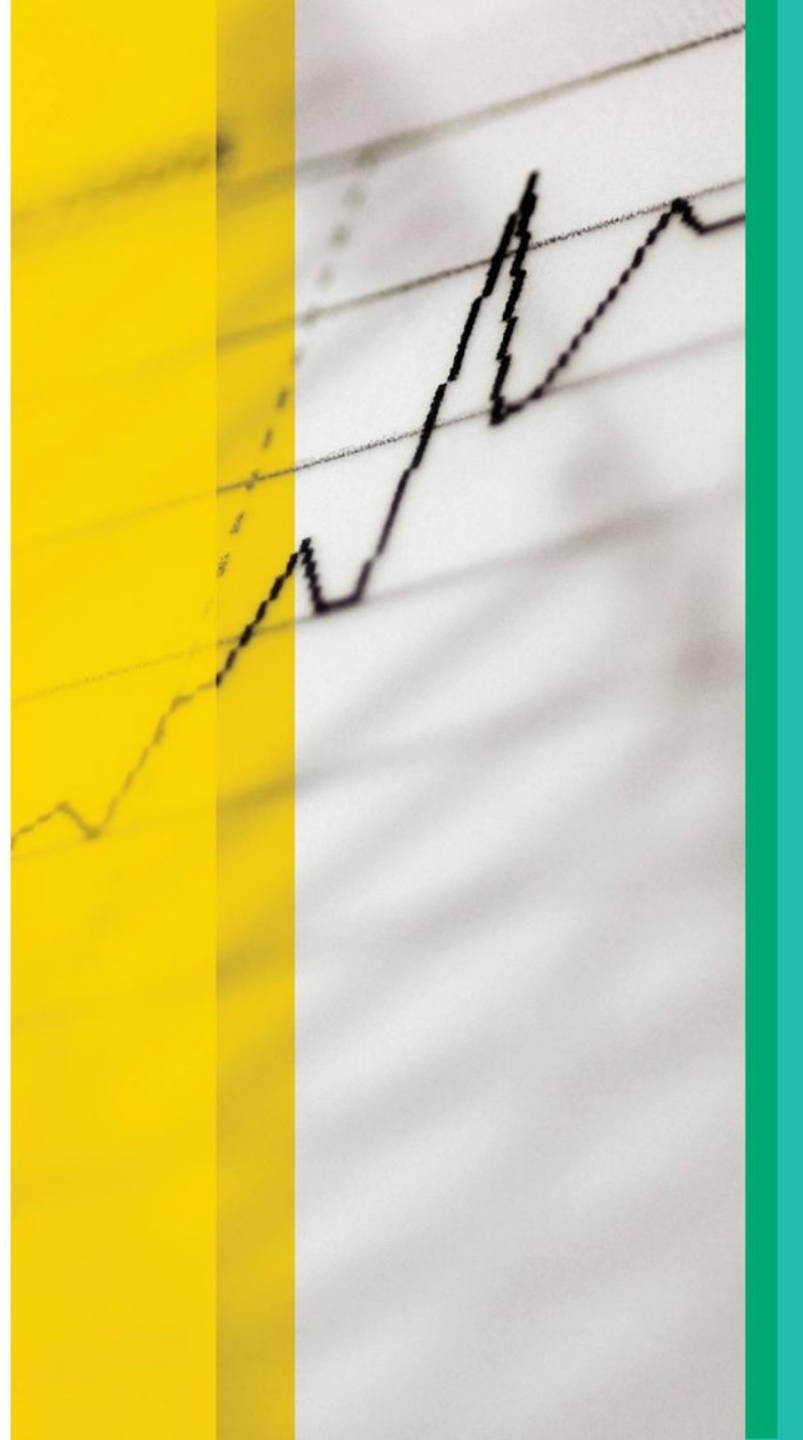




BNY MELLON

PROCESSING

Business L1 Training iNautix



Course Outline

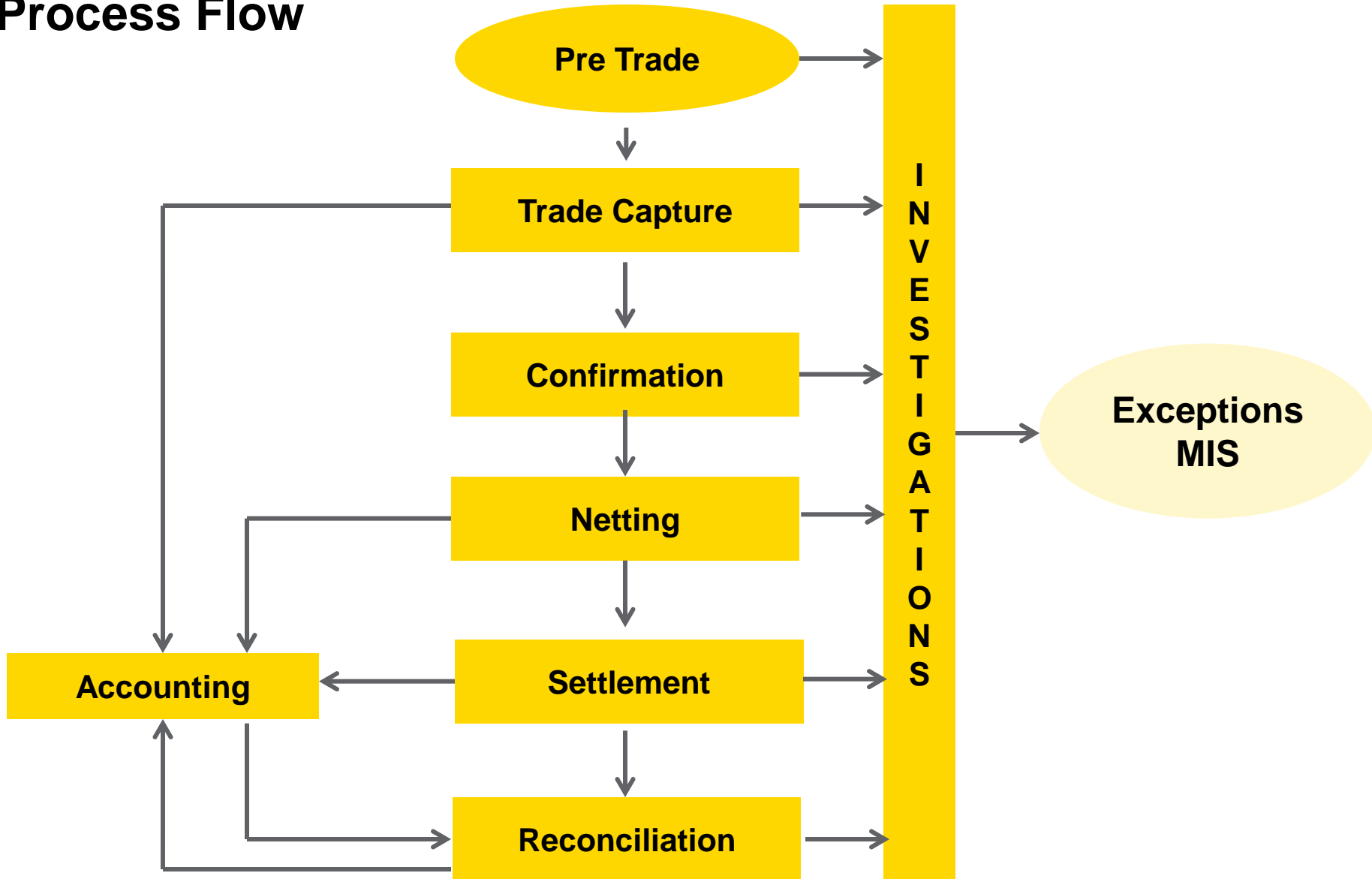
- Overview of clearing & settlement
- Trading accounts, trade positions / types, order types
- Life of a trade
- Orders and execution – order management
- Clearing process – trade processing, allocation and agreement
- Settlement process
- Cashiering, margin
- Trade failure, bad deliveries
- Securities lending
- Stock records



Section 1

Trade Process Flow, Clearing & Settlement

Process Flow



Overview of Clearing & Settlement

- **Clearing:**

Clearing is the process of determination of obligations, after which the obligations are discharged by settlement.

The clearing function of the clearing corporation is designed to work out:

- what counter parties owe and
- what counter parties are due to receive on the settlement date.

- **Settlement:**

Settlement is a two way process which involves legal transfer of title to funds and securities or other assets on the settlement date.

Overview of Clearing & Settlement

SETTLEMENT CYCLE

- At the end of each trading day, concluded or locked-in trades are received from exchange by clearing corporation. Clearing corporation determines the cumulative obligations of each member and electronically transfers the data to Clearing Members.
- On the securities pay-in day, delivering members are required to bring in securities to NSCC. On pay out day the securities are delivered to the respective receiving members.

Overview of Clearing & Settlement(contd)

- On the cash pay-in day, delivering members are required to bring in cash to NSCC. On pay out day the cash is delivered to the respective receiving members
- Exceptions may arise because of short delivery of securities by clearing members, bad deliveries or company objections on the pay-out day.

Trading Account Types

- Four major choices when opening an account
- **Cash Account:** The basic account where you deposit cash to buy stocks, bonds, mutual funds, etc
- **IRA account:** For people looking to setup an individual retirement account
- **Margin Account:** allows the investor to borrow from broker against cash and securities in their account
- **Option Account:** for seasoned investors. This type of account allows investor to trade in options, which are much riskier than stocks or bonds

Trade Positions and Types

TRADE POSITION

- **Long position** - Indicates securities owned by an investor but held with the broker
- **Short Position** - Indicates securities sold by the investor by borrowing it from the broker

TYPES OF TRADES

- **Normal Buy / Sell**
- **Selling Short** - The sale of a security that the investor does not own in order to take advantage of an anticipated decline in the price of the security
- **Closing a position** - Elimination of an investment from a portfolio

Order Types

- **Market Order** – order to buy or sell a stock as soon as possible at the best price available
- **Limit Order** – order to buy or sell a stock only at the specified price (the limit price) or better
- **Stop Order** – order to buy or sell a stock when the price reaches or passes a specified point (the stop price). When that happens, a stop order automatically becomes a market order
- **Stop-Limit Order** – Like a Stop Order but after activation becomes a limit Order instead of Market Order

Market Order

CUSTOMER	SIZE	BIDS (BUYERS)
Hard Line Brokerage	30,000	\$ 60.00
Top Notch Advisors	15,000	\$59.95
Reckless Securities Inc	25,000	\$59.89
Lighting Execution Inc	20,000	\$59.81
Rumor Mill Brokerage	10,000	\$59.73
HI IQ Capital	30,000	\$59.65

“Sell 100,000 Shares at the Market”

Order to buy or sell a stock as soon as possible at the best price available

Market Order

CUSTOMER	SIZE	Offers (Sellers)
Blue-Chip Brokerage	30,000	\$60.00
EZ Trade Corporation	15,000	\$59.85
Walck Discounters	5,000	\$59.80
Klick Quick Trade	35,000	\$59.60
Halasy Investors	15,000	\$59.55
Murphy Retail Investors	30,000	\$59.40

“Buy 100,000 Shares at the Market”

Order Format - XYZ, Sell, 100

Price , Time, Quantity – Order of Preference for any trade

All Fall in Line

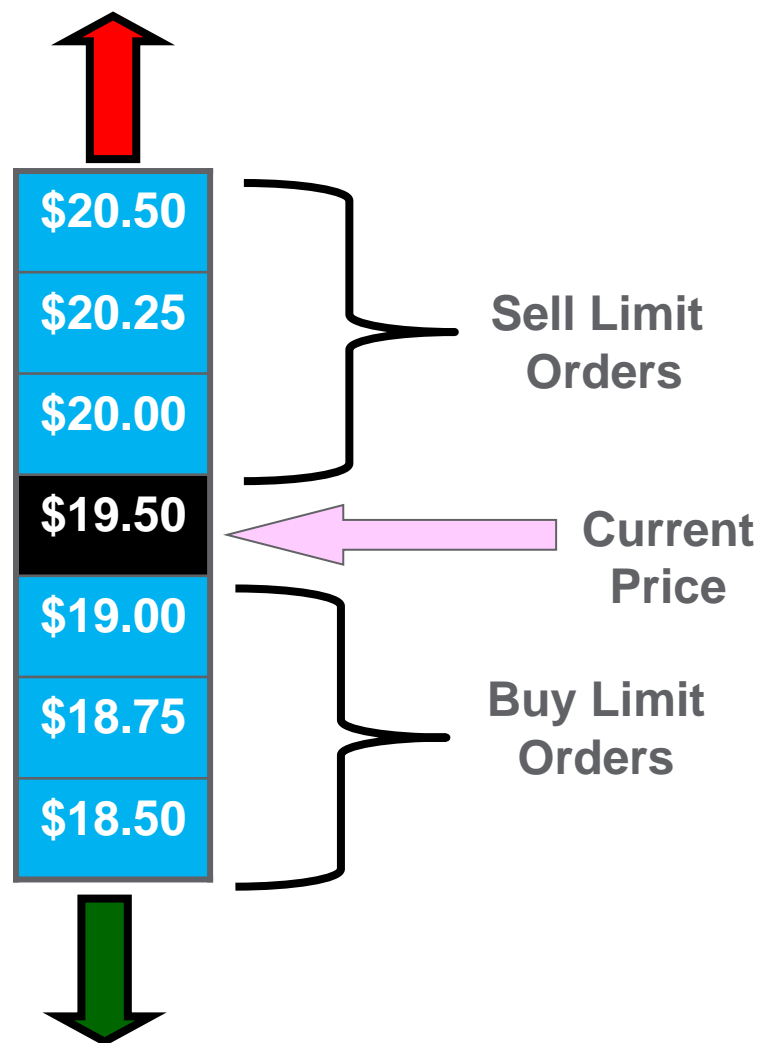
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Halasy Investors	15,000	\$59.55
Murphy Retail Investors	30,000	\$59.40

- **Someone records and tracks order information to ensure the best deal for everyone**

Building Block for a stock exchange

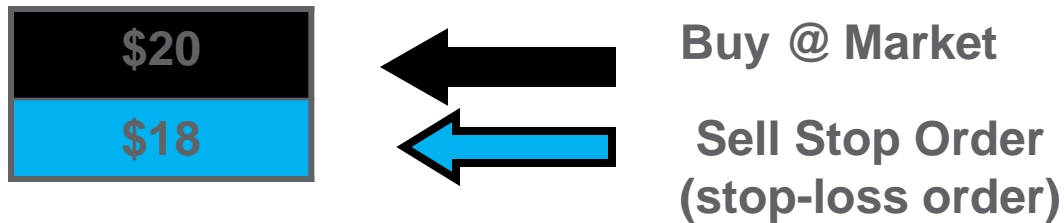
Limit Orders

- Placing a price parameter on order
- Not guaranteed execution, but if executed, will receive a better price than the current market price.
- Order to buy or sell a stock only at the specified price (the limit price) or better; Safer way for trading
- Format for order
 - XYZ, Sell, 100, \$20.25



Buy limit price < Current market price, Sell limit price > Current market price

Sell Stop Order



- Used to protect a long position
- Placed below the market
- Two Step Process:
 1. “Activation price” or “Trigger price”
 2. Once “activated”, it becomes a market order
- Order Format – XYZ, Sell, 100, \$18
- Market Price could be \$ 20

Sell Stop Order

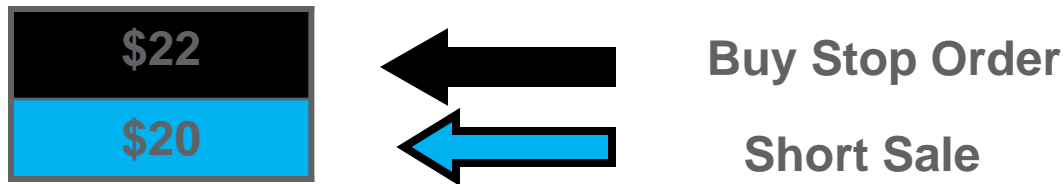
1. Buy 100 XYZ @ the market price of \$20.00 (long position)
2. Places the following order to protect his long position:
Sell 100 XYZ \$18.00 stop GTC

Three days later the following trades take place:

\$18.25 Open	\$18.15	\$18.05	\$18.00	\$17.90	\$17.85	\$17.75
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Activation Price / Execution Price ?

Buy Stop Order



- Used to protect a short position
- Placed above the market
- Two Step Process:
 - “Activation price” or “Trigger price”
 - Once “activated”, it becomes a market order
- Order Format – XYZ, Buy, 100, \$22
- Market Price could be \$ 20

Buy Stop Order

1. Sell Short 100 XYZ @ the market price of \$20.00 (Short position)
2. Places the following order to protect short position:
Sell 100 XYZ \$22.00 Stop GTC

Three days later the following trades take place:

\$21.75 Open	\$21.85	\$22.00	\$22.10	\$22.15	\$22.25	\$22.30
-----------------	---------	---------	---------	---------	---------	---------

Activation Price / Execution Price ?

Stop-Limit Order- Like a stop Order but after activation becomes a limit Order instead of Market Order

More Order Types

- **All-or-None Order (AON)**
 - No partial executions
 - Broker has all day to execute order (no urgency)
- **Immediate-or-Cancel Order (IOC)**
 - Partials are acceptable
 - Fill immediately (urgency), and cancel unfilled balance
- **Fill-or-Kill Order (FOK)**
 - Fill immediately
 - No partials
 - If entire order cannot be filled immediately, then cancel order

More Order Types (contd..)

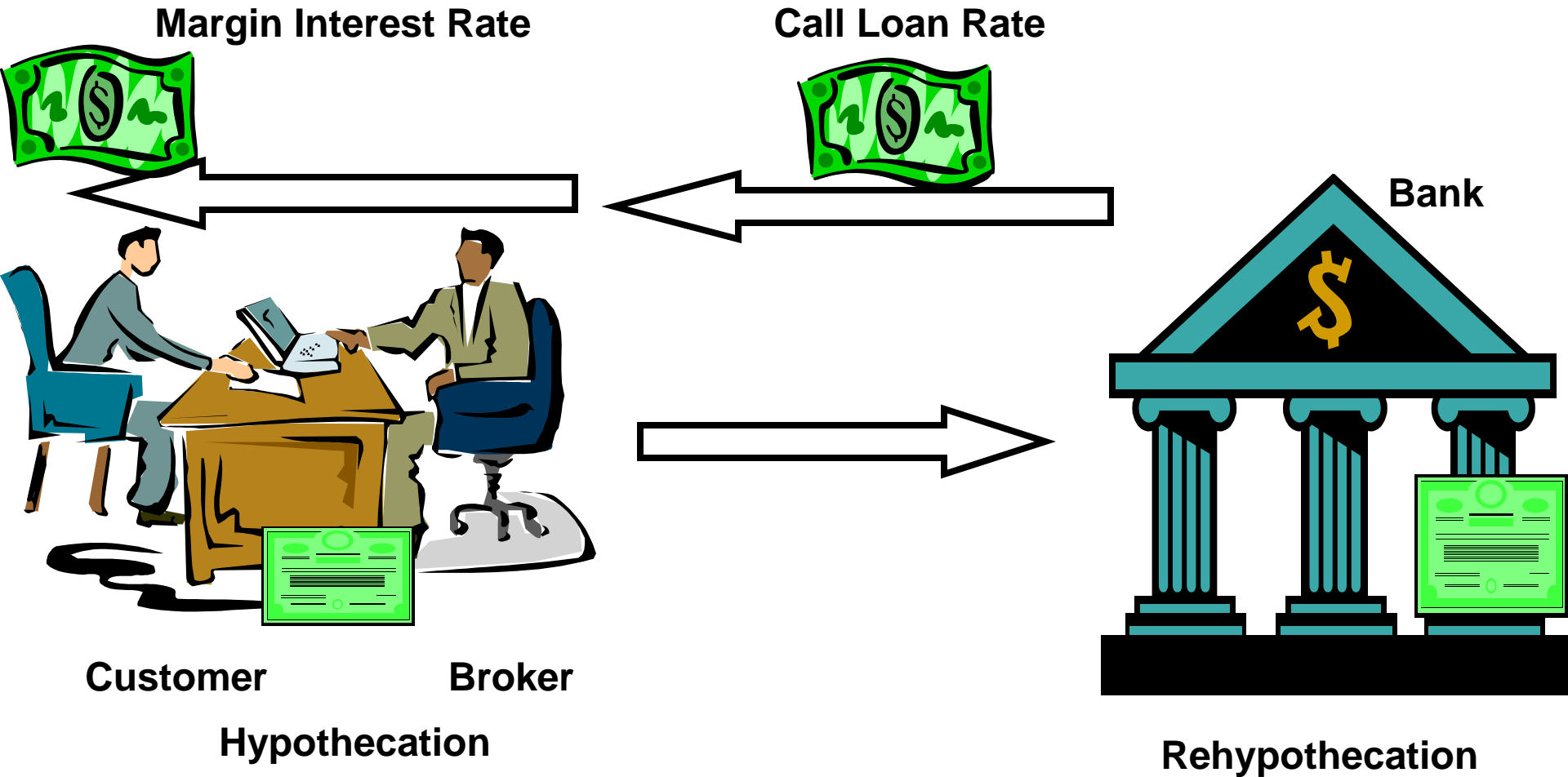
- **Day Order**
- Good for the day
- If not executed within the course of day, order is canceled.
- **GTC Order**
- Also known as an “open order”.
- Order is in effect until executed or canceled by the customer

Margin Trading

- A process whereby a brokerage client uses credit to finance securities transactions
- Allows its clients to buy securities with money borrowed from the broker
- Margin requirements can be met by the investor with cash, eligible securities, or any combination thereof
- Governed by regulations of Federal Reserve, NYSE and the brokerage firm's internal rules
- Not all securities can be traded through margin account-
- Federal Reserve Board specifies "Margin securities" i.e. securities eligible for trading through Margin account

Margin Account - Collateralized loan from a broker-dealer regulated by Reg T

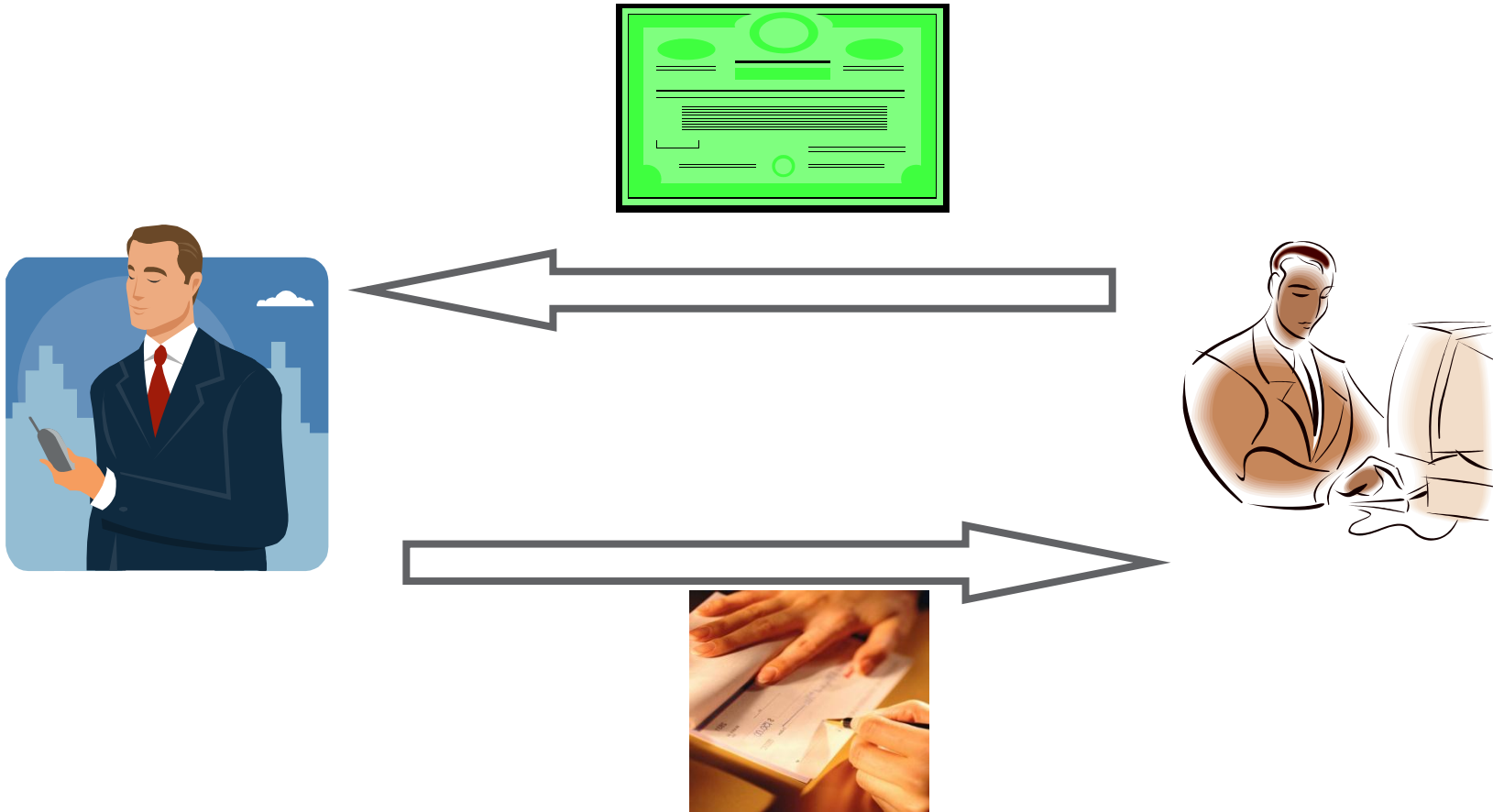
Margin Trading Process



Brokerage Operations

- Execution Processes
- Clearing Processes
- Settlement Processes
- Post Settlement Processes
- Benefits of Outsourced Clearing

Stock Trading : A Client Perspective



What's so difficult about buying and selling stock?

The Reality

- Trade processing is complex
- Many different areas of a firm are involved in a trade
- Trade processing methodologies grew up in a paper-driven environment.
- Complex system of checks, double checks and triple checks to safeguard the firm and client
- Today: Intermediaries (e.g. Pershing; DTCC)

■ Old World

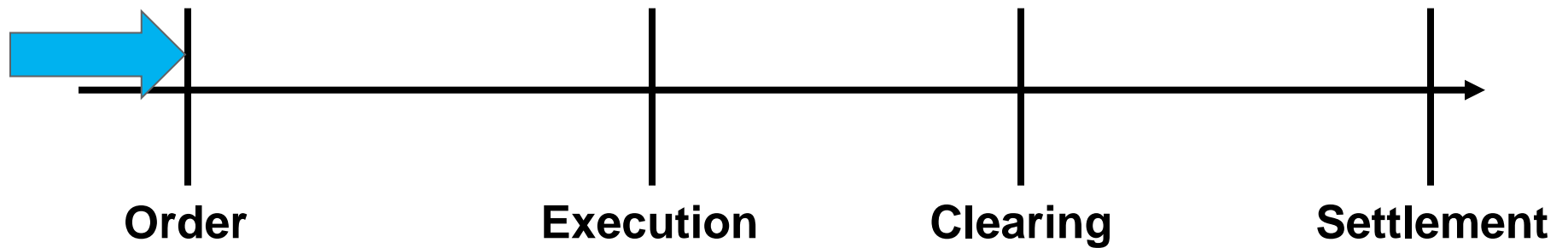
- Examination of trade processing in a paper-based environment
- Low volume
- Trade by trade settlement
- Firms deals directly with one-another
- Slower and volume sensitive

■ Modern World

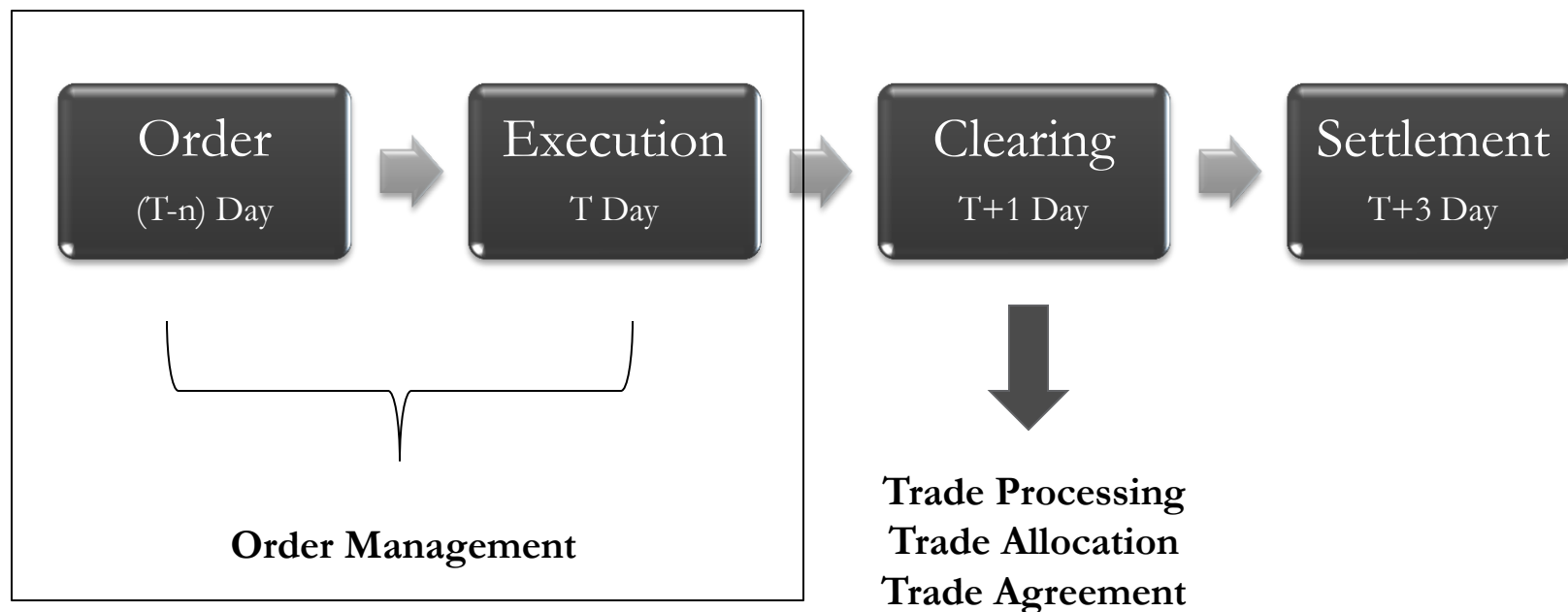
- Examination of trade processing in an electronic environment
- High volume
- Net settlements
- Firms deal with Centralized Counter party
- Volume insensitive and high speed

Brokerage Services is a multi-billion dollar industry

Life of a Trade



Life of a Trade



Pershing's View

**1.Order
Management**

**2.Trade
Processing**

**3.Trade
Allocation**

**4.Trade
Agreement**

Order Initiation

- Incoming Orders
- Solicited by RR or at client's direction
 - In person
 - Phone Call
 - Internet

Order Initiation

Order Capture

Order Handling

Order Routing

**Execution Match
and Reporting**

**Execution
Order Creation**

Solicitation or Receipt of Customer Orders is Order Initiation

Order Ticket Information

- Purchase or Sale
- Long sale vs. Short Sale
- Security
- Quantity
- Type of order (market/limit/stop)
- RR Identifier
- GTC or day

ORDER TICKET					
Broker Identifier 7246314			Contra Broker Identifier 8256174		
BUY	SELL	Quantity 200		Security Symbol A x P	
MARKET			Price		
GTC	Day	Not Held	IOC	AON	FOK
Customer Account # 734-61624-19					
Discretion Exercised <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Solicited <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

Obtaining correct information is critical for execution and other subsequent activities

Order Capture

- More Work Prior to placing the Order (System checks & Reviews)
- Internal checking of order
- Is the “ticket” filled out correctly?
- Is all information there?
- Is client cleared to do this type of trading?
- Does the client have sufficient assets (\$/securities) in account? (credit limits)
- Shorting? Are securities available?

Order Initiation

Order Capture

Order Handling

Order Routing

**Execution Match
and Reporting**

**Execution
Order Creation**

Order Handling

- Order Rooms
 - Receipt of incoming orders from RRs
 - Branch level or centralized for entire firm
 - Organize pending orders based on security type, market, client type, size, etc.
 - Determination if trade is internal or goes to the street

Order Initiation

Order Capture

Order Handling

Order Routing

**Execution Match
and Reporting**

**Execution
Order Creation**

Dealer or Principal Capacity

Subject to risk on transaction

Mark-up or markdown



Broker or Agency Capacity

No risk on transaction

Commission



Order Routing

- Routing
 - Client's preferences?
 - Broker Dealer's preferences?
- Routing to NYSE floor
- Regional exchange
- Execution occurs at this stage

Order Initiation

Order Capture

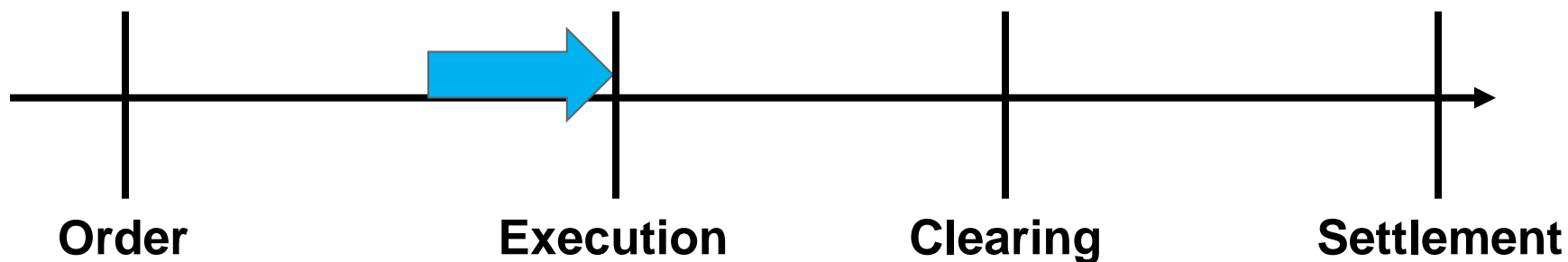
Order Handling

Order Routing

**Execution Match
and Reporting**

**Execution
Order Creation**

Life of a Trade



Execution Match and Reporting

- **Internal**
 - Receipt of execution reports from trading venue
 - Correct security / quantity / client?
 - Research of un-entered/unexecuted orders
- **SRO**
 - Report of executions to SRO
 - Exchanges have systems to track executions
 - SROs looking for violations/patterns
- **Client**
 - Record executions (partial or full)
 - Report executions to RR
 - RR gives verbal/email report to client

Order Initiation

Order Capture

Order Handling

Order Routing

**Execution Match
and Reporting**

**Execution
Order Creation**

Execution Order Creation

BEFORE WE LEAVE THE ORDER ROOM

- Order – Potential Business
- Execution is contract between the BD and contra firm
- BD-to-client transaction is a separate agreement
- Clients do not transact business on NYSE or NASDAQ!

Order Initiation

Order Capture

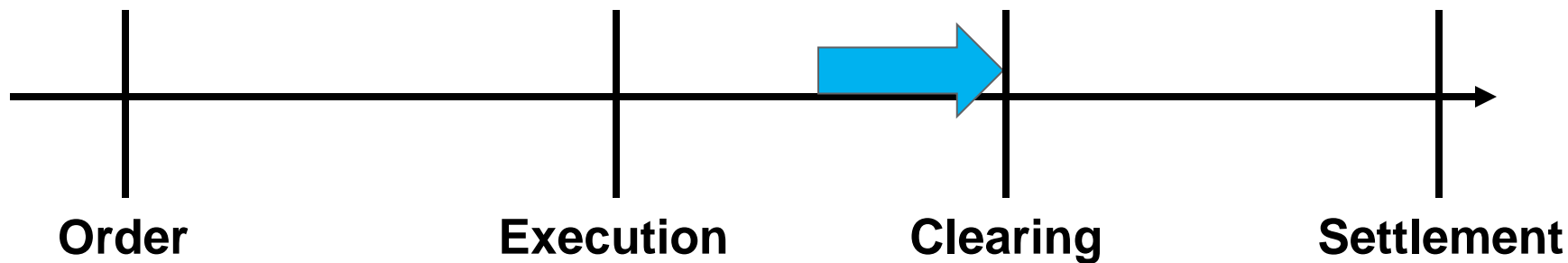
Order Handling

Order Routing

Execution Match
and Reporting

Execution
Order Creation

Life of a Trade



Clearing Operations

**1.Order
Management**

**2.Trade
Processing**

**3.Trade
Allocation**

**4.Trade
Agreement**



- Recording of executions
- Computing monetary amounts
- Comparison of trades with contra broker
- Confirmation of trade with client
- Booking

Trade Validation

- BDs, branches, RRs all given distinct identifiers
- Securities have CUSIP #s
- Think of a CUSIP as a barcode which contains issuer and issue identifiers
- Trade itself is given transaction (ID) #
- Contra-brokers have ids
- If problem: Exception

Trade Validation

Trade Enrichment

**Street Side
Submission**

**Trade Matching
(Customer and
/or street)**

**Trade Exception
Handling**

Trade Enrichment

- Adding Information
- Commissions/mark-up or mark down
- Sec fees
- Taxes
- Regulatory Disclosures
- The end result is a “fully figured trade”

Trade Validation

Trade Enrichment

**Street Side
Submission**

**Trade Matching
(Customer and
/or street)**

**Trade Exception
Handling**

Street Side Submission

- Comparing the details
- Comparing trades with contra broker
- Old days: trade-by-trade or itemized comparison
- If OK trade is affirmed or “locked in”

Trade Validation

Trade Enrichment

**Street Side
Submission**

**Trade Matching
(Customer and
/or street)**

**Trade Exception
Handling**

Trade Matching

- Notification-Generating a Customer Confirm
- Trade particulars (security price, size, etc)
- TD/SD
- Where / when executed
- Capacity in which the form acted
- Cash or Margin
- SRO Rule: Customer confirms must be generated by completion of the transaction

Trade Validation

Trade Enrichment

**Street Side
Submission**

**Trade Matching
(customer and
street)**

**Trade Exception
Handling**

Trade Exception Handling

Trade Problems

- Looking for problems (exceptions)
- Wrong stock / Bond (maturity)/ Quantity
- Problem “real” (error) or “typo” (discrepancy)?
- Does the problem affect contra-broker?
- Can the trade be repaired?
- Cancels and re-bills

“As of” Trades and Corrections

- Fixing a customer/contra broker problem
- Trades mistakenly not entered
- Execution problems
- Error accounts
- Internal corrections and or contra broker notification
- Compliance Notification -
- Is a client being showed favoritism
- Does a particular RR/trader/branch exhibit a pattern?
- Is there a system problem?

Trade Validation

Trade Enrichment

**Street Side
Submission**

**Trade Matching
(Customer and
/or street)**

**Trade Exception
Handling**

Clearing Operations

**1.Order
Management**

**2.Trade
Processing**

**3.Trade
Allocation**

**4.Trade
Agreement**

- Block Trades
- Investment Managers (MFs etc)
- Individual clients selected
- A given trade may be split up and confirmations generated to many clients

Clearing Operations

**1.Order
Management**

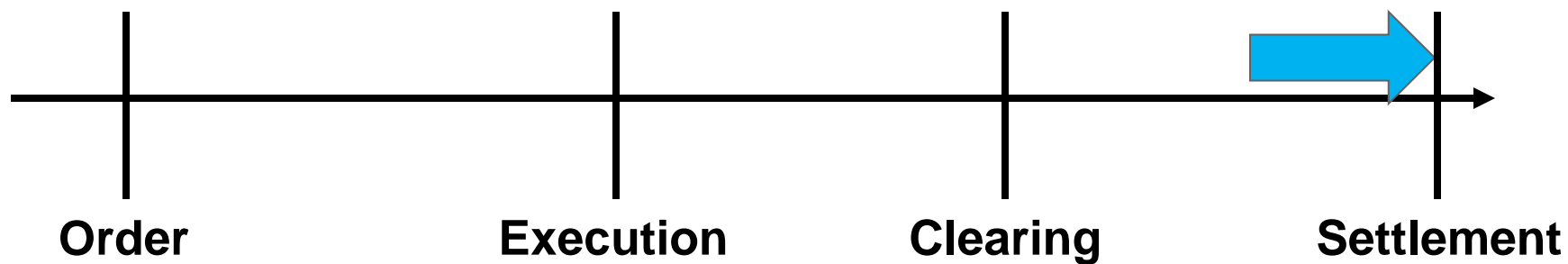
**2.Trade
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**3.Trade
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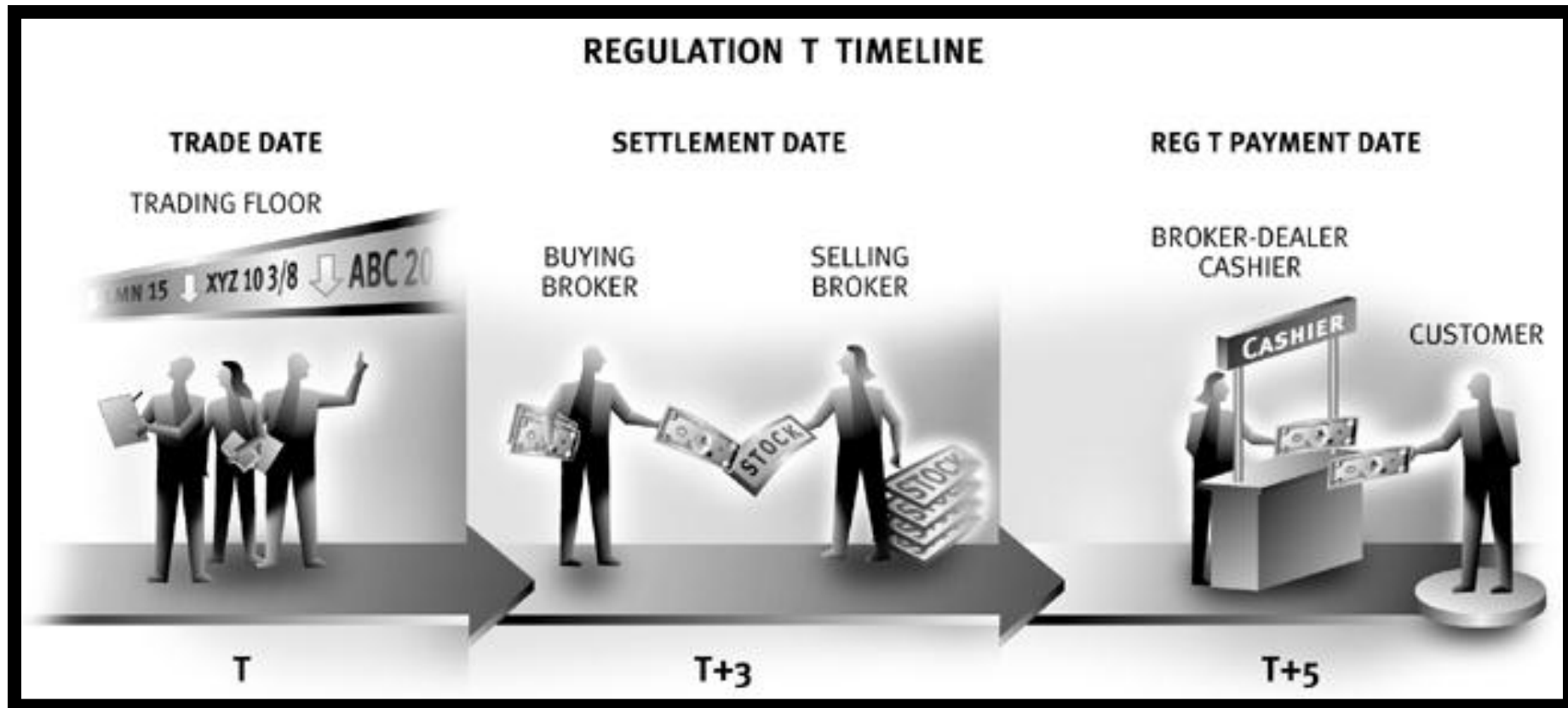
**4.Trade
Agreement**

- **Booking** - Everyone agrees the trade is now processed and balanced or booked into the firms records

Life of a Trade



If Trade Clears: Goal = Settlement



Settling Compared Trades

1. On settlement date, the selling broker delivers to the buying broker and gets paid (formerly trade-by-trade)
2. Firm to Firm transfer
3. \$ vs. securities

Can Clients Cause a Failure to Settle?

- Firms agree on trade particulars
 - Client (seller) does not deliver
 - Client (buyer) does not pay
 - Settlement will still occur....
 - Contract is between firms!
-
- Analyze reasons for fails
 - Record keeping to age items
 - One “fail” may affect multiple trades
 - Fails cost \$
 - Issue buy-in to client or street
 - Obtain stock from safekeeping or stock loan

Post Settlement Events

- **Cashiering (Cash Management)**

- Receipt/disbursement of client funds
- Receipt/disbursement of contra broker funds

- **Checks**

- **Fed Funds**

- **Credits or debits internally**

- **Third party payments**

- **Accounting**

- keeps track of the cash - daily cash record
- invoicing and payments
- trial balance - monthly
- p&l statements
- balance sheet
- regulatory reports

Post Settlement Events

- Stock Record
 - Record of positions
 - Tracking movements
 - Identification/investigation of *Breaks*
 - Auditing positions - physical vs. stock Record
-
- Client Records (Customer Reporting)
 - Statements
 - Tax reporting
 - P&L (cost basis etc)
-
- SEC/SRO Records (Regulatory Reporting)
 - Net capital
 - Operational Issues
 - Client extensions
 - \$ Laundering
 - Complaints

Corporate Actions

COMMUNICATIONS

- Receive information from Issuer / DTC etc.
- Review Information (Prospectus / Letter)
- Mailing Announcements
- Communications with depositories or agent banks

Outcomes

- Receipt of customer instructions
- Research and reconciliation of exceptions
- Stock record must be consulted
- Crediting/debiting accounts for \$/stock

Examples

- Mergers, Spin-offs, Splits / Reverse splits
- Cash and stock, Interest allocations, Rights offerings
- Calls, Proxies, Dividends, Voting

Why Not Self-Clear?

- **Cost Issues** - Inefficient; Cheaper to Outsource
- **Financial Benefits** - Cheaper cost of funds (margin), Stock loan opportunities, Reduced net capital Needs, Reduction of contra party risk, Bulk buying opportunities
- **Reduced Paperwork** – Confirms, Statements, Mailings, Proxies, Tax Reports
- **Regulations Concerns / Compliance** - Patriot Act /Money Laundering, Trade Monitoring, Net Capital Issues, 144 Sales/Accounts of Deceased/Accts - Associated Persons Activities, DNC Lists, Archiving Records

Why Not Self-Clear?

- **Technology Advantages** - Access to trading software, Data feeds (News and Quotes), Access to ECNs, Trading Technology/Relationships, Access to risk management software (Trading), Client profiling software (Compliance)
- **Client Peace of Mind**
- **Why Hire Pershing? (Why Third Party Clearing Services?)**
 - Saves time and \$
 - Think of clearing on a unit cost basis
 - Permits small firms to focus on what they do best (Sales and/or Trading)

Q&A

ADDITIONAL INFORMATION

Cashiering

- Receipt and delivery of client funds and securities
- Receipt/disbursement of contra broker funds
- Maintenance of the Vault
- Transfer
- Checks, Fed Funds, Third party payments, debits / credits internally
- Hypothecation and re-hypothecation (margin)*
- Stock loan (margin)*

Trade Failure

- Analyze reasons for fails
- Record keeping to age items
- One “fail” may affect multiple trades
- Fails cost \$
- Issue buy-in to client or street
- Obtain stock from safekeeping or stock loan

Bad Deliveries

- Incorrect (no) signatures
- No stock or bond power
- Missing paperwork
- Missing coupons
- Wrong security
- Security was cancelled/called
- Rejection-at time of delivery
- Reclamation-post delivery

Stock Record

- Ensures stock ownership records
- Record of positions
- Tracking movements
- Identification / Investigation of Breaks
- Auditing positions - physical vs. stock record
- Effect of Corporate Actions on Stock Records
- Mergers / Spin-offs
- Splits / Reverse splits
- Cash and stock Dividend
- Rights offerings

Problems

- Breaks - missing the offsetting credit or debit
- Bad account numbers
- Bad CUSIP #
- Missing stock?
- Comparison of stock record to physical positions

Margin

- What is Margin?
 - Trading on Credit
- What is a Margin Account?
 - An account that provides a collateralized loan from the broker-dealer
 - Use of leverage
 - Regulated under Regulation T
- Initial Margin
 - The amount of money that needs to be held in the account at the time of the trade
- Maintenance Margin
 - The amount that must be in the account at any point after the initial trade

Margin contd..

- **What is a Margin Call?**

- Securities bought on margin decreases in value beyond a certain pre-set point
- Forces to deposit more money in the account or sell off some of the assets
- Also called a 'Fed Call' or a 'Maintenance Call'

Example:

Mr. X purchases \$20,000 worth of securities by paying \$10,000 and borrowing \$10,000 from the brokerage. If the market value of the securities drops to \$15,000, the equity in X's account falls to \$5,000 ($\$15,000 - \$10,000 = \$5,000$).

Assuming a maintenance requirement of 25%, Mr. X must have \$3,750 in equity ($25\% \text{ of } \$15,000 = \$3,750$). Thus, Mr. X is fine in this situation as the \$5,000 worth of equity in X's account is greater than the required maintenance margin of \$3,750.

If the maintenance margin of the brokerage is 40% instead of 25%, equity of \$5,000 is less than the maintenance margin of \$6,000 ($40\% \text{ of } \$15,000 = \$6,000$). The brokerage issues a 'Margin Call'.

Margin Agreement

- Document signed by the investor to open a margin account
- Agrees to certain regulations and allows brokerage to have a lien on the account

Provisions of a Margin Agreement

Credit Provision

- Estimated credit that is made available

Hypothecation Provision

- Right to liquidate assets if the margin is not held

Loan Consent Agreement

- Agreed limit to buy securities based on the customer's debit balance

Securities Lending

- **Securities Lending** - The act of loaning a stock, derivative or other security to another investor or firm
- Lending/borrowing between portfolio managers and other firms (matchbook)
- Lending to short sellers (stock loan)
- Firm Financing Activities
- Broker Dealers look to both internal and external sources