

**PROGRESS REPORT
TO THE SEC
ON
AN NYSE AUDIT TRAIL
AND OTHER RELATED
DEVELOPMENTS**

SEPTEMBER 9, 1980



**NY STOCK
EXCHANGE**

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INTRODUCTION

This interim presentation serves to brief the SEC, in more detail, of on-going activities relating to the subject of audit trail and other developmental efforts at the New York Stock Exchange. This presentation will demonstrate that the NYSE is committed to developing an integrated program centering around our mutual concern for the existence of a comprehensive audit trail.

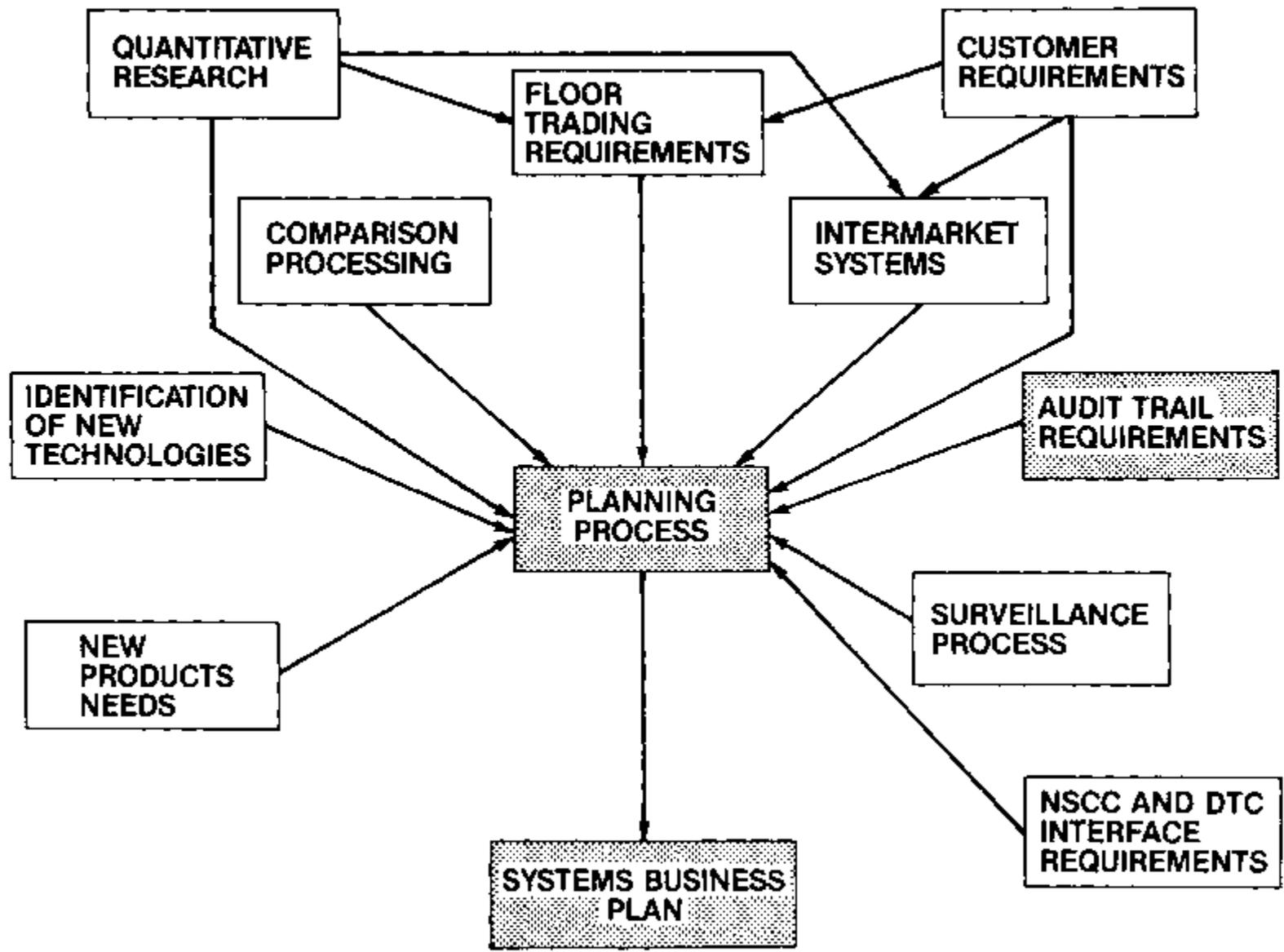
Over the past three months we have intensified our efforts, focusing upon incorporating functional components into the design of our systems which would increase their overall auditability. During that time frame we have re-examined specific programs which were previously put into place, including the Capacity Increase Program which you were made aware of in December, and our Systems Business Plan. In addition to this, we have retained Coopers & Lybrand to work in conjunction with a number of divisions at the Exchange and SIAC to identify potential points of linkage between our existing systems and with the operations in support of our trading activities. To illustrate these activities, this presentation reviews our progress to-date and indicates potential future courses of action.

In view of the extensive impact which development of an audit trail capability would have on the trading process itself and all systems supporting it, the justification for its development can only be found within the context of a comprehensive systems approach. The approach followed here is, therefore, to incorporate development of a trail as an integral component of our systems planning process.

INTRODUCTION (con't.)

In addition to any direct benefits being derived from having a complete audit trail, there are additional benefits such as a reduction in error rates, and greater efficiency and effectiveness in researching transactions to be derived by the Exchange and the securities industry as a whole.

The extensive impact of installing a complete audit trail capability is reflective in the complexity of its development. It effects not only the NYSE floor support systems but also those of specialists, on-floor and off-floor member firm operations, vendors of supporting services, and the post-trade clearance processes. This can only be accomplished with the support and active participation of the various parties and of the SEC.





INTERRELATIONSHIP OF AUDIT TRAIL WITH OTHER KEY EXCHANGE MISSIONS

**INTERNAL CAPACITY INCREASE PROGRAM FOR 150MSD
INDUSTRYWIDE WORKFLOW AND CAPACITY ANALYSIS
PROGRAM**

**TRADING FLOOR WORKFLOWS-QUANTITATIVE ANALYSIS
SYSTEMS ELIGIBILITY INCREASE-IMPACT ANALYSIS**

SMALL ORDER HANDLING PROGRAM

FLOOR UPGRADE PROGRAM-FACILITIES MODERNIZATION

**TRADING TECHNIQUES AND PROCEDURES-ACADEMIC
STUDIES**

OVERALL SYSTEMS BUSINESS PLAN

RECAP OF DECEMBER 14th SEC PRESENTATION

RELATIONSHIP OF PROJECTS TO AUDIT TRAIL

	CONTRIBUTION TO AUDIT TRAIL	
	ADDITIONAL DATA FLOWS CAPTURED	WORK OFFLOAD OR PRODUCTIVITY INCREASE
TRADE REPORTING		
OPENING ASSIST	✓	✓
DOT TURNAROUND CARD		✓✓
ENHANCED DOT	✓	✓✓
ELECTRONIC REPORTING	✓✓	
FLOOR UPGRADE		✓
UNCOMPARED TRADES		
OPENING ASSIST	✓	✓
ENHANCED DOT		✓
ELECTRONIC REPORTING	✓✓	
ON-LINE COMPARISON	✓✓	
ITS CAPACITY		
ITS BROKER INPUT		
ITS TURNAROUND CARD		✓
ITS SYSTEM UPGRADE		
QUOTE REPORTING		
FLOOR UPGRADE		✓
NEW REPORTING TECHNIQUES	✓✓	✓
MEMBER FIRM CAPACITY INTEGRATION		
IMPACT STUDIES	✓✓	✓

✓ = CONTRIBUTES
 ✓✓ = CONTRIBUTES SIGNIFICANTLY

CAPACITY INCREASE PROGRAM

1. TRADE REPORTING

OPENING ASSIST - ALL ORDERS AT THE OPENING WILL BE ACCUMULATED IN AN ELECTRONIC FILE, AND THE SPECIALIST WILL BE ADVISED OF TOTALS AND NET IMBALANCES. UPON ENTRY OF AN OPENING PRICE, REPORTS -- ACCOUNTING FOR 15-20% OF THE DAY'S TOTAL -- WILL BE GENERATED AUTOMATICALLY. STATUS REQUESTS RELATIVE TO THESE ORDERS WILL BE REDUCED DUE TO THE TIMELINESS OF REPORTING.

- . 300 ACTIVE STOCKS AND DOT-ELIGIBLE ORDERS
- . ALL STOCKS AND ALL OPENING ORDERS

DOT TURNAROUND CARD - DOT ORDERS WILL BE PRINTED ON CARDS, INSTEAD OF PAPER, IN BOTH HUMAN AND MACHINE READABLE FORM. THIS TECHNIQUE WILL REDUCE THE NUMBER OF MARKS REQUIRED FOR REPORTING AND WILL INCREASE ACCURACY.

- . PILOT TEST FOR SELECTED STOCKS
- . FLOOR-WIDE EXPANSION

ENHANCED DOT - SEVERAL METHODS ARE BEING STUDIED FOR ASSISTING THE SPECIALIST IN HANDLING DOT ORDERS. ONE TECHNIQUE USES A TOUCH-SENSITIVE PLASMA DISPLAY -- A VERY EFFICIENT METHOD FOR SHOWING ORDERS AND ENTERING REPORTS. ANOTHER USES MARK SENSE CARDS IN A MORE EFFECTIVE MANNER.

- . PILOT TEST - 5 STOCKS

RELATIONSHIP TO AUDIT TRAIL

- . ORDERS PROCESSED BY OARS INCLUDE DETAILED AUDIT TRAIL INFORMATION
- . BECAME OPERATIONAL IN MARCH
- . UNDERGOING CONTINUING EXPANSION TO ALL STOCKS UP TO 1,000 SHARES

- . VEHICLE TO ESTABLISH POINT OF CONTROL OVER FLOOR TRANSACTIONS
- . EQUIPMENT BEING TESTED FOR ENVIRONMENTAL STABILITY
- . CURRENTLY SCHEDULED FOR COMPLETION BY MID-1981

- . A VEHICLE FOR IMPROVING SPECIALIST PRODUCTIVITY, ALLOWING FUTURE REDISTRIBUTION OF WORK LOADS IN SUPPORT OF CAPTURING AUDIT TRAIL INFORMATION.
- . APPLICATION FUNCTIONS CURRENTLY BEING DEVISED
- . PILOT FACILITY CURRENTLY BEING SCHEDULED FOR 1981

RELATIONSHIP TO AUDIT TRAIL

ELECTRONIC REPORTING - THE TECHNIQUES WHICH HAVE PROVEN SUCCESSFUL FOR DOT AT THE TRADING POSTS WILL BE EXPANDED TO THE FLOOR BOOTH AREAS. BROKERS' ORDERS WILL BE PRINTED ON TURNAROUND CARDS -- BOTH HUMAN AND MACHINE READABLE. AFTER EXECUTION, PRICE AND CONTRA-BROKER DATA WOULD BE MARKED AND THE CARD WOULD BE PLACED IN A FLOOR READER TO INITIATE A REPORT. EFFICIENCY AND ACCURACY OF REPORTING SHOULD IMPROVE.

- . PILOT TEST 3 FIRMS

FLOOR UPGRADE - WHEN THE UPGRADE IS COMPLETED, SPECIALISTS WILL HAVE A BETTER WORKSTATION FOR GENERATING REPORTS, ADDITIONAL ROOM FOR CLERKS AND CLOSER PROXIMITY TO FLOOR PRINTERS AND READERS.

2. UNCOMPARED TRADES

OPENING ASSIST - THE TECHNIQUE DESCRIBED UNDER "TRADE REPORTING" WILL ALSO ELIMINATE ANY COMPARISON PROBLEMS AT THE OPENING. SINCE THE SYSTEM WILL BALANCE ALL BUY AND SELL QUANTITIES, NO OTHER SIDE NAMES NEED BE REPORTED TO THE FIRMS -- THE INPUT TO COMPARISON WILL SIMPLY STATE "OPENING" AS THE OTHER SIDE. A SYSTEM TAPE WILL PROVIDE DETAILS.

- . 300 ACTIVE STOCKS AND DOT-ELIGIBLE ORDERS
- . ALL STOCKS AND ALL OPENING ORDERS

- . ORDER AND TRADE DATA CAPTURED FOR LARGER SEGMENT OF ORDER POPULATION
- . CONCEPT UNDER REVIEW, TURNAROUND CARD BEING EVALUATED
- . PILOT PLANNED 3Q 1981

- . THE UPGRADED FLOOR WILL AFFORD GREATER FLEXIBILITY IN INSTALLING FUTURE SYSTEMS
- . 3 POSTS CONVERTED AT THIS TIME
- . COMPLETION OF PHYSICAL UPGRADE EXPECTED

- . THE SYSTEM TAPE ALLOWS THE CLEARANCE DATA ELEMENTS OF OPENING TRADES TO RESIDE AT THE EXCHANGE
- . CURRENTLY OPERATIONAL FOR 150 STOCKS FOR UP TO 299 SHARE ORDERS. PILOT FOR UP TO 500 SHARES UNDER WAY
- . TO BE EXPANDED TO ALL STOCKS AND, POSSIBLY, ORDERS UP TO 1,000 SHARES

RELATIONSHIP TO AUDIT TRAIL

ENHANCED DOT - THE TECHNIQUES DESCRIBED UNDER "TRADE REPORTING" WILL ALSO REDUCE COMPARISON PROBLEMS. AS WITH "OPENING ASSIST", OTHER SIDE NAMES WILL NOT BE GIVEN. A DOT SUBSCRIBER WOULD REPORT "DOT" AS THE OTHER SIDE, THUS BEING ASSURED OF COMPARISON. SIMILARLY, A FLOOR BROKER TRADING AGAINST A DOT ORDER WOULD REPORT "DOT". A SYSTEM TAPE, AND SPECIALIST RECORDS WOULD PROVIDE DETAILS TO CLEARING.

. PILOT TEST - 5 STOCKS

ELECTRONIC REPORTING - THE TECHNIQUE DESCRIBED UNDER "TRADE REPORTING" WILL ALSO PROVIDE AN INITIAL TEST OF ON-LINE COMPARISON. FOR EXAMPLE, WHEN A BROKER, USING ELECTRONIC REPORTING, TRADES AGAINST ANOTHER "FILE" ORDER -- ANOTHER ELECTRONIC REPORTING BROKER, A DOT ORDER, A GTC FILE ORDER, ETC. -- COPIES OF EACH REPORT CAN BE MATCHED THE SAME DAY.

. PILOT TEST - 3 FIRMS

ON-LINE COMPARISON - STUDIES ARE UNDERWAY TO DETERMINE HOW TO CAPTURE THE REMAINING NON-"FILE" REPORTS ON A TIMELY BASIS. ONE APPROACH WOULD BE TO HAVE MACHINE FIRMS SUBMIT A COPY AFTER THEIR OWN REPORTING AND ORDER-MATCH PROCEDURES. OTHER ALTERNATIVES ARE BEING INVESTIGATED.

. PILOT TEST

. SEE UNDER "TRADE REPORTING."

. PERMITS THE ADDITIONAL ELEMENTS PRESENT IN DOT ORDER AND EXECUTION DATA, SUCH AS CLEARING FIRM AND CONTRA BROKER, TO BE AVAILABLE AT THE NYSE FOR A LARGER SEGMENT OF THE ORDER POPULATION.

. SEE UNDER "TRADE REPORTING."

. ENABLES SAME DAY COMPARISON OF TRADE REPORTS AND ORDERS ON NYSE FILES. REDUCES ERRORS AND MAKES ADDITIONAL DATA ELEMENTS AVAILABLE SOONER.

. EXPANSION OF GTC FILE IS UNDERWAY

RELATIONSHIP TO AUDIT TRAIL

3. ITS CAPACITY

ITS BROKER INPUT - FLOOR BROKERS WILL BE ABLE TO CREATE OUTGOING ITS COMMITMENTS DIRECTLY BY MARKING MARK SENSE CARDS AND PLACING THEM IN CONVENIENT UNIVERSAL READERS.

- . EXPANSION OF PILOT TEST
- . FLOOR-WIDE

ITS TURNAROUND CARD - INCOMING ITS COMMITMENTS WILL BE PRINTED ON CARDS, INSTEAD OF PAPER, IN BOTH HUMAN AND MACHINE READABLE FORM. ACCEPTANCE OR REJECTION WILL BE INDICATED BY SIMPLE MARKING. THIS TECHNIQUE WILL ELIMINATE THE CRT OPERATOR AS MIDDLEMAN IN THE PROCESS, THUS IMPROVING TIMELINESS, ACCURACY AND HANDLING CAPABILITY.

- . PILOT TEST
- . FLOOR-WIDE

ITS SYSTEM UPGRADE - TWO ADDITIONAL PROCESSING UNITS WILL BE ADDED TO THE THREE NOW IN EXISTENCE, INCREASING CAPACITY BY 67%

- . UPGRADE COMPLETED

- . WILL IMPROVE THE AVAILABILITY OF THE ITS SYSTEM TO BROKERS, ENCOURAGING MORE COMMITMENTS AND TRADES TO APPEAR IN THE ITS FILES
- . THE PILOT PROGRAM IS BEING EXPANDED FOR ACTIVE STOCKS
- . EXPECTED TO BE AVAILABLE FLOOR-WIDE IN MID 1981
- . WILL CAPTURE ADDITIONAL DATA ELEMENTS IN MACHINE READABLE FORMAT.
- . PILOT PRESENTLY OPERATIONAL FOR DOT. ITS PILOT AT ONE POST 3Q 1980
- . FULLY OPERATIONAL IN MID-1981

RELATIONSHIP TO AUDIT TRAIL

4. QUOTE REPORTING

FLOOR UPGRADE - THE UPGRADE WILL PROVIDE READERS DIRECTLY ACCESSIBLE BY ALL REPORTERS, THUS ELIMINATING THE DELAY NOW CAUSED BY USING CARRIER PAGES AT 17 OF THE 22 TRADING POSTS.

- . FIRST POST
- . ALL POSTS COMPLETED

NEW REPORTING TECHNIQUES - THE REPORTER/READER INTERFACE IS BEING EVALUATED TO SEE IF IT CAN HANDLE THE HIGHER VOLUMES FORECAST. THE MERITS OF HAND-HELD TERMINALS AND VOICE INPUT WILL BE ASCERTAINED.

- . EVALUATION REPORT
- . LABORATORY TEST OF NEW TECHNIQUES
- . FLOOR TEST OF NEW TECHNIQUES

. SEE UNDER "TRADE REPORTING,"

- . AUTOMATED METHODS OF DATA CAPTURE AT THE POINT OF TRADE ARE BEING EVALUATED IN THE PRODUCT ANALYSIS LABORATORY (PAL).
- . HAND-HELD TERMINAL, VIDEO SCREEN AND VOICE INPUT TECHNOLOGY ARE CURRENTLY BEING EXAMINED.
- . THIS RESEARCH IS AN ONGOING PROCESS AT THE NYSE.

5. MEMBER FIRM CAPACITY INTEGRATION

A REVIEW HAS BEEN INITIATED TO EVALUATE THE OPERATIONAL CAPABILITY OF NYSE MEMBER FIRMS TO INTERACT WITH EXCHANGE SYSTEMS AND PROCEDURES.

- . CONCLUSIONS AND RECOMMENDATIONS

IMPACT STUDY

IN ADDITION TO THE PROJECTS LISTED, WE ARE STUDYING:

- . THE IMPACT AND IMPLICATIONS OF RAISING DOT-ELIGIBILITY.
- . ALTERNATIVE METHODS OF PROCESSING/PRICING SMALL ORDERS (500 SHARES AND UNDER)
 - CONCLUSIONS AND RECOMMENDATIONS

RELATIONSHIP TO AUDIT TRAIL

- . RAISING OF ELIGIBILITY AND NEW METHODS OF SMALL ORDER PROCESSING PROMOTE CAPTURE OF A LARGER SEGMENT OF THE ORDER STREAM IN AUTOMATED SYSTEMS, THEREBY EXPANDING AVAILABLE DATA, AND PERMITTING MORE ORDERLY PROCESSING OF OTHER ORDERS.
- . ANALYSIS OF THE QUANTITATIVE EFFECTS OF RAISING ELIGIBILITY HAVE BEEN COMPLETED. THE EFFECT ON FLOOR PROCEDURES WILL BE THE SUBJECT OF A FOLLOW-ON STUDY.
- . THE STUDY OF ALTERNATIVE PROCESSING OF SMALL ORDERS IS COMPLETE. THE MOST ATTRACTIVE SUGGESTIONS SEEM TO BE USE OF THE TOUCH SCREEN AND SUPER-DOT TYPES OF ALTERNATIVES.

APPROACH

Introduction

This chapter illustrates the overall systems approach being followed in design of a complete audit trail facility. Beginning with a clear definition of the NYSE mission, various diagrams are then utilized to show what a final audit trail facility would look like, and how it would be utilized. In order to achieve the goal of a complete audit trail, many existing systems components first must be inter-linked, and then expanded in scope. As a result of efforts to date, a path has been identified which assembles a wide range of potential projects so as to begin actual development of the initial phases. Based on the complexity of interrelationship among other key NYSE missions, and due to the uncertainties of project scheduling associated with activities involving a large number of member firms, we have not yet completed the planning for later phases. Further, it is believed that comments from the SEC on the design approach thus far will provide valuable input, and perhaps lead to "mid-course corrections" before NYSE proceeds with the later stages of Audit Trail planning, which will involve selection and specification of final design.

Goal Formulation

Because of the large number of individuals and departments at NYSE, SIAC and from outside organizations that have become involved in the Audit Trail activity, a "Mission Statement"⁽¹⁾ was developed. This serves to clearly and simply identify objectives so as to ensure that all participants are working toward a common cause. Similarly, the identification of the "Final Goal" in diagrammatic form seeks to focus attention on the final product of systems design which will ultimately

serve as a new surveillance tool. Although represented in a computer printout format, this does not construe an actual output media. Because massive printouts are cumbersome and inflexible, actually it is the design intent to utilize interactive terminal devices which afford more productive and efficient man-machine interaction capabilities.

In the final design, many "System Components of the Complete Audit Trail" serve a major functional role. Toward the final objective, many existing systems will provide a varying percentage of contribution of key data elements. In a more theoretical sense, "Conceptual Design-Enhanced NYSE Surveillance System" illustrates the major functional components of the design, e.g. data capture processes, data transport into a centrally accessible data base, processing activity for selecting and analyzing key data elements, and the production of outputs to serve as surveillance tools.

In terms of project implementation, the above functions can be classified into two major systems activities: data collection and data utilization, associated with the left and right sides of the chart, respectively.

Data Utilization Activities

Based on the fact that development of these Audit Trail components rests solely within the control of NYSE, this appears to be the "easy" implementation area. "Ultimate Use of Complete Audit Trail Facility" illustrates the overall operating features of a planned facility which provides interactive surveillance research stations which access a central data base facility. Terminal operators are able to retrieve a wide variety of output reports, each presenting data sorted in ways appropriate to conducting particular investigations. Additionally, "what if" questions

are able to be posed interactively to the computer for analysis. It should be noted, however, that the data feed path shown changes over the implementation period, providing less complete data at the outset, but complete audit trail data at the end. Thus, the quality of surveillance can be expected to grow continually as as more components are added.

Implementation plans for the data utilization components will follow the path described in "Development Phases of Audit Trail Data Base Management System". Over a three year period, it is expected that evolution can proceed from a "manual data feed" and "hardcopy printout" to an "online data feed" and "online inquiry output." While initial stages provide only for inquiry into yesterday's data (and prior), ultimate design provides inquiry features shortly after the consummation of a trade, at least for some data. Ultimately, as components of the overall NYSE Systems Business plan come into place, significant additional data elements will become available immediately after trading, based on the success of plans to achieve a locked-in-trade. It is not desirable, however, to "stall" in any way the evolution of the Data Base Management System, awaiting success at achieving a locked-in-trade; the system will always utilize all data which it has received.

Data Collection Activities

As opposed to the above described functions, whose development is under total NYSE control, the implementation of data collection activities requires participation by many outside constituents. Implementation is also highly interrelated with other key exchange goals and activities, as were outlined in the previous section of this report (ref. "Interrelationships of Audit Trail with Other Key Exchange Missions") on a more micro-level of analysis, "Audit Trail Systems Goals and

"Design Philosophies" enumerates several key systems design objectives which are interrelated with overall Systems Business Plan efforts. This more global plan, currently being developed, includes well over 100 major projects of the Exchange spanning a five-year time horizon. Of these projects, 36 have been identified as having relevance to the Audit Trail's development, and a number of additional projects are still being formulated. "Potential Audit Trail Components" identifies these projects by name, and indicates whether they are short, intermediate, or long term possibilities.

Presently, as we proceed to develop the Data Base Management System described in the previous section, we would be able to "feed" data to the extent shown in "NYSE Order Flow Distribution - Current Systems Penetration." To date, we have been able to schedule specific projects from the previous list so as to increase the Audit Trail's scope. This project schedule is shown in "Overview-Program Target Schedule." As a result of these activities, NYSE's data would be expanded to the level shown in "NYSE Order Flow Distribution - Projected Systems Penetration!"

Further Audit Trail Planning

The projects currently being developed and remaining to be scheduled for audit trail are requiring broader participation than many of the initial projects. As the circle of players widens (as shown in "Participation Required to Achieve Audit Trail Components"), so does the uncertainty in planning and scheduling. Communicating with various constituencies and balancing their needs is critical for effective implementation, and the NYSE is working to overcome these obstacles.

Quite frankly, however, it is difficult to "sell" the concept of an audit trail in an economically competitive securities marketplace.

Audit trail costs are ultimately imbedded in higher transactions costs, driving order flow to exchanges that do not have an audit trail.(2) The costs of developing an audit trail must be traded-off against the goal of the exchange to reduce transactions costs.

Thus, Audit Trail must be completed based not on its own merits, but on "by-product" benefits emanating from its interrelationship with other functions. We are in the process of developing final Audit Trail components to provide a level of synergism with other activities. A specific example of such planning involves the concept illustrated in "The Three Facets of Unified Reporting". To the extent it becomes possible to provide a single "point-of sale" data capture process resulting in reporting of market information, input to clearing, and customer reporting, significant cost savings can result. At the same time it would provide the Audit Trail facilities a common data base facility. Further, assuming, we can extend the illustrated concept such that comparison procedures are eliminated by a "locked-in-trade", tremendous savings could accrue to the industry. This can be our vehicle for development of an Audit Trail on a cost-free basis.

Along these lines, we are formulating plans, through our Systems Business Plan, to incorporate experimental results from our Product Analysis Laboratory into overall direction of systems evolution. We are confident that a number of high-technology innovations that we are experimenting with, such as touch screens and wireless hand held terminals, can lead to these results.

Thus, it remains our objective that our final Audit Trail plan will achieve the 100% objective as depicted in "Final Goal-Capture Essential

Audit Trail In Information For All Transactions Taking Place
on the NYSE Floor.

-
- (1) Underlined titles serve as references to diagrams that follow this walk-thru narrative.
 - (2) Similarly, the opportunity for market abuse where a complete audit trail does not exist, as is the case in off-board trading, would direct further order flow. As a result, abuses would thus be driven "upstairs" and to regionals, in environments not subject to rigorous surveillance processes.

MISSION STATEMENT

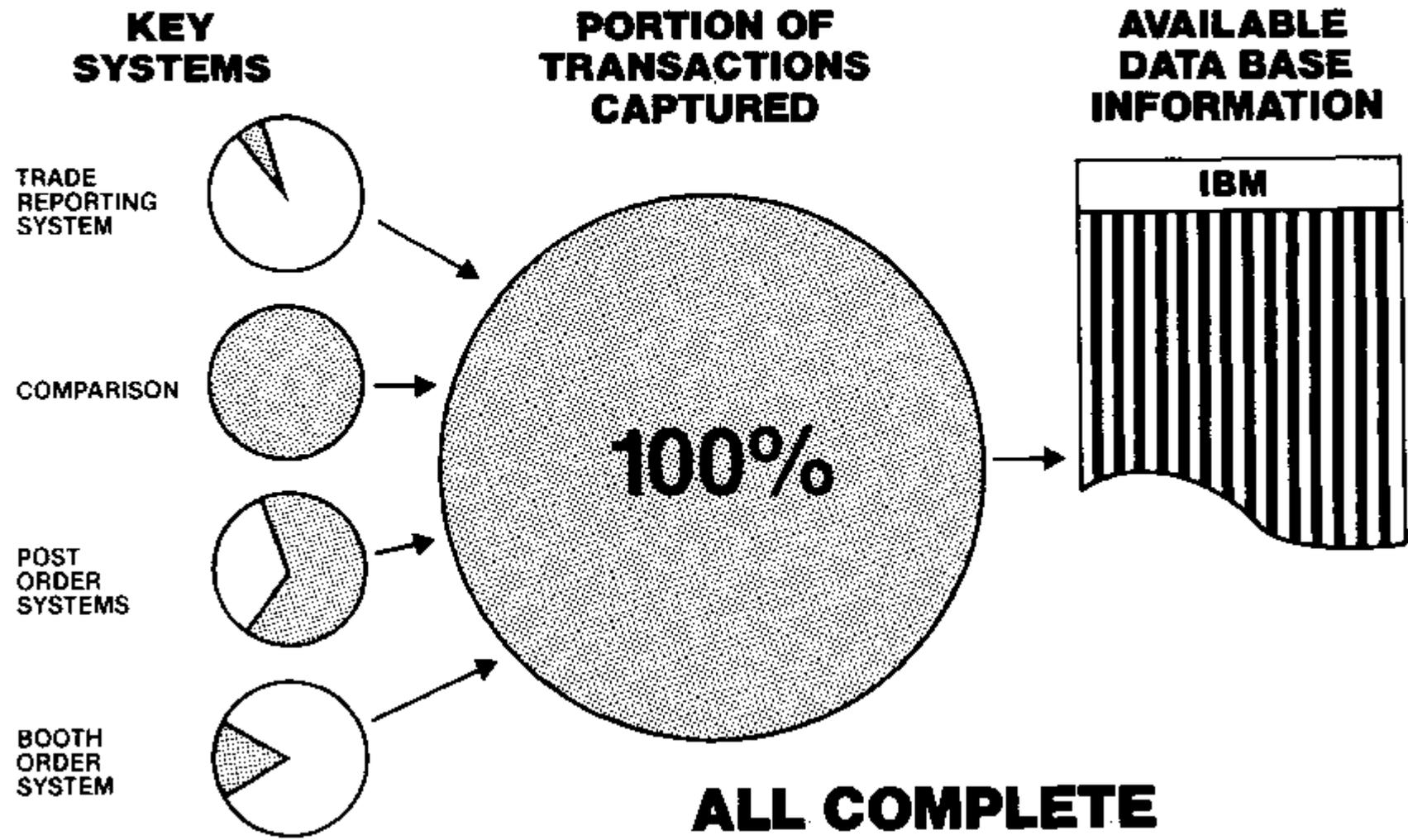
DESIGN A COMPLETE AUDIT TRAIL AND ASSOCIATED IMPLEMENTATION PLANS TO CAPTURE ALL EXECUTED TRADES OCCURRING ON THE NYSE. THIS AUDIT TRAIL WILL ATTEMPT TO SATISFY THE MARKET SURVEILLANCE REQUIREMENT FOR A COMPLETE AND ACCURATE INFORMATION SOURCE WITHIN THE BOUNDS OF A COST EFFECTIVE APPROACH CONSISTENT WITH OTHER ONGOING NYSE PLANS.

FINAL GOAL

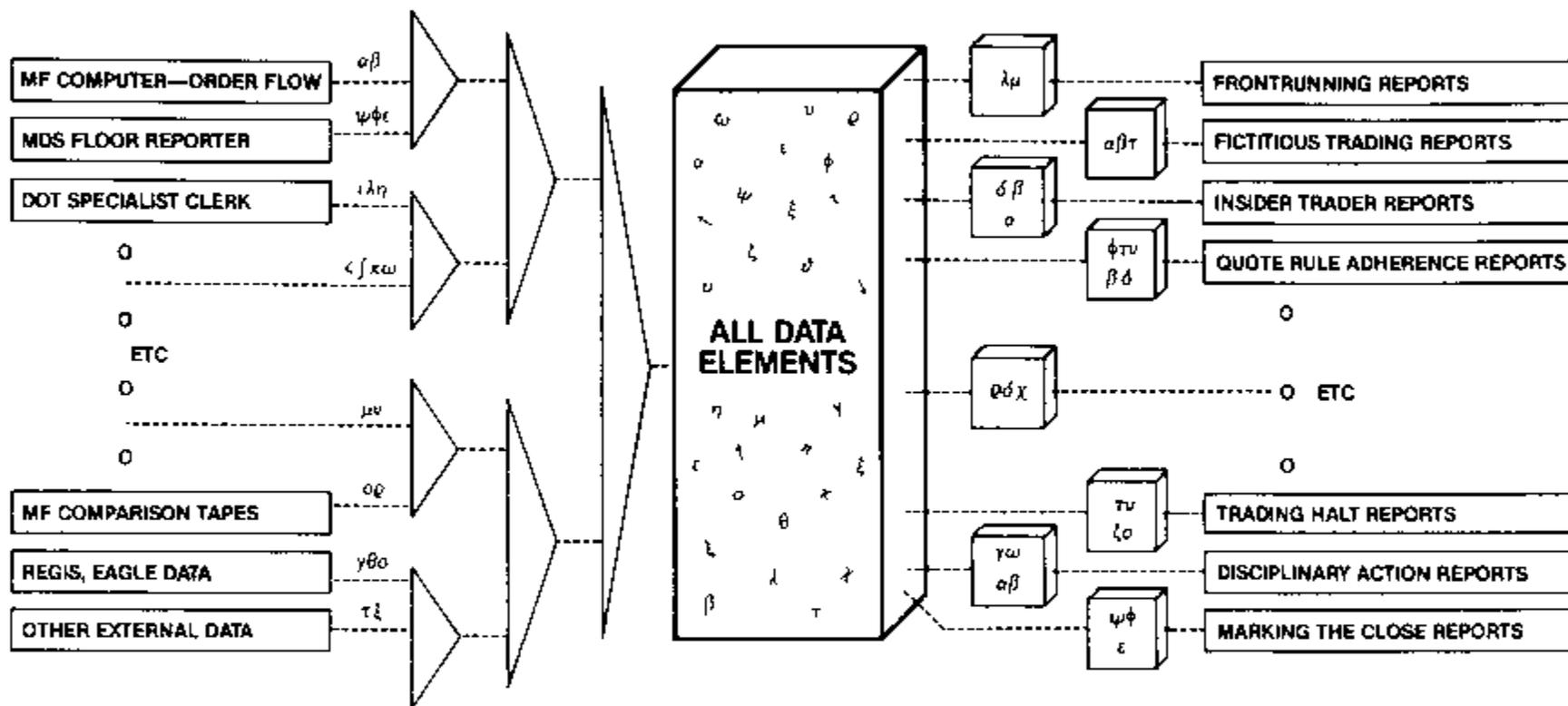
PROVIDE AN ONLINE TERMINAL INQUIRY CAPABILITY INTO AN AUDIT TRAIL DATA BASE CONTAINING ALL NYSE TRANSACTIONS LINKED TO MF ORDERS

IBM														
BUY SIDE									SELL SIDE					
SOURCE	TYPE	EXT. REF.	CM	EX. BKR	BUY QTY	PRICE	TIME	TRADE #	SELL QTY	EX. BKR	CM	EXT. REF.	TYPE	SOURCE
DOT	A	LA003	M	0161	200	66 1/4	1006	3	200	0487	H	G-1693	P	BD
DLF	A	27-136		0068	400	66 1/8	1007	6	1100	0030	B	B-026	A	BD
SPC	P	86	SPC	0247	700	66 1/8	1007	6	*	*	*	*	*	*
DOT	A	FOX12	PW	0221	600	66 1/8	1015	7	600	0322	HS	361-JR	A	GTC

SYSTEM COMPONENTS OF THE COMPLETE AUDIT TRAIL



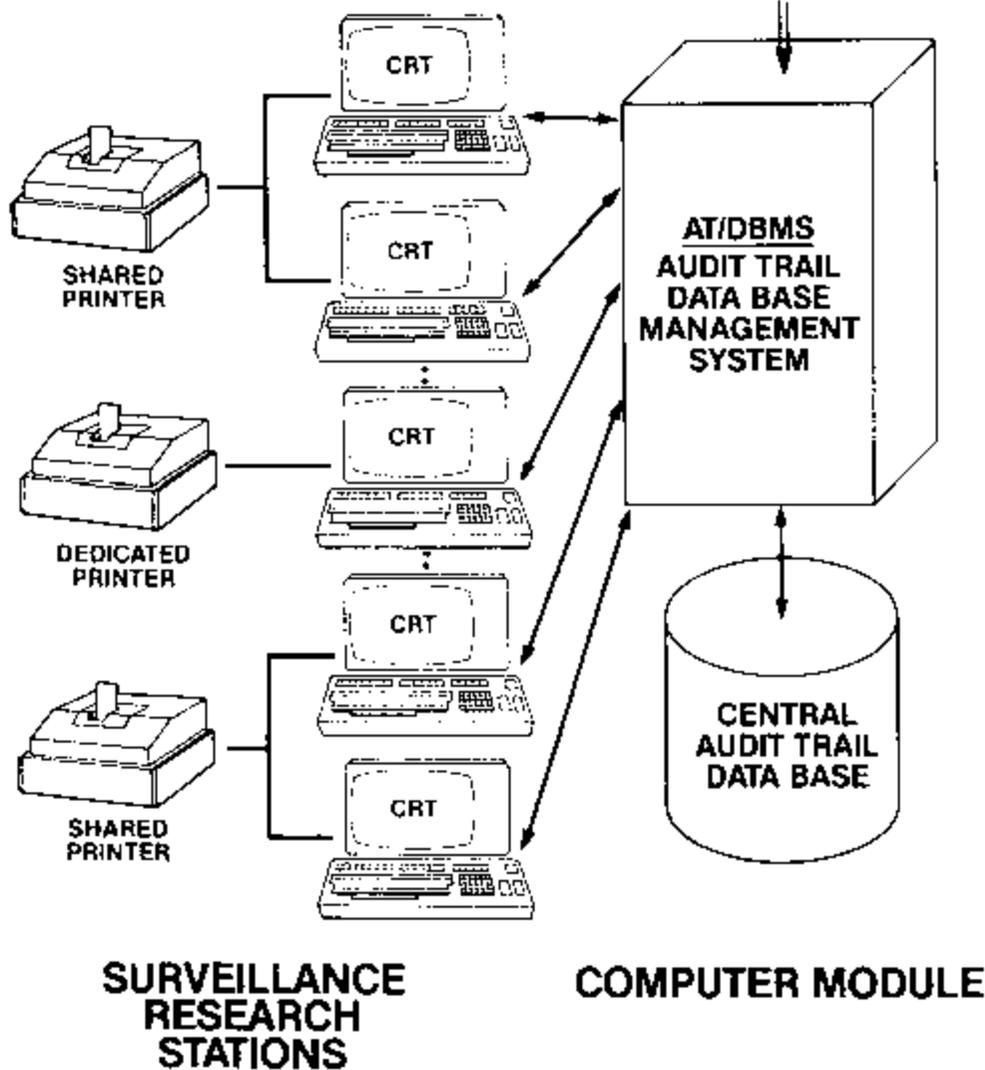
CONCEPTUAL DESIGN-ENHANCED NYSE SURVEILLANCE SYSTEM



DATA CAPTURE PROCESSES	DATA TRANSPORT NETWORK	GLOBAL DATA STORAGE	PROCESSING/ ASSEMBLY MODULES	SURVEILLANCE OUTPUT "PRODUCTS"
CAPTURE DATA ELEMENTS ($\alpha \beta \psi \phi \epsilon \nu \lambda \eta \Delta \infty$)	CENTRALIZE ALL DATA PIECES	SAVE DATA ELEMENTS FOR MODULE INQUIRY	RETRIEVE, ANALYZE, PROCESS REQUIRED DATA ELEMENTS	GENERATE FINAL OUTPUTS IN BOTH ONLINE TERMINAL & PRINTOUTS

ULTIMATE USE OF COMPLETE AUDIT TRAIL FACILITY

DATA FEED PATH
FROM OTHER SYSTEMS COMPONENTS
(DOT/LOF/DLF, OARS, MDS, COMPARISON, ETC.)

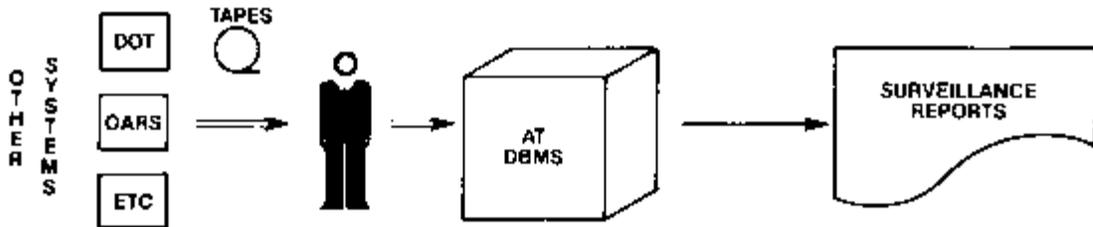


- EXAMPLE INQUIRIES AVAILABLE**
- | | |
|--|--|
| IBM
ALL TRADES DURING DAY BY TIME | BROKER SAM
ALL TRADES DURING DAY BY TIME |
| IBM
ALL TRADES DURING DAY CLUMPED BY BROKER | BROKER SAM
ALL TRADES IN IBM DURING DAY BY TIME |
| IBM
ALL MACHINE ORDERS WHICH TRADED TODAY | BROKER SAM
ALL UNCOMPARED LAST WEEK |
| CLEARING MEMBER
ALL TRADES INVOLVING MORE THAN 1000 SHARES | SPECIALIST
ALL PRINCIPAL TRADES BY STOCK |
| BLOCKS
ALL INDIVIDUALS TRADING BEFORE AND AFTER A LARGE TRADE | MISC
ANY OTHER LOGICAL SORT OF AVAILABLE DATA |

DEVELOPMENT PHASES OF AUDIT TRAIL DATA BASE MANAGEMENT SYSTEM

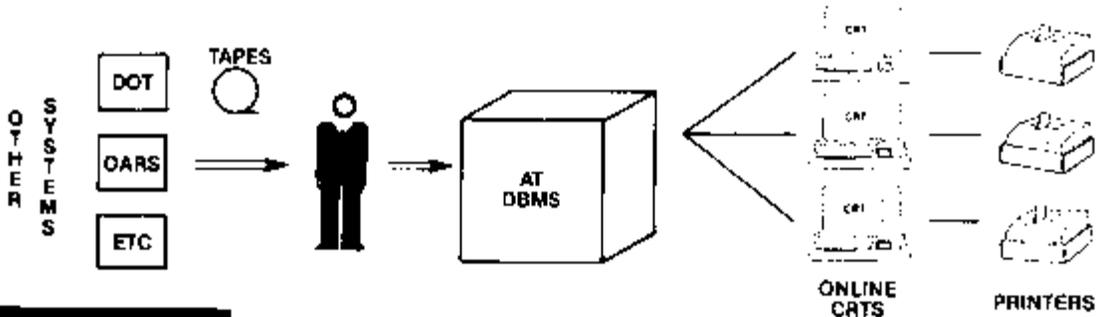
PHASE I—1981

DATA FEED—OVERNIGHT BATCH
OUTPUTS—HARD COPY PRINTOUTS
AVAILABLE OVERNIGHT



PHASE II—1982

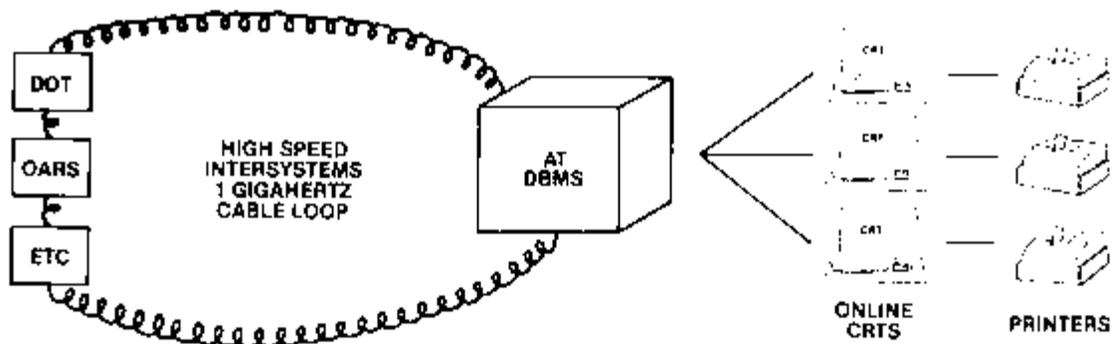
DATA FEED—OVERNIGHT BATCH
OUTPUTS—ONLINE RESEARCH TERMINALS
WITH HARDCOPY PRINTERS



PHASE III—1983

DATA FEED—REALTIME CONNECTION FROM
ONLINE SYSTEM SOURCES

OUTPUTS—ONLINE RESEARCH TERMINALS
WITH HARDCOPY PRINTERS



AUDIT TRAIL

SYSTEMS GOALS AND DESIGN PHILOSOPHIES

INCREASE AUDITABILITY

LOWER UNCOMPARED RATE

SAME DAY ON-LINE COMPARISON

LOCKED-IN TRADE

CERTIFICATELESS CLEARING-COMPARISON INTERFACE

**TIMELINESS OF INFORMATION, TRADE REPORTING WITH LESS
ERRORS**

MINIMIZATION OF DUPLICATE, ERROR PRONE DATA ENTRY

CENTRALIZATION OF INFORMATION INTO LARGE DATA BASE

MAINTAIN SEQUENCING OF TICKER PRINTS

**OFFLOAD EXISTING WORKFLOWS AND REPLACE WITH NEW
DATA CAPTURE**

AVOIDANCE OF SERIOUS IMPACT ON TRADE EXECUTION

INCREASE CAPACITY OF THE EXCHANGE

REDUCE EXECUTION TIME

LOWER COST OF ORDER HANDLING

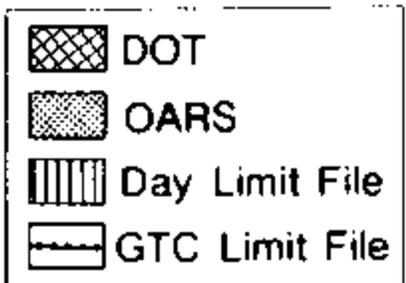
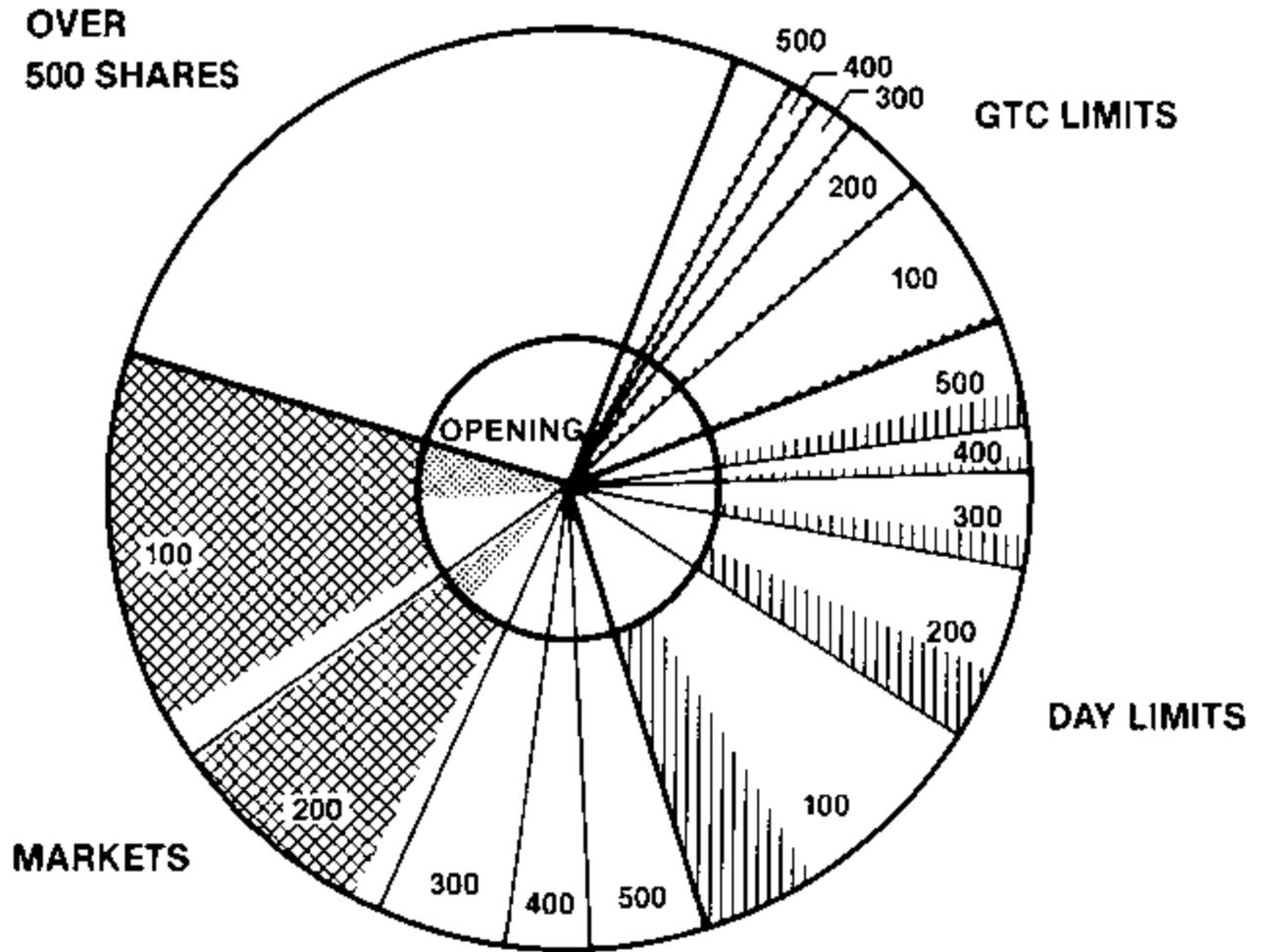
EXPEDIENT VS. EFFICIENT, COST-EFFECTIVE SOLUTIONS

POTENTIAL AUDIT TRAIL COMPONENTS

Number	Activity-Description	Time*
1	Supply executing broker to comparison-should be collected at trade	S
2	Evaluate impact of increased automated order flow	S
3	Increase DOT order size eligibility	S
4	Increase OARS security eligibility	S
5	Increase OARS order size eligibility	S
6	Increase DLF order size eligibility	S
7	Increase LOF/GTC security eligibility-Requires marketing effort	S
8	Evaluate Total Opening and pilot integration of non-OARS data	I
9	Total Opening implementation	I
10	Turnaround cards for LOF/GTC	I
11	Turnaround cards for ITS	I
12	Suggested price and default for DOT orders-SUPER DOT	L
13	Evaluation of ticker driven pricing mechanism during high volume	L
14	APARS type pricing for DOT eligible orders-SAFETY VALVE	L
15	Algorithmic routing of post directed orders by CMS	L
16	Algorithmic routing of booth directed orders by CMS-customize member firm order size handling	L
17	Direct reporting of DOT/DLF/OARS trades to MDS	I
18	Direct reporting of LOF/GTC trades to MDS	I
19	Direct reporting of ITS trades to MDS	I
20	Evaluate and pilot separation of quote and trade reporting functions	S
21	Implement hand held terminals for quote input	L
22	Collect time/unique number on floor execution reports	I
23	Add unique number to MDS input	L
24	Convert MDS input to hand held terminal	L
25	Add additional data element to MDS input (broker id?)	L
26	Pilot study of BOOTH-DOT	L
27	Provide alternative input (mark sense, etc.) for non machine firms-Improved Broker Reporting (IBR)	L
28	Provide sharable booth terminals around floor/posts	L
29	Install specialist touch screen	L
30	Move quote input to touch screens	L
31	Move DOT, etc. orders to touch screen	L
32	Collect additional data elements for non-automated orders for MDS	L
33	Offer touch screens in the booths	L
34	Install touch screens/mini printers as sharable booths around floor/posts	L
35	Create Surveillance Data Base from all data sources	I
36	Install generalized data base manager and report writer	I

NYSE ORDER FLOW DISTRIBUTION

CURRENT SYSTEMS PENETRATION



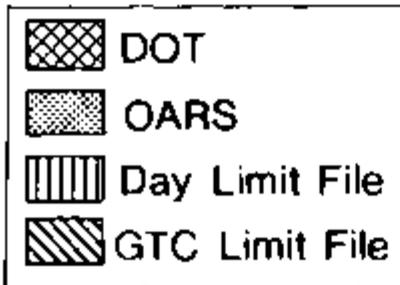
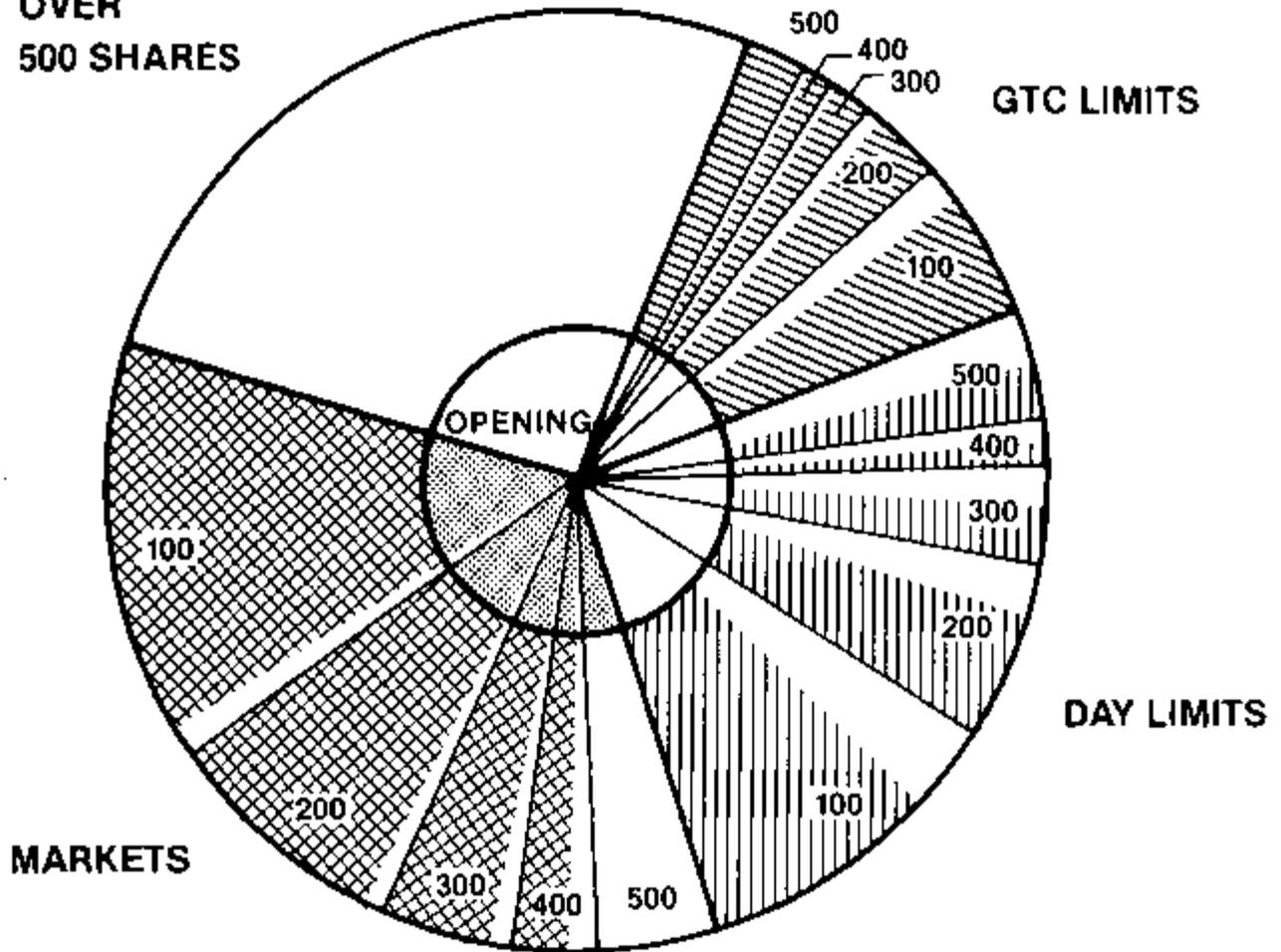
OVERVIEW - PROGRAM TARGET SCHEDULE

	OARS	DOT	DLF	LOF	CONTRA	OTHER
1980	500 SH PILOT ALL STOCKS	399 ELIGIBLE		EXPAND CARD USE EXPAND STOCKS	DOT/TOD PILOT EXPAND	TOTAL OPENING PILOT
1981	POSSIBLE 1000 SH	TURNAROUND CARD SUPERDOT LAST PRICE 499 ELIGIBLE TOUCH SCREEN PILOT	ALGORITHM EXPAND USAGE	EXPAND FIRMS	DLF PILOT EXPAND LOF PILOT EXPAND	BOOTH SUPPORT PILOT EXPAND BOOTH CAPABILITY
1982		EXPAND TOUCH SCREEN		TOUCH SCREEN PILOT EXPAND TOUCH SCREEN	NEW COMPARISON SURVEILLANCE BILLING SYSTEM	

NYSE ORDER FLOW DISTRIBUTION

PROJECTED SYSTEMS PENETRATION

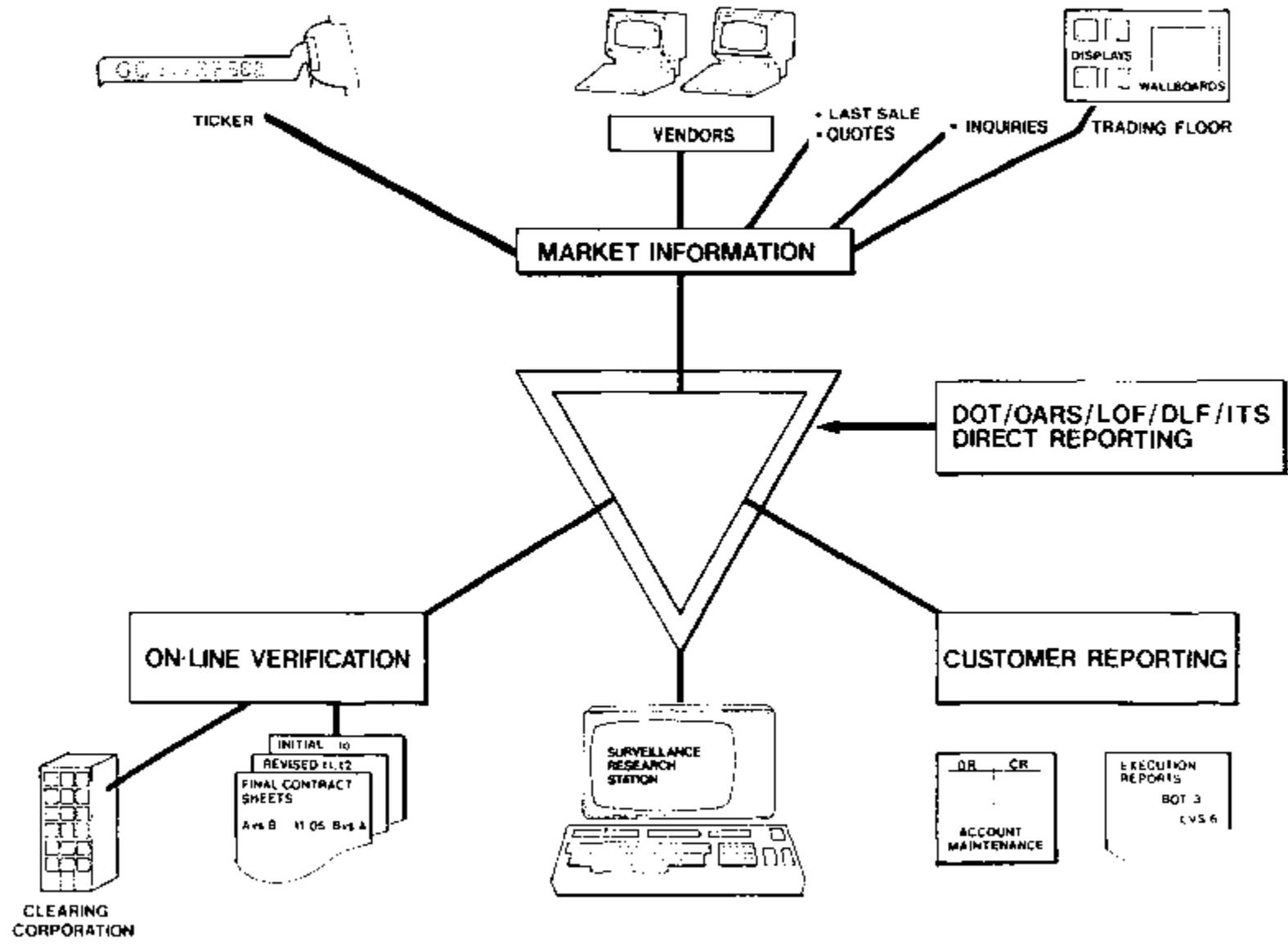
OVER
500 SHARES



PARTICIPATION REQUIRED TO ACHIEVE AUDIT TRAIL COMPONENTS

Activity	NYSE System	NYSE Floor		Member Firm Floor		Member Firm System			
		Reporter	Specialist	Broker	Booth	Order Match	Branch Off Network	Back Off. Prog.	Comparison
1	Comp		✓	✓				✓	✓
2	All		✓	✓	✓				
3	DOT		✓			✓	✓		
4	OARS		✓			✓	✓		
5	OARS		✓			✓	✓		
6	DLF		✓			✓	✓	✓	
7	LOFIGTC		✓			✓	✓	✓	
8	OARS		✓		✓	✓	✓		
9	OARS/Comp	✓	✓		✓	✓	✓		
10	LOFIGTC		✓						
11	ITS		✓	✓					
12	DOT		✓						
13	DOT/APARS	✓	✓						
14	APARS		✓	✓					
15	CMS					✓	✓	✓	
16	CMS					✓	✓	✓	
17	DOT	✓	✓						
18	DOT	✓	✓						
19	ITS/MDS	✓	✓						
20	MDS	✓	✓						
21	MDS	✓	✓						
22	COMP		✓	✓	✓	✓	✓	✓	✓
23	MDS	✓							
24	MDS	✓							
25	MDS	✓							
26	DOT/CMS	✓	✓	✓	✓		✓		✓
27				✓	✓				
28				✓	✓				
29			✓						
30	MDS		✓						
31	DOT	✓	✓						
32	MDS/COMP	✓	✓	✓	✓	✓	✓		✓
33	Booth DOT			✓	✓				
34	Booth DOT			✓	✓				
35	Compliance Data Base						✓		✓
36	Supervisory Data Base						✓		✓

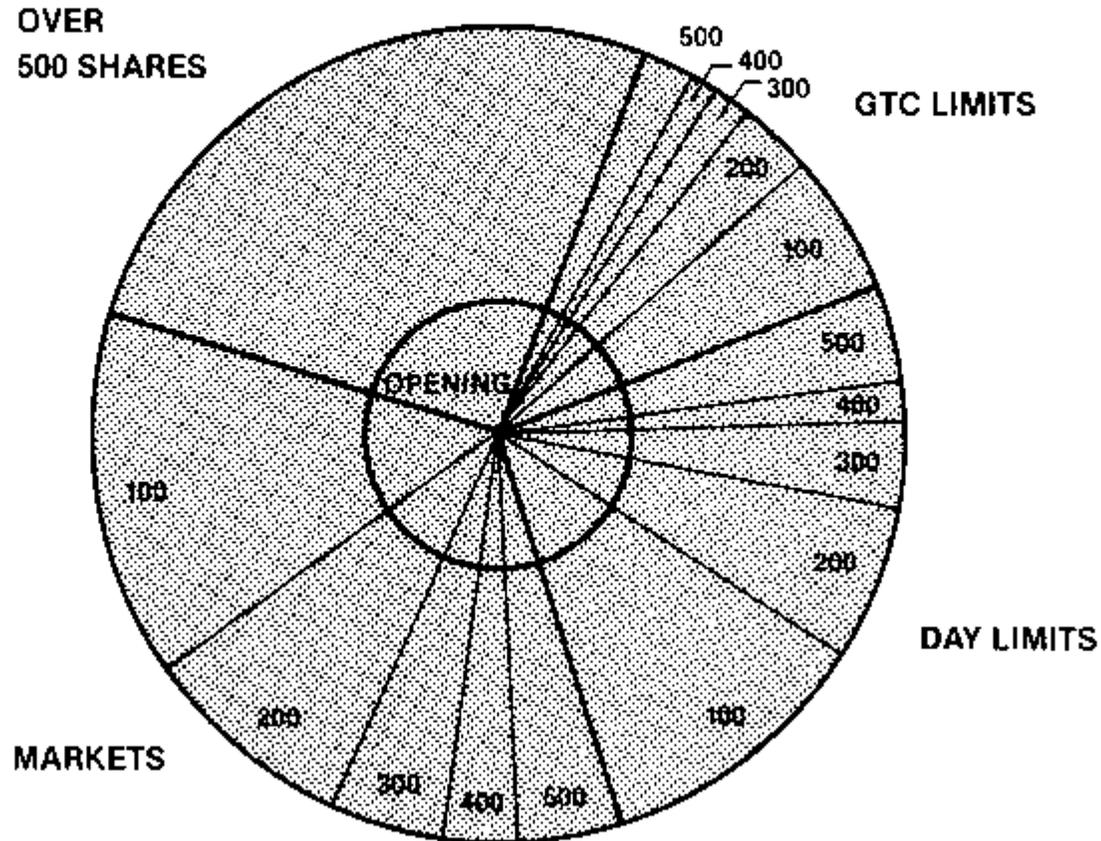
THE THREE FACETS OF UNIFIED REPORTING



FINAL GOAL

CAPTURE ESSENTIAL AUDIT TRAIL INFORMATION FOR ALL TRANSACTIONS TAKING PLACE ON THE NYSE FLOOR

PORTION OF TRANSACTIONS CAPTURED: **100%**



 = TRANSACTIONS CAPTURED

IN ADDITION TO REQUESTING THE EXCHANGE TO SUBMIT A PLAN TO THE COMMISSION STAFF OUTLINING THE METHOD BY WHICH IT INTENDS TO ESTABLISH AN ADEQUATE TRANSACTION AUDIT TRAIL FOR ALL TRANSACTIONS OCCURRING ON THE NYSE FLOOR, THE COMMISSION ENUMERATED THE FOLLOWING NON-AUDIT TRAIL RELATED DEFICIENCIES.

- PRICE MANIPULATION**
- FRONTRUNNING**
- INSIDER TRADING**
- FIRM QUOTE**
- DISCIPLINARY RESPONSE TO TRADING VIOLATIONS**

**IN RESPONSE TO THE COMMISSION'S
RECOMMENDATIONS AND SUGGESTIONS
FOR CORRECTING THESE DEFICIENCIES,
THE FOLLOWING IS A STATEMENT OF THE
EXCHANGE'S RESPONSIVE ACTIONS AND
PROJECTIONS FOR IMPLEMENTING NEW,
CORRECTIVE PROCEDURES:**

PRICE MANIPULATION

SEC RECOMMENDATION

- 1. INITIATE A COMPUTERIZED SURVEILLANCE PROGRAM TO DETECT POSSIBLE INSTANCES OF LONG TERM PRICE MANIPULATION.**
- 2. INITIATE A ROUTINE REVIEW OF WEEKLY EXCEPTION REPORTS TO DETECT DOMINATION OF THE MARKET IN SPECIFIC STOCKS BY NYSE FIRMS.**

ACTION AND PROJECTION

INSTITUTED A REVIEW OF EXCEPTION REPORTS TO DETECT POSSIBLE DOMINATION OF THE MARKET BY NYSE FIRMS BASED UPON:

- MARKET PARTICIPATION OF 50% OR MORE DURING A SINGLE WEEK**
- MARKET PARTICIPATION OF 40% OR MORE OVER A PERIOD OF TWO OR MORE WEEKS**

THE STAFF WILL ALSO REVIEW EXCEPTION REPORTS TO DETECT ANY CORRELATION BETWEEN UNUSUAL PRICE ACTIVITY AND HIGH MARKET PARTICIPATION LEVELS.

REVIEWED CURRENT PROGRAMS AVAILABLE FROM SIAC AND HAVE EXPLORED POTENTIAL FOR NEW AND/OR REVISED PROGRAMS TO ENHANCE SURVEILLANCE EFFORTS. FOR EXAMPLE, WITH THEIR ASSISTANCE WE WILL IMPLEMENT USE OF VOLUME SURVEY RUN INFORMATION AS A SURVEILLANCE TOOL FOR DETECTION OF LONG TERM MANIPULATION.

FRONTRUNNING CIRCULAR

SEC RECOMMENDATION

THAT THE EXCHANGE ISSUE A CIRCULAR STATING THAT FRONT-RUNNING OF BLOCKS MAY CONSTITUTE CONDUCT INCONSISTENT WITH JUST AND EQUITABLE PRINCIPLES OF TRADE.

ACTION AND PROJECTIONS

A STAFF MEMORANDUM HAS BEEN PREPARED FOR DISCUSSION WITH THE OFFICE OF THE CHAIRMAN RECOMMENDING THE ISSUANCE OF A FRONT-RUNNING CIRCULAR CONSISTENT WITH THE "UNIFORM" CIRCULAR ISSUED BY OTHER SELF-REGULATORY ORGANIZATIONS. THE STAFF WILL RECOMMEND THAT A CIRCULAR BE ISSUED WITHOUT ADOPTING THE MODIFICATIONS SUGGESTED BY THE MARKET PERFORMANCE COMMITTEE; I.E. THAT A TRADE BE CONSIDERED AS HAVING BEEN MADE "PUBLIC" ONCE IT IS CONSUMATED IN THE TRADING CROWD. THE ISSUANCE OF A CIRCULAR ALONG THE LINES OF A UNIFORM INDUSTRY CIRCULAR HAS NOT BEEN OBJECTED TO BY THE RULES REVISION SUBCOMMITTEE, UTAC OR ITAC.

INSIDER TRADING

SEC RECOMMENDATION

COMMIT ADDITIONAL RESOURCES IN THE INVESTIGATION OF POSSIBLE INSIDER TRADING VIOLATIONS BY MEMBERS AND/OR MEMBER FIRMS.

ACTION AND PROJECTIONS

- **ADDED AN ADDITIONAL MARKET ANALYST TO INVESTIGATE POSSIBLE INSIDER TRADING VIOLATIONS BY MEMBERS AND/OR MEMBER FIRMS.**
- **CONTINUE EXISTING PROCEDURES WHICH INCLUDE, FOR EACH CASE OPENED, A REVIEW OF MEMBER AND MEMBER FIRM TRADING ALONG WITH CUSTOMER TRADING INFORMATION.**
- **UTILIZE WEEKLY AND MONTHLY EXCEPTION REPORTS TO SPOT-CHECK CONCENTRATIONS OF MEMBER FIRM ACTIVITY IN SPECIFIC ISSUES.**
- **SPOT-CHECK ANY CORRELATION BETWEEN THE ISSUANCE OF RESEARCH REPORTS AND/OR RECOMMENDATIONS AND THE TRADING ACTIVITY OF THE ISSUING FIRM.**

DISCIPLINARY RESPONSE TO TRADING VIOLATIONS

SEC RECOMMENDATION

- **CONSIDER THE ESTABLISHMENT OF A STANDING "BUSINESS CONDUCT COMMITTEE" TO REVIEW EACH TRADING INVESTIGATION TO DETERMINE WHETHER JOURNAL DISCIPLINARY CHARGES SHOULD BE AUTHORIZED.**

ACTION AND PROJECTION

MARKET SURVEILLANCE AND EVALUATION DEPARTMENT HAS PREPARED FOR REVIEW BY THE OFFICE OF THE CHAIRMAN A MEMORANDUM WHICH:

- **ANALYZES THE FUNCTION AND RELATIVE SUCCESS AND FAILURE OF THE NASD'S AND CBOE'S BUSINESS CONDUCT COMMITTEE.**
- **COMPARES THE DISCIPLINARY PROCEEDINGS OF THE NYSE, NASD AND CBOE.**
- **PROPOSES THAT AN EXCHANGE ADVISORY COMMITTEE BE ESTABLISHED TO FURTHER STUDY THE POSSIBILITY OF CREATING AN EXCHANGE BUSINESS CONDUCT COMMITTEE AS A MEANS OF ENHANCING CURRENT DISCIPLINARY PROCEDURES WITH RESPECT TO TRADING VIOLATIONS.**

FIRM QUOTE

SEC RECOMMENDATION

COLLECT AND SUPPLY THE COMMISSION STAFF STATISTICAL INFORMATION TO DOCUMENT THE EXTENT TO WHICH NYSE MEMBERS ARE FAILING TO HAVE THEIR PUBLISHED QUOTATIONS.

ACTION AND PROJECTIONS

A LETTER HAS BEEN SENT TO THE COMMISSION WHICH SUPPLIES THE COMMISSION STAFF WITH THE REQUESTED STATISTICS FOR THE PERIOD FEBRUARY 1978 THROUGH JUNE 1980. THE MARKET SURVEILLANCE AND EVALUATION DEPARTMENT CONDUCTED A SPECIAL STUDY OF ITS COMMITMENT CANCELLATIONS TO GATHER INFORMATION TO RESPOND TO THE COMMISSION'S REQUEST.

EFFECTIVENESS OF THE SOLUTIONS

This section discusses Coopers & Lybrand's overall involvement in the assignment and provides a detailed analysis of the various data elements and functional NYSE projects potentially required for the development of a conceptualized audit trail solution.

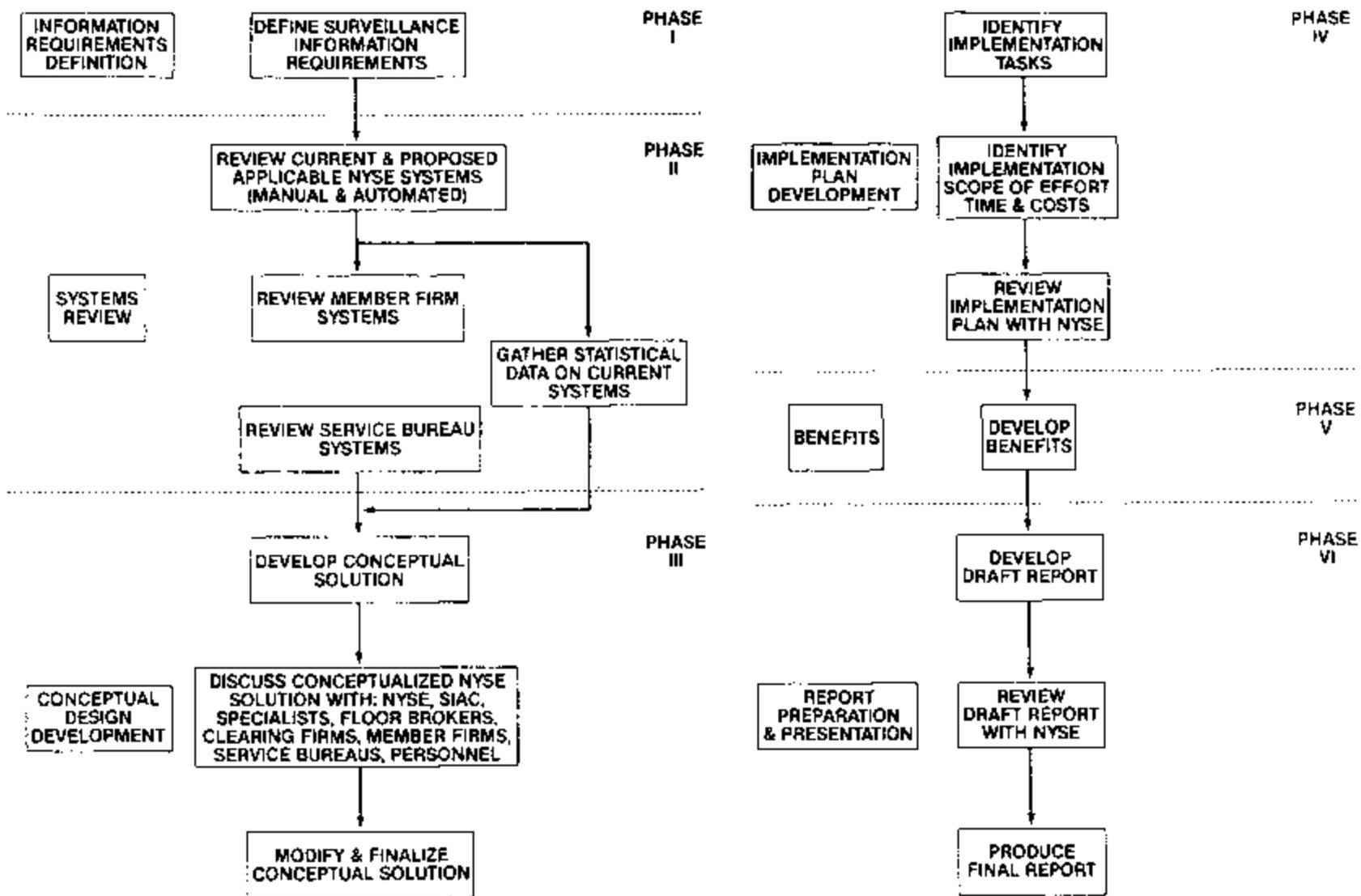
In conducting this study thus far, interviews were held with various NYSE and SIAC personnel to document their audit trail information requirements. Additionally, Coopers & Lybrand:

- . Reviewed current data collection procedures
- . Defined the data elements required to provide an on-line terminal inquiry capability into a central audit trail data base
- . Reviewed current NYSE systems and identified their audit trail data elements
- . Identified projects which functionally had to be undertaken to provide the missing data elements required
- . Identified the potential audit trail component for each NYSE Order type

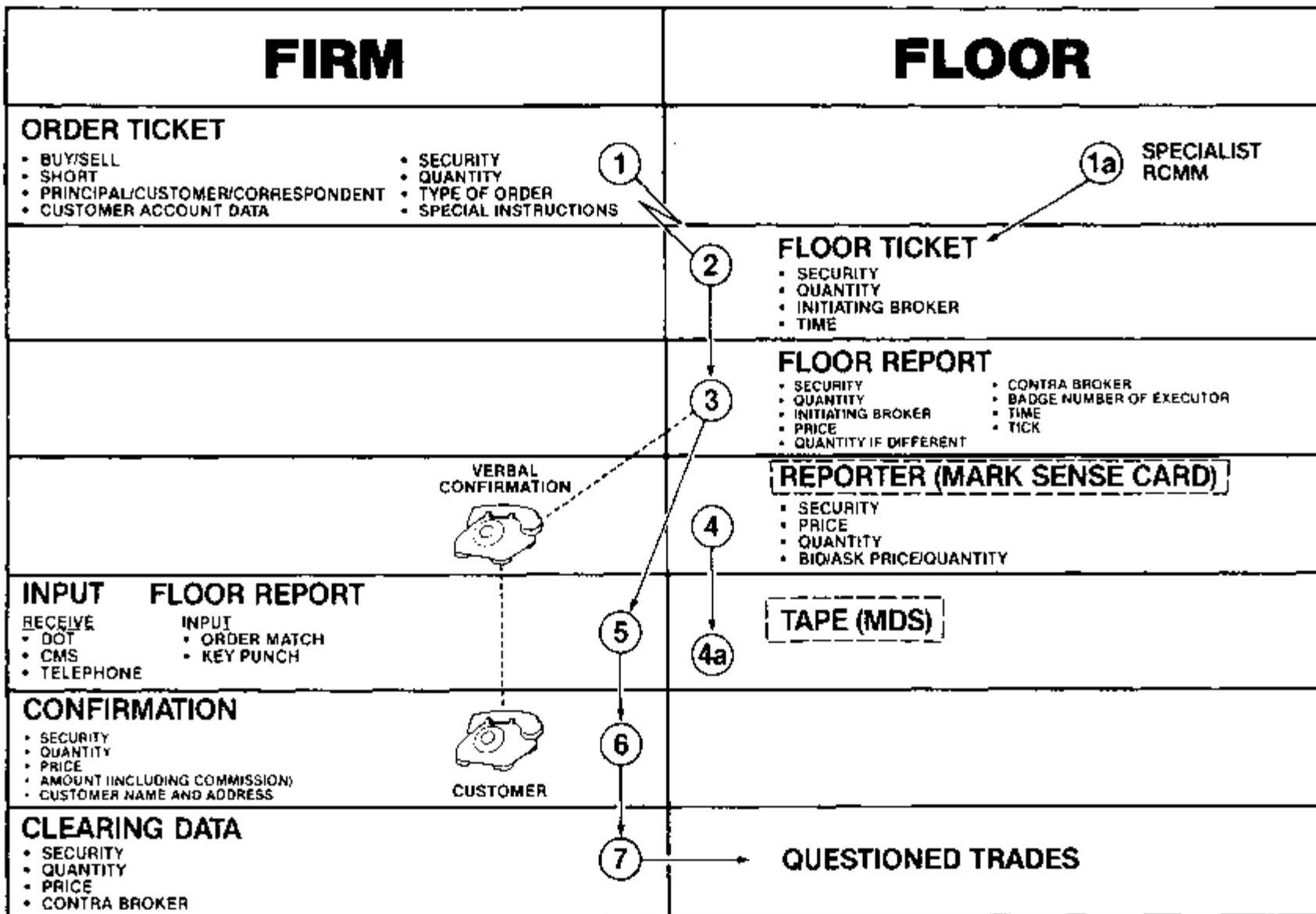
What follows are a number of diagrams highlighting study methodology and illustrating findings thus far.

- . an initial "NYSE Complete Audit Trail-Design Approach" provides a perspective as to what has been accomplished, and what remains to be completed
- . "Current Data Collection" is utilized to illustrate the nature of the audit trail problem and to assess whether the approach taken thus far will result in an adequate solution
- . A number of tables then comment upon whether specific systems components cited in Chapter II (approach) do, in fact, have the ability to increase auditability for a wide range of order types. Since these order flows are the ultimate target for "audit," a separate appendix has been included to illustrate their diverse nature, and the complexity of applying an audit trail to them all.

NYSE COMPLETE AUDIT TRAIL DESIGN APPROACH



CURRENT DATA COLLECTION



1

1a

2

3

4

5

4a

6

7

FINAL GOAL

PROVIDE AN ONLINE TERMINAL INQUIRY CAPABILITY INTO AN AUDIT TRAIL DATA BASE CONTAINING ALL NYSE TRANSACTIONS LINKED TO MF ORDERS

IBM														
BUY SIDE						SELL SIDE								
SOURCE	TYPE	EXT. REF.	CM	EX. BKR	BUY QTY	PRICE	TIME	TRADE #	SELL QTY	EX. BKR	CM	EXT. REF.	TYPE	SOURCE
DOT	A	LA003	M	0161	200	66¼	1006	3	200	0487	H	G-1693	P	BD
DLF	A	27-136		0068	400	66½	1007	6	1100	0030	B	B-026	A	BD
SPC	P	86	SPC	0247	700	66½	1007	6	*	*	*	*	*	*
DOT	A	FOX12	PW	0221	600	66½	1015	7	600	0322	HS	361-JR	A	GTC

AUDIT TRAIL DATA ELEMENTS CAPTURED

SYSTEM	ORDERS PROCESSED	% OF TRADES*		SECURITY	PRICE	QUANTITY	B/S/H**	INIT CM	CONTRA CM	INIT EXECUTING BROKER	CONTRA EXECUTING BROKER	TIME OF TRADE	INIT ACCOUNT TYPE	CONTRA ACCOUNT TYPE	TRADE NUMBER	INIT EXTERNAL REFERENCE	CONTRA EXTERNAL REFERENCE
		CURRENT	POTENTIAL														
QARS	100 299 SHARES AT THE OPEN	3%	10%	X	X	K	X	X	OPN	Spec	Spec	Opening	n	UC	n	X	UC
DOT	100 299 MKT	50%	70%	X	X	X	X	K	100	Spec	n	X	n	UC	X	X	UC
DLF	100 500 DAY LIMIT			X	X	X	X	K	X	Spec	n	X	n	UC	X	X	UC
LOFAGTC (PILOT)	LIMIT ORDERS	1%	20%	X	X	X	X	X	X	Spec	n	X	n	Proposed UC	X	X	Proposed UC
APARS	ODD LOTS	Not included		X	X	X	X	K	Spec	Spec	Spec	X	n	UC	X	X	UC
MOS	TRADE REPORTS	100%	100%	X	X	X	n.a.	—	—	n	—	Ticks	n	—	n	—	—
ITS	OTHER EXCHANGES	4%	8%	X	X	X	X	K	ITS	n	1	K	n	n	X	n	n
CMS	POST DIRECTED	—	—	—	—	—	—	—	—	—	—	—	n	—	X	n	n
COMPARISON	FOR CLEARANCE	94%	100%	X	X	X	K	X	K	n	n	n	n	n	n	n	n
MANUAL	NON AUTOMATED	50%	20%	X	X	X	X	X	K	X	n	n	X	n	n	X	n

X = Currently available

n = Supplied by activity n

* % of Trades may add up to greater than 100% due to automated orders on both sides of a trade.

** B = Buy, S = Sell, H = Sell Short flag

+ UC = Universal Contra

POTENTIAL AUDIT TRAIL COMPONENTS

Number	Activity-Description	Time*
1	Supply executing broker to comparison-should be collected at trade	S
2	Evaluate impact of increased automated order flow	S
3	Increase DOT order size eligibility	S
4	Increase OARS security eligibility	S
5	Increase OARS order size eligibility	S
6	Increase DLF order size eligibility	S
7	Increase LOF/GTC security eligibility-Requires marketing effort	S
8	Evaluate Total Opening and pilot integration of non-OARS data	I
9	Total Opening Implementation	I
10	Turnaround cards for LOF/GTC	I
11	Turnaround cards for ITS	I
12	Suggested price and default for DOT orders-SUPER DOT	L
13	Evaluation of ticker driven pricing mechanism during high volume	L
14	APARS type pricing for DOT eligible orders-SAFETY VALVE	L
15	Algorithmic routing of post directed orders by CMS	L
16	Algorithmic routing of booth directed orders by CMS-customize member firm order size handling	L
17	Direct reporting of DOT/DLF/OARS trades to MDS	I
18	Direct reporting of LOF/GTC trades to MDS	I
19	Direct reporting of ITS trades to MDS	I
20	Evaluate and pilot separation of quote and trade reporting functions	S
21	Implement hand held terminals for quote input	L
22	Collect time/unique number on floor execution reports	I
23	Add unique number to MDS input	L
24	Convert MDS input to hand held terminal	L
25	Add additional data element to MDS input (broker id?)	L
26	Pilot study of BOOTH-DOT	L
27	Provide alternative input (mark sense, etc.) for non machine firms-Improved Broker Reporting (IBR)	L
28	Provide sharable booth terminals around floor/posts	L
29	Install specialist touch screen	L
30	Move quote input to touch screens	L
31	Move DOT, etc. orders to touch screen	L
32	Collect additional data elements for non-automated orders for MDS	L
33	Offer touch screens in the booths	L
34	Install touch screens/mini printers as sharable booths around floor/posts	L
35	Create Surveillance Data Base from all data sources	I
36	Install generalized data base manager and report writer	I

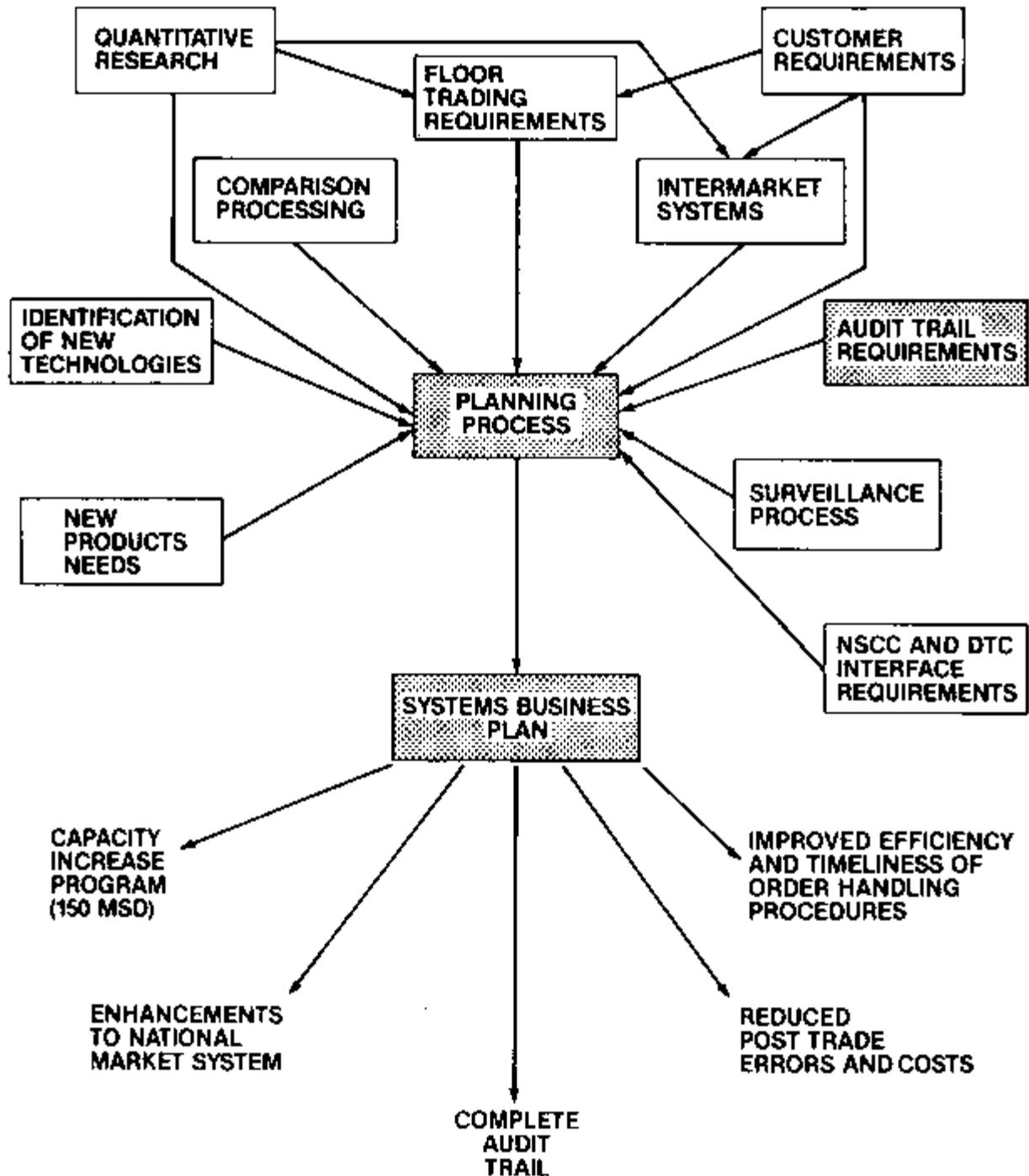
CONCLUSION

In the course of this presentation, we have indicated an approach to development of a comprehensive audit trail capability. It is initially based both on expansion of the traffic segment captured in our automated systems, and on the expansion of information available for each transaction, brought about by evolution toward new methods of supporting trading activity. The evolving systems approach and its conceptualized usage were described, and a program of work specifying audit trail components presently under development and others yet to be scheduled was shown.

NYSE will be committing significant additional resources toward formulating the final Audit Trail Plan, including its own and SIAC staff, as well as amplified involvement on the part of the Coopers & Lybrand consultants. The audit trail function is being incorporated as an integral component of our systems planning process as an activity and end result.

We have indicated that the systems components of the plan will impact not only our trading support systems, but also the trading process itself, its key on-floor participants, member firm systems, those of service companies, and the comparison methodology. The successful accomplishment of changes of this magnitude will draw on the resources of a number of organizations, and we fully solicit any support which the SEC can lend to this process.

INCORPORATION OF AUDIT TRAIL REQUIREMENTS INTO THE SYSTEMS PLANNING PROCESS



NEXT STEPS

- **MAKE AUDIT TRAIL PLANNING A REGULAR PART OF SYSTEMS PLANNING PROCESS**
- **PURSUE PLANS ACTIVELY WHICH CONTRIBUTE TO AUDIT TRAIL**
- **RESOLVE COMPLEXITIES THAT COULD AFFECT IMPLEMENTATION**
- **COMPLETE DESIGN DETAILS OF AUDIT TRAIL AND PRESENT RESULTS TO SEC**