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PREVIEW

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Murtha, James Joseph

**DISTRIBUTED PROCESSING IN BROKERAGE OPERATIONS: A CASE
STUDY**

Pace University

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DISTRIBUTED PROCESSING IN BROKERAGE OPERATIONS:

A CASE STUDY

A Dissertation

Presented to

the Faculty of the Graduate School

Pace University

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Professional Studies

by

James J. Murtha

May 1984

PREVIEW

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PREFACE

This study deals with the applicability of distributed data processing in brokerage operations. Securities brokerage is a complex business which has evolved over time, and practices and customs within the industry do not always lend themselves to automation. As trading volumes grow, brokerage firms must expand their processing capacities in order to remain competitive. Many firms within the industry have turned to automation as the key to this expanded processing capacity.

This study examines the critical processing requirements of brokerage operations and attempts to relate these requirements to the strengths and weaknesses of distributed data processing. The study is based upon the results of a questionnaire administered to nineteen of the industry's twenty-five largest firms as well as a detailed case study analysis of Merrill Lynch's back office operations. The results of this two-pronged study are synthesized by the researcher and presented in the concluding chapter.

The writer wishes to acknowledge the invaluable guidance of Dr. Heinz Jauch as well as the assistance of Dr. Andrew Varanelli and Dr. Stuart Varden. Without their help, this study could not have been completed.

The writer also wishes to acknowledge the constant support and assistance of his wife, Catherine Murtha, and the endless hours of typing by Franca Cortina. Their help was also indispensable on this project.

PREVIEW

CHAPTER I

STATEMENT OF THE PROBLEM

The problem is to determine the applicability of distributed data processing for brokerage operations. The study will focus exclusively on "back office" brokerage operations.

Specific Problems

The first problem is to identify the data processing requirements of brokerage "back office" operations.

The second problem is to investigate the capabilities and deficiencies of distributed data processing.

The third problem is to evaluate these capabilities and deficiencies within the framework of the requirements to determine applicability.

Definition of Terms

The following definitions will be used for the purpose of this study.

Applicability is the noun form of the adjective "applicable" which is defined by Funk and Wagnalls as "capable of or suitable for application; relevant; fitting."¹ The word application is further defined as "capacity of being used; relevance, as of a theory."²

¹ Funk and Wagnalls Standard College Dictionary, (New York: Funk and Wagnalls, 1963), p. 71.

² Ibid., p. 71.

Distributed data processing refers to the placement of equipment and software at "the periphery of a business system to capture and process data at the source."³

Brokerage operations refers to the ongoing clerical work conducted to support the business activities of a brokerage firm in the financial securities industry.

Capabilities is defined as, "attributes required for performance or accomplishment."⁴ In this case, the attributes will be limited to those which can be measured or demonstrated in some way. (For example: computational, communicative or physical capabilities; timings or responsiveness.) Theoretical capabilities or potentialities are not considered.

Deficiency is defined as that which lacks "in some necessary quality or element."⁵ As with the definition of capabilities, the deficiencies considered will be limited to those which can be measured or demonstrated in some way.

To evaluate is "to determine the significance or worth of...by careful appraisal and study."⁶

The Need for the Study

The brokerage industry has been laboring through a

³ "Distributed Computing: A Growing Concept," Infosystems (August, 1975), p. 32.

⁴ Webster's New Collegiate Dictionary (Springfield: C&G Merriam Company, 1976), p. 164.

⁵ Ibid., p. 297.

⁶ Ibid., p. 395.

period of consolidation. The trend has been toward fewer firms of larger size with a greater diversification of products and services. In the words of Donald Regan, former chairman of Merrill Lynch:

We consider ourselves not just a securities firm, but a financial services company, intent on servicing the financial needs of all types of customers in whatever area we think we can be helpful.

In line with these principles, we have long been on record in favor of encouraging financial companies to offer a broad range of services.⁷

Of course a highly diversified product line may not be economically practical for a small firm. When Paine Webber and Blyth Eastman Dillon recently agreed to merge, Ralph Saul, chairman of INA, which is Blyth's parent company, was quoted in The New York Times as follows:

We came to the conclusion that the way the industry is going, it really made sense to convert our investment into a larger firm. That is the logic in the industry and there is no point in fighting the logic.⁸

As the firms grow larger and more diversified, the burden on the back-office function increases. This burden is particularly troublesome during Wall Street's

⁷ Statement by Donald T. Regan, Chairman and Chief Executive Officer, Merrill Lynch & Co., Inc., Before the United States Senate Subcommittee on Securities of the Committee on Banking, Housing and Urban Affairs on Wednesday, August 4, 1976.

⁸ Karen Arenson, "Paine Webber Set to Buy Blyth," The New York Times (October 2, 1979), p. D1.

characteristic volume surges. This problem was first widely publicized in the late nineteen-sixties when stock exchange activity was growing too rapidly to be processed by the member firms. "In effect, the industry demonstrated its inability to deal with an unanticipated trading surge."⁹ Trading volumes have grown steadily since then. Harold Williams, Chairman of the SEC, has predicted that "the securities industry would see 150 million-share days in the stock market," and expressed concern that, "if the industry continued to diversify, it might not be able to handle that volume or growth in other industry functions."¹⁰

In recent years, a series of new record volumes have added credence to Mr. Williams' concern. On October 10, 1979, a new single day volume record of 81.6 million shares was attained. At that time, The New York Times indicated that the brokerage community handled the surge rather well "aided by heavy computerization."¹¹ However, the article acknowledged the skepticism of some brokers that "personnel on the stock exchange trading floor -- where problems first arise -- could handle sustained heavy trading."¹² This fear

⁹ E. Bloch, A. Sametz, A Modest Proposal for a National Securities Market System and Its Governance, (New York: New York University, Bulletin 1977-1, 1977), p.9.

¹⁰ K. Arenson, "S.E.C. Head Cities Shift in Securities Industry," The New York Times (November 30, 1979), p. D1.

¹¹ Robert Cole, "Record Volume Buffets Back Offices," The New York Times (October 11, 1979), p. D1.

¹² Ibid., p. D1.

was later confirmed. January of 1980 was a new record volume month on the New York Stock Exchange with over one billion shares traded. Here the surge lasted not for a single day but for an entire month. The pressure on the back-office functions had been so severe that some member firms suggested that the Stock Exchange close on Wednesdays "to give the paper-plagued member firms a chance to clear up their back offices."¹³ "The Wall Street Letter" indicated that:

Traders worked into the evening to help back office personnel... Firms started to match offers being made to back office staffers to keep their own staffs working coherently.¹⁴

In the Fall of 1982, new volume records were achieved. Harold Williams' prediction was realized and the one hundred-fifty million share day was a reality. While the brokerage community handled the surge in relatively good fashion, it still created a significant strain in the operations areas.

This situation is more than just an inconvenience for the personnel of the member firms. The effect is felt on the bottom line. "The paperwork continues to cause new problems, chief among them that profits are being eaten up."¹⁵ This is consistent with the findings of New York

¹³ "NYSE Should Close on Wednesday If Volume Continues, Firm Officials Say," The Wall Street Letter (February 18, 1980), p. 1.

¹⁴ Ibid., p. 2.

¹⁵ Ibid., p. 2.

University Professor M. Keenan who states that "most brokerage firms have traditionally been badly managed from the viewpoint of economic efficiency."¹⁶

The problem is an important one. With growing size, greater product diversification and the burden of unpredictable surges in trading activity, how can a firm best prepare itself to perform economically and effectively? How can brokerage firms improve the productivity of their back office operations? Technology may be part of the solution. In 1972, Donald Regan in his book, A View From the Street, stated that:

Modern electronics will bring more changes in our industry than the elimination of the stock certificate... There is promise in other areas as well.¹⁷

A more recent article in Fortune magazine discusses the "productivity lag" in our economy, referencing the work of Professor John Kendrick of George Washington University. The article indicates that "industries that have converted to electronic technology have shown the highest productivity gains."¹⁸ The technical literature is replete with articles concerning distributed processing. A Fortune magazine article on IBM's new marketing strategy indicates that

¹⁶ Michael Keenan, Profile of the New York Based Security Industry, (New York: New York University, Monograph 1977-3, 1977, p. 19).

¹⁷ Donald Regan, A View From the Street, (New York: New American Library, 1972), p. 167.

¹⁸ Edward Meadows, "A Close-Up Look At the Productivity Lag," Fortune (December 4, 1978), p. 83.