J. Retirement Plan:**

Effective July 1, 1990, the Company adopted a retirement plan which is qualified under Section 401(k) of the Internal Revenue Code. This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. In addition, Company contributions to the plan may be made at the discretion of the Board of Directors. No Company contributions have been made to date. The Company does not offer post-retirement or post-employment benefits.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

**K. Segment Information:**

The Company is active in only one business segment: developing, marketing and supporting its application software development tools for the client/server market. No one customer accounted for 10% or more of total revenues. Sales to markets outside North America in 1992 were approximately \$2,150,000, or 10% of total revenues for 1992, and were less than 10% of total revenues in 1991. At December 31, 1991 and 1992, identifiable assets of foreign operations were not material to total assets.

POWERSOFT CORPORATION  
2527 Elm St.  
Dallas, Texas 75201

RISK RATING  
Date                      Rating  
5/25/93                      4  
\_\_\_\_\_  
\_\_\_\_\_

05/25/93  
Stemmons Middle Market  
CBO: G. Edwin McComas  
LAO: R. Langdon Bennett  
CBA:

EXPOSURE SUMMARY (See Appendix "A")

Requested Money:            \$ 3,000,000  
  
New Money:                    \$ 3,000,000  
  
Total Borrower Debt:        \$ 3,000,000  
  
Related Debt:                 \$ -  
  
Total Aggregated Debt:      \$ 3,000,000  
  
Other Debt:                    \$

	<u>SIGNATURES</u>		
	<u>DATE</u>	<u>APPROVE</u>	<u>DECLINE</u>
<u>GROUP</u>			
<u>COMMITTEE</u>			
<u>TX EXEC</u>			

INDUSTRY CONCENTRATION(S)

None

EXCEPTION(S)

5/25/93 Advancing on progress billings.

BUSINESS

Established:    1974  
  
Tax Status:    C-Corp

Trade Terms:    50% down; 50% upon installation,  
N30

Three Major Customers:            % of Sales  
  
Microsoft Corp                            15  
Dell Computer Corp.                      13  
EDS    11  
American Airlines                         8  
Dun & Bradstreet Software              6  
Fidelity Investments, Inc.                 5

Subsidiaries:

% Owned            Since            Name  
None

Line of Business:

% of Sales            SIC Code            Business  
100                      7371                      Software design

Introduction Remarks:

Powersoft Corporation ("Powersoft" or the "Company") develops, markets and supports PowerBuilder, an application software development tool for the emerging client/server market. The Company's products are used by organizations to design, prototype, build, test, deploy and maintain a wide range of business applications. PowerBuilder addresses the market need for application development tools which combine the ease of use, graphical user interface and distributed computing capabilities of personal computer development tools with the performance and functionality of mainframe-based tools.

POWERSOFT CORPORATIONPage 2  
5/25/93

PowerBuilder enables both developers and end-users to take advantage of the benefits provided by client/server computing. PowerBuilder's open architecture and tight integration with most widely-used relational database management systems ("RDBMSs") allow customers to choose the hardware, operating systems and RDBMSs which best meet their needs without compromising functionality or performance. PowerBuilder runs on Microsoft Corporation's Windows operating system and employs the full range of Windows functions, communications and windowing styles. PowerBuilder's object-oriented programming techniques, interactive debugging facility and group development capabilities facilitate rapid development, easy deployment and efficient maintenance of complex, enterprise-wide applications.

The Company's objective is to be the leading provider of application development tools for development of business applications in the client/server environment. The Company plans to continue to expand its product leadership by adding support for additional widely-used operating systems, RDBMSs and third-party development tools.

The Company has established a comprehensive sales organization that combines elements of the direct sales approach traditionally used in the mainframe software industry with the leveraged distribution methods employed by personal computer software vendors. The Company sells its products through a direct sales force and a network of more than 75 value-added resellers, systems integrators and independent applications software vendors in the United States and through international distributors in 33 countries worldwide. The Company has licensed more than 8,000 copies of PowerBuilder to over 2,000 customers, including America Airlines, Dun & Bradstreet Software, Dell Computer Corporation, Electronic Data Systems, Fidelity Investments, Inc., and Microsoft Corporation.

The Company was incorporated in Massachusetts in 1974 under the name Computer Solutions, Inc., and initially specialized in the development of manufacturing management software. The Company introduced a manufacturing management applications software package, known as GrowthPower, in 1982. In the fourth quarter of 1988, the Company began development of PowerBuilder, originally intended to assist the company in developing the next generation of GrowthPower. In 1990, the Company changed its name to Powersoft Corporation. In June, 1991, PowerBuilder was released as a commercial product. In December, 1991, the Company decided to divest itself of its manufacturing management applications business segment in order to focus on its application development tools business and the further development and marketing of PowerBuilder. In transactions with two separate and unrelated purchasers in January and May of 1992 the Company sold substantially all of the assets of its manufacturing management applications business segment. See note C of notes to financial statements.

KEY \*DIRECTORS, MANAGEMENT & PERSONNEL

<u>Name</u>	<u>Title</u>	<u>Ownership %</u>	<u>Born</u>	<u>Experience</u>
-------------	--------------	--------------------	-------------	-------------------

**Executive Officers and Directors**

Mitchell Kertzman, a founder of the Company, has been Chief Executive Officer and Chairman of the Board of Directors since the Company's inception in May, 1974. From May, 1974, to March, 1992, he also served as President of the Company.

David Litwack joined the Company as Vice President of Product Development in October, 1988. Since March, 1992, he has served as President of the Company. Mr. Litwack is the chief architect of PowerBuilder. Prior to joining the Company, Mr. Litwack was the Executive Vice President of Product Development for Cullinet Software, Inc., a database management software

POWERSOFT CORPORATIONPage 3  
5/25/93

company.

David Dewan, a co-founder of the Company, has served as a Vice President of the Company since 1981. Mr. Dewan was the chief designer of the Company's first commercial business product, GrowthPower, and has been involved with PowerBuilder since its inception.

John Gannon is Chief Financial Officer and Treasurer of the Company. He joined the Company in September, 1992, from Trinzic Corporation (formerly AlCorp, Inc.), where he served as Treasurer from 1987 to 1992 and as Chief Financial Officer from April to September, 1992. Prior to his employment at Trinzic, Mr. Gannon held several positions, including Treasurer and Vice President, Corporate Services, at Cullinet Software, Inc. Before that, he was employed as a Certified Public Accountant at Coopers & Lybrand.

Other executive officers and directors of the Company are:

Thomas A. Herring	Vice President of Sales & Marketing--Americas
Paul MacKay	Vice President of International Operations
Douglas Miller	Director of Marketing
Coleman Sisson	Director of Customer Services
Jonathan A. Flint (1) (2)	Director
John Hummer	Director
L. William Krause	Director
William P. Miller (1)	Director
Paul J. Palmer (2)	Director
Joseph Stavenhagen (1) (2)	Director

(1) Member of the Compensation Committee.

(2) Member of the Audit Committee.

**Ownership**

There are no individuals, partnerships, or corporations holding a majority of the voting common stock. However, all directors and officers as a group (12 persons) own a total of 69.1% of the Company's Common Stock.

POWERSOFT CORPORATIONPage 4  
5/25/93REQUESTTotal of new funds being requested: \$3,000,0001. Approval of a \$3,000,000 (2) two-year Revolving Credit.

Business Unit: Stemmons Middle Market

Use of funds: Provide working capital

Rate: P + 1%

Current Outstanding: -0-

Review Date: September 1, 1993

Expiration/Maturity: Two years from funding.

Dollar amortization; basis: Interest only monthly.

Note type: Revolver

Security: A/R's AOC: Inventory, M&amp;E, Intellectual Property, General Intangibles.

Formula: 80% of A/R less than 90 days (date of invoice)

Support: None

Subordination: None

Repayment Source: Cash flow from operations

Alternate Source: Liquidation of collateral

CONTROLS

- Monthly borrowing base reports
- Monthly A/R agings
- Monthly A/P agings
- Monthly financial statements and Quarterly 10Qs
- Annual audited financial statements and 10Ks
- 1 A/F audit per year
- NDOF

SUBJECT TO

- Preloan A/F Audit

Covenants:

- Debt to Worth 1.5
- Minimum Net worth of \$5,250,000 with the following step ups:

03/31/93	\$100,000
06/30/93	150,000
09/30/93	150,000
12/31/93	100,000
03/31/94	100,000
06/30/94	200,000
09/30/94	200,000
12/31/94	100,000

- Net Working Capital 1.5

POWERSOFT CORPORATIONPage 5  
5/25/93FIVE YEAR BORROWING HISTORY (000's Omitted) Customer Since: Prospect  
Facility: Revolver

<u>Year</u>	<u>Facility</u>	<u>High</u>	<u>Low</u>	<u>Average</u>	<u>Days Paid Out</u>	<u>Risk Rating</u>
1993	3,000	new	new	new	-	4

BALANCES

<u>Year</u>	<u>Avg Coll Bal</u>
1993	2,500

OFFICER REMARKSStrengths:

1. Market leader
2. Strong account debtor base

Weaknesses:

1. Lack of operating history
2. Highly competitive market

Financials:Auditors

The financial statements and financial statement schedules of Powersoft Corporation at December 31, 1990, 1991, and 1992 have been audited by Coopers & Lybrand, independent auditors.

Financial Performance

Mitchell Kertzman has provided the bank with a set of audited financial statements for Powersoft Corporation for the calendar years 1990, 1991, and 1992. The operating results are summarized below:

	Powersoft Corporation		
	<u>1990</u>	<u>1991</u>	<u>1992</u>
Revenues	55	4,714	21,193
Operating Income (Loss)	(1,670)	(3,137)	3,208
Profit (Loss) after Tax	(640)	(2,741)	3,540

The Company's revenues are derived from two sources, software license fees (including fees for upgrades) and fees for services (including support, training and consulting). For all periods presented, the Company has recognized revenue in accordance with Statement of Position 91-1 ("SOP"), entitled "Software Revenue Recognition," dated December 12, 1991, promulgated by the American Institute of Certified Public Accountants. The SOP requires that software license revenue be recognized upon shipment and that maintenance revenue be recognized ratably over the



POWERSOFT CORPORATIONPage 6  
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term of the maintenance agreement. The Company's standard license agreements generally do not provide a right of return and reserves are maintained for potential credit losses, which have not been material to date. See note B of notes to financial statements.

The Company had total revenues from continuing operations of \$55,000 in 1990. Total revenues from continuing operations increased from \$4,714,000 in 1991, following the first commercial shipment of PowerBuilder in June of that year, to \$21,193,000 in 1992. Management believes it unlikely that the rate of growth in its revenues experienced by the Company during 1991 and 1992 will be sustained.

**Liquidity and Capital Resources**

From inception through March, 1992, the Company financed its operations principally through the private sale of equity securities and through a mix of short-term secured bank financing, long-term equipment leasing and favorable trade credit terms from a vendor of equipment sold by the Company in its now discontinued manufacturing management applications software product line. In each quarter subsequent to March, 1992, the Company's operations have been profitable and have generated positive cash flow.

During 1989, 1990, and 1991, the Company's principal use of cash was to fund operating losses incurred during the development of PowerBuilder. In March, 1991, the Company raised approximately \$2,452,000 from the sale of preferred stock to supplement this development effort. In 1992, the Company generated approximately \$3,068,000 from continuing operations. In March, 1992, the Company raised an additional \$2,722,000 from the sale of preferred stock, primarily to fund the expansion of the Company's sales and marketing organization worldwide and to discharge approximately \$1,343,000 in obligations of its discontinued operations, resulting in a net cash balance of \$4,364,000 at December 31, 1992. The Company has no significant capital commitments and currently anticipates that additions to property and equipment through 1993 will not exceed \$1,000,000.

**Competition**

The application development software market is intensely competitive. The Company currently encounters competition primarily from a limited number of direct competitors which provide graphical, client/server based application development tools, such as Gupta Corporation, Cooperative Solutions, Inc., and Uniface Corporation. The Company also competes with a larger number of indirect competitors, which fall into four categories: (i) RDBMS vendors who provide application development tools with their proprietary database technology, such as Sybase, Oracle, Informix and Ingres; (ii) 4GL application development tools vendors such as Progress Software Corporation and Cognos Incorporated; (iii) CASE tools vendors such as Knowledgeware, Inc., Intersolv and Texas Instruments Incorporated; and (iv) PC-based application development tools vendors such as Microsoft Corporation and Borland International, Inc. The Company expects that competition from these sources, most of which have substantially greater financial, technical and marketing resources than the Company, will increase to the extent that these vendors intensify their focus on the client/server application development tools market.

The principal competitive factors affecting the market for the Company's products include vendor and product reputation, product architecture, functionality and features, ease of use, quality of support, product quality, performance and price. The Company believes that due to PowerBuilder's full implementation of a graphical user interface, use of client/server architecture, close integration with leading RDBMSs, object-oriented programming techniques and group development capabilities, as well as the Company's licensing and pricing policies and its emphasis on customer support, its products currently compete favorably with respect to such

POWERSOFT CORPORATIONPage 7  
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factors. The Company's exclusive focus on application development tools may be a disadvantage in competing with vendors who offer a broader range of products for the business of customers who wish to deal with only one or a limited number of vendors. In addition, the Company may be at a competitive disadvantage against companies with greater financial, marketing, service and support and technological resources.

Purpose:

Mitchell E. Kertzman, Chairman of the Board and Chief Executive Officer of Powersoft has approached your bank concerning a \$3,000,000 line of credit. The line of credit is necessary to cover short term working capital needs during the next year. Both Mr. Kertzman and Powersoft are deposit customers of your bank and have been for several years. Mitchell Kertzman has provided you with the following background information about his company.

Collateral:Intellectual Property

The Company regards its software as proprietary and attempts to protect it with a combination of copyright, trademark and trade secret laws, employee and third-party nondisclosure agreements and other methods of protection. Despite these precautions, it may be possible for unauthorized third parties to copy certain portions of the Company's products or reverse engineer or obtain and use information the Company regards as proprietary. While the Company's competitive position may be affected by its ability to protect its proprietary information, the Company believes that trademark and copyright protections are less significant to the Company's success than other factors, such as the knowledge, ability and experience of the Company's personnel, name recognition and ongoing product development and support.

The Company's software products are generally licensed to end-users on a "right to use" basis pursuant to a perpetual license. The Company licenses PowerBuilder primarily under "shrink wrap" licenses (i.e., licenses included as part of the product packaging). Shrink-wrap licenses are not negotiated with or signed by individual licensees, and purport to take effect upon the opening of the product package. Certain provisions of such licenses, including provisions protecting against unauthorized use, copying, transfer and disclosure of the licensed program, may be unenforceable under the laws of certain jurisdictions. In addition, the laws of some foreign countries do not protect the Company's proprietary rights to the same extent as do the laws of the United States.

As the number of software products in the industry increases and the functionality of these products further overlaps, the Company believes that software programs will increasingly become subject to infringement claims. There can be no assurance that third parties will not assert infringement claims against the Company in the future with respect to current or future products. Any such assertion would require the Company to enter into royalty arrangements or result in costly litigation.

MiscellaneousEmployees

As of December 31, 1992, the Company had 136 full-time employees, including 20 in product development, 62 in sales and marketing, 31 in customer support services and 23 in finance and

POWERSOFT CORPORATIONPage 8  
5/25/93

administration. The Company's employees are not represented by any collective bargaining organization, and the company has never experienced a work stoppage.

Facilities

The Company's corporate headquarters are located in Dallas, Texas, in a leased facility consisting of approximately 43,000 square feet of office space occupied under a lease expiring in November, 1994. The Company leases additional facilities and offices, including locations in California, Massachusetts, Georgia, Illinois, New Jersey, and Virginia. The Company believes that its existing facilities and offices and additional space available to it are adequate to meet its requirements through 1993, and that in any event suitable additional or alternative space adequate to serve the company's foreseeable needs will be available on commercially reasonable terms.

DLAO or LAO Comments:OTHER SERVICES

Corporate Cash Management: Controlled disbursement

Trust Relationship: Prospect

International Services: Prospect

Consumer Financial Services: None

Other Bank Relationships: Depository with Nations Bank, Dallas.

05/25/93  
Common Size Report

## POWERSOFT CORPORATION

03:01 P.M.  
FAST 4.2d

Coopers & Lybrand Langdon Bennett	UNQUAL DEC 31 1990 12 MTHS		UNQUAL DEC 31 1991 12 MTHS		UNQUAL DEC 31 1992 12 MTHS		100 MAR 31 1993 3 MTHS		PROJ MAR 31 1993 3 MTHS	
AMOUNTS IN THOUSANDS OF DOLLARS	\$	%	\$	%	\$	%	\$	%	\$	%
<b>INCOME STATEMENT</b>										
License Fees	0	0.0	4,088	86.7	17,560	82.9	5,217	84.5	0	0.0
Services	55	100.0	626	13.3	3,633	17.1	954	15.5	0	0.0
<b>NET SALES</b>	<b>55</b>	<b>100.0</b>	<b>4,714</b>	<b>100.0</b>	<b>21,193</b>	<b>100.0</b>	<b>6,171</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
Cost of License Fees	0	0.0	253	5.4	1,227	5.8	647	10.5	0	0.0
Cost of Services	29	52.7	698	14.8	2,404	11.3	674	10.9	0	0.0
<b>GROSS PROFIT/REVENUES</b>	<b>26</b>	<b>47.3</b>	<b>3,763</b>	<b>79.8</b>	<b>17,562</b>	<b>82.9</b>	<b>4,850</b>	<b>78.6</b>	<b>0</b>	<b>0.0</b>
General & Administrative Expense	124	225.5	1,234	26.2	2,011	9.5	751	12.2	0	0.0
Selling Expense	303	550.9	4,188	88.8	9,952	47.0	2,785	45.1	0	0.0
Research & Development	1,010	1,836.4	1,324	28.1	2,004	9.5	743	12.0	0	0.0
Bad Debt Expense	160	290.9	32	0.7	88	0.4	150	2.4	0	0.0
Depreciation	99	180.0	122	2.6	299	1.4	231	3.7	0	0.0
<b>TOTAL OPERATING EXPENSES</b>	<b>1,696</b>	<b>3,083.6</b>	<b>6,900</b>	<b>146.4</b>	<b>14,354</b>	<b>67.7</b>	<b>4,660</b>	<b>75.5</b>	<b>0</b>	<b>0.0</b>
<b>OPERATING INCOME</b>	<b>(1,670)</b>	<b>*****</b>	<b>(3,137)</b>	<b>(66.5)</b>	<b>3,208</b>	<b>15.1</b>	<b>190</b>	<b>3.1</b>	<b>0</b>	<b>0.0</b>
Other Income	7	12.7	60	1.3	19	0.1	5	0.1	0	0.0
<b>PROFIT BEFORE TAXES &amp; EXTR ITEMS</b>	<b>(1,663)</b>	<b>*****</b>	<b>(3,077)</b>	<b>(65.3)</b>	<b>3,227</b>	<b>15.2</b>	<b>195</b>	<b>3.2</b>	<b>0</b>	<b>0.0</b>
Current Taxes	1	1.8	5	0.1	227	1.1	0	0.0	0	0.0
<b>PROFIT BEFORE EXTR. ITEMS</b>	<b>(1,664)</b>	<b>*****</b>	<b>(3,082)</b>	<b>(65.4)</b>	<b>3,000</b>	<b>14.2</b>	<b>195</b>	<b>3.2</b>	<b>0</b>	<b>0.0</b>
Income-Discontinued Operations	1,024	1,861.8	488	10.4	0	0.0	0	0.0	0	0.0
Gain/(Loss) on Disposal of Disc Ops	0	0.0	(147)	(3.1)	540	2.5	0	0.0	0	0.0
<b>NET PROFIT</b>	<b>(640)</b>	<b>*****</b>	<b>(2,741)</b>	<b>(58.1)</b>	<b>3,540</b>	<b>16.7</b>	<b>195</b>	<b>3.2</b>	<b>0</b>	<b>0.0</b>
Preferred Stock Issue	0	0.0	2,000	42.4	0	0.0	0	0.0	0	0.0
Common Stock Issue	0	0.0	0	0.0	2,722	12.8	0	0.0	0	0.0
Additional Paid In Capital	0	0.0	3	0.1	0	0.0	0	0.0	0	0.0
Other Inc/(Dec) Capital Accounts	0	0.0	452	9.6	87	0.4	0	0.0	0	0.0
<b>CHANGE IN NET WORTH</b>	<b>(640)</b>	<b>*****</b>	<b>(286)</b>	<b>(6.1)</b>	<b>6,349</b>	<b>30.0</b>	<b>195</b>	<b>3.2</b>	<b>0</b>	<b>0.0</b>

88P

## POWERSOFT CORPORATION

05/25/93

Common Size Report

03:01 P.M.  
FAST 4.2d

Coopers & Lybrand Langdon Bennett	UNQUAL DEC 31 1990 12 MTHS		UNQUAL DEC 31 1991 12 MTHS		UNQUAL DEC 31 1992 12 MTHS		10Q MAR 31 1993 3 MTHS		PROJ MAR 31 1993 3 MTHS	
AMOUNTS IN THOUSANDS OF DOLLARS	\$	%	\$	%	\$	%	\$	%	\$	%
=====										
COMMON SIZE REPORT	\$	%	\$	%	\$	%	\$	%	\$	%
=====										
ASSETS:										
Cash	1,233	23.3	659	20.9	4,364	35.3	5,011	33.6	5,011	33.6
Accounts Receivable - Trade	3,448	65.2	1,429	45.2	6,000	48.5	7,148	47.9	7,148	47.9
less: Allow for Doubtful Accts	22	0.4	10	0.3	98	0.8	225	1.5	225	1.5
Total Accounts Receivable - Net	3,426	64.7	1,419	44.9	5,902	47.7	6,923	46.4	6,923	46.4
Raw Materials	0	0.0	45	1.4	110	0.9	105	0.7	105	0.7
Finished Goods	0	0.0	150	4.7	390	3.2	785	5.3	785	5.3
Total Inventory	0	0.0	195	6.2	500	4.0	890	6.0	890	6.0
Prepaid Expenses	175	3.3	43	1.4	304	2.5	227	1.5	227	1.5
TOTAL CURRENT ASSETS	4,834	91.3	2,316	73.3	11,070	89.5	13,051	87.5	13,051	87.5
Furniture & Fixtures	205	3.9	260	8.2	313	2.5	347	2.3	347	2.3
Leasehold Improvements	175	3.3	262	8.3	444	3.6	444	3.0	444	3.0
Computer Equip. & Pur. Software	333	6.3	636	20.1	1,134	9.2	1,891	12.7	1,891	12.7
Gross Fixed Assets	713	13.5	1,158	36.7	1,891	15.3	2,682	18.0	2,682	18.0
less: Accumulated Depreciation	299	5.7	421	13.3	720	5.8	951	6.4	951	6.4
Total Fixed Assets - Net	414	7.8	737	23.3	1,171	9.5	1,731	11.6	1,731	11.6
Deposits	44	0.8	106	3.4	126	1.0	134	0.9	134	0.9
NON-CURRENT ASSETS	458	8.7	843	26.7	1,297	10.5	1,865	12.5	1,865	12.5
TOTAL ASSETS	5,292	100.0	3,159	100.0	12,367	100.0	14,916	100.0	14,916	100.0

05/25/93  
Common Size Report

## POWERSOFT CORPORATION

03:01 P.M.  
FAST 4.2d

Coopers & Lybrand Langdon Bennett	UNQUAL DEC 31 1990 12 MTHS		UNQUAL DEC 31 1991 12 MTHS		UNQUAL DEC 31 1992 12 MTHS		10Q MAR 31 1993 3 MTHS		PROJ MAR 31 1993 3 MTHS	
AMOUNTS IN THOUSANDS OF DOLLARS	\$	%	\$	%	\$	%	\$	%	\$	%
<b>LIABILITIES</b>										
Notes Payable S/T - Bank	0	0.0	0	0.0	0	0.0	0	0.0	3,000	20.1
Accounts Payable - Trade	2,188	41.3	784	24.8	1,596	12.9	3,035	20.3	1,535	10.3
Deferred Revenue	1,126	21.3	252	8.0	2,708	21.9	3,481	23.3	3,481	23.3
Other Accruals	2,023	38.2	624	19.8	2,277	18.4	2,419	16.2	919	6.2
Net Curr Liabs of Discontinued Oper	149	2.8	1,175	37.2	0	0.0	0	0.0	0	0.0
<b>TOTAL CURRENT LIABILITIES</b>	<b>5,486</b>	<b>103.7</b>	<b>2,835</b>	<b>89.7</b>	<b>6,581</b>	<b>53.2</b>	<b>8,935</b>	<b>59.9</b>	<b>8,935</b>	<b>59.9</b>
Deferred Rent	292	5.5	292	9.2	209	1.7	209	1.4	209	1.4
Net non-curr liabs of discount ops	0	0.0	804	25.5	0	0.0	0	0.0	0	0.0
<b>TOTAL SENIOR LT LIABILITIES</b>	<b>292</b>	<b>5.5</b>	<b>1,096</b>	<b>34.7</b>	<b>209</b>	<b>1.7</b>	<b>209</b>	<b>1.4</b>	<b>209</b>	<b>1.4</b>
<b>TOTAL SENIOR LIABILITIES</b>	<b>5,778</b>	<b>109.2</b>	<b>3,931</b>	<b>124.4</b>	<b>6,790</b>	<b>54.9</b>	<b>9,144</b>	<b>61.3</b>	<b>9,144</b>	<b>61.3</b>
<b>TOTAL LIABILITIES</b>	<b>5,778</b>	<b>109.2</b>	<b>3,931</b>	<b>124.4</b>	<b>6,790</b>	<b>54.9</b>	<b>9,144</b>	<b>61.3</b>	<b>9,144</b>	<b>61.3</b>
Preferred Stock Series A	0	0.0	2,000	63.3	2,000	16.2	2,000	13.4	2,000	13.4
Preferred Stock Series B	2,844	53.7	2,844	90.0	2,844	23.0	2,844	19.1	2,844	19.1
Preferred Stock Series C	0	0.0	0	0.0	2,722	22.0	2,722	18.2	2,722	18.2
Common Stock	6	0.1	9	0.3	9	0.1	9	0.1	9	0.1
Paid in Capital	1	0.0	453	14.3	540	4.4	540	3.6	540	3.6
Retained Earnings	(3,337)	(63.1)	(6,078)	(192.4)	(2,538)	(20.5)	(2,343)	(15.7)	(2,343)	(15.7)
<b>NET WORTH</b>	<b>(486)</b>	<b>(9.2)</b>	<b>(772)</b>	<b>(24.4)</b>	<b>5,577</b>	<b>45.1</b>	<b>5,772</b>	<b>38.7</b>	<b>5,772</b>	<b>38.7</b>
<b>TOTAL LIABILITIES &amp; NET WORTH</b>	<b>5,292</b>	<b>100.0</b>	<b>3,159</b>	<b>100.0</b>	<b>12,367</b>	<b>100.0</b>	<b>14,916</b>	<b>100.0</b>	<b>14,916</b>	<b>100.0</b>
Tangible Net Worth	(486)	(9.2)	(772)	(24.4)	5,577	45.1	5,772	38.7	5,772	38.7
Working Capital	(652)	(12.3)	(519)	(16.4)	4,489	36.3	4,116	27.6	4,116	27.6

88P		POWERSOFT CORPORATION					03:02 P.M.	
05/25/93							FAST 4.2d	
Financial Ratios								
Coopers & Lybrand		UNQUAL	UNQUAL	UNQUAL	100	PROJ		
Langdon Bennett		DEC 31	DEC 31	DEC 31	MAR 31	MAR 31		
		1990	1991	1992	1993	1993		
AMOUNTS IN THOUSANDS OF DOLLARS		12	12	12	3	3	MTHS	
=====								
FINANCIAL RATIOS		-----						
GROWTH RATIOS:								
Net Sales Growth, Composite %		N/A	8,470.91	349.58	16.47	(100.00)		
Sales Growth, License Fees		N/A	N/A	329.55	18.84	(100.00)		
Sales Growth, Services		N/A	1,038.18	480.35	5.04	(100.00)		
Net Income Growth, %		N/A	(328.28)	229.15	(77.97)	(100.00)		
Total Assets Growth, %		N/A	(40.31)	291.48	20.61	20.61		
Total Liabilities Growth, %		N/A	(31.97)	72.73	34.67	34.67		
Net Worth Growth, %		N/A	N/A	822.41	3.50	3.50		
-----								
PROFITABILITY RATIOS:								
Gross Margin, Composite		47.27	79.83	82.87	78.59	0.00		
Margin, License Fees		0.00	93.81	93.01	87.60	0.00		
Margin, Services		47.27	(11.50)	33.83	29.35	0.00		
SG & A, %		2,903.64	143.78	66.32	71.77	0.00		
Cushion (Gross Margin - SG & A), %		*****	(63.96)	16.55	6.82	0.00		
Depreciation, Amortization, %		180.00	2.59	1.41	3.74	0.00		
Operating Profit Margin, %		*****	(66.55)	15.14	3.08	0.00		
Operating Margin, %		*****	(66.55)	15.14	3.08	0.00		
Net Margin, %		*****	(58.15)	16.70	3.16	0.00		
Return on Average Assets, %		N/A	(64.87)	45.60	5.72	0.00		
Return on Average Equity, %		N/A	N/A	147.35	13.75	0.00		
-----								
COVERAGE RATIOS:								
ACTIVITY RATIOS:								
Receivables in Days		22,736	110	102	102	0		
Inventory in Days		0	75	50	61	0		
Payables in Days		27,539	301	160	210	0		
Total Assets / Net sales		96.22	0.67	0.58	0.60	0.00		
-----								
LIQUIDITY RATIOS:								
Working Capital		(652)	(519)	4,489	4,116	4,116		
Quick Ratio		0.85	0.73	1.56	1.34	1.34		
Current Ratio		0.88	0.82	1.68	1.46	1.46		
Sales / Net Working Capital		(0.08)	(9.08)	4.72	6.00	0.00		
-----								
LEVERAGE RATIOS:								
Total Liabilities / Total Net Worth		N/A	N/A	1.22	1.58	1.58		
Tot Sr. Liabs. / TNW & Sub Debt		N/A	N/A	1.22	1.58	1.58		
-----								
CASH POSITION:								
Cash Margin	%	N/A	88.48	64.11	79.05	0.00		
Net Cash Income		N/A	(2,584)	1,629	1,438	(1,988)		
Net Income + Depreciation		(541)	(2,619)	3,839	426	0		
-----								
SUSTAINABLE GROWTH & BANKRUPTCY:								
Sustainable Growth, (N/(T-N))	%	N/A	N/A	173.78	15.63	0.00		
Z=1.2x1 +1.4x2 +3.3x3 +.6x4 +.999x5		(2.11)	(4.73)	3.21	2.32	0.49		
=====								

88P		POWERSOFT CORPORATION					
05/25/93						03:02 P.M.	
Financial Ratios						FAST 4.2d	
Coopers & Lybrand		UNQUAL	UNQUAL	UNQUAL	10Q	PROJ	
Langdon Bennett		DEC 31	DEC 31	DEC 31	MAR 31	MAR 31	
		1990	1991	1992	1993	1993	
AMOUNTS IN THOUSANDS OF DOLLARS		12 MTHS	12 MTHS	12 MTHS	3 MTHS	3 MTHS	
=====							
FINANCIAL RATIOS							
-----							
GROWTH RATIOS:							
Net Sales Growth, Composite %		N/A	8,470.91	349.58	16.47	(100.00)	
Sales Growth, License Fees		N/A	N/A	329.55	18.84	(100.00)	
Sales Growth, Services		N/A	1,038.18	480.35	5.04	(100.00)	
Net Income Growth, %		N/A	(328.28)	229.15	(77.97)	(100.00)	
Total Assets Growth, %		N/A	(40.31)	291.48	20.61	20.61	
Total Liabilities Growth, %		N/A	(31.97)	72.73	34.67	34.67	
Net Worth Growth, %		N/A	N/A	822.41	3.50	3.50	
-----							
PROFITABILITY RATIOS:							
Gross Margin, Composite		47.27	79.83	82.87	78.59	0.00	
Margin, License Fees		0.00	93.81	93.01	87.60	0.00	
Margin, Services		47.27	(11.50)	33.83	29.35	0.00	
SG & A, %		2,903.64	143.78	66.32	71.77	0.00	
Cushion (Gross Margin - SG & A), %		*****	(63.96)	16.55	6.82	0.00	
Depreciation, Amortization, %		180.00	2.59	1.41	3.74	0.00	
Operating Profit Margin, %		*****	(66.55)	15.14	3.08	0.00	
Operating Margin, %		*****	(66.55)	15.14	3.08	0.00	
Net Margin, %		*****	(58.15)	16.70	3.16	0.00	
Return on Average Assets, %		N/A	(64.87)	45.60	5.72	0.00	
Return on Average Equity, %		N/A	N/A	147.35	13.75	0.00	
-----							
COVERAGE RATIOS:							
-----							
ACTIVITY RATIOS:							
Receivables in Days		22,736	110	102	102	0	
Inventory in Days		0	75	50	61	0	
Payables in Days		27,539	301	160	210	0	
Total Assets / Net sales		96.22	0.67	0.58	0.60	0.00	
-----							
LIQUIDITY RATIOS:							
Working Capital		(652)	(519)	4,489	4,116	4,116	
Quick Ratio		0.85	0.73	1.56	1.34	1.34	
Current Ratio		0.88	0.82	1.68	1.46	1.46	
Sales / Net Working Capital		(0.08)	(9.08)	4.72	6.00	0.00	
-----							
LEVERAGE RATIOS:							
Total Liabilities / Total Net Worth		N/A	N/A	1.22	1.58	1.58	
Tot Sr. Liabs. / TW & Sub Debt		N/A	N/A	1.22	1.58	1.58	
-----							
CASH POSITION:							
Cash Margin	%	N/A	88.48	64.11	79.05	0.00	
Net Cash Income		N/A	(2,584)	1,629	1,438	(1,988)	
Net Income + Depreciation		(541)	(2,619)	3,839	426	0	
-----							
SUSTAINABLE GROWTH & BANKRUPTCY:							
Sustainable Growth, (M/(T-N))	%	N/A	N/A	173.78	15.63	0.00	
Z=1.2x1 +1.4x2 +3.3x3 +.6x4 +.999x5		(2.11)	(4.73)	3.21	2.32	0.49	
=====							



88P		POWERSOFT CORPORATION			
05/25/93					03:28 P.M.
Cash Flow					FAST 4.2d
Coopers & Lybrand	UNQUAL	UNQUAL	100	PROJ	
Langdon Bennett	DEC 31	DEC 31	MAR 31	MAR 31	
	1991	1992	1993	1993	
AMOUNTS IN THOUSANDS OF DOLLARS	12	MTHS 12	MTHS 3	MTHS 3	MTHS
=====					
C A S H F L O W					
-----					
Sales - Net	4,714	21,193	6,171	0	
Change in Receivables	2,007	(4,483)	(1,021)	(1,021)	
CASH FROM SALES	6,721	16,710	5,150	(1,021)	
Cost of Goods Sold	(951)	(3,631)	(1,321)	0	
Change in Inventories	(195)	(305)	(390)	(390)	
Change in Payables	(1,404)	812	1,439	(61)	
CASH PRODUCTION COSTS	(2,550)	(3,124)	(272)	(451)	
GROSS CASH PROFITS	4,171	13,586	4,878	(1,472)	
SG & A Expense	(6,778)	(14,055)	(4,429)	0	
Change in Prepaids	132	(261)	77	77	
Change in Accruals	(1,399)	1,653	142	(1,358)	
Cash Operating Expense	(8,045)	(12,663)	(4,210)	(1,281)	
CASH AFTER OPERATIONS	(3,874)	923	668	(2,753)	
Miscellaneous Cash Income	2,169	(1,523)	(3)	(8)	
Income Taxes Paid	(879)	2,229	773	773	
NET CASH AFTER OPERATIONS	(2,584)	1,629	1,438	(1,988)	
-----					
NET CASH INCOME	(2,584)	1,629	1,438	(1,988)	
-----					
CASH AFTER DEBT AMORTIZATION	(2,584)	1,629	1,438	(1,988)	
Capital Expenditures - Tangible	(445)	(733)	(791)	(560)	
FINANCING SURPLUS/(REQUIREMENTS)	(3,029)	896	647	(2,548)	
Change in Short Term Debt	0	0	0	3,000	
Change in Equity	2,455	2,809	0	195	
Total External Financing	2,455	2,809	0	3,195	
Cash After financing	(574)	3,705	647	647	
Actual Change in Cash	(574)	3,705	647	647	
=====					
Net Income + Depreciation	(2,619)	3,839	426	0	
-----					
Misc Cash Income Detail:					
Other Non-Current Assets	(62)	(20)	(8)	(8)	
Other Current Liabilities	1,026	(1,175)	0	0	
Other Long Term Liabilities	804	(887)	0	0	
Other Income	60	19	5	0	
Extraordinary Items	341	540	0	0	
Total	2,169	(1,523)	(3)	(8)	
=====					

88P	POWERSOFT CORPORATION				03:02 P.M.
05/25/93					FAST 4.2d
FASB 95 Indirect					
Coopers & Lybrand	UNQUAL	UNQUAL	10Q	PROJ	
Langdon Bennett	DEC 31	DEC 31	MAR 31	MAR 31	
	1991	1992	1993	1993	
AMOUNTS IN THOUSANDS OF DOLLARS	12 MTHS	12 MTHS	3 MTHS	3 MTHS	
=====					
CASHFLOW - INDIRECT METHOD					
-----					
NET INCOME	(2,741)	3,540	195	0	
Adjustments to Reconcile:					
Depreciation, Amortization	122	299	231	0	
Change in Accounts Receivable	2,007	(4,483)	(1,021)	(1,021)	
Change in Inventory	(195)	(305)	(390)	(390)	
Change in Prepaids	132	(261)	77	77	
Change in Account Payable	(1,404)	812	1,439	(61)	
Change in Accrued Liabilities	(1,399)	1,653	142	(1,358)	
Change in Other Curr Liabilities	1,026	(1,175)	0	0	
Change in Non-Current Income Tax	(874)	2,456	773	773	
Change in Non-Current Assets	(62)	(20)	(8)	(8)	
Change in Non-Current Liabilities	0	(83)	0	0	
-----					
NET CASH PROVIDED BY OPERATIONS	(3,388)	2,433	1,438	(1,988)	
CASH FLOWS FROM INVESTING ACTIVITIES					
Capital Spending/LT Investments	(445)	(733)	(791)	(560)	
-----					
NET CASH USED IN INVESTING	(445)	(733)	(791)	(560)	
CASH FLOWS FROM FINANCING ACTIVITIES					
Change in Short Term Financing	0	0	0	3,000	
Change in Long Term Financing	804	(804)	0	0	
Change in Equity	2,455	2,809	0	195	
-----					
NET CASH FROM FINANCING	3,259	2,005	0	3,195	
NET INCREASE IN CASH	(574)	3,705	647	647	
ACTUAL CHANGE IN CASH	(574)	3,705	647	647	
=====					
Supplemental Disclosures of CF Info					
Income Taxes	(879)	2,229	773	773	



POWERSOFT CORPORATION  
 ACCOUNTS RECEIVABLE ANALYSIS  
 03/31/93

Page XX

## AGINGS - (000'S)

Date	Accounts Payable Aging								Total Amount
	0-30		31-60		61-90		>90		
	Amount	%	Amount	%	Amount	%	Amount	%	
12/31/91	157	20.0%	37	4.7%	421	53.7%	169	21.6%	784
3/31/92	114	10.9%	268	25.6%	551	52.7%	112	10.7%	1045
6/30/92	221	25.4%	244	28.1%	347	39.9%	57	6.6%	869
9/30/92	144	14.9%	47	4.9%	478	49.4%	298	30.8%	967
12/31/92	847	53.1%	25	1.6%	85	5.3%	639	40.0%	1596
3/31/93	1297	42.7%	814	26.8%	501	16.5%	423	13.9%	3035
	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0

## A/R Reserve Reconciliation

Date	Beginning Reserve	Bad Debt + Expense	Charge - Offs	+ Other - Adj.	Ending = Reserve
12/31/90	50	160	188	0	22
12/31/91	22	32	44	0	10
12/31/92	10	88	0	0	98
3/31/93	98	150	23	0	225
	225	0	0	0	0
	0	0	0	0	0

POWERSOFT CORPORATIONCOLLATERAL ANALYSIS - 000's Omitted

<u>Asset</u>	<u>Value</u>	<u>Date</u>	<u>Basis</u>	<u>Adv</u> <u>%</u>	<u>Est</u> <u>Borr</u> <u>Base</u>	<u>Liq</u> <u>%</u>	<u>Coll</u> <u>Value</u>	<u>Proj</u> <u>Loans</u> <u>O/S</u>
A/R(1)	5,145	3/31	Aging	80	4,116	80	4,116	3,000
Inventory	890	3/31	F/S	-	-	-	-	-
Total	6,035				3,000	(2)	4,116	3,000

\* % - Current inventory reliance.

Loans to Borrowing Base = 100%  
Loans to Collateral Base = 72.8%

(1) \$7,148 less \$2,003 over 90 days.  
(2) Capped by facility.

COMERICA INCORPORATED  
 COMMERCIAL BANKING PRICING MODEL Version 1.1 9/92  
 POWERSOFT CORPORATION 25-May-93

COMPANY :

	IN USE (\$)	% ABOVE INDEX	FEES(\$)	CREDIT RISK FACTOR
COMMITMENT	\$3,000,000	1.000	\$0	44
FACILITY 1 <=1 year	\$0	0.000	\$0	0
FACILITY 2 >1 year	\$0	0.000	\$0	0
LOAN 1	\$0	0.000	\$0	0
LOAN 2	\$0	0.000	\$0	0
LOAN 3	\$0	0.000	\$0	0

	AMOUNT (\$)	% TOTAL RATE	FEES(\$)	CREDIT RISK FACTOR
EDC <1983	\$0	0.000	\$0	0
EDC 83-8/86	\$0	0.000	\$0	0
EDC >8/86	\$0	0.000	\$0	0
ESOP LOANS	\$0	0.000	\$0	0
LETTERS OF CREDIT	\$0	0.000	\$0	0
50% LETTER OF CREDIT	\$0	0.000	\$0	0
BANKERS ACCEPT	\$0	0.000	\$0	0

TOTAL COMMITMENT

	GROSS AMT(\$)	FEES(\$)	CREDIT RISK FACTOR
COMMITMENT (REV. CREDIT)	\$3,000,000	\$0	44
FACILITY 1 ( <=1 year LINE/L.U.T.)	\$0	\$0	0
FACILITY 2 ( >1 year LINE/L.U.T.)	\$0	\$0	0

BALANCES (\$)

LEDGER DDA BALANCE	\$0
COLLECTED DDA BALANCE	\$0
CERTIFICATES OF DEPOSIT	\$0
BMMIA/OTHER BALANCES	\$2,500,000

RATES (%)

INDEX RATE	6.000 %
LOAN FUNDING RATE	4.250 %
EDC COST OF FUNDS	4.250 %
FUNDS PROVIDER CREDIT -	
DDA (net of float & reserves)	6.670 %
CERTIFICATES OF DEPOSIT	0.380 %
BMMIA / OTHER DEPOSITS	1.300 %
EQUITY	6.670 %

OTHER INCOME AND EXPENSES (\$)

OTHER GROSS FEE INCOME:

TRUST	\$0	Net Mgn =	25 %
FINANCIAL MARKET INSTRUMENTS	\$0	Net Mgn =	100 %

SERVICE CHARGES	\$0	Net Mgn =	100 %
OTHER FEES	\$0	Net Mgn =	100 %
ADMINISTRATIVE COST (HOURS)	60	Hours	
DEPOSIT SERVICING COST	\$0		
LOAN SERVICING EXPENSE	\$0		

## OTHER FACTORS (CHANGE AS WARRANTED)

FLOAT FACTOR-DDA	25 %
RESERVE REQUIRED-DDA...	10 %
RESERVE REQUIRED-BMIA/OTHER	0 %
FDIC INSURANCE COST	0.230 %
MARGINAL TAX RATE-CORP	34 %
TARGET RETURN ON ASSETS	1.00 %
TARGET RETURN ON EQUITY	24.0 %
ADMIN. COST/HOUR (\$)	\$165
CORP. OVERHEAD	20 %
EQUITY/CAPITAL (Assets)	5.00 %
EQUITY/CAPITAL (Deposits)	2.00 %
FEE BASED EQUITY (Trust)	25.00 %
FEE BASED EQUITY (FMI)	1.00 %
FEE BASED EQUITY (Service Charges)	1.00 %
FEE BASED EQUITY (Other Exclude Credit)	1.00 %

## SUMMARY REPORT

TOTAL INCOME	255,840	RET ON TOTAL ASSETS	1.11%
TOT EXPENSES	159,689	TARGET ROA	1.00%
PRETAX INCOME	96,151	TARGET INCOME (ROA)	57,000
INCOME TAX	32,691	RETURN ON EQUITY	31.7%
NET INCOME	63,460	TARGET ROE	24.0%
% of ROA TARGET	111%	TARGET INCOME (ROE)	48,000
% of ROE TARGET	132%		

## TO REACH 100% OF TARGET:

	ROE INCREASE OR (DECREASE) NEEDED	ROA INCREASE OR (DECREASE) NEEDED
LEDGER DDA BALANCES (approximate)	(736,287) *	(307,659) *
CREDIT RELATED FEES	(23,424)	(9,788)
TRUST FEES	(133,270)	(37,232)
FINANCIAL MKT INSTRUMENT FEES	(23,494)	(9,783)
SERVICE CHARGES	(23,494)	(9,783)
OTHER FEES	(23,494)	(9,783)
RATE (Excludes EDCs & ESOPs)	-0.781 %	-0.326 %

\* Ledger DDA Balances needed to reach 100% of targeted ROE or ROA are approx  
Several iterations may be needed to achieve correct target levels.

**POWERSOFT CORPORATION  
PRINCIPAL STOCKHOLDERS**

The following table sets forth certain information with respect to the beneficial ownership of the Company's Common Stock as of December 31, 1992 (i) by each person known by the Company to own beneficially more than five percent of the Common Stock, (ii) by each of the Company's directors and (iii) by all directors and officers of the Company as a group:

Name	Shares Beneficially Owned	
	Number	Percent
Alta IV Limited Partnership c/o Burr, Egan, Deleage & Co. Boston, MA	1,446,985	21.0%
Hummer Winblad Venture Partners Emeryville, CA 94608	982,670	14.2%
Prince of Liechtenstein Foundation Postfach 366 FL-9490 Vaduz Liechtenstein	746,230	10.8%
David P. Dewan c/o Powersoft Corporation Dallas, TX	606,882	8.8%
Claffin Capital c/o Clafflin Capital Management, Inc. Dallas, TX	451,238	6.5%
Greater Washington Investments, Inc. 5454 Wisconsin Avenue Chevy Chase, MD 20815	401,994	5.8%
Mitchell E. Kertzman c/o Powersoft Corporation Dallas, TX	376,882	5.4%
The Roda Realty Trust c/o Robert Roda Dallas, TX	371,250	5.4%
<b>Directors:</b>		
David A. Litwack	200,000	2.8%
Jonathan A. Flint	1,710,988	24.8%
John Hummer	1,034,366	15.0%
L. William Krause	-----	-----
William P. Miller	40,000	*
Ruth O. Owens	30,000	*
Paul J. Palmer	16,667	*
Joseph Stavenhagen	968,530	14.0%
All directors and officers as a group (12 persons)	4,964,315	69.1%

\* Less than 1%



APPENDIX D  
CASE MATERIALS  
BANK B

### Instructions

Attached you will find a short-term credit line request for Powersoft Corporation. As the loan officer for Powersoft Corporation you are required to review the request and decide whether to recommend it, in whole or in part. You may attach any conditions to the request which you consider necessary. Please treat the situation described in the attached pages as if it occurred in your organization and required your recommendation. I further ask that you follow the normal practices and procedures you would use in making a recommendation of this type.

During the time you are considering this lending situation, and following your regular practices and procedures, I ask that you verbalize the thoughts and considerations that occur to you. Please do this, no matter how trivial the thoughts may seem to you. Verbalizing this thought process is critical to my research. The verbal comments you make will be tape recorded; your comments will be held in confidence and in no way attributed to you without your prior permission. I will be present during your decision period to make additional observations.

I wish to emphasize that I am interested in the process by which loan decisions are made, rather than the particular decision itself. Please note that, as in an actual lending situation, there is no correct answer.

You are provided with the following information for this lending decision. Please feel free to write on any of the materials.

1. Description of the company and its environment.
2. Audited financial statements.
3. Bank financial statement spreads.
4. Accounts receivable aging and customer concentration.
5. Accounts payable aging.
6. Principle stockholder listing.
7. RMA industry statistics.

Thank you.

## POWERSOFT CORPORATION

### Credit Request

Mitchell E. Kertzman, Chairman of the Board and Chief Executive Officer of Powersoft has approached your bank concerning a \$3,000,000 line of credit. The line of credit is necessary to cover short term working capital needs during the next year. Both Mr. Kertzman and Powersoft are deposit customers of your bank and have been for several years. Mitchell Kertzman has provided you with the following background information about his company.

### Company Background

Powersoft Corporation ("Powersoft" or the "Company") develops, markets and supports PowerBuilder, an application software development tool for the emerging client/server market. The Company's products are used by organizations to design, prototype, build, test, deploy and maintain a wide range of business applications. PowerBuilder addresses the market need for application development tools which combine the ease of use, graphical user interface and distributed computing capabilities of personal computer development tools with the performance and functionality of mainframe-based tools.

PowerBuilder enables both developers and end-users to take advantage of the benefits provided by client/server computing. PowerBuilder's open architecture and tight integration with most widely-used relational database management systems ("RDBMSs") allow customers to choose the hardware, operating systems and RDBMSs which best meet their needs without compromising functionality or performance. PowerBuilder runs on Microsoft Corporation's Windows operating system and employs the full range of Windows functions, communications and windowing styles. PowerBuilder's object-oriented programming techniques, interactive debugging facility and group development capabilities facilitate rapid development, easy deployment and efficient maintenance of complex, enterprise-wide applications.

The Company's objective is to be the leading provider of application development tools for development of business applications in the client/server environment. The Company plans to continue to expand its product leadership by adding support for additional widely-used operating systems, RDBMSs and third-party development tools.

The Company has established a comprehensive sales organization that combines elements of the direct sales approach traditionally used in the mainframe software industry with the leveraged distribution methods employed by personal computer software vendors. The Company sells its products through a

direct sales force and a network of more than 75 value-added resellers, systems integrators and independent applications software vendors in the United States and through international distributors in 33 countries worldwide. The Company has licensed more than 8,000 copies of PowerBuilder to over 2,000 customers, including American Airlines, Dun & Bradstreet Software, Dell Computer Corporation, Electronic Data Systems, Fidelity Investments, Inc. and Microsoft Corporation.

The Company was incorporated in Massachusetts in 1974 under the name Computer Solutions, Inc. and initially specialized in the development of manufacturing management software. The Company introduced a manufacturing management applications software package, known as GrowthPower, in 1982. In the fourth quarter of 1988, the Company began development of PowerBuilder, originally intended to assist the Company in developing the next generation of GrowthPower. In 1990, the Company changed its name to Powersoft Corporation. In June 1991, PowerBuilder was released as a commercial product. In December 1991, the Company decided to divest itself of its manufacturing management applications business segment in order to focus on its application development tools business and the further development and marketing of PowerBuilder. In transactions with two separate and unrelated purchasers in January and May of 1992 the Company sold substantially all of the assets of its manufacturing management applications business segment. See note C of notes to financial statements.

#### **Executive Officers and Directors**

Mitchell Kertzman, a founder of the Company, has been Chief Executive Officer and Chairman of the Board of Directors since the Company's inception in May 1974. From May 1974 to March 1992, he also served as President of the Company.

David Litwack joined the Company as Vice President of Product Development in October 1988. Since March 1992, he has served as President of the Company. Mr Litwack is the chief architect of PowerBuilder. Prior to joining the Company, Mr. Litwack was the Executive Vice President of Product Development for Cullinet Software, Inc., a database management software company.

David Dewan, a co-founder of the Company, has served as a Vice President of the Company since 1981. Mr. Dewan was the chief designer of the Company's first commercial business product, GrowthPower, and has been involved with PowerBuilder since its inception.

John Gannon is Chief Financial Officer and Treasurer of the Company. He joined the Company in September 1992 from Trinzic Corporation (formerly AlCorp, Inc.), where he served as Treasurer from 1987 to 1992 and as Chief Financial Officer from April to

September 1992. Prior to his employment at Trinzic, Mr. Gannon held several positions, including Treasurer and Vice President, Corporate Services, at Cullinet Software, Inc. Before that, he was employed as a Certified Public Accountant at Coopers & Lybrand.

Other executive officers and directors of the Company are:

Thomas A. Herring	Vice President of Sales & Marketing--Americas
Paul MacKay	Vice President of International Operations
Douglas Miller	Director of Marketing
Coleman Sisson	Director of Customer Services
Jonathan A. Flint(1)(2)	Director
John Hummer	Director
L. William Krause	Director
William P. Miller(1)	Director
Paul J. Palmer(2)	Director
Joseph Stavenhagen(1)(2)	Director

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(1) Member of Compensation Committee.

(2) Member of the Audit Committee.

#### **Ownership**

There are no individuals, partnerships, or corporations holding a majority of the voting common stock. However, all directors and officers as a group (12 persons) own a total of 69.1% of the Company's Common Stock.

### Financial Performance

Mitchell Kertzman has provided the bank with a set of audited financial statements for Powersoft Corporation for the calendar years 1990, 1991 and 1992. The operating results are summarized below:

#### Powersoft Corporation (\$000s)

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Revenues	55	4,714	21,193
Operating Income (Loss)	(1,670)	(3,137)	3,208
Profit (Loss) after Tax	(640)	(2,741)	3,540

The Company's revenues are derived from two sources, software license fees (including fees for upgrades) and fees for services (including support, training and consulting). For all periods presented, the Company has recognized revenue in accordance with Statement of Position 91-1 ("SOP"), entitled "Software Revenue Recognition," dated December 12, 1991, promulgated by the American Institute of Certified Public Accountants. The SOP requires that software license revenue be recognized upon shipment and that maintenance revenue be recognized ratably over the term of the maintenance agreement. The Company's standard license agreements generally do not provide a right of return and reserves are maintained for potential credit losses, which have not been material to date. See note B of notes to financial statements.

The Company had total revenues from continuing operations of \$55,000 in 1990. Total revenues from continuing operations increased from \$4,714,000 in 1991, following the first commercial shipment of PowerBuilder in June of that year, to \$21,193,000 in 1992. Management believes it unlikely that the rate of growth in its revenues experienced by the Company during 1991 and 1992 will be sustained.

### Liquidity and Capital Resources

From inception through March 1992, the Company financed its operations principally through the private sale of equity securities and through a mix of short-term secured bank financing, long-term equipment leasing and favorable trade credit terms from a vendor of equipment sold by the Company in its now discontinued manufacturing management applications software product line. In each quarter subsequent to March 1992, the Company's operations have been profitable and have generated positive cash flow.

During 1989, 1990 and 1991, the Company's principal use of cash was to fund operating losses incurred during the development of PowerBuilder. In March 1991, the Company raised approximately \$2,452,000 from the sale of preferred stock to supplement this

development effort. In 1992, the Company generated approximately \$3,068,000 from continuing operations. In March 1992, the Company raised an additional \$2,722,000 from the sale of preferred stock, primarily to fund the expansion of the Company's sales and marketing organization worldwide and to discharge approximately \$1,343,000 in obligations of its discontinued operations, resulting in a net cash balance of \$4,364,000 at December 31, 1992. The Company has no significant capital commitments and currently anticipates that additions to property and equipment through 1993 will not exceed \$1,000,000.

### **Competition**

The application development software market is intensely competitive. The Company currently encounters competition primarily from a limited number of direct competitors which provide graphical, client/server based application development tools, such as Gupta Corporation, Cooperative Solutions, Inc. and Uniface Corporation. The Company also competes with a larger number of indirect competitors, which fall into four categories: (i) RDBMS vendors who provide application development tools with their proprietary database technology, such as Sybase, Oracle, Informix and Ingres; (ii) 4GL application development tools vendors such as Progress Software Corporation and Cognos Incorporated; (iii) CASE tools vendors such as KnowledgeWare, Inc., Intersolv and Texas Instruments Incorporated; and (iv) PC-based application development tools vendors such as Microsoft Corporation and Borland International, Inc. The Company expects that competition from these sources, most of which have substantially greater financial, technical and marketing resources than the Company, will increase to the extent that these vendors intensify their focus on the client/server application development tools market.

The principal competitive factors affecting the market for the Company's products include vendor and product reputation, product architecture, functionality and features, ease of use, quality of support, product quality, performance and price. The Company believes that due to PowerBuilder's full implementation of a graphical user interface, use of client/server architecture, close integration with leading RDBMSs, object-oriented programming techniques and group development capabilities, as well as the Company's licensing and pricing policies and its emphasis on customer support, its products currently compete favorably with respect to such factors. The Company's exclusive focus on application development tools may be a disadvantage in competing with vendors who offer a broader range of products for the business of customers who wish to deal with only one or a limited number of vendors. In addition, the Company may be at a competitive disadvantage against companies with greater financial, marketing, service and support and technological resources.

**Employees**

As of December 31, 1992, the Company had 136 full-time employees, including 20 in product development, 62 in sales and marketing, 31 in customer support services and 23 in finance and administration. The Company's employees are not represented by any collective bargaining organization, and the Company has never experienced a work stoppage.

**Facilities**

The Company's corporate headquarters are located in Dallas, Texas, in a leased facility consisting of approximately 43,000 square feet of office space occupied under a lease expiring in November 1994. The Company leases additional facilities and offices, including locations in California, Massachusetts, Georgia, Illinois, New Jersey and Virginia. The Company believes that its existing facilities and offices and additional space available to it are adequate to meet its requirements through 1993, and that in any event suitable additional or alternative space adequate to serve the company's foreseeable needs will be available on commercially reasonable terms.

**Auditors**

The financial statements and financial statement schedules of Powersoft Corporation at December 31, 1990, 1991, and 1992 have been audited by Coopers & Lybrand, independent auditors.



**REPORT OF INDEPENDENT ACCOUNTANTS**

To the Board of Directors and Stockholders of  
Powersoft Corporation:

We have audited the accompanying balance sheets of Powersoft Corporation as of December 31, 1992 and 1991, and the related statements of operations, cash flows and stockholders' deficit for each of the three years in the period ended December 31, 1992. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Powersoft Corporation as of December 31, 1992 and 1991, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 1992, in conformity with generally accepted accounting principles.

COOPERS & LYBRAND

Dallas, Texas  
January 14, 1993

**POWERSOFT CORPORATION**  
**BALANCE SHEETS**  
(In thousands, except share amounts)

ASSETS	December 31,	
	1991	1992
Current assets:		
Cash and cash equivalents . . . . .	\$ 659	\$ 4,364
Accounts receivable, net of allowances for doubtful accounts of \$10 and \$96 in 1991 and 1992, respectively . . . . .	1,419	5,902
Inventory . . . . .	195	500
Prepaid expenses and other current assets . . . . .	43	304
Total current assets . . . . .	2,316	11,070
Property and equipment, net . . . . .	737	1,171
Deposits . . . . .	106	126
Total assets . . . . .	\$ 3,159	\$12,367
<b>LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)</b>		
Current liabilities:		
Accounts payable . . . . .	\$ 784	\$ 1,596
Accrued liabilities . . . . .	624	2,277
Deferred revenue . . . . .	252	2,708
Net current liabilities of discontinued operations . . . . .	1,175	—
Total current liabilities . . . . .	2,835	6,581
Deferred rent . . . . .	292	209
Net non-current liabilities of discontinued operations . . . . .	804	—
Series A redeemable preferred stock, \$.01 par value, 20,000 shares authorized, issued and outstanding . . . . .	2,000	2,000
Series B redeemable preferred stock, \$.01 par value, 18,163 shares authorized, issued and outstanding . . . . .	2,844	2,844
Series C redeemable convertible preferred stock, \$.01 par value, 730,158 shares authorized, issued and outstanding . . . . .	—	2,722
Commitments		
Stockholders' equity (deficit):		
Preferred Stock, \$.01 par value, 1,000,000 shares authorized; none outstanding (Note G) . . . . .	—	—
Common stock \$.00167 par value; 12,500,000 shares authorized; 5,227,828, 5,436,082 shares issued and outstanding in 1991 and 1992, respectively . . . . .	9	9
Additional paid-in capital . . . . .	453	540
Accumulated deficit . . . . .	(6,078)	(2,538)
Total stockholders' equity (deficit) . . . . .	(5,616)	(1,989)
Total liabilities and stockholders' equity (deficit) . . . . .	\$ 3,159	\$12,367

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**STATEMENTS OF OPERATIONS**  
(In thousands, except per share data)

	Year ended December 31,		
	1990	1991	1992
<b>Revenues:</b>			
License fees .....	\$ —	\$ 4,088	\$17,560
Services .....	55	626	3,633
<b>Total revenues</b> .....	<b>55</b>	<b>4,714</b>	<b>21,193</b>
<b>Costs and expenses:</b>			
Cost of license fees .....	—	253	1,227
Cost of services .....	29	698	2,404
Sales and marketing .....	303	4,188	9,952
Research and development .....	1,010	1,324	2,004
General and administrative .....	383	1,388	2,398
<b>Total costs and expenses</b> .....	<b>1,725</b>	<b>7,851</b>	<b>17,985</b>
Operating income (loss) .....	(1,670)	(3,137)	3,208
Other income, net .....	7	60	19
Income (loss) before income taxes .....	(1,663)	(3,077)	3,227
Provision for income taxes .....	1	5	227
<b>Income (loss) from continuing operations</b> .....	<b>(1,664)</b>	<b>(3,082)</b>	<b>3,000</b>
<b>Discontinued operations:</b>			
Income from discontinued operations .....	1,024	488	—
Gain (loss) on disposal including provision of \$598 in 1991 for operational losses during phase-out period .....	—	(147)	540
<b>Net income (loss)</b> .....	<b>\$ (640)</b>	<b>\$ (2,741)</b>	<b>\$ 3,540</b>
<b>Income (loss) per share:</b>			
Income (loss) per share from continuing operations .....	\$ (0.26)	\$ (0.41)	\$ 0.35
Income per share from discontinued operations .....	0.16	0.05	0.06
<b>Net income (loss) per share</b> .....	<b>\$ (0.10)</b>	<b>\$ (0.36)</b>	<b>\$ 0.41</b>
Weighted average number of common shares outstanding .....	6,411	7,558	8,570

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**STATEMENTS OF STOCKHOLDERS' DEFICIT**  
**for the years ended December 31, 1990, 1991 and 1992**  
**(In thousands, except share amounts)**

	Shares			Par Value			Additional Paid-in Capital	Additional Paid-in Capital Common Stock	Accumulated Deficit	Total Stock- holders' Deficit
	Class A Common Stock	Class B Common Stock	Common Stock	Class A Common Stock	Class B Common Stock	Common Stock				
Balance, December 31, 1989	2,368,238	1,482,360		\$4	\$2			\$(2,496)	\$(2,490)	
Exercise of stock options		23,750					\$ 20		20	
Preferred dividends accrued							(20)	(162)	(182)	
Net loss								(640)	(640)	
Balance, December 31, 1990	2,368,238	1,506,110		4	2			(3,298)	(3,292)	
Preferred dividends accrued								(39)	(39)	
March 19, 1991 financing and changes in capital structure	(2,368,238)	(1,506,110)	5,218,452	(4)	(2)	\$9	\$450		453	
Exercise of stock options		9,376					3		3	
Net loss								(2,741)	(2,741)	
Balance, December 31, 1991		5,227,828				9	453	(6,078)	(5,616)	
Common stock issuance		2,000					10		10	
Exercise of stock options		206,254					77		77	
Net income								3,540	3,540	
Balance, December 31, 1992		5,436,082				\$9	\$540	\$(2,538)	\$(1,989)	

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**STATEMENTS OF CASH FLOWS**  
(In thousands)

	Years ended December 31,		
	1990	1991	1992
<b>Cash flows from operating activities:</b>			
Income (loss) from continuing operations .....	\$(1,664)	\$(3,082)	\$3,000
Income from discontinued operations .....	1,024	341	540
Net income (loss) .....	(640)	(2,741)	3,540
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Loss on disposal of discontinued operations .....			
	—	147	—
Depreciation and amortization .....	99	122	299
Provision for doubtful accounts .....	160	32	88
Changes in operating assets and liabilities:			
Accounts receivable .....	(1,279)	2,019	(4,571)
Inventory .....	—	(195)	(305)
Prepaid expenses and other current assets .....	(92)	132	(261)
Deposits .....	(4)	(62)	(20)
Accounts payable and accrued liabilities .....	2,003	(2,803)	2,382
Deferred revenue .....	641	(874)	2,456
Net liability of discontinued operations .....	—	1,830	(1,979)
Net cash provided by (used in) operating activities .....	888	(2,393)	1,629
<b>Cash flows from investing activities:</b>			
Capital expenditures .....	(138)	(445)	(733)
Net cash used for investing activities .....	(138)	(445)	(733)
<b>Cash flows from financing activities:</b>			
Proceeds from sale of preferred and common stock .....	—	2,452	2,732
Principal payments under capital lease obligations .....	(21)	(191)	—
Proceeds from exercise of stock options .....	20	3	77
Net cash provided by (used for) financing activities .....	(1)	2,264	2,809
Net increase (decrease) in cash and cash equivalents .....	749	(574)	3,705
Cash and cash equivalents at beginning of year .....	484	1,233	659
Cash and cash equivalents at end of year .....	<u>\$ 1,233</u>	<u>\$ 659</u>	<u>\$4,364</u>
<b>Supplemental disclosures of cash flow information:</b>			
Interest paid .....	\$ 15	\$ 23	\$ 10
Income taxes paid .....	\$ 1	\$ 4	\$ 221

The accompanying notes are an integral part of the financial statements.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS**

**A. The Company:**

Until 1991, Powersoft Corporation (the "Company") was engaged in the development and marketing of software applications for manufacturing data processing. In the fourth quarter of 1988 the Company began development of PowerBuilder, a software application development tool designed for use in the client/server computing environment. In December 1991, following the June release of PowerBuilder, the Company determined that it would divest itself of its manufacturing applications business segment to focus on PowerBuilder. The Company sold substantially all the assets of its manufacturing applications business in two transactions in January and May of 1992 (see Note C).

**B. Summary of Significant Accounting Policies:**

**Revenue Recognition**

Revenue is recognized from the perpetual license of software upon shipment to the end-user provided that no significant vendor obligations remain outstanding and collection of the resulting receivable is deemed probable. The Company receives a one-time fee for each program licensed. Training revenue is recognized as the services are performed. Subscription and support revenues are recognized ratably over the contract period.

The Company's revenue recognition policies for all periods presented are in conformance with the Statement of Position 91-1, "Software Revenue Recognition" promulgated by the American Institute of Certified Public Accountants.

**Cash and Cash Equivalents**

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. At December 31, 1991 and 1992, cash and cash equivalents include \$495,000 and \$2,523,000, respectively, which were invested in repurchase agreements and commercial paper, and are stated at cost plus accrued interest, which approximates market.

The repurchase agreements held at December 31, 1991 and 1992 bear interest at 2.75% and 2.25% respectively, and mature overnight.

**Inventory**

Inventories are stated at the lower of cost (first in, first out) or market.

**Property and Equipment**

Property and equipment are stated at cost and are depreciated by use of the straight-line method over the estimated useful lives of the related assets (3 to 5 years). Upon sale or retirement, the asset cost and related accumulated depreciation are removed from the respective accounts, and any related gain or loss is reflected in operations.

Leasehold improvements are amortized over the shorter of their estimated useful lives or the term of the lease. Repair and maintenance costs are expensed as incurred.

**Research and Development Costs**

Research and development costs are expensed as incurred. Costs of internally developed software which qualify for capitalization are immaterial.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

**Income Taxes**

The provision for income taxes includes United States federal, state and foreign income taxes, each currently payable and deferred, as determined in accordance with the provisions of Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes." Tax credits are recorded as a reduction in the provision for income taxes when utilized.

Deferred income tax assets and liabilities arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements that will result in taxable or deductible amounts in future years.

**Net Income (Loss) Per Common Share**

Net income (loss) per common share is computed based upon the weighted average number of common shares outstanding. Common equivalent shares, using the treasury stock method, are included in the historical per-share calculations for fiscal year 1992 since the effect of their inclusion is dilutive.

**C. Discontinued Operations:**

In 1992, pursuant to the strategy adopted in the fourth quarter of 1991, the Company sold the technology and certain other assets of its manufacturing applications business segment to two separate and unrelated companies. In the first transaction the Company received a noninterest-bearing promissory note secured by substantially all of the assets of the purchaser in the amount of \$1,375,000, payable in four equal quarterly installments of \$187,500 commencing on April 30, 1992 and four equal quarterly installments of \$156,250 commencing on April 30, 1993. Because of the risk of collection, the Company recognizes this note as cash payments are received. The Company has netted against its loss on disposal of its discontinued operations the sum of \$1,250,000, consisting of a cash payment of \$250,000 received by the Company under an agreement for the second transaction. This agreement provides for royalties on the future retail sale of products incorporating certain of the sold technology and an additional \$1,000,000 of minimum royalties receivable in installments of \$250,000 in each of the years ended November 30, 1993, 1994, 1995 and 1996. Royalties earned in excess of the minimum will be recognized as earned and paid. Maximum aggregate royalties over the life of the agreement are capped at \$2,250,000.

The divested business is being accounted for as discontinued operations and, accordingly, the operating results are reported in this manner for all periods presented in the accompanying statements of operations. Revenues, recognized upon shipment, from discontinued operations were \$17,445,000, \$14,643,000 and \$733,000 for the years ended December 31, 1990, 1991 and 1992, respectively.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

The net liabilities of discontinued operations consisted of the following:

	December 31,	
	1991	1992
	(In thousands)	
Accounts payable and accruals .....	\$5,408	\$1,000
Less: Receivables .....	3,429	1,000
Net liabilities .....	<u>\$1,979</u>	<u>\$ —</u>

**D. Inventory:**

Inventory consists of the following:

	December 31,	
	1991	1992
	(In thousands)	
Finished goods .....	\$150	\$390
Raw materials .....	45	110
	<u>\$195</u>	<u>\$500</u>

**E. Property and Equipment:**

Property and equipment consists of the following:

	December 31,	
	1991	1992
	(In thousands)	
Computer equipment and purchased software .....	\$ 636	\$1,134
Office equipment and furniture .....	260	313
Leasehold improvements .....	262	444
	1,158	1,891
Less accumulated depreciation and amortization .....	(421)	(720)
	<u>\$ 737</u>	<u>\$1,171</u>

**F. Commitments:**

**Leases**

The Company leases certain office facilities, computer equipment and furnishings under lease agreements with various expiration dates through 1997. The corporate office facility lease, which contains an option to renew, is subject to escalation for increases in real estate taxes and operating expenses. The lease also granted the company free rent periods. Rent expense is reflected on a straight-line basis over the term of the lease in the statements of operations. Deferred rent represents the difference between expense reflected on a straight-line basis and payments due under the terms of the lease agreement.



**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

Future minimum payments under noncancelable operating leases as of December 31, 1992 are as follows:

	<i>(in thousands)</i>
1993 .....	\$1,230
1994 .....	1,179
1995 .....	302
1996 .....	151
1997 .....	25
Thereafter .....	—
Total future minimum lease payments .....	<u>\$2,887</u>

Certain of the leases contain renewal options at the end of the lease term. Rental expense for operating leases was \$1,171,000 in 1990, \$1,305,000 in 1991 and \$1,220,000 in 1992.

Capital lease obligations of \$176,130 were incurred during fiscal 1990. These noncash transactions have been excluded from the statement of cash flows.

In September 1991, the Company entered into a lease line of \$1,000,000. The line was used for non-cancellable operating leases of furniture, telephone and computer equipment as disclosed above. The Company was required to pay a commitment fee of .75% of the cost of the equipment or \$7,500. At December 31, 1992, the Company had fully utilized this line.

**G. Capital Structure:**

On November 20, 1992, the Board of Directors declared a 2-for-1 stock split, and approved a resolution to increase the authorized number of shares of Common Stock to 12,500,000, each of which the stockholders of the Company approved at a special meeting of stockholders on December 18, 1992. All share and per share data have been retroactively adjusted to reflect these changes. At the special meeting, the stockholders also authorized 1,000,000 shares of Preferred Stock, par value \$.01 per share, of which no shares were issued or outstanding at December 31, 1992.

On March 19, 1991 the Company sold \$2,500,000 of newly authorized Common Stock and Series A Preferred Stock, the proceeds of which are recorded net of financing costs of \$48,000. This financing caused significant changes in the Company's existing preferred and common stock accounts. The Class A and Class B Common Stock was combined into a single class of Common Stock and the Redeemable Preferred Stock was converted to Series B Redeemable Preferred Stock.

On March 17, 1992, the Company sold 730,158 shares of its newly authorized Series C Preferred Stock, \$.01 par value for \$3.78 per share pursuant to a purchase agreement. The proceeds of \$2,722,000 are recorded net of financing costs of \$38,000. In March 1992, approximately \$1,343,000 of the net proceeds was used to satisfy an existing vendor obligation which had been collateralized by the Company's assets at December 31, 1991.

The holders of the Series C Preferred Stock may convert each share of such stock into two shares of Common Stock at any time.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

The holders of the Preferred Stock (Series A, B and C) are not entitled to receive any dividends other than the unpaid dividends on the Series B Preferred Stock accrued prior to March 19, 1991 (\$1,027,139). In addition, holders of the Preferred Stock are not entitled to vote on any corporate matters, except those affecting their rights or interests as holders of Preferred Stock.

The holders of the Preferred Stock can notify the Company during the three months ended March 31, 1997 that they require the Company to repurchase up to 100% of their stock at a price of \$100 per share for the Series A Series and B Preferred Stock (plus the accrued dividends, in the case of Series B Preferred Stock) and at \$3.78 per share for the Series C Preferred Stock. Should the Preferred Stockholders make such a demand, the Company would be required to repurchase the shares offered in equal annual installments on March 31, 1997, 1998, and 1999.

**Warrants**

In conjunction with a lease line entered into in September 1991 (see Note F), the Company issued a warrant to purchase 61,828 shares of Common Stock at \$1.86 per share. The warrant is exercisable prior to the tenth annual anniversary date of the grant and contains registration and antidilution rights similar to those given to the holders of the Company's Preferred Stock.

**H. Stock Options:**

Under the 1984 Incentive Stock Option Plan, as amended, incentive stock options can be granted to certain employees entitling them to purchase shares of Common Stock within one to ten years from the date of grant at option prices equal to the fair market value as determined by the Board of Directors at the date of grant. The exercise price for incentive options may not be less than the fair market value of the Common Stock on the date of grant (110% of fair market value in the case of a greater-than-ten-percent-stockholder).

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

Information with respect to options granted under the plan is as follows:

	Shares	Option Price
Outstanding at December 31, 1989 .....	738,300	\$ 0.375
Granted .....	34,000	0.375
Exercised .....	(23,750)	0.375
Canceled .....	(50,750)	0.375
Outstanding at December 31, 1990 .....	697,800	0.375
Granted .....	185,600	0.375
Exercised .....	(9,376)	0.375
Canceled .....	(44,624)	0.375
Outstanding at December 31, 1991 .....	829,400	0.375
Granted .....	1,180,800	0.375-10.50
Exercised .....	(186,254)	0.375
Canceled .....	(226,946)	0.375-10.50
Outstanding at December 31, 1992 .....	<u>1,597,000</u>	<u>\$0.375-10.50</u>
Available for grant, December 31, 1992 .....	<u>134,436</u>	

At December 31, 1992, options to purchase 406,800 shares were exercisable.

In March 1992, in conjunction with the financing described in Note G, the Board of Directors voted to increase the number of shares with respect to which options may be granted to 1,945,816.

In April 1991 and October 1991, the Board of Directors voted to grant nonqualified options to purchase 20,000 shares of Common Stock (which were fully vested at September 30, 1992) and 50,000 shares of Common Stock (none of which were vested at December 31, 1992) to non-employee directors. Each option is exercisable at \$.375 per share, the fair market value of the options, and is for a term of five years. On September 1, 1992 a non-employee director exercised an option granted in October 1987 to acquire 20,000 shares of common stock at an exercise price of \$.375 per share.

**i. Income Taxes:**

Effective January 1, 1992, the Company adopted Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes." There was no impact on prior year financial statements. Under this statement, deferred tax assets (net of any valuation allowance) and liabilities resulting from temporary differences, net operating loss carryforwards and tax credit carryforwards are recorded using a liability method. Deferred taxes relating to temporary differences and loss carryforwards are measured using the enacted tax rate expected to be in effect when they reverse or are realized.

The components of the net deferred tax amount recognized in the accompanying balance sheets are:

	1991	1992
Deferred tax assets .....	\$ 3,544,000	\$ 1,404,000
Deferred tax liabilities .....	(1,154,000)	—
Valuation allowance .....	(2,390,000)	(1,404,000)
	<u>\$ 0</u>	<u>\$ 0</u>

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

Due to the uncertainty surrounding the timing of realizing the benefits of its favorable tax attributes in future tax returns, the Company has placed a valuation allowance against its otherwise recognizable net deferred tax assets. The decrease in the valuation reserve during 1992 was primarily the result of the utilization of net operating loss carryforwards.

The approximate tax effect of each type of temporary difference and carry forward before allocation of the valuation allowance is:

	<u>1991</u>	<u>1992</u>
Deferred tax assets (liabilities):		
Net operating loss carryforwards .....	\$ 1,532	—
Accounts receivable reserves .....	87	328
Deferred revenue .....	(1,154)	—
Leases .....	796	156
Vacation and benefits reserves .....	320	88
Other liabilities and reserves .....	306	316
Tax credits and carryforwards .....	503	516
	<u>\$2,390</u>	<u>\$1,404</u>

The provision for federal and state income taxes for the year ended December 31, 1992 was offset as a result of the utilization of net operating loss carryforwards in the amount of approximately \$4,500,000. The Company has tax credit carryforwards of approximately \$516,000 expiring at various times through 2007. Future ownership changes may result in limitations on the utilization of research and development tax credit carryforwards.

A reconciliation of the statutory federal income tax rate to the Company's effective tax rate is as follows:

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Statutory federal income tax rate (benefit) .....	(34)%	(34)%	34%
Operating losses not benefited .....	34	34	—
Utilization of net operating loss carryforwards .....	—	—	(33)
State taxes, net of federal tax benefit .....	—	—	6
	<u>— %</u>	<u>— %</u>	<u>7%</u>

Income taxes related to discontinued operations after consideration of valuation allowances are not significant. Income tax provision for continuing operations includes the following:

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Current:			
Federal .....	\$ —	\$ —	\$125
State .....	1	5	102
	<u>\$ 1</u>	<u>\$ 5</u>	<u>\$227</u>

**J. Retirement Plan:**

Effective July 1, 1990, the Company adopted a retirement plan which is qualified under Section 401(k) of the Internal Revenue Code. This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. In addition, Company contributions to the plan may be made at the discretion of the Board of Directors. No Company contributions have been made to date. The Company does not offer post-retirement or post-employment benefits.

**POWERSOFT CORPORATION**  
**NOTES TO FINANCIAL STATEMENTS—(Continued)**

**K. Segment Information:**

The Company is active in only one business segment: developing, marketing and supporting its application software development tools for the client/server market. No one customer accounted for 10% or more of total revenues. Sales to markets outside North America in 1992 were approximately \$2,150,000, or 10% of total revenues for 1992, and were less than 10% of total revenues in 1991. At December 31, 1991 and 1992, identifiable assets of foreign operations were not material to total assets.

DETAILED BALANCE SHEET									
Name: POWERSOFT CORPORATION (POWERSOF)									
Prepared: 07/19/93									
Page 1									
Rounded Thousands									
Statement Date	12/31/90		12/31/91		12/31/92		03/31/93		
Months Covered	12		12		12		3		
Statement Type	UNQUALIFIE		UNQUALIFIE		UNQUALIFIE				
Accountant	COOPERS&LY		COOPERS&LY		COOPERS&LY				
Analyst	RWELDON		RWELDON		RWELDON		RWELDON		
=====									
ASSETS									
-----									
Cash & Equivalents	1,233	23.3	659	20.9	4,364	35.3	5,011	33.6	
Accts Receivable-Trade	3,426	64.7	1,419	44.9	5,902	47.7	6,923	46.4	
Inventory	0	0	195	6.2	500	4.0	890	6.0	
<b>TOTAL CURRENT ASSETS</b>	<b>4,659</b>	<b>88.0</b>	<b>2,273</b>	<b>72.0</b>	<b>10,766</b>	<b>87.1</b>	<b>12,824</b>	<b>86.0</b>	
-----									
Fixed Assets	713	13.5	1,158	36.7	1,891	15.3	2,682	18.0	
Accumulated Depreciation	299	5.7	421	13.3	720	5.8	951	6.4	
<b>Net Fixed Assets</b>	<b>414</b>	<b>7.8</b>	<b>737</b>	<b>23.3</b>	<b>1,171</b>	<b>9.5</b>	<b>1,731</b>	<b>11.6</b>	
Prepays/Deferreds - LTP	175	3.3	43	1.4	304	2.5	227	1.5	
Deposits	44	0.8	106	3.4	126	1.0	134	0.9	
<b>TOTAL NON-CURRENT ASSETS</b>	<b>633</b>	<b>12.0</b>	<b>886</b>	<b>28.0</b>	<b>1,601</b>	<b>12.9</b>	<b>2,092</b>	<b>14.0</b>	
<b>TOTAL ASSETS</b>	<b>5,292</b>	<b>100.0</b>	<b>3,159</b>	<b>100.0</b>	<b>12,367</b>	<b>100.0</b>	<b>14,916</b>	<b>100.0</b>	
=====									
LIABILITIES									
-----									
Accounts Payable-Trade	2,188	41.3	784	24.8	1,596	12.9	3,035	20.3	
Accruals	2,023	38.2	624	19.8	2,277	18.4	2,419	16.2	
<b>TOTAL CURRENT LIABILITIES</b>	<b>4,211</b>	<b>79.6</b>	<b>1,408</b>	<b>44.6</b>	<b>3,873</b>	<b>31.3</b>	<b>5,454</b>	<b>36.6</b>	
-----									
Deferred Rent	292	5.5	292	9.2	209	1.7	209	1.4	
Liabs. of Disc. Operations	149	2.8	1,979	62.6	0	0	0	0	
Deferred Income	1,126	21.3	252	8.0	2,708	21.9	3,481	23.3	
<b>TOTAL NON-CURRENT LIABS</b>	<b>1,567</b>	<b>29.6</b>	<b>2,523</b>	<b>79.9</b>	<b>2,917</b>	<b>23.6</b>	<b>3,690</b>	<b>24.7</b>	
<b>TOTAL LIABILITIES</b>	<b>5,778</b>	<b>109.2</b>	<b>3,931</b>	<b>124.4</b>	<b>6,790</b>	<b>54.9</b>	<b>9,144</b>	<b>61.3</b>	
-----									
Capital Stock	2,850	53.9	4,853	153.6	7,575	61.3	7,575	50.8	
Paid In Surplus	1	0.0	453	14.3	540	4.4	540	3.6	
Retained Earnings	(3,337)	(63.1)	(6,078)	(192.4)	(2,538)	(20.5)	(2,343)	(15.7)	
<b>TOTAL NET WORTH</b>	<b>(486)</b>	<b>(9.2)</b>	<b>(772)</b>	<b>(24.4)</b>	<b>5,577</b>	<b>45.1</b>	<b>5,772</b>	<b>38.7</b>	
-----									
<b>TOTAL LIABS &amp; NET WORTH</b>	<b>5,292</b>	<b>100.0</b>	<b>3,159</b>	<b>100.0</b>	<b>12,367</b>	<b>100.0</b>	<b>14,916</b>	<b>100.0</b>	
=====									

DETAILED INCOME STATEMENT									
Name: POWERSOFT CORPORATION (POWERSOF)									
Prepared: 07/19/93									
Page 2									
Rounded Thousands									
Statement Date	12/31/90		12/31/91		12/31/92		03/31/93		
Months Covered	12		12		12		3		
Statement Type	UNQUALIFIE		UNQUALIFIE		UNQUALIFIE				
Accountant	COOPERS&LY		COOPERS&LY		COOPERS&LY				
Analyst	RWELDON		RWELDON		RWELDON		RWELDON		
License Fees	0	0	4,088	86.7	17,560	82.9	5,217	84.5	
Service Revenue	55	100.0	626	13.3	3,633	17.1	954	15.5	
NET SALES/REVENUE	55	100.0	4,714	100.0	21,193	100.0	6,171	100.0	
Cost of License Fees	0	0	253	5.4	1,227	5.8	647	10.5	
Cost of Services	29	52.7	698	14.8	2,404	11.3	674	10.9	
TOTAL COST OF GOODS SOLD	29	52.7	951	20.2	3,631	17.1	1,321	21.4	
GROSS PROFIT	26	47.3	3,763	79.8	17,562	82.9	4,850	78.6	
Selling, Gen & Admin Expense	587	1067.3	5,454	115.7	12,051	56.9	3,686	59.7	
Depreciation Exp. Cur. Period	99	180.0	122	2.6	299	1.4	231	3.7	
Research and Development	1,010	1836.4	1,324	28.1	2,004	9.5	743	12.0	
TOTAL OPERATING EXP(INC)	1,696	3083.6	6,900	146.4	14,354	67.7	4,660	75.5	
OPERATING PROFIT	(1,670)	*****	(3,137)	(66.5)	3,208	15.1	190	3.1	
Other Non-Operating Income	7	12.7	60	1.3	19	0.1	5	0.1	
TOTAL OTHER INCOME(EXPENSE)	7	12.7	60	1.3	19	0.1	5	0.1	
PROFIT BEFORE INTEREST & TAXES	(1,663)	*****	(3,077)	(65.3)	3,227	15.2	195	3.2	
Interest Income	0	0	0	0	0	0	0	0	
Interest Expense	0	0	0	0	0	0	0	0	
Deferred Interest Expense	0	0	0	0	0	0	0	0	
PROFIT BEFORE TAXES & EX ITEMS	(1,663)	*****	(3,077)	(65.3)	3,227	15.2	195	3.2	
Income Tax	1	1.8	5	0.1	227	1.1	0	0	
NET PROFIT BEFORE EX ITEMS	(1,664)	*****	(3,082)	(65.4)	3,000	14.2	195	3.2	
Gain (Loss) from Disc. Oper.	1,024	1861.8	341	7.2	540	2.5	0	0	
NET PROFIT	(640)	*****	(2,741)	(58.1)	3,540	16.7	195	3.2	

## NET WORTH RECONCILIATION

BEGINNING NET WORTH		(486)	(772)	5,577
Net Profit		(2,741)	3,540	195
Increase(Decrease) in:				
Capital Stock		2,003	2,722	0
Paid In Surplus		452	87	0
Unexplained Chg in Net Worth		0	0	0
ENDING NET WORTH		(772)	5,577	5,772

## TRADE CYCLE ANALYSIS

	DOLLAR	DAYS						
	AMOUNT	SALES						
Accts Receivable-Trade	3,426	22736	1,419	110	5,902	102	6,923	102
Inventory	0	0	195	75	500	50	890	61
Trading Assets	3,426	22736	1,614	185	6,402	152	7,813	163
Accounts Payable-Trade	2,188	27539	784	301	1,596	160	3,035	210
Working Capital Needs	1,238	(4803)	830	(116)	4,806	(8)	4,778	(47)
ACTUAL WORKING CAPITAL	448	(1738)	865	(121)	6,893	(11)	7,370	(72)
Trade Cycle Surplus/(Deficit)	(790)	(3065)	35	5	2,087	3	2,592	25

Name: POWERSOFT CORPORATION (POWERSOF)		DETAILED RATIOS		Prepared: 07/19/93	
				Page 3	
				Rounded Thousands	
Statement Date	12/31/90	12/31/91	12/31/92	03/31/93	
Months Covered	12	12	12	3	
=====					
GROWTH RATIOS					
=====					
Total Assets Growth		(40.306)	291.485	20.611	
Total Liabilities Growth		(31.966)	72.730	34.669	
Net Worth Growth		N/A	N/A	3.497	
Net Sales Growth		8,470.909	349.576	16.472	
Operating Profit Growth		(87.844)	202.263	(76.309)	
Net Profit Growth		(328.281)	229.150	(77.966)	
Growth in Retained Earnings		82.140	(58.243)	(7.683)	
Sustainable Growth	(124.533)	(139.207)	173.795	15.625	
=====					
PROFITABILITY RATIOS					
=====					
Return on Average Net Worth		435.771	147.347	13.746	
Return on Average Assets		(64.868)	45.601	5.718	
Return on Equity	N/A	N/A	63.475	13.514	
Gross Margin	47.273	79.826	82.867	78.593	
Operating Profit Margin	(3,036.364)	(66.546)	15.137	3.079	
Net Profit Margin	(1,163.636)	(58.146)	16.704	3.160	
Dividend Payout Ratio	(285.469)	0	0	0	
Effective Tax Rate	(0.060)	(0.162)	7.034	0	
=====					
LIQUIDITY RATIOS					
=====					
Working Capital	448	865	6,893	7,370	
Inventory/Working Capital	0	22.54	7.25	12.08	
Quick Ratio	1.11	1.48	2.65	2.19	
Current Ratio	1.11	1.61	2.78	2.35	
=====					
LEVERAGE RATIOS					
=====					
Tangible Net Worth	(486)	(772)	5,577	5,772	
Eff Tang Net Worth	(486)	(772)	5,577	5,772	
Total Liabilities/Net Worth	N/A	N/A	1.218	1.584	
Total Liab/Tang Net Worth	N/A	N/A	1.218	1.584	
Senior Debt/Net Worth	(0.601)	(0.378)	0.037	0.036	
Funded Debt/Net Worth	(0.601)	(0.378)	0.037	0.036	
Total Liabilities/Total Assets	1.092	1.244	0.549	0.613	
Debt Cover=Net PFT+DDA/LYCMLTD	N/A	N/A	N/A	N/A	
Net Funds Flow/CMLTD + LTD	(8.110)	(8.969)	18.368	8.153	
Interest Coverage	N/A	N/A	N/A	N/A	
=====					
ACTIVITY RATIOS					
=====					
Net Receivables Days on Hand		110	102	102	
Inventory Turnover		10	10	8	
Trade Payables Days on Hand		301	160	210	
Sales / Total Assets	0.01	1.49	1.71	1.65	
Sales / Working Capital	0.12	5.45	3.07	3.35	
Sales / Net Worth	N/A	N/A	3.80	4.28	
Sales / Fixed Assets	0.13	6.40	18.10	14.26	
Profit Before Taxes/Assets	(0.31)	(0.97)	0.26	0.05	
Z-Score < 1.8? => Poor	(1.86)	(4.21)	3.45	2.58	
> 2.68 => Good					
=====					
FUNDS FLOW					
=====					
Net Income - Annualized	(640)	(2,741)	3,540	780	
Deprec. / Amort. / Depletion	99	122	299	924	
Deferred Taxes	0	0	0	0	
Other Non-Cash Charges	0	0	0	0	
-----					
GROSS OPERATING FUNDS FLOW	(541)	(2,619)	3,839	1,704	
Less: CMLTD	0	0	0	0	
Less: Cash Dividends	1,827	0	0	0	
-----					
NET OPERATING FUNDS FLOW	(2,368)	(2,619)	3,839	1,704	
(Cap. Exp.)/Sale Fixed Assets		(445)	(733)	(1,484)	
-----					
FUNDS SURPLUS/(DEFICIT)		(3,064)	3,106	220	
=====					



Name: POWERSOFT CORPORATION (POWERSOF)		DETAILED BANK ONE, TEXAS CASH FLOW		Prepared: 07/19/93	
				Page 4	
				Rounded Thousands	
Statement Date	12/31/90	12/31/91	12/31/92	03/31/93	
Months Covered	12	12	12	3	
License Fees		4,088	17,560	5,217	
Service Revenue		626	3,633	954	
Chg in Accts Receivable-Trade		2,007	(4,483)	(1,021)	
<b>CASH COLLECTED FROM SALES</b>		<b>6,721</b>	<b>16,710</b>	<b>5,150</b>	
Cost of License Fees		(253)	(1,227)	(647)	
Cost of Services		(698)	(2,404)	(674)	
Chg in Inventory		(195)	(305)	(390)	
Chg in Accounts Payable-Trade		(1,404)	812	1,439	
<b>CASH PRODUCTION COSTS</b>		<b>(2,550)</b>	<b>(3,124)</b>	<b>(272)</b>	
<b>GROSS CASH MARGINS</b>		<b>4,171</b>	<b>13,586</b>	<b>4,878</b>	
Selling, Gen & Admin Expense		(5,454)	(12,051)	(3,686)	
Research and Development		(1,324)	(2,004)	(743)	
Chg in Prepaids/Deffereds - LTP		132	(261)	77	
Chg in Accruals		(1,399)	1,653	142	
<b>CASH OPERATING EXPENSES</b>		<b>(8,045)</b>	<b>(12,663)</b>	<b>(4,210)</b>	
<b>CASH AFTER OPERATIONS</b>		<b>(3,874)</b>	<b>923</b>	<b>668</b>	
Chg in Deferred Income		(874)	2,456	773	
Chg in Deposits		(62)	(20)	(8)	
Income Tax		(5)	(227)	0	
<b>Other Income (Expense) &amp; Taxes Paid</b>		<b>(941)</b>	<b>2,209</b>	<b>765</b>	
<b>NET OPERATING CASH FLOW</b>		<b>(4,815)</b>	<b>3,132</b>	<b>1,433</b>	
<b>FINANCING COSTS</b>		<b>0</b>	<b>0</b>	<b>0</b>	
<b>CASH AFTER FINANCING COSTS</b>		<b>(4,815)</b>	<b>3,132</b>	<b>1,433</b>	
Current Portion Long Term Debt		0	0	0	
<b>CASH AFTER DEBT AMORTIZATION</b>		<b>(4,815)</b>	<b>3,132</b>	<b>1,433</b>	
Other Non-Operating Income		60	19	5	
Extraordinary Gain (Loss)		341	540	0	
<b>CASH AFTER DEBT &amp; NON-RECURRING ITEMS</b>		<b>(4,414)</b>	<b>3,691</b>	<b>1,438</b>	
<b>(CAPITAL EXPEND.)/SALE OF FIXED ASSETS</b>		<b>(445)</b>	<b>(733)</b>	<b>(791)</b>	
<b>FINANCING SURPLUS (REQUIREMENTS)</b>		<b>(4,859)</b>	<b>2,958</b>	<b>647</b>	
Chg in Deferred Rent		0	(83)	0	
Chg in Liabs. of Disc. Operations		1,830	(1,979)	0	
Chg in Equity		2,455	2,809	0	
<b>TOTAL EXTERNAL FINANCING</b>		<b>4,285</b>	<b>747</b>	<b>0</b>	
<b>CASH AFTER FINANCING</b>		<b>(574)</b>	<b>3,705</b>	<b>647</b>	
<b>BEGINNING CASH BALANCE</b>		<b>1,233</b>	<b>659</b>	<b>4,364</b>	
<b>CASH AFTER FINANCING</b>		<b>(574)</b>	<b>3,705</b>	<b>647</b>	
<b>ENDING CASH BALANCE</b>		<b>659</b>	<b>4,364</b>	<b>5,011</b>	
<b>DIFFERENCE</b>		<b>0</b>	<b>0</b>	<b>0</b>	

POWERSOFT CORPORATION  
 ACCOUNTS RECEIVABLE ANALYSIS  
 3/31/93

Accounts Receivable Aging (000's)

Date	0-30		31-60		61-90		>90		Total Amount
	Amount	%	Amount	%	Amount	%	Amount	%	
12/31/90	248	7.2%	941	27.3%	1758	51.0%	500	14.5%	3448
3/31/91	1236	55.4%	580	26.0%	344	15.4%	71	3.2%	2231
6/30/91	833	40.0%	935	44.9%	214	10.3%	100	4.8%	2082
9/30/91	643	38.0%	521	30.8%	423	25.0%	105	6.2%	1693
12/31/91	747	52.3%	497	34.8%	54	3.8%	130	9.1%	1429
3/31/92	1077	70.1%	253	16.5%	147	9.6%	57	3.7%	1536
6/30/92	3267	74.8%	856	19.6%	131	3.0%	114	2.6%	4368
9/30/92	2404	47.3%	1596	31.4%	442	8.7%	640	12.6%	5082
12/31/92	2280	38.0%	2604	43.4%	696	11.6%	420	7.0%	6000
3/31/93	3002	42.0%	2759	38.6%	1101	15.4%	286	4.0%	7148

AR Concentration 3/31/93 (000's omitted)

Obligor	Location	Total Amount	Due %	Past Due
Microsoft	Redmond, WA	1973	27.6%	36
American Airlines	Ft. Worth, TX	1773	24.8%	25
Dell Computer	Austin, TX	951	13.3%	82
Dun & Bradstreet	Atlanta, GA	443	6.2%	102
EDS	Plano, TX	322	4.5%	6
Fidelity Investments	Boston, MA	336	4.7%	14
Other	Other	1351	18.9%	21
		7148	100.0%	286

POWERSOFT CORPORATION  
 ACCOUNTS PAYABLE ANALYSIS  
 3/31/93

Accounts Payable Aging (000's)									
Date	0-30		31-60		61-90		>90		Total
	Amount	%	Amount	%	Amount	%	Amount	%	Amount
12/31/91	157	20.0%	37	4.7%	421	53.7%	169	21.6%	784
3/31/92	157	15.0%	341	32.6%	425	40.7%	122	11.7%	1045
6/30/92	217	25.0%	218	25.1%	347	39.9%	87	10.0%	869
9/30/92	144	14.9%	220	22.8%	478	49.4%	125	12.9%	967
12/31/92	749	46.9%	519	32.5%	85	5.3%	244	15.3%	1596
3/31/93	1296	42.7%	813	26.8%	501	16.5%	425	14.0%	3035

**POWERSOFT CORPORATION  
PRINCIPAL STOCKHOLDERS**

The following table sets forth certain information with respect to the beneficial ownership of the Company's Common Stock as of December 31, 1992 (i) by each person known by the Company to own beneficially more than five percent of the Common Stock, (ii) by each of the Company's directors and (iii) by all directors and officers of the Company as a group:

<u>Name</u>	<u>Shares Beneficially Owned</u>	
	<u>Number</u>	<u>Percent</u>
Alta IV Limited Partnership c/o Burr, Egan, Deleage & Co. Boston, MA	1,446,985	21.0%
Hummer Winblad Venture Partners Emeryville, CA 94608	982,670	14.2%
Prince of Liechtenstein Foundation Postfach 366 FL-9490 Vaduz Liechtenstein	746,230	10.8%
David P. Dewan c/o Powersoft Corporation Dallas, TX	606,882	8.8%
Claffin Capital c/o Clafflin Capital Management, Inc. Dallas, TX	451,238	6.5%
Greater Washington Investments, Inc. 5454 Wisconsin Avenue Chevy Chase, MD 20815	401,994	5.8%
Mitchell E. Kertzman c/o Powersoft Corporation Dallas, TX	376,882	5.4%
The Roda Realty Trust c/o Robert Roda Dallas, TX	371,250	5.4%
 Directors:		
David A. Litwack	200,000	2.8%
Jonathan A. Flint	1,710,988	24.8%
John Hummer	1,034,366	15.0%
L. William Krause	----	----
William P. Miller	40,000	*
Ruth O. Owens	30,000	*
Paul J. Palmer	16,667	*
Joseph Stavenhagen	968,530	14.0%
All directors and officers as a group (12 persons)	4,964,315	69.1%

\* Less than 1%

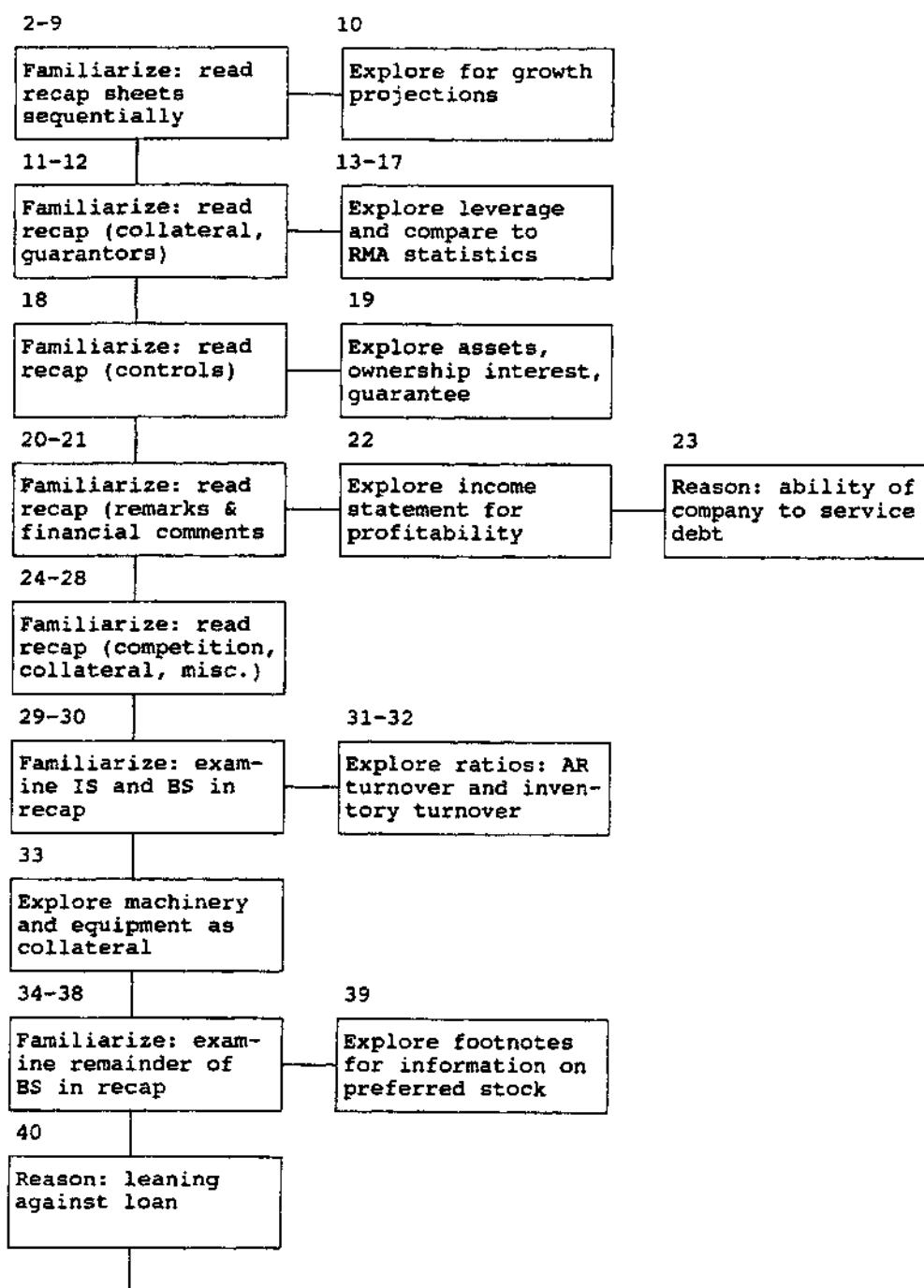
APPENDIX E  
EPISODE SUMMARIES OF CREDIT ANALYSTS  
BANK A

This appendix presents the Episode Summaries of the credit analysts. Each block in the Episode Summary consists of one or more consecutive episodes that share the same activity type (i.e., familiarizing, scanning, exploring, reasoning). The numbers above the blocks denote the individual episodes in the decision making process. The lines between the blocks represent the nature of the relationship. A horizontal line indicates a causal relationship, where the second episode is a follow-up, or a direct consequence of the first one. Vertical lines represent temporal relationships; the two blocks just "happen" to follow each other in time. Blocks that are drawn with a double line (i.e., =) denote that the subject was using cash flow information during one or more episodes within that block. The major processing phases identified within the decision making process are also identified.

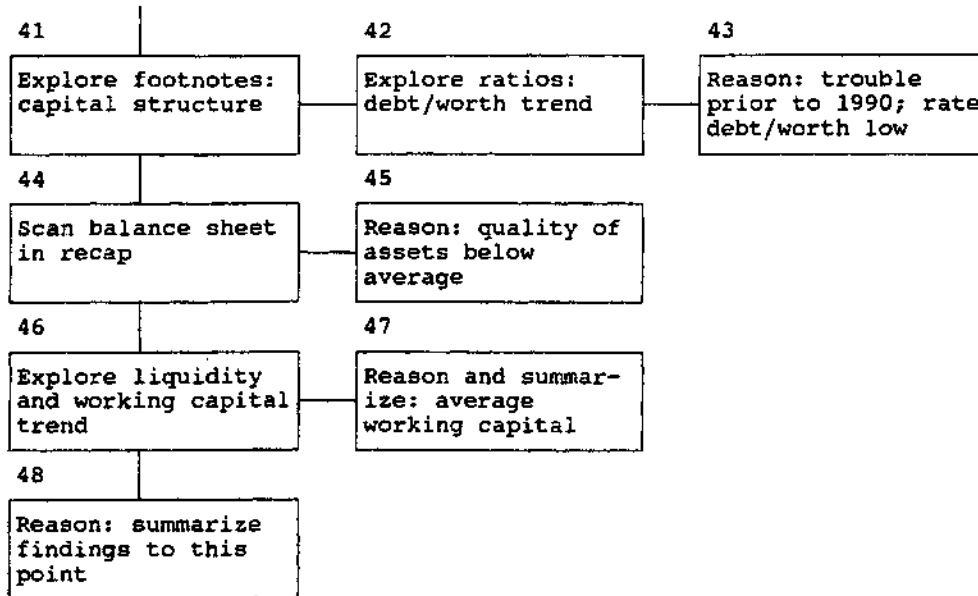
A narrative description of the decision making process and the use of cash flow information for each subject is contained in Chapter 7. The narrative descriptions are aided by the flowcharts included in this appendix.

Episode Summary of Credit Analyst A1  
Processing Time: 50 minutes

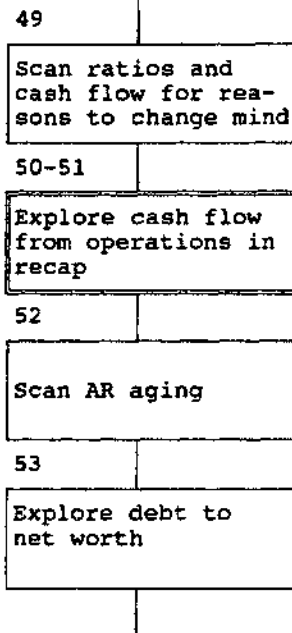
PHASE 1: FAMILIARIZATION



PHASE 2: EXPLORATION

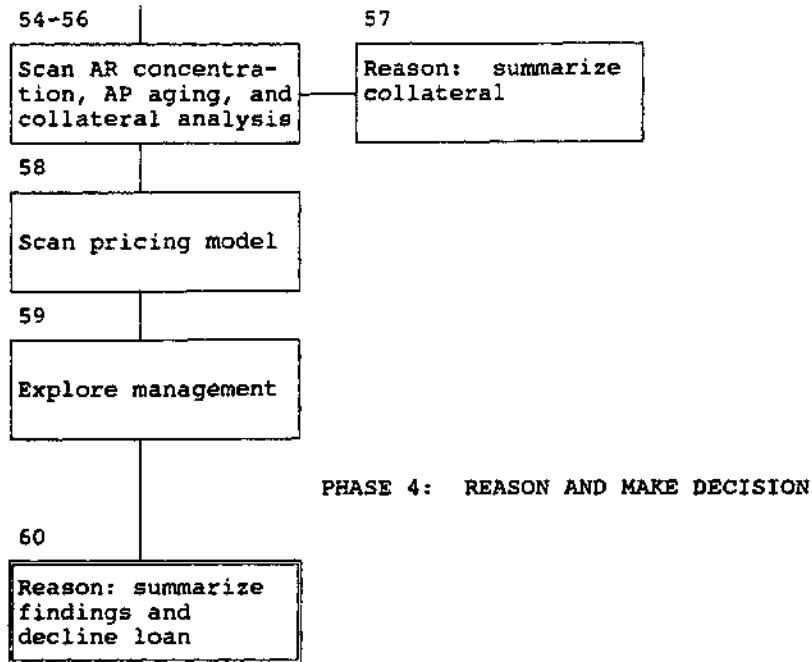


PHASE 3: SCANNING



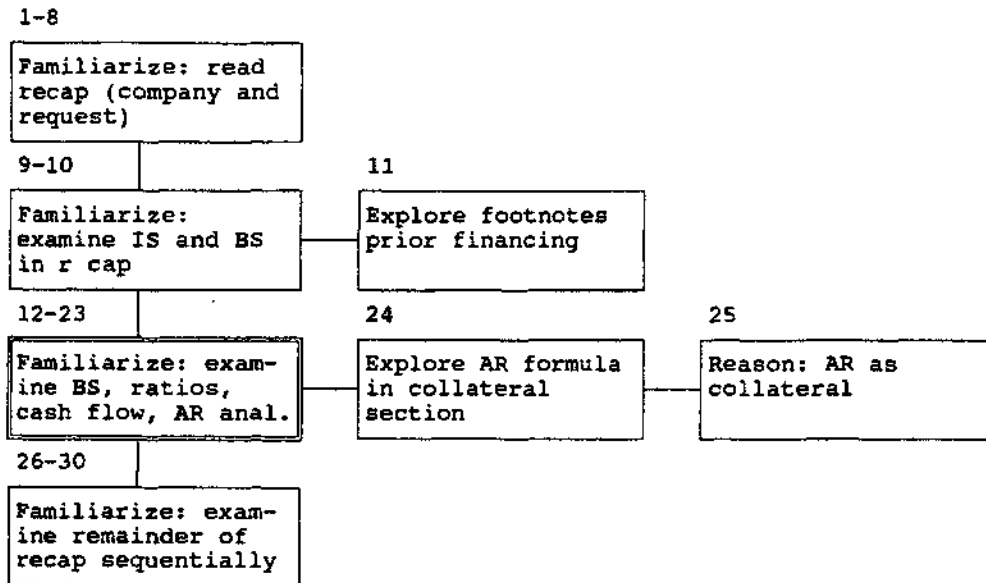


Credit Analyst A1  
Page 3

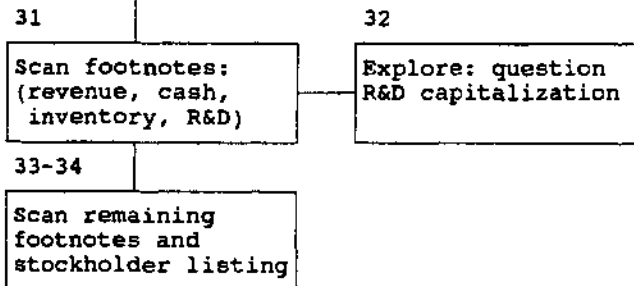


Episode Summary of Credit Analyst A2  
 Processing Time: 48 minutes

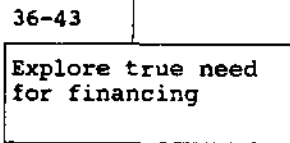
PHASE 1: FAMILIARIZATION



PHASE 2: SCANNING

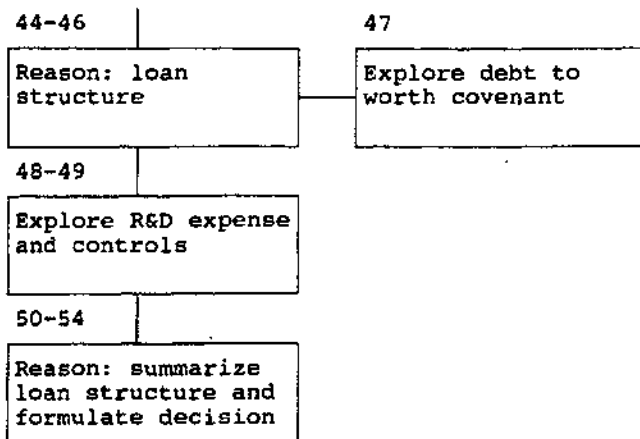


PHASE 3: EXPLORATION



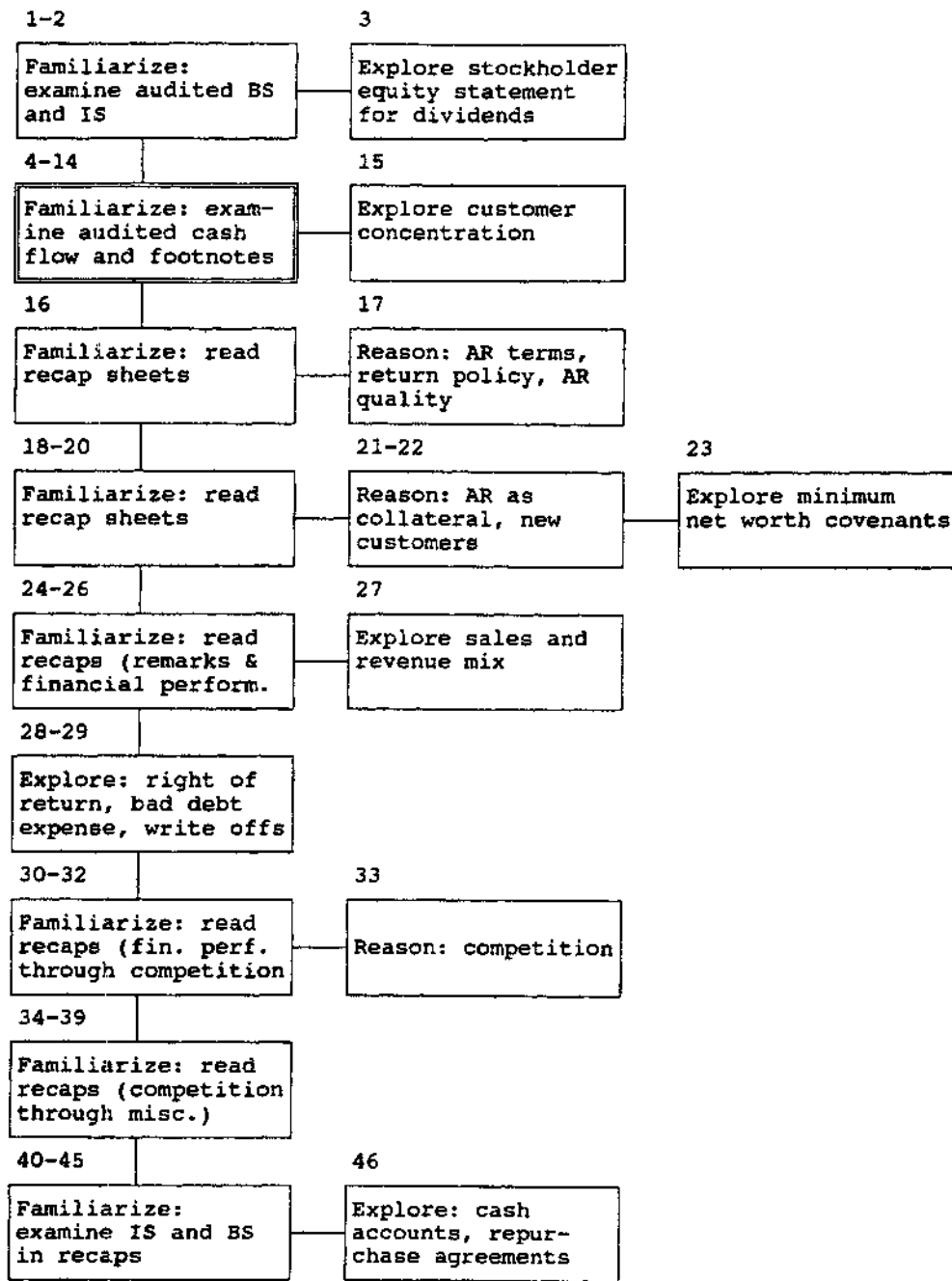
Credit Analyst A2  
Page 2

PHASE 4: REASON AND MAKE DECISION

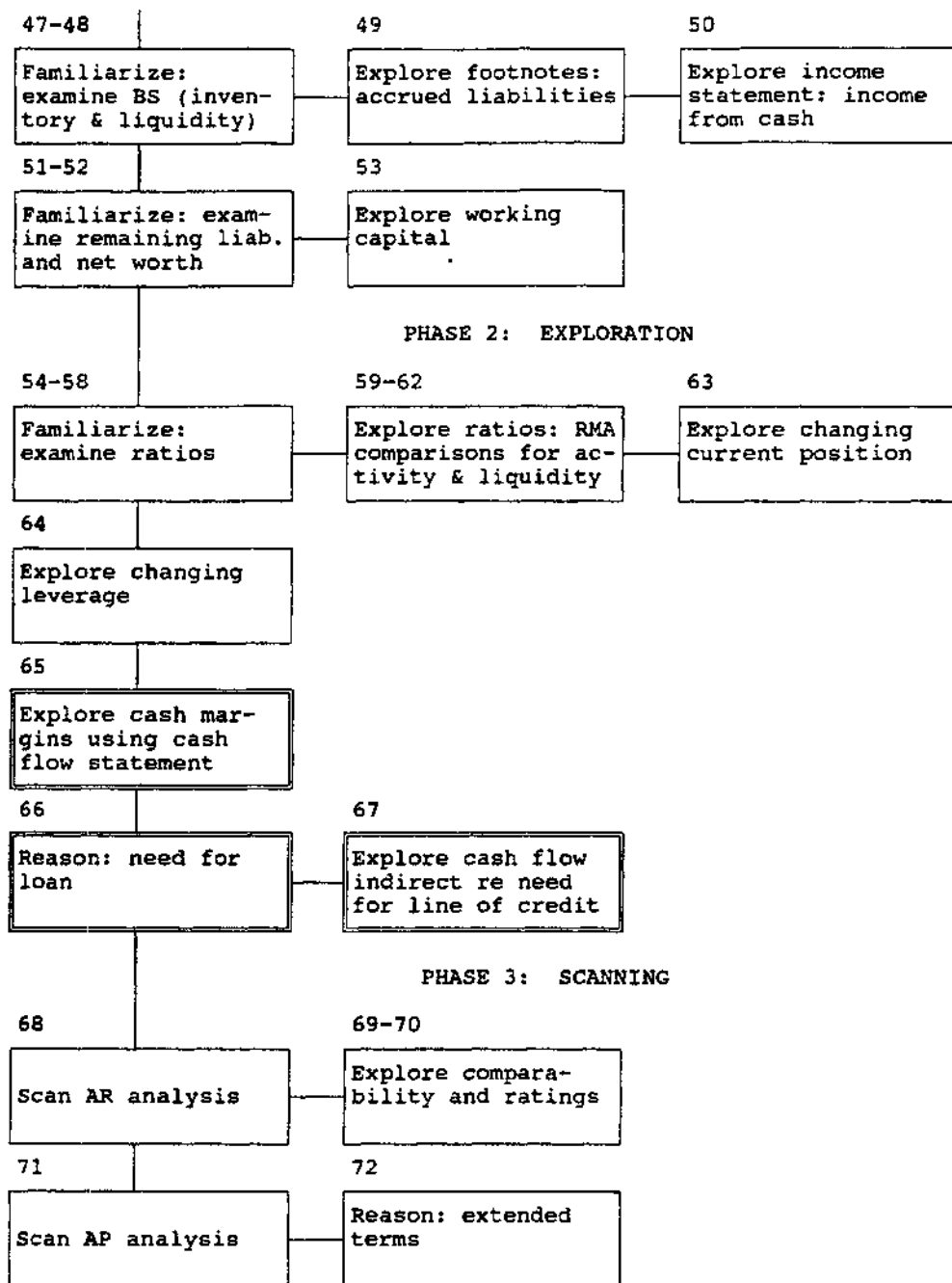


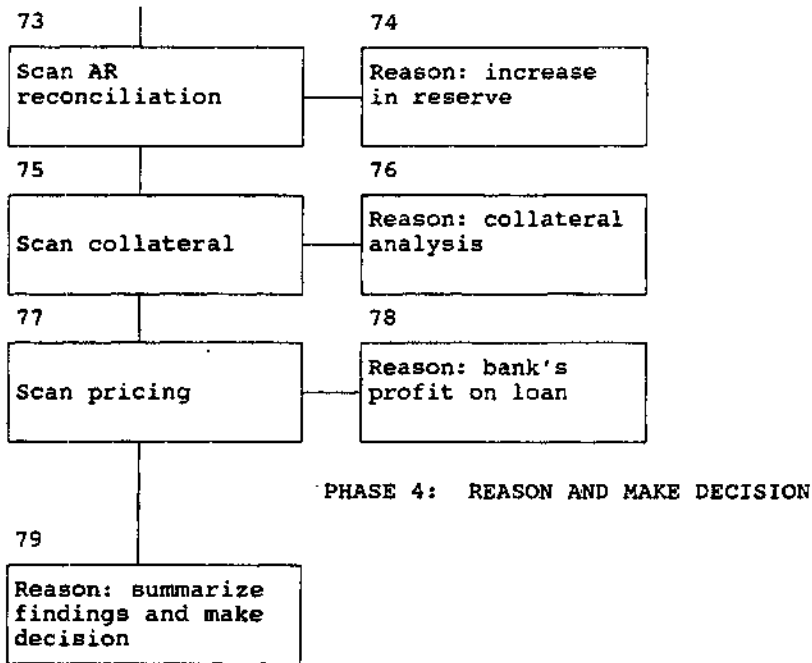
Episode Summary of Credit Analyst A3  
 Processing Time: 70 minutes

PHASE 1: FAMILIARIZATION



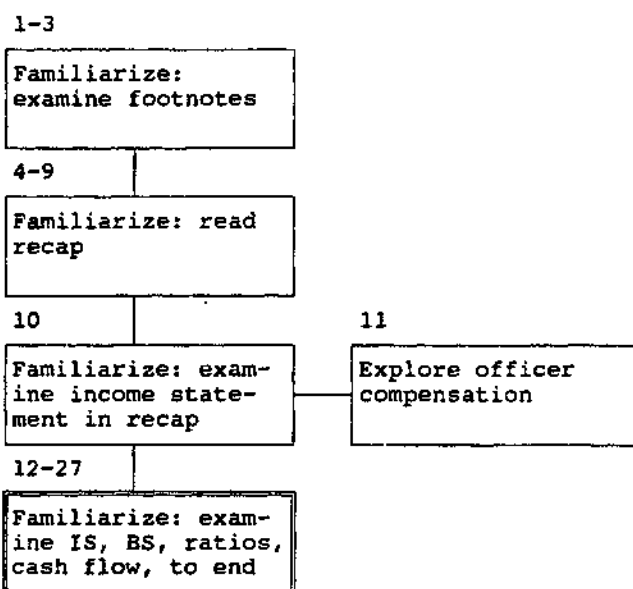
Credit Analyst A3  
Page 2



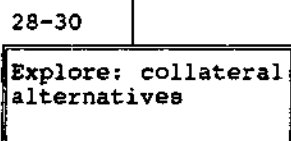


Episode Summary of Credit Analyst A4  
Processing Time: 50 minutes

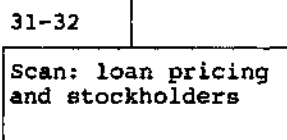
PHASE 1: FAMILIARIZATION



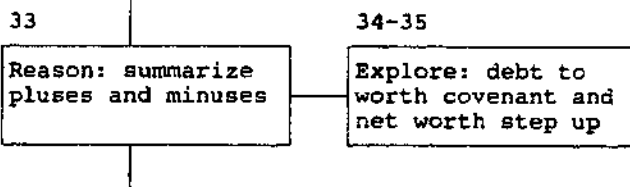
PHASE 2: EXPLORATION

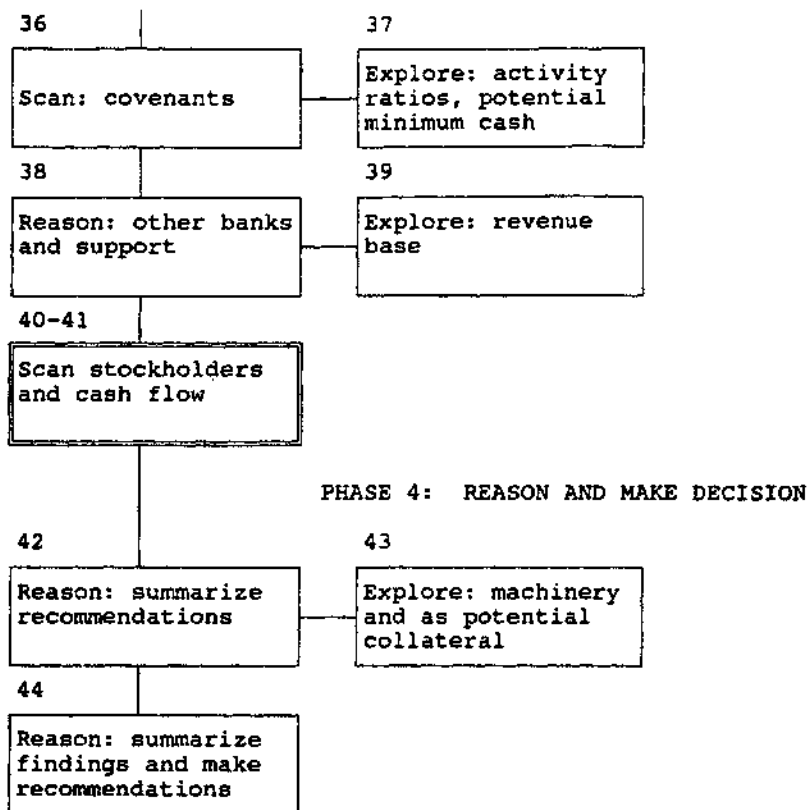


PHASE 3: SCANNING



PHASE 4: SUMMARIZE PLUSES AND MINUSES







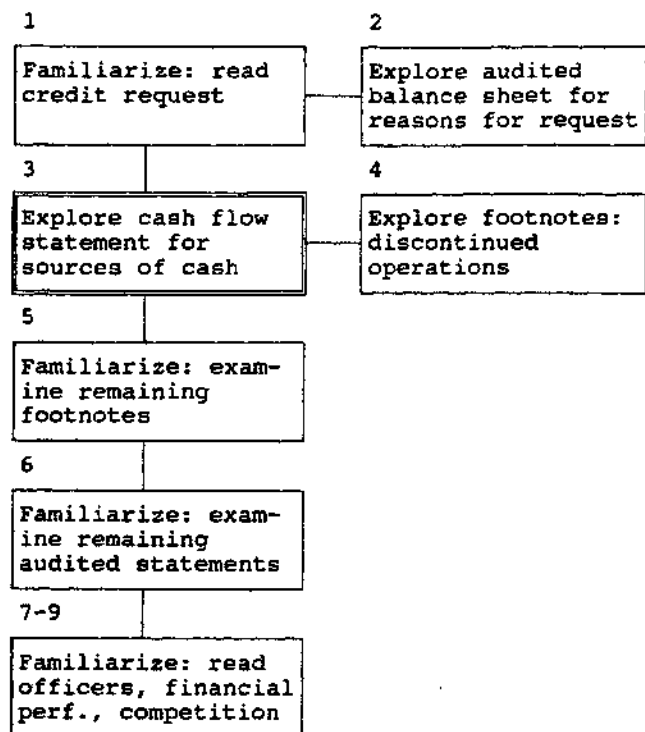
APPENDIX F  
EPISODE SUMMARIES OF LOAN OFFICERS  
BANK B

This appendix presents the Episode Summaries of the loan officers. Each block in the Episode Summary consists of one or more consecutive episodes that share the same activity type (i.e., familiarizing, scanning, exploring, reasoning). The numbers above the blocks denote the individual episodes in the decision making process. The lines between the blocks represent the nature of the relationship. A horizontal line indicates a causal relationship, where the second episode is a follow-up, or a direct consequence of the first one. Vertical lines represent temporal relationships; the two blocks just "happen" to follow each other in time. Blocks that are drawn with a double line (i.e., =) denote that the subject was using cash flow information during one or more episodes within that block. The major processing phases identified within the decision making process are also identified.

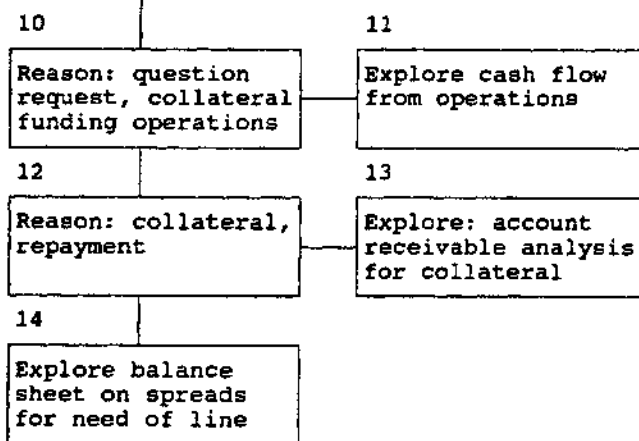
A narrative description of the decision making process and the use of cash flow information for each subject is contained in Chapter 7. The narrative descriptions are aided by the flowcharts included in this appendix.

Episode Summary of Loan Officer B1  
Processing Time: 15 minutes

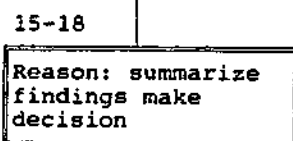
PHASE 1: FAMILIARIZATION



PHASE 2: EXPLORATION

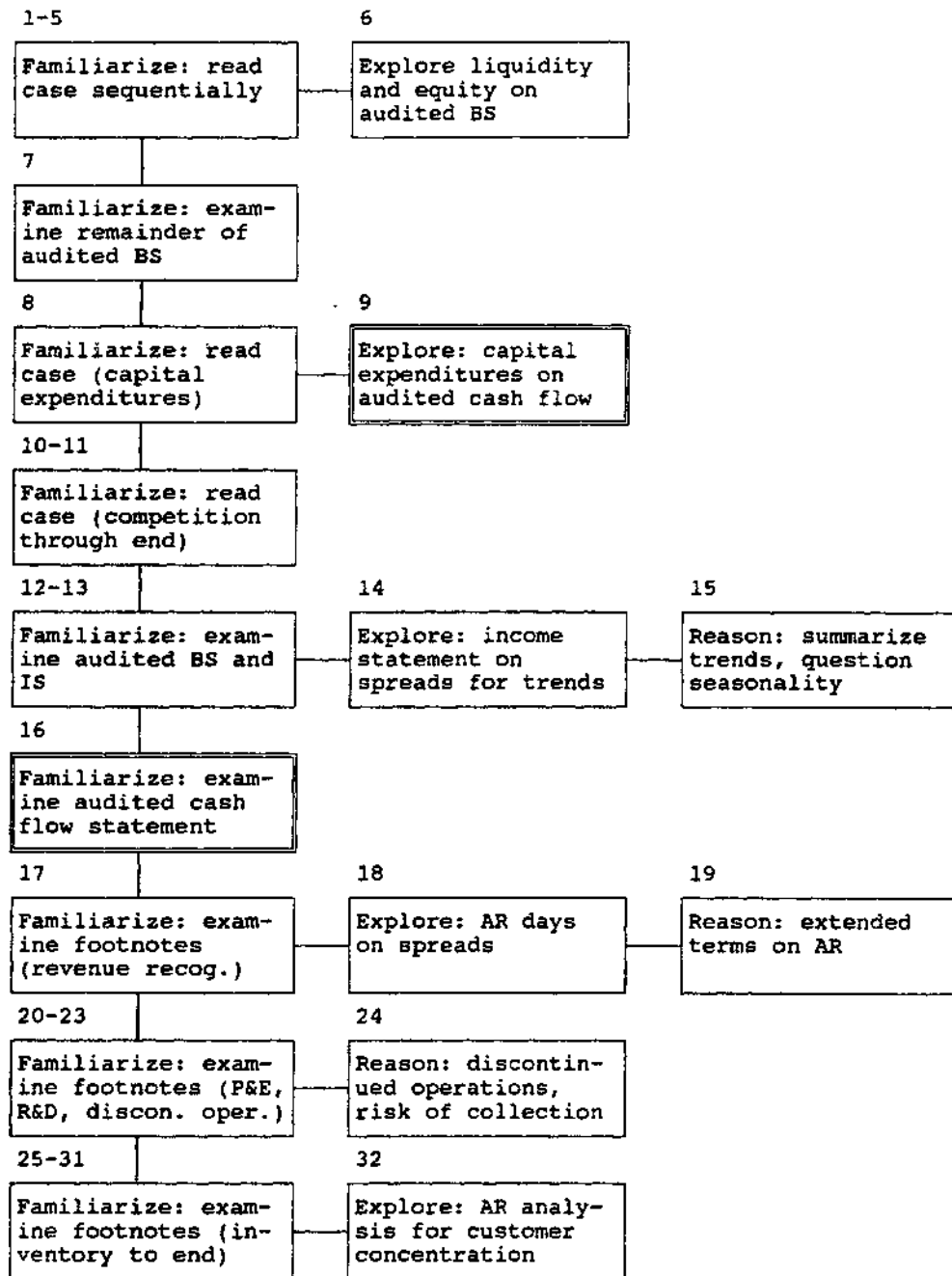


PHASE 3: REASON AND MAKE DECISION

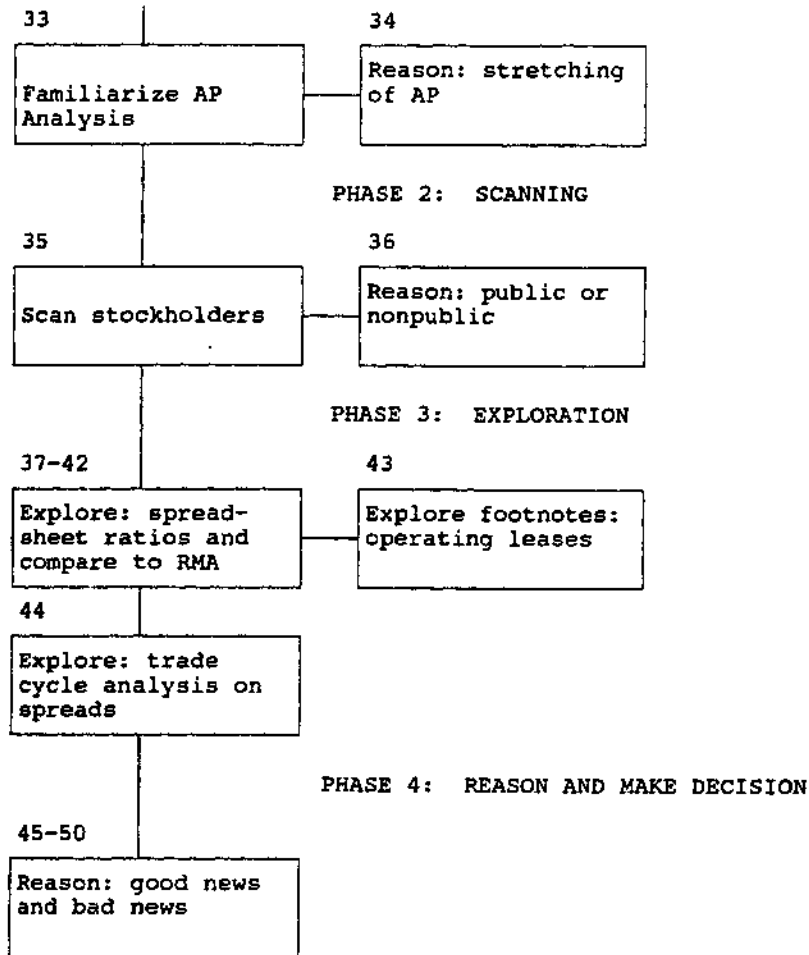


Episode Summary of Loan Officer B2  
Processing Time: 60 minutes

PHASE 1: FAMILIARIZATION



Loan Officer B2  
Page 2



Episode Summary of Loan Officer B3  
 Processing Time: 36 Minutes

PHASE 1: FAMILIARIZATION

1-8

Familiarize: read case sequentially

9-11

Familiarize: examine audited BS and IS

12

Explore footnotes: capital structure

13

Explore spreads: dividend payments on stock

14

Explore footnotes: capital structure

15

Familiarize: examine BS in spreads for trends

16

Explore footnotes: deferred income

17

Reason: contracts with customers

18

Familiarize: examine ratios (working capital)

19

Reason: improvement in working capital

20

Familiarize: examine IS in spreads

21

Reason: seasonality

Explore AR analysis for seasonality

PHASE 2: SCANNING

22-24

Scan AR concentration, AP aging, stockholders

PHASE 3: EXPLORATION

25

Explore: RMA comparisons

26

Reason: 92 a good year

PHASE 4: SUMMARIZE AND MAKE DECISION

27

Reason: summarize findings, turn down loan

28

Reason: possibility of making loan

Episode Summary of Loan Officer B4  
Processing Time: 35 minutes

PHASE 1: EXPLORATION

1  
Explore capitalization using spreads

2  
Explore profitability using IS in spreads

PHASE 2: FAMILIARIZATION

3-7  
Familiarize: read case sequentially

8  
Explore financing of growth (cash flow stmt. and IS)

9-12  
Familiarize: read case through end

13  
Familiarize: examine BS in spreads

14  
Explore AR days

15  
Reason: high due to international sales

16  
Explore AR aging and concentration

17-21  
Familiarize: examine BS in spreads

22  
Explore AP turnover

23  
Explore AP analysis

24  
Familiarize: examine stockholder list

25  
Explore officer compensation

26  
Reason: importance of management, ownership & funding

27-29  
Familiarize: examine remainder of BS in spreads

30  
Familiarize: examine IS in spreads

31  
Reason: seasonality

Loan Officer B4  
Page 2

32

Reason: officer  
compensation and  
potential growth

33

Explore ratios:  
current and  
capitalization

34-38

Reason: summarize  
findings

PHASE 3: SUMMARIZE AND MAKE DECISION



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