L2: Corporate Actions

Domain Competency Training

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Cognizant
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Change History

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1	January 10, 2006	0.1	Initial	DCG
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5	October 10, 2006	1.0	Baselined	Ramesh Vabai

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1 Introduction to Capital Markets

Capital markets, by definition, are markets where long-term capital is raised and the financial instruments thus issued are traded. Capital markets have two segments

- Primary Markets: where capital is raised through new issues
- Secondary Market: where previously traded instruments are traded

Companies raise money by issuing securities in the form of equity and debt. Equity represents ownership of the company and takes the form of stock. Debt is funded by issuing bonds, debentures and various certificates. Investors choose between debt and equity securities based on their investment objectives.

The following section describes in detail about the different types of equity and debt instruments.

DEBT

Debt is money owed by one person or firm to another. Bonds, loans, and commercial paper are all examples of debt.

Bond

An investor loans money to an entity (company or government) that needs funds for a specified period of time at a specified interest rate. In exchange for the money, the entity will issue a certificate, or bond, that states the interest rate (coupon rate) to be paid and repayment date (maturity date). Interest on bonds is usually paid every six months (semiannually).

Bonds are issued in three basic physical forms: Bearer Bonds, Registered As to Principal Only and Fully Registered Bonds. Bonds that are issued today are most likely to be issued fully registered as to both interest and principal. The transfer agent now sends interest payments to owners of record on the interest Payable Date. Book Entry bonds are still fully registered, but there is no physical certificate and the transfer agent keeps track of ownership. Examples of different types of bond are:

Corporate Bonds

A bond issued by a corporation. Corporations generally issue three types of bonds: Secured Bonds, Unsecured Bonds (Debentures), and Subordinated Debentures.

Municipal bond

A bond issued by a municipality. These are generally tax free, but the interest rate is usually lower than a taxable bond.

EQUITY

Equity (Stock) is a security, representing an ownership interest. Equity refers to the value of the funds contributed by the owners (the stockholders) plus the retained earnings (or losses).

Common stock

Common stock represents an ownership interest in a company. Owners of stock also have Limited Liability (i.e.) the maximum a shareholder can lose is their original investment. Most of the stock traded in the markets today is common. An individual with a majority shareholding or controlling interest controls a company's decisions and can appoint anyone he/she wishes to the board of directors or to the management team.

Preferred Stock

Preference shares carry a stated dividend and they do not usually have voting rights. Preferred shareholders have priority over common stockholders on earnings and assets in the event of liquidation. Preferred stock is issued with a fixed rate of return that is either a percent of par (always assumed to be $100) or a dollar amount. There are two types of preferred stock. They are

- *Convertible preferred stock* can be converted into shares of common stock either at a fixed price or a fixed number of shares. It is essentially a mix of debt and equity, and most often used as a means for a risky company to obtain capital when neither debt nor equity works. It offers considerable opportunity for capital appreciation.
- *Non-convertible preferred stock* remains outstanding in perpetuity and trades like stocks. Utilities represent the best example of nonconvertible preferred stock issuers.

Investment Objective

Income is the main objective for a debt investor. The income is paid in the form of Interest, usually as semi-annual payments. Capital Appreciation (the increase in the value of a security over time) is only a secondary consideration for debt investors. Conversely, equity investors are primarily seeking growth, or capital appreciation. Income is usually of lesser importance, and is received in the form of dividends.

Income from Financial Instrument:

Investment in any financial instruments is made with the intention of generating income. Following are the various types of income generated by financial instrument.

Equity:

Common Stock

Cash Dividend – Distribution of cash to shareholders, in proportion to their equity holding. The shareholder must take cash and is not offered a choice in the form of distribution. A proportion of net earning paid periodically by the corporation in the form of a cash distribution to its stockholders as a return on their investment.

Special Dividend – A non-recurring dividend paid to shareholders in addition to the regular dividend that is exceptional in terms of either size or date issued. Such a payment is made after a particularly very profitable year in order to reward shareholders or to celebrate anniversaries like silver jubilee or golden jubilee year.

Stock Dividend – A dividend paid to shareholders in the form of shares of stock in the issuing company or in another company. The shareholder must take stock and is not offered a choice in the form of distribution. Stock distribution made to shareholders based on the company's decision to pay its shareholders a dividend in stock. The distribution of shares to stockholders is in proportion to the respective number of shares owned by them.

Preference Stock

Preference Dividend: A dividend paid to preference share holder for the current payment period.

Cumulative Preference Dividend – A dividend paid on cumulative preference shares that the company is liable for in the next payment period if not satisfied in the current payment period (i.e. the dividends accumulate). Unlike a dividend on common stock that the company can pay out to shareholders if they want, dividends on cumulative preferred shares are an obligation regardless of the earnings of the company.

Bonds:

Bond Interest – Interest paid to the bondholder as a cash distribution. Payments are generally obligatory, fixed frequencies and payment rates are fixed as per the coupon rate.

Variable Bond Interest – Interest paid to a bondholder as a cash distribution. Payments are generally at fixed frequencies and payment rates are variable but the variable rates would still lead to payment of fixed committed interest over time and the payment itself is obligatory.

2 What is Corporate Action?

Corporate Actions are the announcements made by a company, which can affect the stakeholders of the company. Stakeholders are primarily shareholders, bond investors and mutual fund investor. Most of the corporate actions are benefits given by a company to its stakeholders. These may be either monetary benefits like dividend, interest or non-monetary benefits like bonus, rights, etc. Moreover, there are other corporate actions like mergers, spin-offs, stock splits, bond redemption etc affecting various stakeholders.

All corporate action is an event which has a material effect on the share price or a stakeholder's right. For some such events, shareholders may or must respond to the corporate action or select from a list of possible options. All corporate actions will be intimated by the company to their respective stakeholders through custodian or 3rd party service providers. Based on the category of corporate action, beneficial owner has the option to either respond or ignore. Corporate action processing is an important activity in determining the eligible stakeholder for applying corporate action benefits.

2.1 Participants in Corporate Action

Following are the participants in corporate actions:

- Company
- Registrar/Agent
- Custodian
- Investor

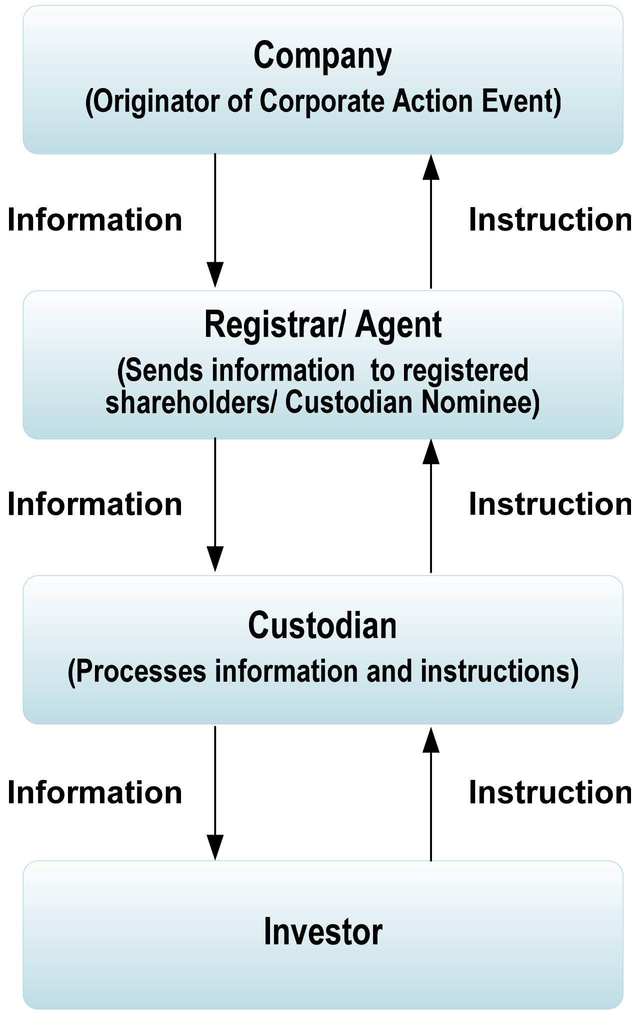
Company: Company is where the corporate action originates. Regulation usually requires the company to announce the corporate action publicly. In practice, this information dissemination normally involves two channels:

– contacting the registered shareholders directly—the company knows who these registered shareholders are through the appointed registrar/agent or the central securities depository (CSD).

– by making a public statement, either through a press release, or, by issuing a public notice to the respective stock exchange were its stocks are listed. This information is then typically dispersed to interested parties through data vendors and other media.

Registrar/Transfer Agent: Registrar/Transfer agents occupy a central role in the issuance of securities and the subsequent transfer of such securities resulting from sales, purchases, reorganizations, tender offers, and other transfers of ownership. Transfer agents plays an important role in corporate action activities like initial issuance, stock dividends, stock splits and dividend reinvestment etc. Registrar forms an important link in the chain from issuers to investors.

The following figure show the contractual/business relationships between the participants



Custodians: A custodian is a bank or other institution that holds securities on behalf of investors. The tasks performed by a custodian include:

- Safekeeping of securities
- Delivering or accepting traded securities
- Performing Corporate Actions like collecting interest, or dividend payments on held securities

If an investor holds foreign securities, their custodian will contract with custodians in foreign countries to provide local custody services. These foreign custodians are called sub custodians.

Institutional investors usually appoint a custodian bank to safeguard their securities holdings. The service-level agreement between institutional investors and custodians typically covers administrative tasks such as settlement of trades and processing of corporate actions. Custodians, in turn, have an account at the CSD, where securities are ultimately held. Custodians are registered at the registrar/agent or CSD as the owner of the security on behalf of investors and any corporate action notices from the company are passed on by custodians to investors. Retail investors mostly have their holding in an electronic format and either custodian or depository act on their behalf. The notification and disbursement of corporate action benefits is made by the company/issuer directly to the investors. In case of any discrepancy in corporate action benefits, retail investor should approach his custodian/depository, who in turn will contact the CSD to obtain clarifications.

Investors: Typically, investors usually appoint a custodian to safeguard their assets. Investors mostly keep the decision-making responsibilities to themselves. However, sometimes through the agreements, investors may delegate the responsibility for dealing with corporate actions to the custodians.

2.2 Categories of Corporate Actions

Corporate actions can be classified into

- Mandatory Corporate Action
- Mandatory Corporate Action with Option
- Voluntary corporate action

2.2.1 Mandatory Corporate Actions

Mandatory corporate actions do not require any action from the shareholders. In mandatory corporate action the shareholders are not given an option or choice to choose. Some of the examples of mandatory corporate actions include bonus issue, company name change etc.

Some of the key Mandatory Corporate Actions includes:

Maturity Payment
- Maturity (including short, medium, long-term, discount note)
- Asset Backed Security final maturity
- National Housing Act (NHA) final maturity
- Strip bond maturity
- Strip bond package maturity

Interest Payment
- Interest payment
- Money market interest
- Asset-backed security pay date
- Asset-backed security record date (no write-down)
- NHA mortgage-backed security (MBS) monthly
- Strip bond package interest payment

Dividend Payment
- Cash Dividend
- Dividend option (cash/stock, currency, dividend re-investment plan (DRIP))
- Stock dividend

Other Distribution
- Cash distribution
- Rights/warrants distribution (bonus rights, special warrants)
- Stock distribution

Reorganizations

- Consolidation/reverse stock split
- Liquidation/dissolution
- Mandatory acquisition without option
- Mandatory change (CUSIP/ISIN change, name change, reclassification, capital reorganization)
- Mandatory conversion
- Mandatory exchange
- Mandatory extension
- Merger – no option (mandatory merger)
- Partial call – lottery (partial call bond)
- Partial call – pro rata (partial call bond)
- Plan of arrangement – no option
- Push out
- Redemption – full (full call bond)
- Spin-off
- Stock split
- Subscription – installment receipt
- Unit separation (split)

2.2.2 Mandatory Corporate Actions with Options

Mandatory corporate actions with options require action from the shareholders. In this case, the shareholders are given an option or choice to choose. Example is an Interest Payout by the issuer that can be given to the shareholder with an option to choose either cash or additional shares.

Examples are:

- Interest with option
- Mandatory acquisition with option
- Mandatory change with option
- Merger with option
- Plan of arrangement with option

Some of the key Mandatory Corporate Actions with options includes:

- Bond Interest
- Bonus Issue/Rights
- Cash Dividend.
- Cumulative Dividend
- Delisting
- Interest/Coupon Payment
- Merger
- Redemption
- Spin-Off
- Stock

2.2.3 Voluntary Corporate Actions

Voluntary corporate actions provide the shareholders an option to respond or select from a list of possible actions. Examples include rights offer, repurchase offer etc. Elections and proxy voting are also voluntary corporate actions

All Voluntary corporate actions can be divided into two phases. In the first phase the investor is given the right to choose between various options. The second phase is the implementation of the option chosen by the investor.

Examples are:

- Debenture buyback
- Odd lot offer (odd lot buyback)
- Purchase offer (Dutch auction)
- Subscription rights
- Subscription warrants
- Tender offer (cash and/or stock)
- Voluntary conversion
- Voluntary exchange
- Voluntary extension
- Voluntary redemption
- Voluntary retraction

3 Corporate Action Business Process Flow

The following section discusses the typical custodian's high level corporate action process flow, mandatory process flow and voluntary process flow.

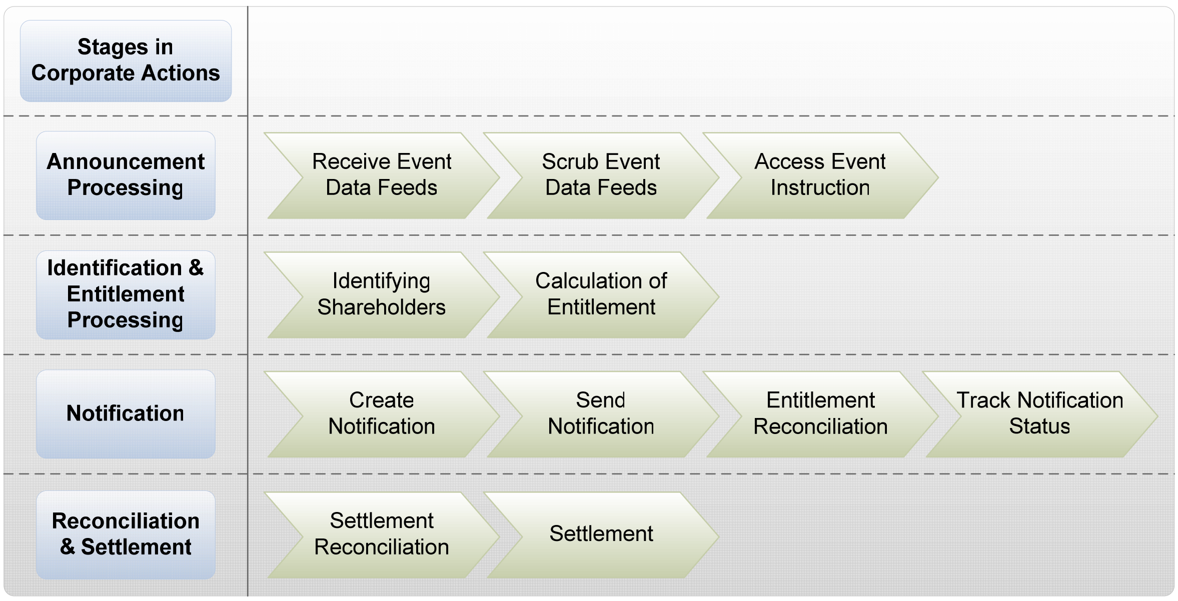
3.1 High Level Business Process Flow

Corporate Actions business processing, in the present scenario, in many securities services firm, circumvents a set of structured activities which aims at resolving most of the, if not all, manual tasks through automation. This process is aimed in achieving Straight –Through-Processing or STP and automation of the process facilitates in to the completion of entire corporate actions starting from capturing of announcements/events to claiming tax by Securities Services on entitlements received by Account Owners.

The understand further each of the sub process involved in processing a Corporate Action, some of the issues related to risk in manual processing and hurdles to automation needs to be understood. The entire process involves predominantly a huge number of manual processes as standardization in receipt and sending of events are not in place. Securities Services Firms often face difficulties attached to corporate actions automation and have to standardize corporate action process flows. The process flows have to be specifically developed to have a logical rules-based methodology for categorizing and defining corporate actions data.

The below business process flow diagram illustrates the high level flow of Corporate Actions processing. Each of this high level process is explained below:

Corporate Actions: High Level Business Flow



The key process of Corporate Actions includes:

1. ***Announcement Processing:*** This process is the starting point in Corporate Actions processing and involves the set of activities where the events (Declaration Date) or

announcements feeds are collected, data consolidation and preparing for comparison. The sub processes under this are:

a. *Receive Event Data Feeds:* Information is received from a variety of data vendors like Bloomberg, Telekurs, Reuters, DTCC (USA), CREST (UK). This information is delivered either via Society for Worldwide Interbank Financial Telecommunications (SWIFT) (MT564 – Corporate Action Notification), Fax message or notice through the stock exchanges. The information sources can be categorized as follows:

   i. *Time Triggered:* In this, the system runs a process at a predetermined time to input corporate actions from sources. These are also pre-approved unless specifically prohibited from approval.

   ii. *Preferred source:* In this, the user identifies a preferred source of data and Corporate Action events are created with that source. For example, if the Reuters data feed is chosen as the preferred source of data, then the Corporate Action information from it are considered correct and are stored in the system directly without scrubbing (explained below).

   iii. *Manual Feed:* In this, the Corporate Action information is obtained through conventional means like fax, telephone, from stock exchanges etc.

   iv. *Non-preferred source:* In this, data from all the sources are received and stored. Then the authentic source is compared using auto and manual methods of scrubbing and then created as corporate action events.

   Some of then key issues that needs to be addressed are

   i. Lack of standard messaging: Though SWIFT is used in some cases, investment managers receive feeds from conventional sources like faxes, e-mail etc.

   ii. Multitude of sources for information: Many data vendors, custodians and newspapers are sources for data. In international holdings, language barrier is also an issue

   iii. Data quality and validity

   iv. Timing – not getting the event notification on time

b. *Scrub Event Data Feeds:* The information thus received from various sources has to be compared and scrubbed before pushing out to next processing. Scrubbing is the process of validating the information through an intricate process of mapping, normalizing and consolidating. There are two levels of scrubbing,

   i. *Auto Scrubbing:* In this, corporate action information, obtained from various sources, is compared. If there are no discrepancies between the data from various sources then the information is stored. If there are discrepancies among the sources then they marked for manual scrubbing.

   ii. *Manual Scrubbing:* The records with the details of discrepancy are displayed for the user to choose the correct information. The user can modify the necessary data and confirm the information.

   For example, if there are mismatches between corporate action data received from Reuters and Bloomberg, the manual scrubbing is used to choose the correct information. The chosen correct information is called the **Golden Record**. Thus all exceptions present in the set of information feeds are rectified.

c. *Access Event Information:* The scrubbed information is printed, sorted, distributed and reviewed by Corporate Action (CA) analyst. Hardcopy notifications (faxes, e-mails, etc.) are manually entered to a central location at the corporate actions system, where an event is created for the particular corporate action. When available, electronic notifications are automatically applied. Corporate actions are divided into two categories, mandatory and voluntary events. The system collects all necessary information needed for a particular corporate action event, including a prospectus. Some custodians automatically send the prospectus along with the corporate action notification, but most custodians provide the prospectus only by request from the user.

2. ***Identification and Entitlement Processing***: Facilitates calculation of entitlement based on different criteria such as Corporate Action Event Type, Agent etc. The sub processes under this are
   a. *Identifying shareholders:* The shareholders of the security on which the corporate action is to be applied are identified.
   b. *Calculation of Entitlement:* For every event setup in corporate action system, there is a field present in the event-setup screen that would indicate the number of days prior to ex-date that the entitlement calculations need to start. The ex-date is the settlement date. By default entitlement calculations would be done on ex-date – 1. Once entitlement calculations start within the system, a pre-advice would be generated for all affected shareholders (as determined in the previous step).

      The pre-advice would get generated for every change in the event setup details and also a final pre-advice would get generated after the final entitlement calculations runs on ex-date –1 EOD. For voluntary events, an election advice would also get generated on the EOD of ex-date –1. On or after ex-date –1 EOD, the CA entitlements as calculated by custodian, at an omni-bus level for the bank will be received (SWIFT message format MT564 ISO 15022 sent by Custodian). For mandatory corporate actions, the entitlements are calculated based on the holdings as on ex-date–1.For voluntary corporate actions and for open offer and scrip dividend events, the customer is allowed to elect based on his holdings on ex-date – 1 EOD. For call payment, takeover bid, squeeze out, conversion voluntary events, the customer is allowed to elect based on the current holdings available to him at the time of elections.

      All shares amounts calculated are in whole numbers. For share credits, if the calculated quantity is with decimals, then its rounded down to the nearest round figure.

      Some of the key issues that needs to be addressed are
      I. Lack of clarity in terms – leading to wrong calculation
      II. Late trades – difficulty in deciding accurate position on record date
      III. Regulatory restrictions affecting options available

3. ***Notification***
   a. *Create Notifications:* The corporate action system creates the notification to be sent to the various shareholders or their custodians. These notifications will have details about corporate action, their ownership status, positions held in securities, beneficiary information etc. In addition, for voluntary corporate actions the corporate action system puts together a package for the shareholders for an investment decision. The package includes information on the corporate action, a prospectus, day record or position of what the shareholders' holdings are and a

reply date. Once the shareholders have reviewed the materials, they report back to the corporate actions department with an investment decision.

b. *Send Notifications:* The notification may be sent via SWIFT message MT564 (see chapter 4 for more details).

c. *Entitlement Reconciliation:* The entitlements are calculated by system on the EOD of ex-date –1 as explained above. The custodian also calculates the entitlements at around the same time. These two entitlements calculated needs to be reconciled by the shareholders, before any further processing can be done. Any difference in the entitlements would need to be further investigated by them.

d. *Track Notification Status:* Once the notification is sent to the shareholders, the shareholders have the responsibility of providing the choice for the options given in an entitlement or opt to not give any instructions to the Servicer or Issuer and any other information that will be needed. The shareholders will perform the following tasks before reaching a decision on the corporate action.

   i. Verify position/entitlement
   ii. Analyze investment impact
   iii. Choose option for voluntary events
   iv. Accounting to journals

   This response may be sent to the Servicer using SWIFT message MT565 (Corporate Action Instruction). A key issue that needs to be addressed is the lack of messaging standards across organization.

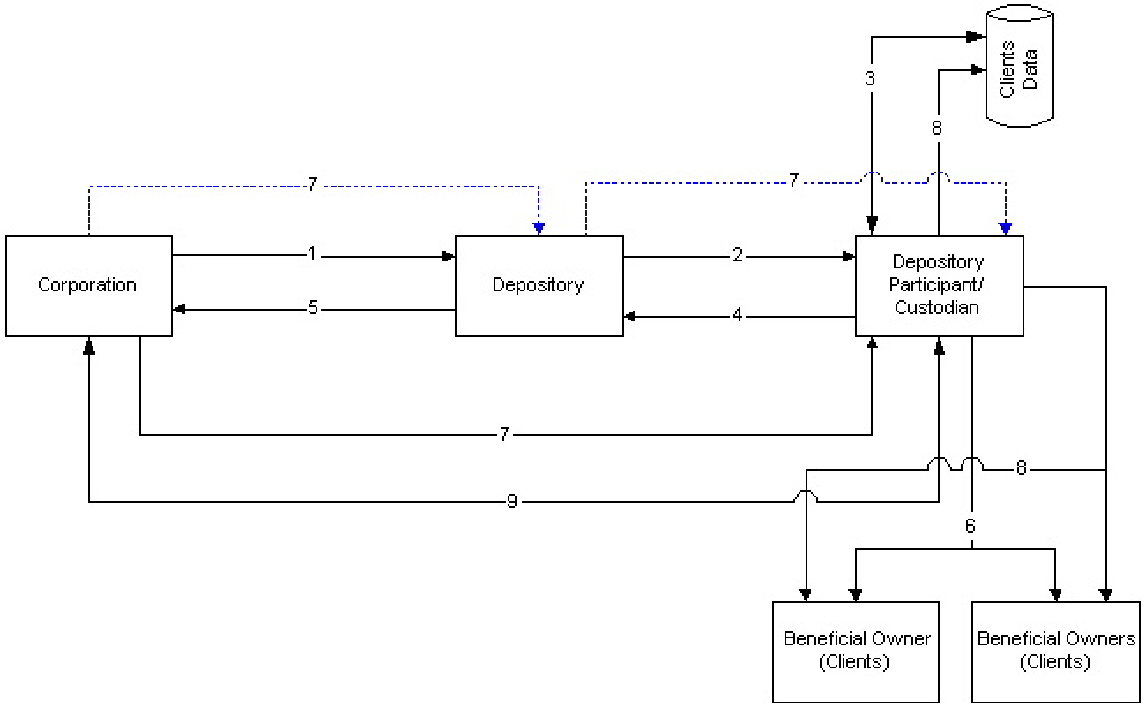
4. Reconciliation & Settlement

a. *Settlement Reconciliation*: Reconciliation is the process of tallying the requisite number of securities and cash to be available for disbursement. The final settlement details needs to be reconciled by the users, before actual settlement can be done. This is a mandatory process prior to the settlement of the event. The settlement reconciliation can be done for the cash and the stock portions separately. The settlement details as provided by the brokerage and the custodian would be compared and reconciled before finalizing the actual settlements. The option for securities and cash has to necessarily tally with the amount of cash and securities to complete the disbursement of entitlement.

b. *Settlement*: The settlement process is triggered only after the settlement reconciliation is done. The settlement dates and reconciliation flags are separate for cash and share portions of the corporate action event, so it is possible that they may settle at different periods in time. In case taxes apply to the event, the custodian will withhold the appropriate tax amount from the payment to the customers. This information will then be reported to the customer in the Consolidated Tax Voucher dispatched at the end of each tax year. For the cash settlements, the settlement process would earmark the amounts intraday and they would be posted to the banking system at the end of the day. For the stock settlements, the settlement process would immediately update the settlement buckets to reflect the updated holdings. At the end of settlement date, confirmations will be generated and sent out to the customer. The SWIFT message MT566 (Corporate Action Confirmation) is used for this purpose.

3.1.1 Life Cycle of Mandatory Corporate Action

The following business process flow briefly explains the stakeholders and their activities involved in mandatory corporate action.



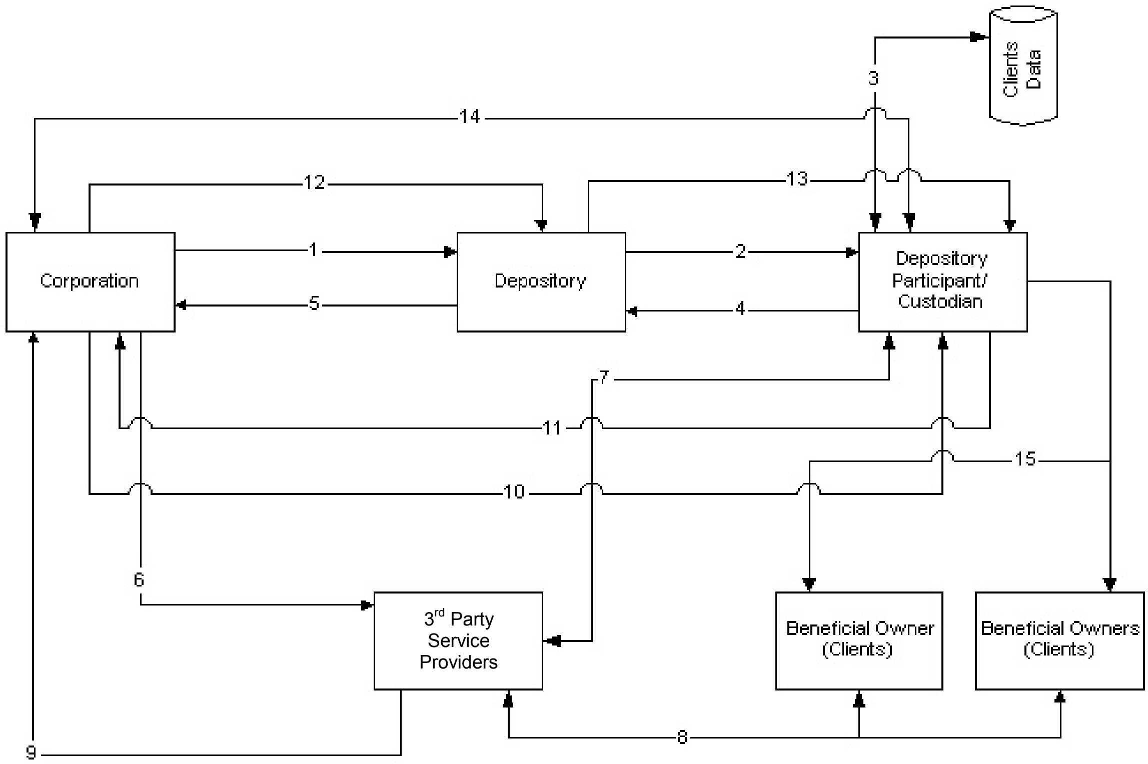
1. A corporation announces a mandatory corporate action such as dividend, bonus payment, payment of interest etc to the depository. It also announces the record date, book closure period etc. The depository based on the settlement cycle for the security arrives at the ex date. US follows a T+3 settlement cycle for equities, i.e. for a equity which is traded on day T it will take 3 days for change of ownership to reflect in depositories book of records. If the record date is on 5 of June ex date is 2 June.
2. Depository communicates the ex date, record date and the terms of the corporate action to all the depository participants (DPs) and the custodians. Depository will also inform the DPs / custodians about the no-delivery period as announced by the clearing corporation / clearing house and the procedure to be followed.
3. Process 3 & 4. On receipt of information about the book closure/record date, the DP/custodians will take care :
    - To notify its participants of terms of corporate action.
    - To update the changes in tax status, bank details, change of address etc. in the beneficial owners' accounts well in advance of the book closure/record date.
    - To clear positions in all the clearing accounts by transferring the relevant securities to relevant beneficiary accounts well in advance of the book closure/record date. The balances lying in the clearing accounts are reported to corporation/Registrar & Transfer agent (R&T) as transit account position.
5. Depository /Custodian will provide the details of the beneficial owners and their holdings as on the EOD of the record date or the EOD on the business day prior to commencement of book closure to the corporation/R&T agent.
6. The custodian may also inform the beneficial owners of their individual entitlement.
7. In case of a cash dividend or cash benefits the Corporation/R&T agent will distribute dividend, interest and other monetary benefits directly to the beneficial owners and custodians on the

basis of list provided by depository. In case of stock benefits the Corporation/R&T agent based on the communication received from the depository communicates the results of the corporate action to the depository/custodian. One such result would be the provision of allotment details and the date on which the necessary credit entries are to be made in the accounts of the beneficial owners (referred to as execution date) to depository. This is indicated by the dotted blue line.

8. The custodian reconciles receipt against entitlement, breaks out and credits (cash/stock) individual distribution to its clients/beneficial holders. The custodian also informs the clients of their pay outs.
9. If the payout and entitlement does not reconcile, the custodian contacts the corporation/R&T agent and sorts out the problem.

3.1.2 Life Cycle of Mandatory with Option and Voluntary Corporate Action

The following business process flow briefly explains the stakeholders and their activities involved in mandatory corporate action with option and voluntary corporate actions.



1. Corporation announces a voluntary corporate action such as stock dividend, rights issue to the depository. It also announces the record date, book closure period etc. The depository based on the settlement cycle for the security arrives at the ex date. US follows a T+3 settlement cycle for equities, i.e. for an equity which is traded on day T it will take 3 days for change of ownership to reflect in depositories book of records. If the record date is on 5 of June ex date is 3 June.
2. Depository communicates the ex date, record date and the terms of the corporate action to all the depository participants (DP's) and the custodians. Depository will also inform the DPs / custodians about the no-delivery period as announced by the clearing corporation / clearing house and the procedure to be followed.
3. Process 3 & 4. On receipt of information about the book closure/record date, the DP/custodians will take care :

- To notify its participants of terms of corporate action.
- To update the changes in tax status, bank details, change of address etc. in the beneficial owners' accounts well in advance of the book closure/record date.
- To clear positions in all the clearing accounts by transferring the relevant securities to relevant beneficiary accounts well in advance of the book closure/record date. The balances lying in the clearing accounts are reported to corporation/Registrar & Transfer agent (R&T) as transit account position.

5. Depository/Custodian will provide the details of the beneficial owners and their holdings as on the EOD of the record date or the EOD on the business day prior to commencement of book closure to the corporation/R&T agent.
6. The Corporation/R&T agent will provide the relevant options to the shareholders through the custodian. Custodian can employee 3rd party service provider (henceforth service provider) for processing of proxies and hence the corporation/ R&T will contact service provider.
7. Service provider informs Custodian about the proxy and collects the required information (beneficiaries name, address, holding information) from Custodian
8. Service provider will distribute the proxy forms to the beneficial owners and collects their options. For example if the corporate action is for choosing between a stock dividend and a cash dividend, Service provider would collect the required forms from corporation/R&T agency, contact the beneficial holders based on the information from Custodian, and get their option.
9. Service provider communicates the data that it has collected from the beneficial owners/clients to the corporation.
10. The Corporation/R&T agent based on the communication received from the service providers/custodians/ investor communicates the results of the corporate action to the depository/custodian/service providers. One such result would be the provision of allotment details and the date on which the necessary credit entries are to be made in the accounts of the beneficial owners (referred to as execution date) to depository.
11. Custodian communicates the details of cash transfer/stock as may be required (for rights issue, security conversion) to the corporation.
12. Depository will perform the necessary bookings and the relevant credit entries are booked in the master file on the execution date on the basis of information provided by the corporation.
13. The depository also communicates the same to the custodian (Custodian)
14. The custodian reconciles receipt against entitlement, breaks out and credits individual distribution to its clients/beneficial holders.
15. The DP will give the statement of holdings and transaction statement to the beneficial owners/custodians, giving the updated positions after the corporate action.

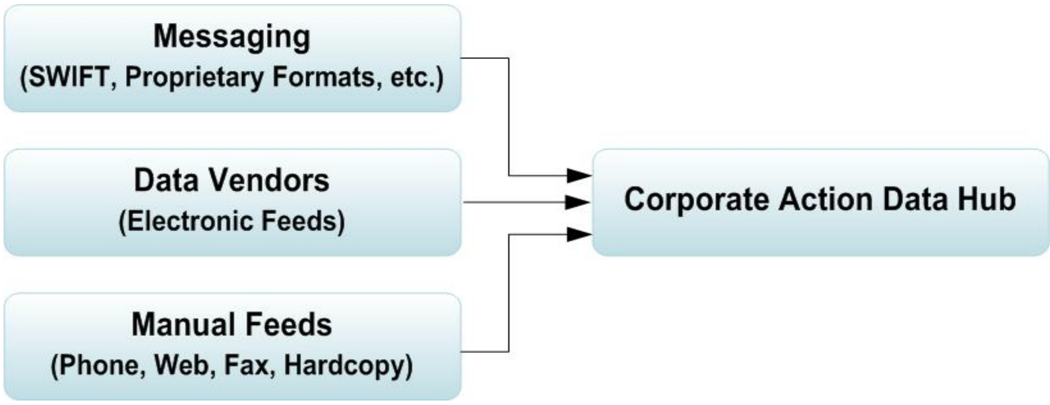
3.2 Corporate Action Processing – Manual Vs Automation

3.2.1 Manual Processing

Corporate actions range from simple dividend and interest declaration to more complex reorganization notices, rights issue and tender offers. The chain of events that lead a corporate action information move back and forth from one entity to another involves enormous length of time and processing capabilities on part of the entity that has to process any entitlement. Managing corporate actions is traditionally a manually intensive operation, processing a large amount of information from multiple sources in multiple formats.

Announcement data is not always standardized and can be sent on a random basis. Also in today's manual corporate actions environment, it is common industry practice to allocate funds to cover losses associated with corporate action mistakes. Significant potential liability and risks exist for failure to handle the processes effectively and efficiently.

Corporate Action: Information Flow



3.2.2 Automated Processing

In the present scenario, the entire corporate action chain originating from the Issuer or Agent and until reaching the shareholder or fund manager is currently mixed with less automation or even no automation. This may be due to cost of automating the CA process can be substantial. However, the need for efficiency has never been greater, especially as the industry moves toward Straight-through-processing (STP). Increasing regulatory compliance, higher volumes, complexity of processing, consolidation of international markets and extended product ranges will ensure automation of corporate actions processing will be key differentiating service factor. Also, those companies that process thousands of corporate actions on millions of records worldwide would like to benefit greatly by automation.

One of the major barriers to corporate action automation has been the lack of standardized messaging formats for the communication of actions and instructions. In order to rectify this issue, SWIFT has released a set of standard messages related to corporate actions using a messaging format known as ISO 15022. (This topic is dealt in great detail in the subsequent chapter). In addition, DTCC has also been active in promoting solutions to help standardize and centralize corporate actions information and messages. In this regards, DTCC has launched two services namely Global Corporate Action Validation Service and Global Corporate Actions Messaging Service.

Securities Services Firm should have clear and unambiguous processing systems and application to assist users with the automation of a quality corporate actions solution, the process flows include:

- Grouping of specific event types to establish key processing decisions
- Identification and capture of specific features required to correctly process actions in each event grouping
- Ability to determine mandatory and optional actions at the appropriate point in the process to facilitate informed business decisions
- Guidance on how to treat regional differences in events presentation

Automation from data capture, data scrubbing, data normalization, and the creation of a single complete record for each through the internal decision making process, to the ultimate settlement of the transaction can help mitigate the financial risks involved.

4 SWIFT in Corporate Actions

4.1 SWIFT messaging standards used in processing Corporate Actions

After the settlement and custody of securities, the major process for a custodian involves the management of Corporate Actions (CA) and their effect on customers' safekeeping accounts. In recent years, the processing of corporate actions has become increasingly visible, because of the risks involved and the degree of manual processing required.

S.W.I.F.T. messages are identified in a consistent manner. They all start with the literal "MT" which denotes Message Type. This is then followed by a 3 digit number. The first digit represents the Category. A category denotes messages grouped together because they all relate to particular financial instruments or services. The second digit represents the Group denoting that the messages are related to similar parts of a transaction's lifecycle. The last digit is the Type and denotes the individual message.

SWIFT's corporate action messages are designed to reduce the risks involved, by providing for:

- the unambiguous reporting of the nature of the event
- the options available to the shareholder, response deadlines
- the specific impact on a safekeeping account

Currently under ISO 15022 following is the sequence of the Corporate Action messages exchanged between the Account Servicer and the Account Owner in case of a Corporate Action.

- MT564 – Corporate Action Notification provides the Account Owner with details of a corporate action event along with possible elections and entitlements available to the Account Owner. It can be sent as a preliminary advice and subsequently replaced by another MT564 with complete or confirmed information.

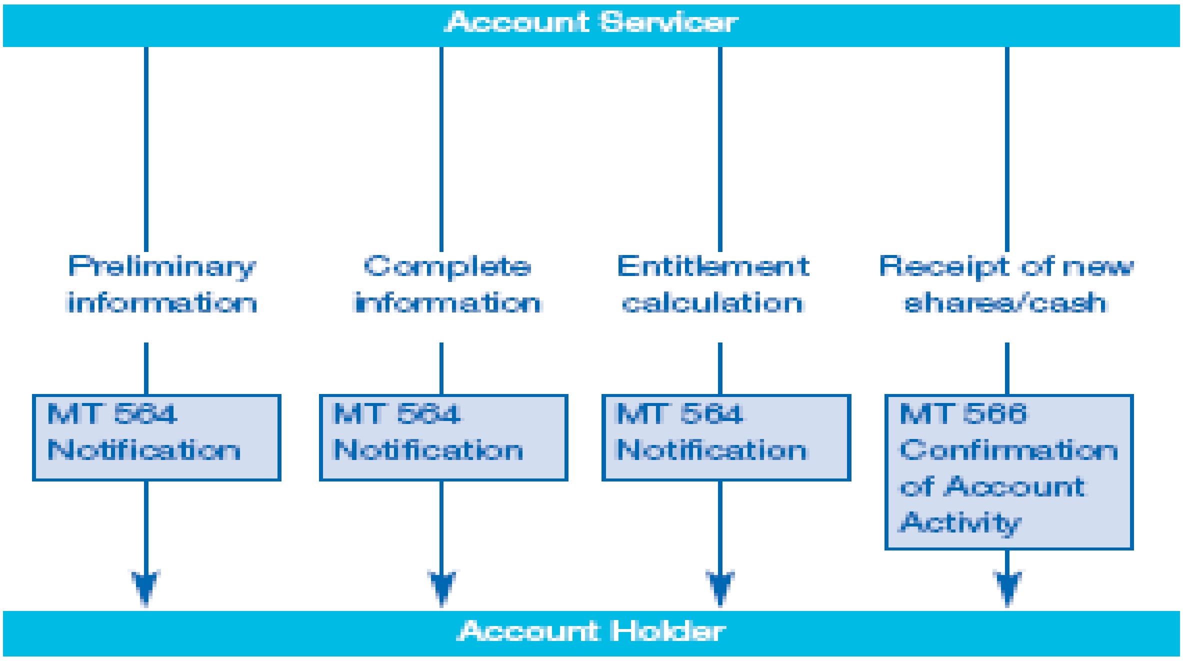
- MT565 – Corporate Action Instruction provides custodians with instructions on how the account owner wishes to proceed with a corporate action or proxy voting event. Instructions include investment decisions on the exercising of rights issues and cash dividend reinvestments and decisions on the conversion or tendering of securities.

- MT566 - Corporate Action Confirmation used to confirm to the account owner that securities and/or cash have been credited/ debited to an account as the result of a corporate event.

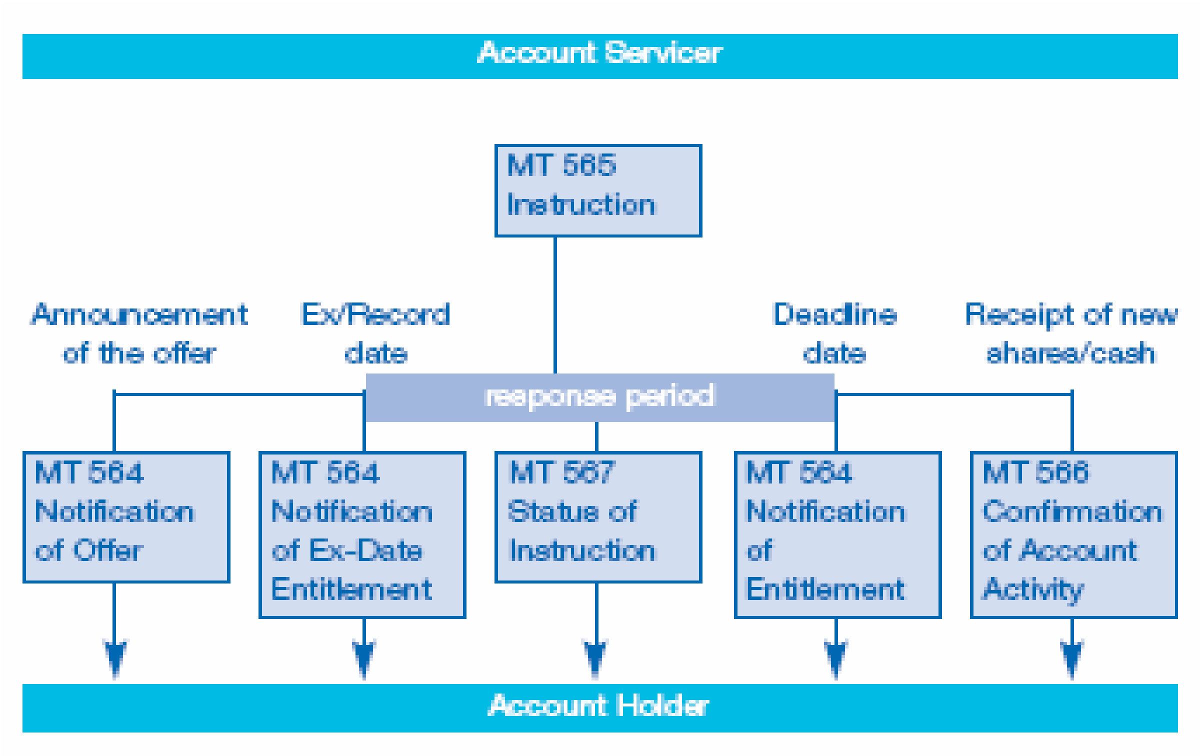
- MT567 - Corporate Action Status and Processing Advice used to advise on the status, or a change in the status, of a corporate action or proxy voting event previously instructed by, or executed on behalf of, the account owner.

- MT568 - Corporate Action Narrative used to provide complex instructions or narrative details relating to a corporate action event.

The chart below shows the SWIFT message flow of a mandatory corporate action event and Cash Dividend as an example.



The chart below shows the SWIFT message flow of a mandatory with option and voluntary corporate action event and Rights Issue as an example.



The following sections give a deeper look into the SWIFT messaging types that are used by the Account Servicer intermediaries and account owner to send

4.1.1 MT 564 Corporate Action Notification – Announcement

Introduction

Unlike other securities markets processes that are initiated as a result of a tangible transaction or instruction, CA events are a direct result of either a company's strategic policies or the effect of market trends on a company.

Consequently, the corporate action label covers a wide spectrum of business scenarios and processes that are difficult to standardize, for the following reasons:

- the number of different types of events that come under the corporate action umbrella: SWIFT has identified over 60 types of corporate action events
- the variation in the relevant information pertinent to each type of event
- the same event or corporate action having market-specific processing or local market variations
- local markets may use alternative names for the same corporate action event

Purpose

MT564 provides an Account Owner with the details of a corporate action event. It may also include possible elections or options available to the Account Owner. The MT 564 can initially be sent as a preliminary advice, and subsequently replaced by another MT 564 with complete or confirmed information. The message will also be used to provide the Account Owner with a calculation of the impact a corporate action event will have on a safekeeping, or cash, account, for example, entitlement calculation.

Players

This message is sent by an Account Servicer to an Account Owner for which it services a securities safekeeping account.

The Account Servicer may be:

- a local agent servicing an account on behalf of a global custodian customer
- a sub-custodian servicing an account on behalf of its global custodian
- a custodian

  Servicing an account on behalf of:

  – An investment management institution

  – A broker/dealer

Other functions

The MT 564 may also be used to:

- request the cancellation or the withdrawal of a previously sent corporate action notification
- re-send a corporate action notification previously sent
- provide a third party with a copy of the message

Special Features of a CA message

- ➢ Multiple accounts - The MT 564 CA Notification provides a custodian with the facility to announce an event together with all accounts that hold a security impacted by a corporate action. The account information sequence will allow the Sender (which could be a sub-custodian or DTCC) to repeat each account number, and the underlying balance of securities held by each account. One announcement per Account Owner may be sent, even if many accounts are involved in an event.

This feature helps the custodian in sending various messages to all the safekeeping account because of the complexity of multiple sequencing, entitlement messages, detailing cash and securities calculations, must be sent based on a one-account-per-message basis.

- General announcement - The MT 564 CA Notification allows a custodian to send a general announcement to each Account Owner, without providing further details on individual safekeeping accounts. This feature is to be used for preliminary announcements only, where complete details are not yet available.

- Balance of securities - All corporate action messages allow flexible reporting of underlying securities balances. The objective of this functionality is to segregate an underlying balance according to the status of the holding. The Account Servicer can provide further details to the Account Owner on pending transactions and indicate if a balance is eligible or not eligible to participate in an event. It can also be used to advise whether a balance is blocked, on loan, or if a registration status would affect eligibility to participate in an event, for example, shares held in street name.

- Default option/standing instructions – When an event has more than one election possible, an Account Servicer can indicate the option that will be selected by default, if an instruction is not received from the Account Owner. Another flag will allow the custodian to indicate that standing instructions will be applied to select a specific option.

- Dates and date codes – The variety of scenarios supported by the corporate actions messages requires a flexible approach to dates. While there are many date qualifiers, the use of dates in any given scenario will be limited. A Corporate Action scenario has been explained in the following sections.

  There are also two codes that can be used in lieu of an actual date. Rather than omitting a date from the message, Account Servicer's are encouraged to use the code word UKWN to indicate critical dates are unknown at the time a message is sent. The second code word OPEN will be used to indicate that a deadline to respond to an offer will remain open until further notice.

- Rates and ratios – The generic field, Rate, allows the Sender a structured way to indicate a wide variety of rates and ratios used to make entitlement calculations for a specific event. The basis on which a rate is expressed is described within the definition of the qualifier. For example, a rate can be expressed as a percentage, for example, tax rate or based on a cash amount per share, for example, dividend rate.

  The basis for ratios is also defined by the qualifier description. Most ratios will be used for events such as rights issues and stock splits. Read the definitions carefully to determine the order of the ratio and to make sure numbers are not transposed, for example, 1 for 2 rather than 2 for 1.

- Linking messages and references – The ISO 15022 SWIFT securities messages provide a linkage sequence that will enable a Sender to link a message to one previously sent (previous reference), or to a message sent by another institution (related reference).

Messages are also linked through a master corporate action reference that remains unique throughout the duration of the event.

- Intermediate securities – In the MT 564 CA Notification, the Intermediate Securities Sequence was created for events that credit securities to a safekeeping account before an Account Owner has an opportunity to make a decision. The Intermediate Securities Sequence is used in rights issues where a custodian confirms that rights are posted to a safekeeping account. Other fields in this sequence indicate whether rights are tradable, the date they were credited to the account, and the duration of the trading period. Events that credit securities to an account representing an entitlement, for example, Netherlands coupon payment, French dividend options, also uses the Intermediate Securities Sequence.

- Details sequence versus options sequence – The MT 564 contains two sequences with many of the same fields, for example, dates, period, rate, price:
  - Sequence D, Corporate Action Details, is used to convey all details relevant to the event in general
  - Sequence E, Corporate Action Options, is used when the details are relevant to the specified option only

  For example, a voluntary event offers the shareholder a choice of two options. If the response deadlines on one option are shorter than the second, the CA Options Sequence must be used to indicate the deadline dates specific to each option. For most mandatory events where a shareholder is offered one choice only, the CA Details Sequence will be used to indicate all dates, periods, rates and prices relevant to the event.

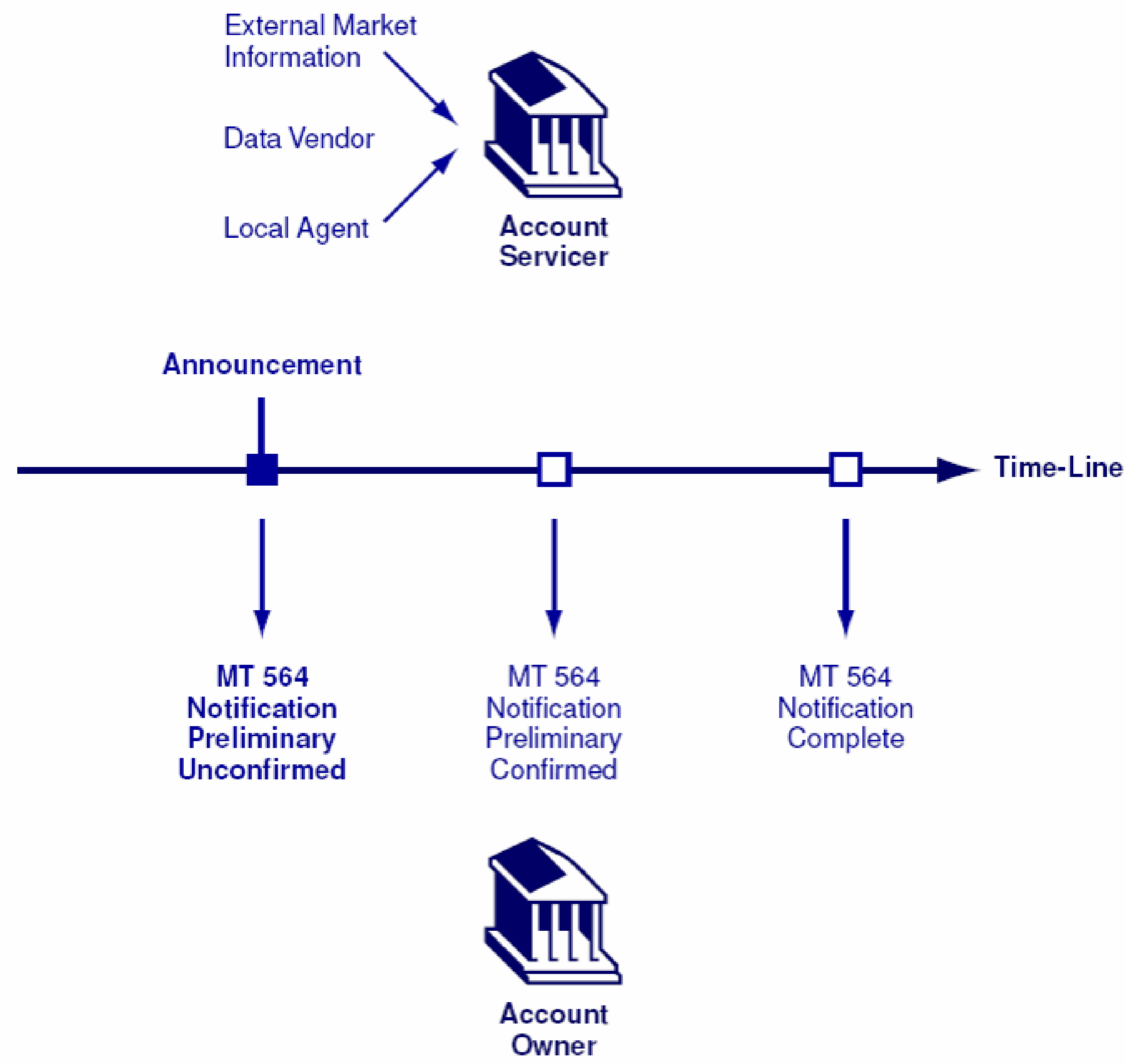
- Amounts - The MT 564 and the MT 566 offer the Sender the opportunity to specify a variety of cash amounts. The objective of the amount qualifiers is to provide details of the individual components of a cash posting. For example, the calculation of the net posted amount can be displayed by showing the original gross payment, taxes and any charges. The Receiver or Account Owner will therefore be able to reconcile the individual components to ensure all calculations were performed accurately. Further qualification of cash amounts remains optional, whereas the actual cash amount posted to an account will always be mandatory.

  Other qualifiers will indicate amounts resulting from events such as capital gains distributions, market claims, or the portion of a cash redemption that represents a premium.

Preliminary to Confirmed Announcements

An Account Servicer can send a preliminary announcement about any forthcoming event and not necessarily wait for the confirmation of an event and then report as confirmed announcement to the Account owner. In such a case where the Account Servicer sends a preliminary announcement, the status of the new message will have a message type that is shown as unconfirmed. The status of such a message type is quite significant. Even when all the details of the confirmed message are ready and some missing, the Account Servicer sends a replace message as confirmed which is related to the earlier unconfirmed message. When all details are complete a final message advising the Account Owner that are details are completely furnished, for example, Payment Date.

Below illustration shows the timeline for MT 564 Corporate Action Notification - Announcement



4.1.2 MT 565 Corporate Action Instruction

Introduction

The Account Servicer will have previously informed the Account Owner of the corporate action taking place via an MT 564 CA Notification.

According to the event type (as explained above), the Account Servicer may require an MT 565 CA Instruction.

Purpose

To provide the Account Servicer with instructions on how the Account Owner wishes to proceed with a corporate action event. Instructions include investment decisions regarding, for example, the exercise of rights issues, the election of stock, or cash, when the option is available, and decisions on the conversion or tendering of securities.

Players

This message is sent by an Account Owner to its Account Servicer.

The Account Owner may be:

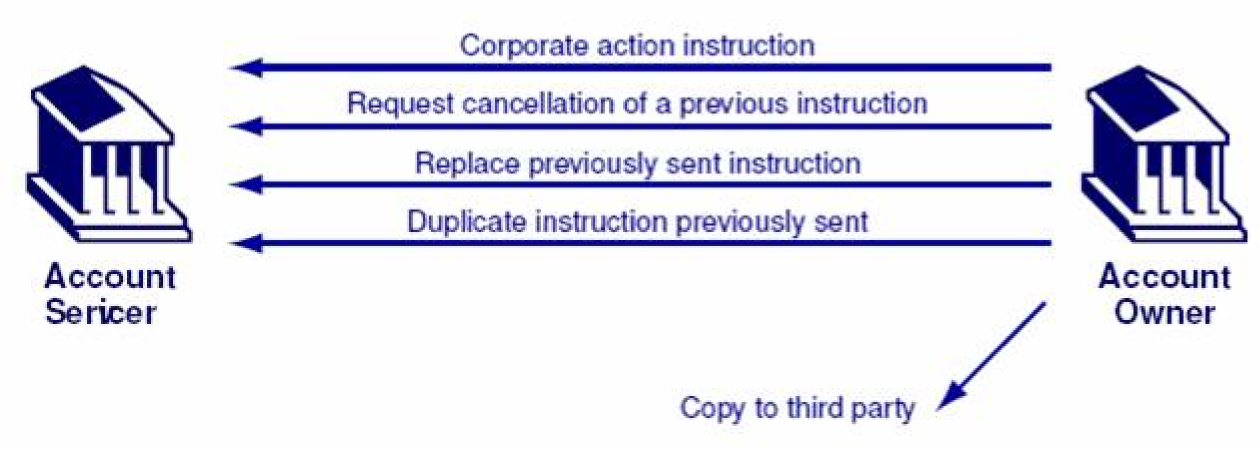
- a global custodian which has an account with a local agent or sub-custodian
- an investment management institution which has an account with a custodian
- a broker/dealer which has an account with a custodian

Other functions

The MT 565 may also be used to:

- request the cancellation of a previously sent corporate action instruction
- re-send a corporate action instruction previously sent
- provide a third party with a copy of the message

Below illustration shows the use of MT 565 Corporate Action Instruction



Types of event

There are two types of event that require an instruction:

- a mandatory event with options, which requires the Account Owner to send an instruction to the Account Servicer expressing its decision on the option it would prefer to take
- a voluntary event, where the Account Owner sends an instruction indicating whether it wishes to participate in the event

It is common practice for an Account Servicer to remind the Account Owner that a deadline is approaching, when no instruction has been received. The MT 564 CA Notification is used for this purpose.

Investment decision

It is also important to understand the implications of the investment decision requirement, as a failure to respond may be interpreted as a decision itself.

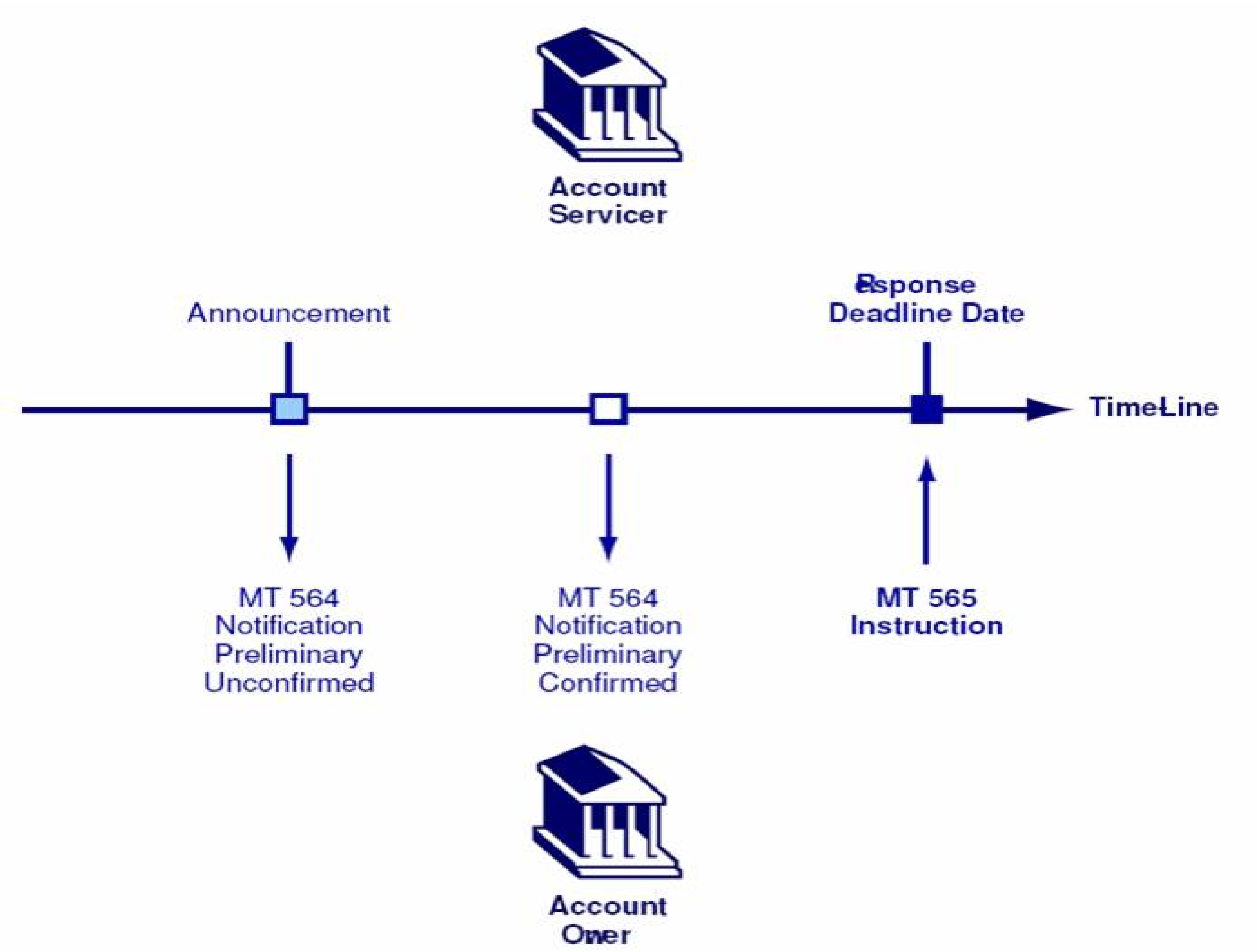
In the event that either the instruction is not received before the response deadline date or no instruction is received at all, the following may occur:

- In a mandatory event, if no instruction is received by the Account Servicer, it may default the Account Owner to a specific option. For example, in the case of a dividend option, if an Account Owner does not respond by the deadline date, the Account Servicer may award cash as a default option
- In a voluntary event, if no instruction is received by a deadline date, an Account Owner may forgo its opportunity to participate in the event.

Therefore, to prevent ambiguity about the Account Owner's intentions, it is good practice to respond to the MT 564 CA Notification, where an instruction is required.

Note: if no instruction is received, through the use of a flag, the MT 564 CA Notification allows the Account Servicer to indicate which option will be selected by default.

Below illustration shows the timeline for MT 565 Corporate Action Instruction

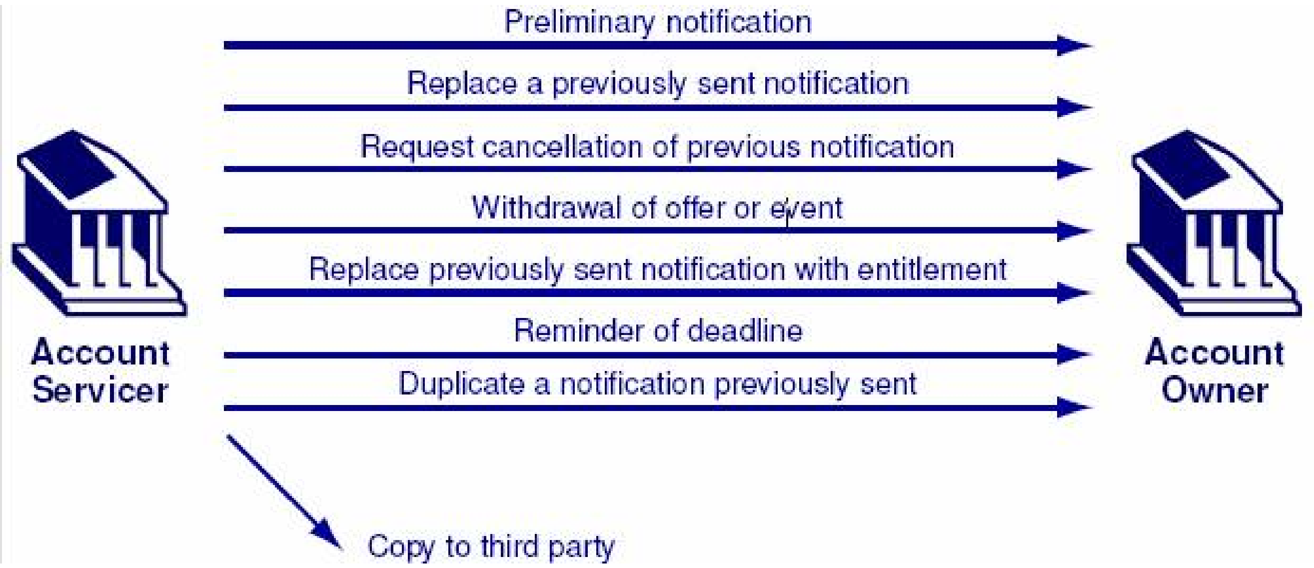


4.1.3 MT 564 Corporate Action Notification – Entitlement

Explanation

On the cut-off date to determine whether securities purchased will be eligible for an event (the Ex Date), the Account Servicer will send an MT 564 CA Notification with entitlement information to the Account Owner. By this time the Account Owner could have sent to the Account Services an instruction, MT565, or not

Below illustration shows the use of MT 564 Corporate Action Notification

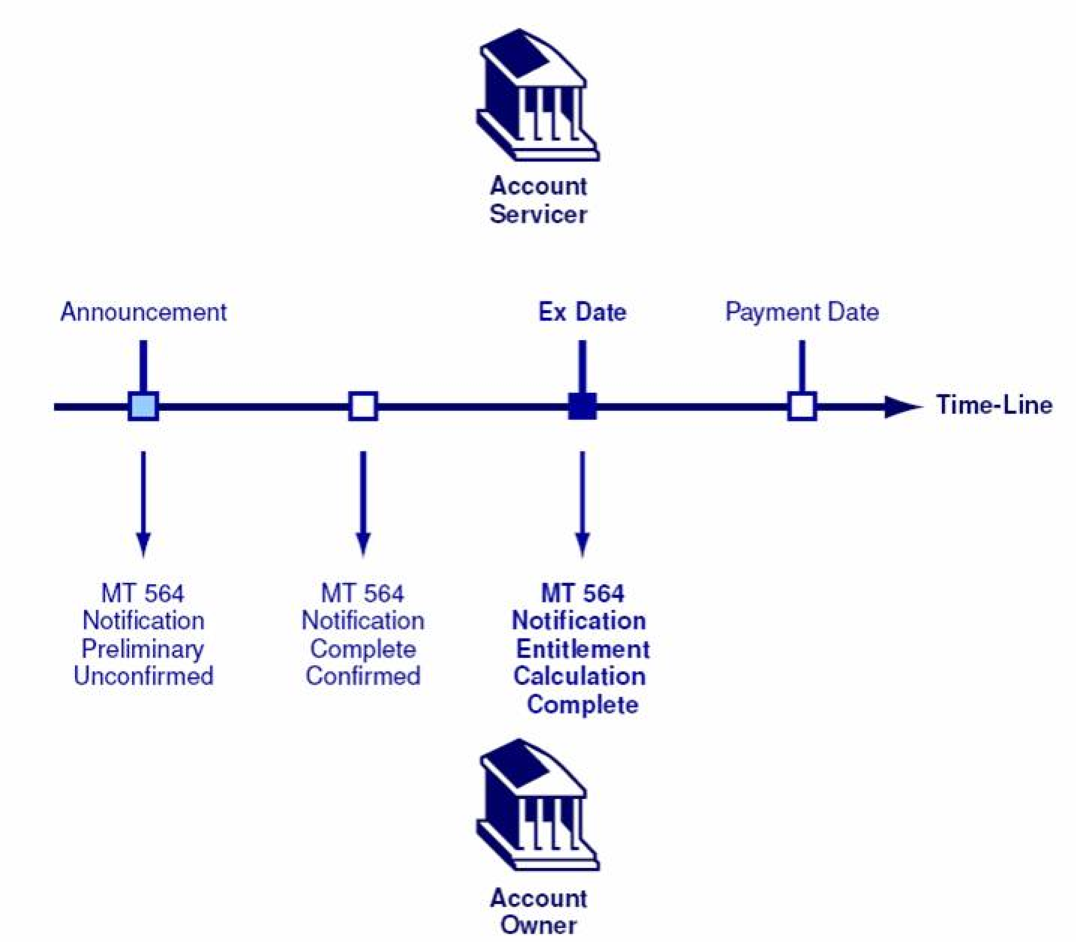


According to the corporate action event type, the MT 564 entitlement calculation will specify the impact to the safekeeping account and/or the cash account based on:

- the number of underlying shares held by the Account Owner
- the payment ratio and the terms of the offer (whether this is in the form of rights, shares, cash or options)
- the option selected by the Account Owner

The function of the MT 564 message will be to replace with entitlement information and the processing status field will shown that the entitlement notification is complete, thus indicating that all the relevant details have been finalized. The message will also contain the expected impact on safekeeping and cash accounts as a result of the event.

Below illustration shows the timeline for MT 564 Corporate Action Notification – Entitlement



4.1.4 MT 566 Corporate Action Confirmation

Purpose

To confirm to the Account Owner that securities and/or cash have been credited/debited to an account, as the result of a corporate action event.

Players

This message is sent by an Account Servicer to an Account Owner for which it services a securities safekeeping account.

The Account Servicer may be:

- a local agent servicing an account on behalf of a global custodian customer
- a sub-custodian servicing an account on behalf of its global custodian
- a custodian

  Servicing an account on behalf of:

  – An investment management institution

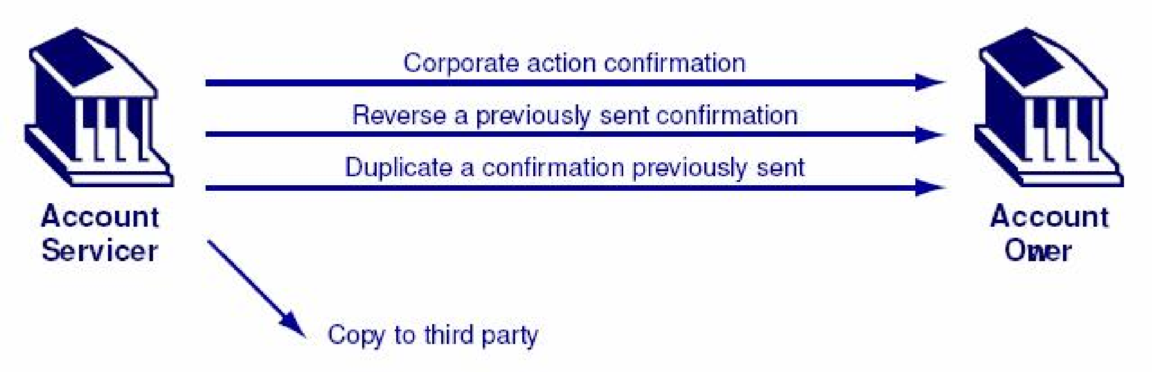
  – A broker/dealer

Other functions

The MT 566 may also be used to:

- reverse a previously sent corporate action confirmation
- re-send a corporate action confirmation previously sent
- provide a third party with a copy of the message

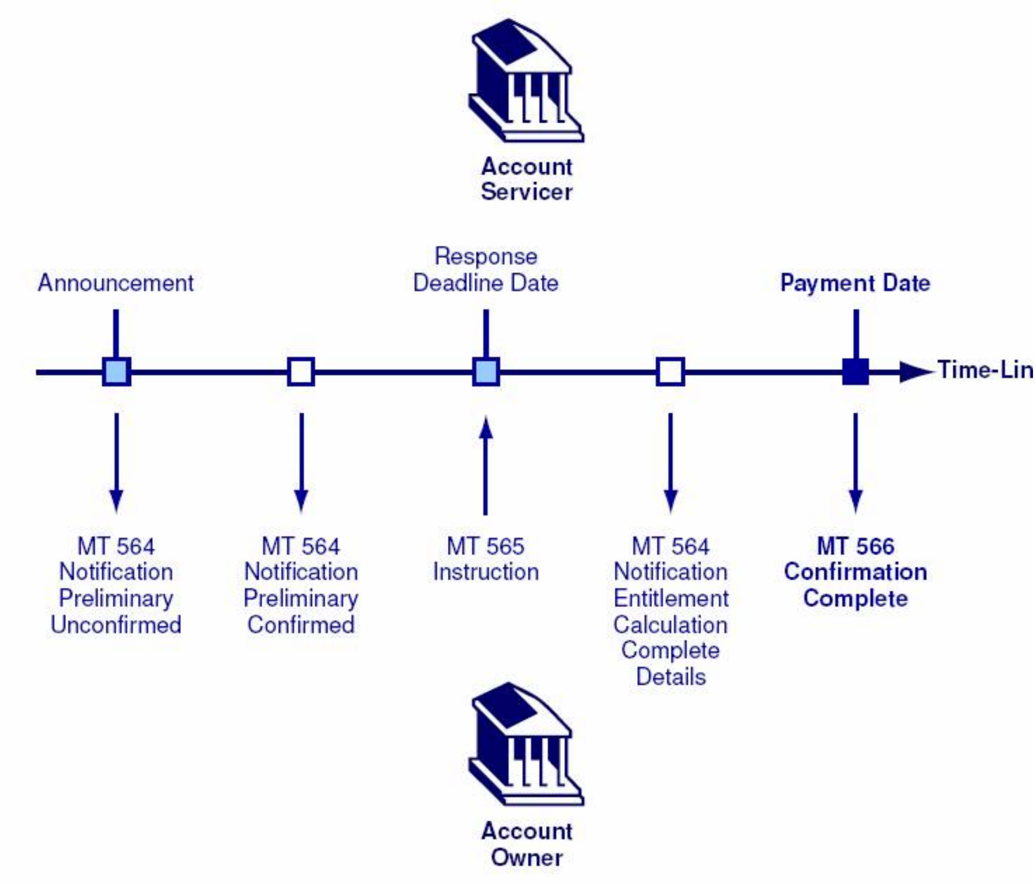
Below illustration shows the use of MT 566 Corporate Action Confirmation



Using the MT 566 CA Confirmation

Confirmation that an event has been completed will be sent from the Account Servicer to the Account Owner via an MT 566 CA Confirmation. This message will only be triggered by actual postings to an account. The MT 566 will confirm that the appropriate adjustments to the safekeeping account have been effected.

Below illustration shows the timeline for MT 566 Corporate Action Confirmation



4.1.5 MT 567 Corporate Action Status and Processing Advice

Purpose

To advise the status, or a change in status, of a corporate-action-related transaction previously instructed by, or executed on behalf of, the Account Owner. This will include the acknowledgment/rejection of a corporate action instruction or the acknowledgment /rejection of a request to cancel an outstanding instruction. It may also be used to provide the reason a corporate action event has not been completed by the announced payment dates.

Players

This message is sent by an Account Servicer to an Account Owner for which it services a securities safekeeping account.

The Account Servicer may be:

- a local agent servicing an account on behalf of a global custodian customer
- a sub-custodian servicing an account on behalf of its global custodian
- a custodian

Servicing an account on behalf of:

– An investment management institution

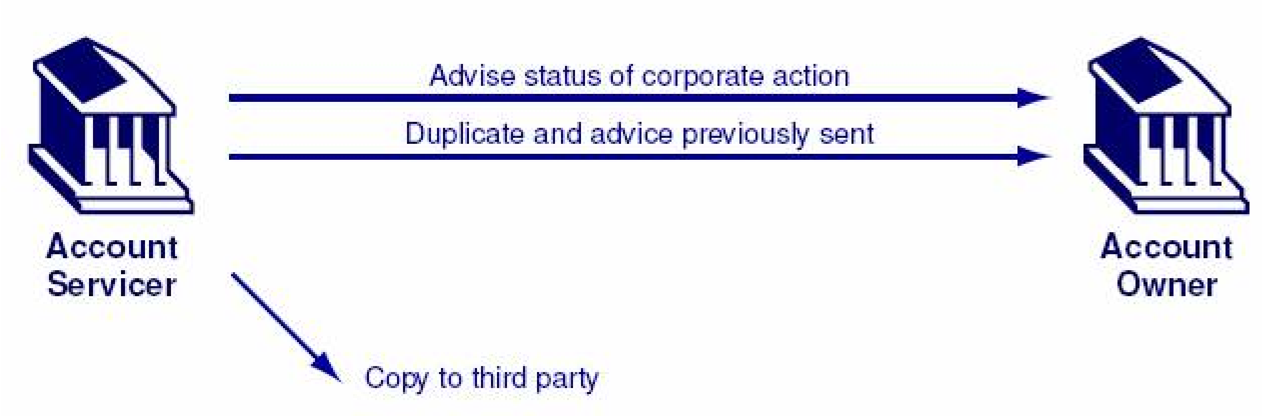
– A broker/dealer

Other functions

The MT 567 may also be used to:

- re-send a corporate action status previously sent
- provide a third party with a copy of the message

Below illustration shows the use of MT567 Corporate Action Status and Processing Advice



Using the MT 567

The MT 567 CA Status and Processing Advice may seem to have limited use within the requirements of corporate action processing, because within a Trade Initiation and Confirmation (TIC) and Settlement and Reconciliation (S&R) transaction, the need for status and process tracking is more apparent. A pending trade can always be attributed a status, for example, the reason that it is still pending; whether matched, unmatched, or a future settlement. In contrast, corporate actions do not follow such a structured process.

Some rules

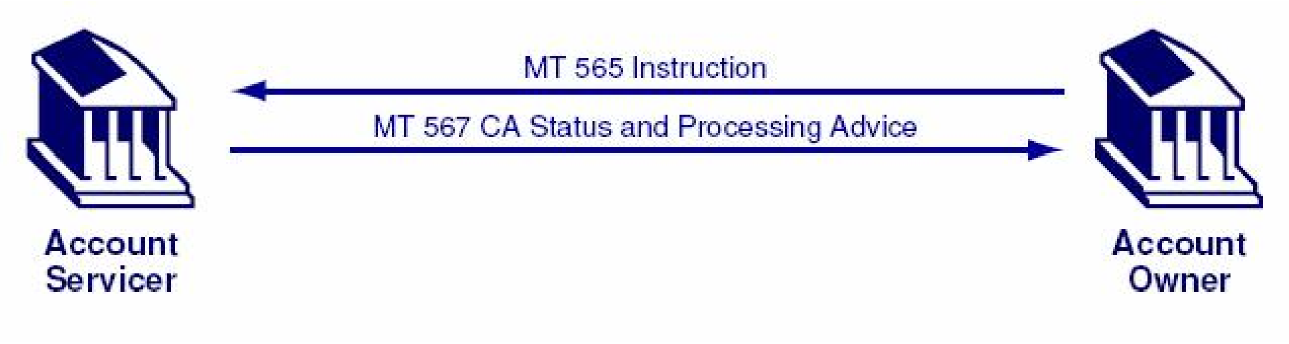
For example, once an MT 565 CA Instruction has been sent from an Account Owner to an Account Servicer stating a requirement to participate in an event, this instruction will be carried out. It is unlikely that structured status codes could be used effectively prior to completion.

In certain circumstances, however, the Account Servicer will have a requirement to send an MT 567 CA Status and Processing Advice to an Account Owner.

These are:

- to acknowledge the acceptance or rejection of an instruction
- to acknowledge the acceptance or rejection of a cancellation
- to advise an Account Owner of a delay in payment by an issuer, or to provide an explanation for an event not being processed, or completed, by the effective date
- To advise an Account Owner that there will be a problem in executing an instruction, for example, insufficient funds or insufficient securities.

Below illustration shows the MT 565 Corporate Action Instruction and a related MT 567 Corporate Action Status and Processing Advice



4.1.6 MT 568 Corporate Action Narrative

Purpose

To provide complex instructions or narrative details relating to a corporate action event.

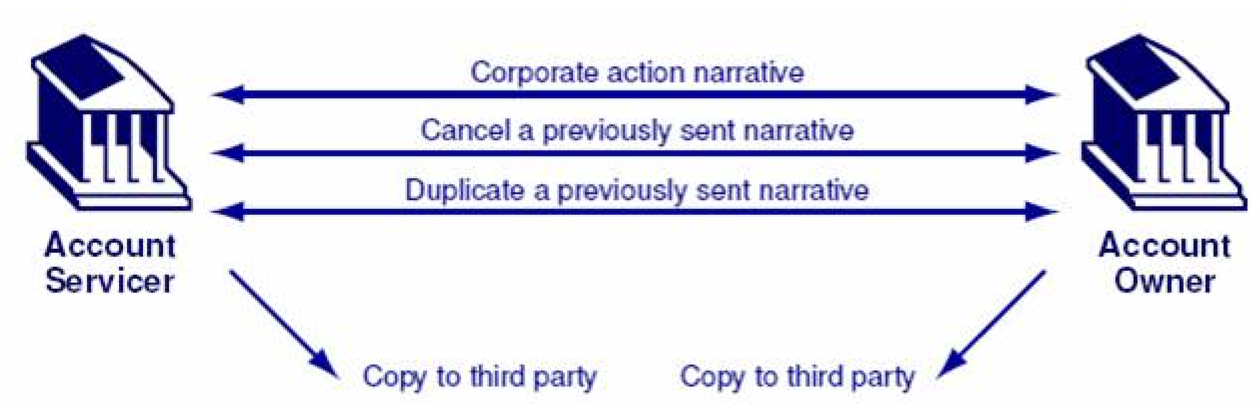
Players

This message is sent between an Account Servicer and an Account Owner for which it services a securities safekeeping account.

The MT 568 may be sent between:

- a local agent and its global custodian customer
- a sub-custodian and its global custodian customer
- a custodian and its investment management institution customer
- a custodian and its broker/dealer customer

Below illustration shows the use of MT 568 Corporate Action Narrative



Other functions

The MT 568 may also be used to:

- cancel a previously sent corporate action narrative
- re-send a corporate action narrative previously sent
- provide a third party with a copy of the message

Using the MT 568

The MT 568 CA Narrative message is designed for extremely complex and detailed events that require a large field for narrative and unstructured information. The MT 568 can be used to convey information to, or from, either party - the Account Owner or the Account Servicer. The MT 568 has been created as a solution to the difficulties of using the MT 599 Free Format, where the message size restrictions inhibit the use of large amounts of free text.

The replacement of the MT 599 by the MT 568 for narrative corporate action information aims at improving the routing of corporate action messages to the correct destinations, providing a more efficient delivery system for the receiver. It must be noted however, that the MT 568 is NOT designed to be used in lieu of structured messages such as the MT 564 - 566 for common events.

4.2 Scenarios in Corporate Action Processing

Introduction

Due to the diversity of corporate actions in general, the application of the ISO 15022 message types to corporate action events may seem a challenging task. Some of the scenarios have been explained here with an example of a specific event related to each category of Corporate Action

Mandatory Corporate Action without Option	Dividend Option
Mandatory Corporate Action with Option	Merger with Option
Voluntary Corporate Action	Bond Redemption (Voluntary redemption)

4.2.1 Mandatory Corporate Action without Option – Dividend Option

Introduction

The first example illustrates the messages used for the notification, instruction, entitlement calculation and confirmation of a dividend option, an event where the distribution of a dividend to shareholders is with the choice of payment method. The shareholder must choose the form of payment - stock, cash, or both.

Scenario

Scenario details

Situation	Dividend Option
Issue name	Glaxo Wellcome
Terms	Final net dividend of GBP 0.0153 per share, OR one ordinary share of 10p for every 37 shares held. Elections cannot be made on holdings of less than 37 shares. Elections which give rise to fractional entitlements will be rounded down to the nearest whole multiple of 37 shares; the net cash dividend of GBP 0.0153 will be paid on the remainder of the holding.
Title	GB0007123466 Glaxo Wellcome 10p
Relative details and dates	Ex date - 01 September 2005 Relative details and dates Record date - 07 September 2005 Response deadline 15 September 2005 Market deadline 25 September 2005 Dividend pay date - 02 October 2005 Dealings in scrip shares expected to commence - 02 October 2005

Transaction narrative

The European Equity Fund (A/C 98-0112441-05) has an underlying balance of 80,000 shares settled in its safekeeping account. The account has a pending transaction to receive 20,000 shares. The shares were purchased prior to ex date and are therefore eligible for the dividend.

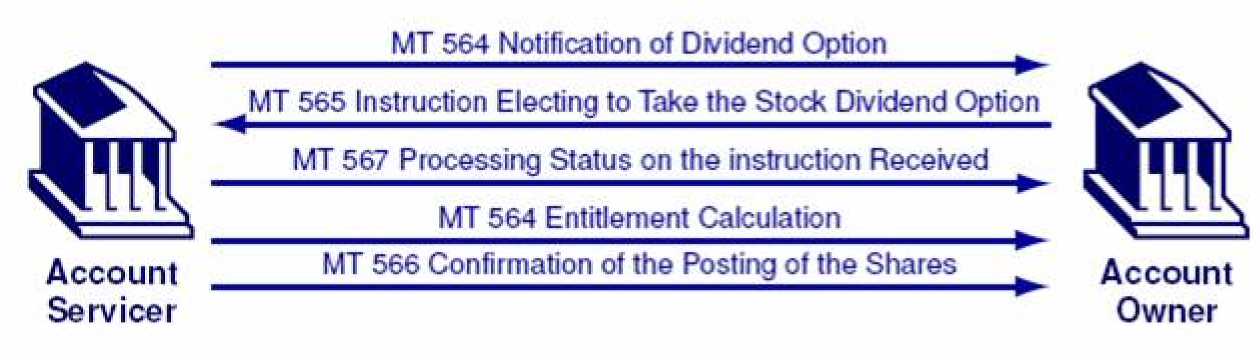
Instruction narrative

The European Equity Fund will elect the cash option for the entire eligible balance.

The above sets the business scene. The application of the event to the corporate action message or series of messages is achieved by using MTs 564, 565, 566 and 567:

- MT 564 for notification of the dividend option
- MT 565 for the instruction of options to be taken
- MT 567 for the processing status on the instruction received.
- MT 564 for the entitlement calculation
- MT 566 to confirm the action resulting from the stock dividend

Below illustration shows the SWIFT messages flow for a Dividend Option scenario



4.2.2 Mandatory Corporate Action with Option – Merger with Option

Scenario

This example illustrates the messages used for the notification and confirmation of a corporate action merger.

Scenario details

Situation	Merger with Option
Issue name	FMC Gold Inc. ISIN US3024941094
Terms	Shares of FMC Gold will be exchanged with shares of Meridian Gold Inc and/or cash. Incase the Account Owner does not send the instruction; the default option set by the Account Services is shares of Meridian Gold. The shareholder will receive 1 share of Meridian Gold and or USD 0.02 for every share of FMC Gold or a combination of both
Critical dates	General meeting date - July 24, 2005 Cash payment date - July 31, 2005 Release date of new security - August 22, 2005 Shares available for sale - August 22, 2005 Effective date of merger - July 31, 2005

Transaction narrative

FMC Gold Inc. (ISIN US3024941094) and Meridian Gold Inc (ISIN US5899751016) have agreed to a merger. Shares of FMC will cease to exist, and will be exchanged for shares of Meridian Gold, together with a cash disbursement. ABN Amro Omnibus account has a position of 135,000 shares of FMC. The New York Stock Exchange has announced the date of the merger will be July 31, 2005.

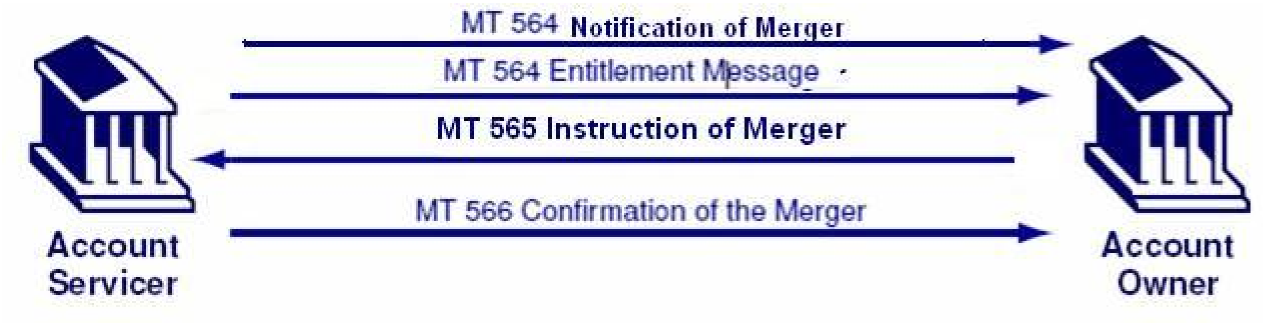
The application of the merger event to the corporate action message, or series of messages, is achieved by using the MTs 564 and 566:

MT 564 for notification of the merger

MT 564 entitlement message

MT 565 for instructions related to entitlements

MT 566 for confirmation of the merger



4.2.3 Voluntary Corporate Action – Bond Redemption

Scenario

This example illustrates the messages used for the notification and confirmation of bond redemption.

Scenario details

Situation	Bond Redemption
Issue name	ABB Finance Inc 6.8% due October 20, 2005 ISIN XS0037583977
Terms	Bond will redeem 100% of par in EUR.
Critical dates	Redemption date - October 20, 2005 Payment date - October 20, 2005

Transaction narrative

A bond issued by ABB Finance will mature and be redeemed at par, or 100% of nominal face amount. The participant account owned by Deutsche Bank (a/c 56344) holds a face amount of EUR120,000,000 in this bond issue.

The application of the bond redemption to the corporate action message, or series of messages, is achieved by using the MTs 564, 565 and 566:

- MT 564 for notification of the bond redemption
- MT 565 for instruction to bond redemption
- MT 566 for confirmation of the bond redemption

5 Global Vs Local CA - Role of a Sub-custodian

A sub-custodian is an agent bank / clearing bank hired by a custodian to maintain security and currency accounts in the sub-custodian's market location, which is the location where the custodian does not have a presence. Sub-custodians perform all required trustee/custodial services based on local market practices.

The sub-custodian bank communicates directly with the clearing broker to settle trades and confirm their execution. The sub-custodian also communicates trade information and other relevant market information back to the trustee/custodian.

Primary custodians often establish a network of sub-custodians to increase their presence throughout the international marketplace. A diverse network of sub-custodians offers clients the global environment required to handle international investment decisions.

Sub-custodians, who form the bedrock of the global securities business, are often hidden to the end users of custody services. But they deliver the products and services that enable investors to manage the risks and reap the rewards of cross-border investing.

Investing in overseas markets is becoming routine, thanks to the efforts of sub-custodians, who work closely with local clearinghouses and depositaries around the world to handle transactions and supply securities services. Meanwhile, emerging markets are making foreign portfolio investors feel more welcomed by upgrading trading infrastructures and eliminating regulatory barriers as more and more local market participants are seeking to adopt international standards and to invest outside of their home market. In the US market, sub-custodians are discussing ways to immobilize a growing range of sophisticated instruments, such as asset-backed securities, by making them depository-eligible.

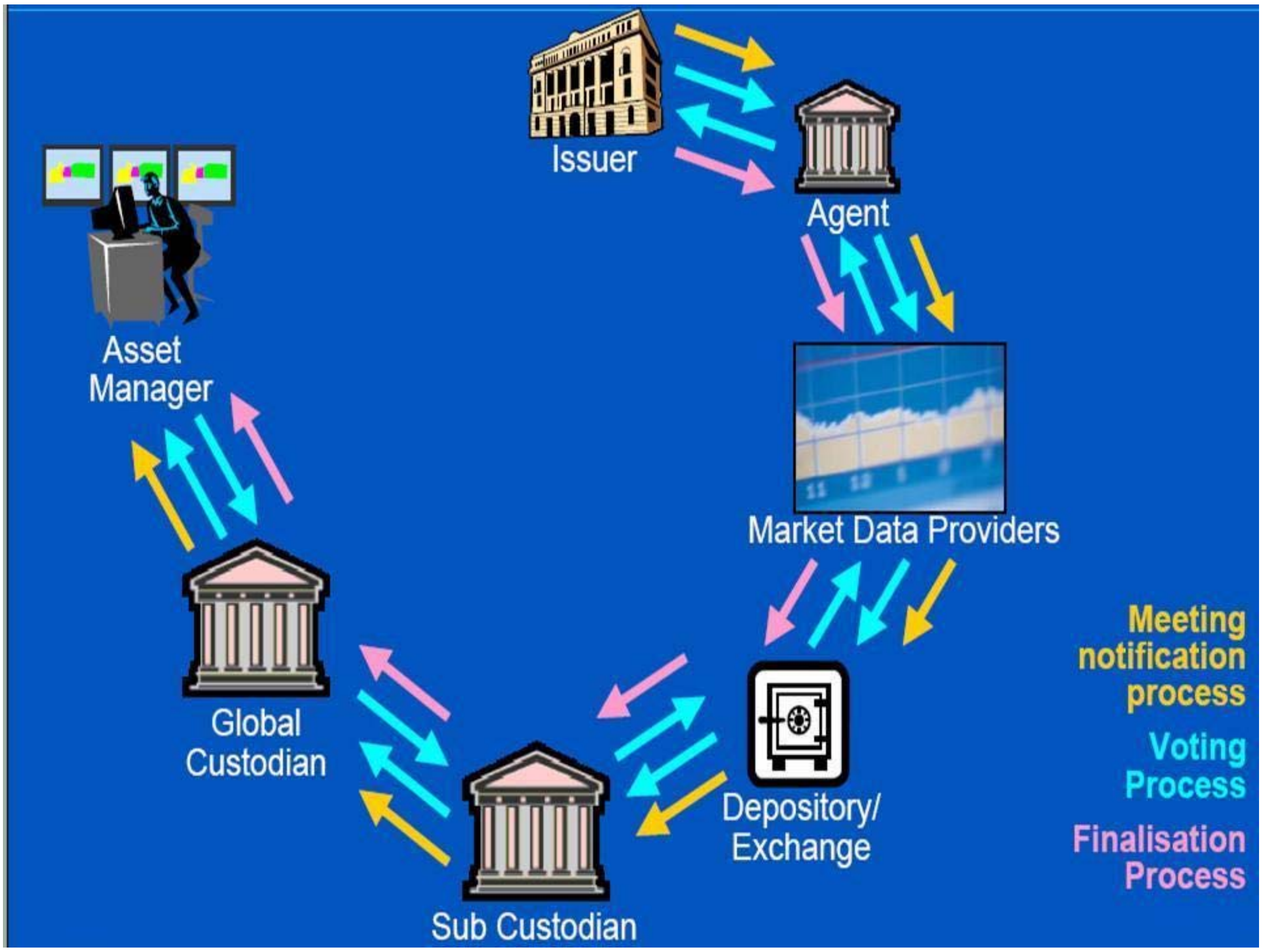
In addition to the individually appointed local market sub-custodians, there are two internationally-recognized settlement facilities. They attempt to standardize individual local market practices and provide a book-entry settlement environment, where physical settlement of local securities becomes transparent to the participant trust company (PTC), e.g., Mellon Trust, State Street.

The two major international settlement facilities include:

- Euroclear
- Cedel

When the settlement location decision has to be made, advisor and/or client make the decision as to whether local sub-custodian or an international settlement facility should be used for trade settlement. Custodian will inform to the sub-custodian to ensure that the appropriate entity carries out the settlement and safekeeping functions.

Below picture shows the information flow through a custodian in Proxy Voting as a Corporate Action Type



Issuer
Agent
Asset
Manager
Market Data Providers
Global
Custodian
Depository/
Exchange
Sub Custodian
Meeting
notification
process
Voting
Process
Finalisation
Process

6 Potential breakdowns in a Corporate Action process flow

Until recently Corporate Actions processing has been deemed too complex and too diverse to successfully automate. A lack of standardization in Corporate Actions messaging formats has led many financial institutions to focus their resources on areas where efficiency gains could be made more easily, for example trade confirmation, settlement and reconciliation.

Processing failures can arise anywhere in the corporate action chain, and all market participants run the risk of failures, due to two factors:

– *Errors in the downstream flow of information* — there are no standard way in which events are announced by issuers; there is no single securities identification system that is universally accepted; different information sources are often inconsistent; and processing details and terminology are often specific to a particular market or financial instrument. The result is that accurate information on corporate actions is difficult to obtain. Moreover, since each party in the chain is responsible for getting the information right, considerable resources are spent on various, often duplicative, external data sources and internal data 'scrubbing' efforts;

– *Errors in the upstream flow of instructions* — the sheer number of different financial intermediaries (custodians, fund managers, broker/dealers, and depositories) involved in any one event requires that many instructions be delivered for each corporate action. This complex chain of communications (with most instructions delivered via phone, fax, telex or unformatted email, and processed manually) can cause a domino effect of potential error and loss if information is misinterpreted or mishandled. The more intermediaries in the chain, the tighter the deadline for the ultimate decision-maker, since each intermediary sets its own deadline to allow sufficient time to handle the instruction — this, too, increases the scope for failure.

Despite the obvious cost and risk advantages delivered by an automated solution, it is understandable, given the astronomic costs that can be attributed to just one mistake on a Corporate Action. Each work flow has to be fool proof to ensure that every possible precaution is taken to safeguard against missed, delayed or incorrect data entering the processing lifecycle. Errors are identified and corrected at the earliest possible stage, so as not to impact downstream processing, an example of this being unresponded rights.

6.1 Failures in the information flow down the chain

Custodians will receive the information on the corporate action from the CSD or registrar if they are registered as the (nominee) owner of the security, or from a sub-custodian if they are not directly registered as owner. Fund managers typically receive the information both from data vendors and from the custodians who safeguard the securities in question. For any single security, a fund manager may receive notices from several different custodian firms if that same security happens to be managed on behalf of different clients who each have appointed different custodians for the safekeeping function.

Obtaining accurate information on corporate actions is difficult for various reasons—there is no standard way in which the events are announced by issuers; there is no single securities identification system that is universally accepted; and the processing details and terminology are often highly specific to the particular market or financial instrument. (For example, what is described in the UK as a one-for-one share distribution, whereby holders of a security receive one new share for each share held, is known as a 'two-for-one' stock distribution in the USA) The precise details of an event may be altered at some stage in the process (e.g., if a takeover bid is modified. In addition, corporate actions are themselves multi-dimensional, so the total number of possible corporate actions is very high. This makes standardization to enable automatic information processing fundamentally complex and difficult. It is therefore not surprising that the different information sources used by firms in the chain may be inconsistent and not standardized. In addition to the information on the corporate action itself, there can be inaccuracies in the information that custodians send to the next participant in the chain (whether another custodian or a fund manager)—i.e., information on the implication of the corporate action for the stock position of that next participant. This is because the custodian may not always have fully up-to-date information on the exact stock position of that next participant because, for example:

1. The next participant has just engaged in trading or stock-lending activity that has not been fully settled or notified to the custodian (in which case, the custodian is not responsible; the delay in settlement is simply an inefficiency in the system); or
2. The custodian has not fully updated the positions of the different clients in its omnibus accounts for the particular security (which may reflect some inefficiency on the part of the custodian).

Current custom and practice mean that responsibility for failures in the information flow usually cannot be passed on to the direct source of the information. Typically, the contractual relationships between links in the chain require the party providing the information to make best efforts, but the accuracy of the information passed on is not guaranteed. Third-party data vendors are normally exempt from liability for providing inaccurate information.

Registrars/agents, CSDs and custodians also do not normally accept liability for inaccuracies because they simply pass on the information as they receive it.

Thus, ultimately, each party in the chain is responsible for getting the information right. This is why the industry spends considerable resources on various, often duplicative, external data sources and on internal data 'scrubbing' efforts. These resources represent inefficiency in the system. In addition, the need to interpret, and act upon, corporate action information may lead to reputation risks to intermediaries. Firms that set themselves up as being fully informed run a strong reputation risk if they get it wrong and subsequently have to compensate their clients.

The costs attached to this risk are difficult to quantify, but, because of the potentially high visibility of errors, the reputation risk may well be greater than the economic importance of the specific corporate action where the mistake was made.

6.2 Failures in the instruction flow up the chain

Failures can also arise in the instruction flow back up the chain, either between parties at different layers of the chain, or within a firm in the chain. For example, a certain instruction from a fund manager to a custodian may not be processed accurately, or may reach the custodian after the set deadline. Likewise, the portfolio manager within the fund management firm may not notify its decision to the corporate action team in its own back office in time.

There is ample scope for such failures to arise somewhere in the chain at some point in time, for various reasons:

- The sheer number of different custodians, fund managers and investors involved in any corporate action means that there is necessarily a large number of instructions for each action;
- The fact that most instructions are sent via fax, telex or unformatted email, and processed manually, means that any of these instructions has some potential for misinterpretation or mishandling;

- The more intermediaries in the chain, the tighter the deadline for the ultimate decision maker, since each intermediary will set its own deadline to allow sufficient time to handle processing and communicate the instruction;
- Fund manager decisions are sometimes changed before the deadline, and the custodian will receive a second instruction in relation to the same client, which further complicates the process. Fund manager decisions may also be left until very close to the deadline because some trading activity is undertaken in response to the announcement;
- The method by which a specific corporate action is finally acted on is not itself standardized (at least not in an electronic form). This reflects the diversity of possible actions involved and the existing restrictions applied to issuers/registrars in what constitutes a decision on which they have to act. Often, a physical paper form supplied by the registrar must be returned correctly completed and officially stamped.

In practice, the liability (and hence costs) for these processing failures is usually borne by the market participants where the failure arises. This participant will usually have to incur the cost of compensating the client for the losses incurred, or the cost of re-establishing the position in which the client would have been, had the instruction been processed correctly. For example, if, for a scrip dividend, the investor (or its portfolio manager) opts for cash, but due to an error by the fund manager or the custodian, the investor ends up with the extra shares, the cost by the party responsible for the error would basically be the loss incurred when selling the stock for cash after the event, potentially at a lower price.

In some cases, the liability or responsibility for the mistake may be less clear-cut—for example, where the fund manager altered its original instruction to the custodian just before the deadline.

In most cases, some form of settlement is reached between the parties involved.

The above-described direct risks of failure are to some extent 'zero-sum'—i.e., the loss to one investor (or intermediary) of being in the wrong position (e.g., receiving shares instead of cash for a scrip dividend) may be a gain for another investor or intermediary. However, the upside will have often been spread across a large number of market participants where each made a very small (and possibly unobservable) gain, while the downside falls upon one or a few participants and is therefore much more visible. In addition, there is a net cost to the financial system as a whole; namely, the additional transaction costs incurred in correcting the failure, which, from an economics perspective, is an inefficiently incurred cost. In other words, corporate action failures make the overall financial system less efficient.

6.3 Controls and procedures to improve the overall work flow

This concept starts at the data cleansing stage – with the cross checking of several feeds and continues throughout the Corporate Actions lifecycle through reconciliation checks on positions and entitlements, claims tracking and diary / workflow capabilities; all designed to pro-actively highlight potential issues before they can become a problem.

In order to appreciate the risks and costs associated with Corporate Actions, it is important to understand the complex processes that are involved. By dissecting a straightforward voluntary event we can establish the methods for processing an event manually. To do this, we must focus on the key areas of event processing which are:

- Data capture
- File management
- Reconciliation
- Communication (inbound & outbound)
- Response management
- Entitlement management
- Claims management

We shall now look deeply into each one of these potential operational risk areas in detail

- Data Capture

The quality and timely delivery of information is critical for effective Corporate Actions processing. Prior to reviewing the information received, the CA analyst must first establish whether there is an interest in the event by determining whether a position is held by the firm or its clients. To achieve this, the analyst must interrogate numerous internal position keeping systems to determine who, if anyone, will need to be informed of the event.

Currently information is received from a variety of sources, including dedicated CA information providers and a network of global custodians. The information is delivered via SWIFT or phone, website, fax and is then printed, sorted, distributed and reviewed by individual processors. This task alone is time consuming and exposes an organization to operational risk due to the sheer volume of work and the repetitive nature of the task.

- File Management

With the event information and client list in hand, the Corporate Actions analyst will create a physical file to store all documentation relevant to the new event. All critical dates for the event, such as the Ex Date, Record Date, Instruction Deadline, Call Date and Pay Date will need to be written in a physical diary or input into an electronic diary. This file must then be stored locally. There is no backup file for contingency purposes, which exposes the organization to tremendous risk in the event of a disaster recovery situation.

- Reconciliation

Each position, for each event, has to be reconciled to ensure that internal positions agree with the balance of client positions and the position held on deposit externally. Each business unit has specific methods of reconciliation that they will need to perform. Many organizations rely on spreadsheets and complex formulas to ensure accurate calculations of positions and entitlements are achieved.

- Communication

Once the client base has been determined, clients are informed of the details of the event and the position they currently hold. Communication with internal and external clients is periodic. As the event progresses through its natural lifecycle, clients are kept informed of the status of the event and the impact it has on their holding(s). These messages are typically drafted by hand - either as a fax, a letter or an email - and submitted manually. The majority of events will require little or no client intervention and positions will be updated and clients advised as and when required. There are events, however, where client participation is critical to accurate processing of the event.

- Response Management

Elective events present the most risk to manual organizations. Corporate Actions analysts are required to establish a requirement from the clients for the entitlement. Typically analysts will converse with clients by telephone, often past the stipulated deadline for the instruction to be received, to determine their specific requirements for this event. They will then collate all client instructions for delivery to the depository or custodian to action.

- Entitlement Management

Assuming all elections have been made on time and acted on appropriately, the Corporate Actions analyst is then required to amend internal positions to reflect entitlements as they are to be received. If there are costs involved, these will need to be factored into any adjustments made to the positions.

Additional reconciliation is then required to determine where the due entitlement, payable from the depository on the Pay Date of the event will be distributed and where funds, if any, will need to be collected. For entitlements to be received outside of the depository, entitlement claims will need to be created and distributed.

- Claims Management

The claims management process of any Corporate Action is extremely tedious and time consuming. Claims arise when transactions remain unsettled over the Record Date of an event. On occasion, Corporate Actions related claims can remain unsettled for several years. The Corporate Actions analyst monitors all outstanding claims and periodically issues further claims where an entitlement has not been received.

The ability to track Corporate Actions throughout their lifecycles and set up monitoring processes at critical stages provides another opportunity to identify and correct potential errors, thus reducing risk within the process. Without this approach there is always the possibility of a single point of failure – a point in the process where an omission or an error may be introduced, which goes unnoticed and impacts later processing stages.

Corporate Actions processing is very much a lifecycle based process and is only as strong as its weakest link. A system that is successful in eradicating risk will eliminate single points of failure and provide multiple checks at the riskiest areas.

7 Corporate Actions Processing – Best Practices

The following corporate action best practices will ensure timely, accurate and complete identification of events, timely decisions on voluntary events and timely settlement of all entitlements.

CA Process requirements

Service providers must have a reliable, comprehensive source of information on forthcoming corporate actions. This usually comprises a combination of their sub-custodian network and multiple third party securities data vendors. Information should be matched across two independent sources (subject to the availability of multiple reliable sources). Validated events data must be matched to a client's holdings and each event tracked through to confirmation that the resulting entitlement has been received for the client and settled. The process should include pre-matching of entitlements (whether or not this is standard market practice) with exceptions pursued vigorously as settlement date approaches. Ideally, the entire process should be automated, with manual effort focused on resolving exceptions. Events must be notified to clients - and event status reported - with clarity and timeliness, preferably in real time.

The processing of mandatory events (e.g. bonus issues) should be straightforward, as no decision is required on the part of the client or its fund managers. Voluntary events (e.g. rights issues, takeovers) can be considerably more demanding and must be tightly managed. Errors and omissions can lead to significant losses, so reliability and accuracy are crucial. The options available to the client, which may be non-standard, must be communicated clearly and promptly. The service provider must be pro-active and able to act in a short time-span, as certain events (such as a hotly contested takeover) may entail a client making their decision at the very latest opportunity. Deadlines should be set according to the nature of the event and, as expiration of the deadlines approaches, there should be a series of communications: reminders, warning messages, telephone follow-up and, ultimately, escalation within the client organization.

Outlined below are best practices that will help address the industry's challenges and contribute to improvements in the way corporate actions are processed globally.

Standardize Corporate Action Announcement Information

Standardizing the information included in corporate action announcements is the first step in bringing greater STP to corporate actions. Accurate and timely information is critical to all industry participants to help them manage the risk and cost associated with corporate actions. Standardizing announcements eliminates the variability and risk associated with the individual interpretation of announcement documentation, and ensures access to consistent and comprehensive information.

Today, major risks exist in corporate action processing due to the lack of uniformity in the way announcements are made from the initial dissemination point — "at source." DTCC supports the SIA initiative to provide clear and full disclosure of standardized corporate action information in prospectuses and proxies, and ultimately the electronic distribution of this information from the initial source (e.g., issuer, offeror or agent), and the similar effort by ISSA. In the coming years, DTCC will help the industry achieve these important objectives by supporting the adoption of standardized announcement requirements, promoting these standards with issuers and offerors, and acting on behalf of the industry to implement these new standards as the normal way of processing corporate action transactions.

Automate the Creation and Dissemination of Announcements

Automating the handling of announcements reduces manual, error-prone processing and minimizes the chance of delayed or miscommunicated information. This has two aspects — automating the creation of the announcement and its subsequent distribution through the chain of custodians and to the ultimate investor.

Today, the automated creation of announcements can be achieved through greater centralization and streamlining of processes used in collecting data from various sources to compose an announcement.

In tomorrow's world, standardized announcements should be distributed in automated form directly "from the source." This eliminates both a major source of potential error and significant delays in the onward distribution of information, giving the investor more time to assess and make decisions about the transaction involved.

Promote Usage of Standards and Best Market Practices

Standardizing intra-industry communications and market practices for handling corporate actions is crucial. Standards help back-office operations more effectively process sophisticated financial instruments with unique characteristics, manage global transactions and deal with unexpected increases in volumes. Following best market practices and business usage rules facilitates the receipt and delivery of information, cutting across national, market and legal differences, which today complicate the processing of corporate actions.

Promote Automated Exchange of Instructions

Bringing greater automation to the communication of corporate action election instructions significantly reduces the risk of processing voluntary corporate actions. Several DTCC initiatives are aimed at this, including the Global Corporate Action Hub, as well as efforts to enhance instruction processing.

Eliminate the Use of Certificates in Handling Corporate Action Transactions

Eliminating the use of physical certificates in handling corporate action transactions, where this occurs today, will facilitate streamlined processing, which lowers costs and reduces risks associated with the shipment of certificates. It also provides the basis for immediate distribution of corporate action entitlements to investors. This is an extension of the drive toward dematerializing physical certificates and using electronic ownership records.

Accelerate Automation

Greater automation is essential. The Depository Trust & Clearing Corporation (DTCC), which has been bringing risk reduction and processing efficiencies to the securities industry for more than 30 years, offers

a service that focuses on corporate action announcement information. The Global Corporate Action (GCA) Validation Service, provided through DTCC's Global Asset Solutions LLC subsidiary, gives customers a single source for all corporate action announcement information. It provides brokers, banks and other financial institutions an automated, standardized source of global corporate action announcement information on everything from elective dividends to rights offerings to tender offers to stock splits. The GCA Validation Service operates between the issuers of corporate actions and the various companies and businesses that have to process those actions. It eliminates the time-consuming, manual work associated with "scrubbing" corporate actions data to make sure it's accurate, timely and, consequently, valid.

The service also operates globally. U.S. offices focus primarily on markets in the Americas, while our London service center concentrates on European market announcements and our Shanghai site manages Asian corporate actions. This global footprint permits GCA Validation to "follow the sun," passing the book of transactions around the globe, around the clock. The service's international reach ensures awareness of local market customs and practices, which adds further value in interpreting and verifying the data. GCA Validation is also built to use international ISO data formats and standards.

Collaboration Is the Answer

Reducing the risks associated with global corporate actions is too great and too costly for individual financial institutions to tackle. Rather, it is an industry-wide challenge that will benefit from an industry-wide approach.

This includes working with the sources of the data – the companies announcing the corporate action event – to standardize information and automate processes. We owe it to ourselves and also to the investors we ultimately serve.

8 Corporate Actions Effects on Share Prices

In recent years, there has been considerable interest in the risks associated with corporate action processing. Several industry initiatives have acknowledged the potential impact of this limitation on the risks to which intermediaries and investors are exposed, principally in the operations of the back office. However, market participants are increasingly recognizing the advantage that accurate and timely corporate action information can provide in the implementation of their trading strategies and provision of investment advice to their clients.

Empirical evidence indicates that accurate and timely corporate action information could benefit financial organizations and their customers by improving the effectiveness of their trading strategy and quality of advice offered to their clients.

For example, investors might use corporate actions information to develop strategies that make use of predictable movements in share prices, or take advantage of the ability to predict changes in share price volatility. At the same time, predictable movements in trading activity are likely to provide greater understanding of the trading liquidity that investors can expect to observe on a given day.

Due to their nature, corporate actions are likely to have the most significant impact on share prices and the trading activity of firms' securities on the announcement day. For example, corporate actions often alter firms' future cash flows, and provide new signals about their profitability and changes in financing structure. Furthermore, some corporate action types can affect the value of firms indirectly by, for example, altering trading costs in the secondary markets. The results documented in this report confirm that corporate actions often have significant implications for share prices and trading activity, and provide evidence on the diversity of these implications, depending on the corporate action type.

The following evidence are excerpts from an Oxera study sponsored by DTCC.

An analysis of takeovers, spin-offs, stock splits, exchange offers, and rights issues for a large sample of US (and, in the case of rights issues, European and Asian) firms between 2003 and 2005 has led to the following conclusions.

- Corporate actions have potentially strong effects on share prices and trading activity, although these effects depend on the type of corporate action and the particular point in the corporate action processing cycle.
- Within the corporate action types analyzed in this study, takeovers, spin-offs, stock splits and rights issues appear to have the strongest effects, while exchange offers have only a limited impact.
- In general, the strongest effect is observed on the date on which the corporate action is announced, although record dates and ex dates is also often associated with significant increases in share price volatility and trading activity.

The initiation of corporate actions may have significant implications for the financial risks of market participants. These effects can be explained by the 'economic nature' of corporate actions. In particular, corporate actions often contain new information about the current and expected profitability and growth prospects of firms, or they can result in changes in firms' operations and financial structure. At the same time, corporate actions can constitute a transfer of wealth between shareholders and bondholders, alter trading costs in secondary markets, and have other direct and indirect effects on a firm's value.

For the analysis and empirical evidence that follow, the effects of corporate actions associated with different critical dates (announcement, record, ex dates, etc) are analyzed using three measures.

- **Average share price returns**—average returns around various critical dates provide evidence on the extent to which the particular corporate action type is associated with a positive or negative average share price effect around these specific dates in the corporate action processing cycle.
- **Share price return volatility**—estimation of return volatility around various critical dates provides an indication of the changes in return characteristics and potential risks around specific dates in the corporate action processing cycle.
- **Trading velocity**—estimation of trading velocity (trading activity or trading volume) around various critical dates provides an indication of the extent to which corporate actions alter investor behavior, thereby, among other effects, changing the level of liquidity that investors may experience in the secondary market.

These three facets of 'market conditions' during the corporate action processing cycle may have significant implications for the profitability of certain trading strategies, and the intermediaries' supply of trading services to their clients. Therefore, accurate and timely corporate action information that is available in a user-friendly format might give financial intermediaries and investors an informational advantage that would improve their trading strategies and reduce risks associated with corporate actions.

The study provides assessment of the following corporate action types:

- Takeovers;
- Spin-offs;
- Forward stock splits;
- Exchange offers; and
- Rights issues.

For each corporate action type, the analysis is based on a large sample of US events (the only exception being rights issues, where analysis is based on an international sample comprising events from the USA, UK, France, Germany, Japan, Singapore, and Hong Kong) between 2003 and 2005.

There are various critical dates during each corporate action processing cycle. Table 8.1 summarizes the dates used for the purposes of the analysis carried out in this part of the study.

The ***announcement date*** is the date on which a particular corporate action is announced. The ***record date*** is the date on which the ownership of securities is recorded. The ***effective date*** is the date on which the corporate action becomes effective. The ***ex date*** is the first date on which shares are purchased without the entitlement of corporate action.

Table 8.1 – Summary of dates used for the purpose of the analysis

Corporate Action Type	Announcement Date	Record Date	Effective Date	Ex Date
Takeovers	√			
Spin Offs	√	√		√
Stock Splits	√	√		√
Exchange Offers	√		√	
Rights Issue (Distribution)	√	√		√

Explanation of the analysis –

- Historical daily average share price return for the below mentioned samples has been around 0.14%
- The event is considered to have happened on 0d
- Representation of the analysis –
    - (+++) indicates strong positive change
    - (++) indicates positive change
    - (+) indicates little positive change
    - (-) indicates little negative change
    - (--) indicates negative change
    - (---) indicates strong negative change

Table 8.2 – Effect of Takeover Announcement on share prices

Event - Takeover	Event Related time (event = 0d)	Share price return	Share price return volatility	Trading velocity
Announcement Date	Event Window	(-1d,+1d)	(-1d,+1d)	(-1d,+1d)
		(+++) around 3% - 7.44% for the sample study conducted	(+++)	(+++)
	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(+)	(normal)	(++)
	Post Event Window	(+1d, +31d)	(+1d, +31d)	(+1d, +31d)
		(+)	(normal)	(normal)

Table 8.3 – Effect of Spin-Off Announcement on share prices

Event – Spin-offs	Event Related time (event = 0d)	Share price return	Share price return volatility	Trading velocity
Announcement Date	Event Window	(-1d,+1d)	(-1d,+1d)	(-1d,+1d)
		(++) around 3% for a sample study conducted	(+)	(++)
	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(+)	(+)	(+)
	Post Event Window	(+1d, +11d)	(+1d, +31d)	(+1d, +31d)
		(+)	(+)	(normal or -)
Record Date	Event Window	(-1d,+1d)	(-1d,+1d)	(-1d,+1d)
		(normal or +) around 0.79% for a sample study conducted	(normal)	(+)
	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(+)	(normal)	(normal)
	Post Event Window	(+1d, +11d)	(+1d, +31d)	(+1d, +31d)
		(+)	(normal)	(-)
Ex-Date	Event Window	(-1d,+1d)	(-1d,+1d)	(-1d,+1d)
		(+) around 0.4% - 2% for a sample study conducted	(+)	(+)
	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(-)	(+)	(normal)
	Post Event Window	(+1d, +11d)	(+1d, +31d)	(+1d, +31d)
		(-)	(normal)	(-)

Table 8.4 – Effect of Stock-Split Announcement on share prices

Event – Stock Spilt	Event Related time (event = 0d)	Share price return	Share price return volatility	Trading velocity
Announcement Date	Event Window	(-1d,+1d) (+) around 0.6% - 1% for a sample study conducted	(-1d,+1d) (+)	(-1d,+1d) (+)
	Extended Event Window	(-1d,+11d) (normal or -)	(-1d,+11d) (normal)	(-1d,+11d) (normal)
	Post Event Window	(+1d, +11d) (normal or -)	(+1d, +31d) (normal)	(+1d, +31d) (normal or -)
Record Date	Event Window	(-1d,+1d) (-)	(-1d,+1d) (normal)	(-1d,+1d) (normal)
	Extended Event Window	(-1d,+11d) (-)	(-1d,+11d) (normal)	(-1d,+11d) (normal)
	Post Event Window	(+1d, +11d) (-)	(+1d, +31d) (normal)	(+1d, +31d) (-)
Ex-Date	Event Window	(-1d,+1d) (-)	(-1d,+1d) (normal)	(-1d,+1d) (normal)
	Extended Event Window	(-1d,+11d) (-)	(-1d,+11d) (normal)	(-1d,+11d) (-)
	Post Event Window	(+1d, +11d) (-)	(+1d, +31d) (normal)	(+1d, +31d) (-)

Table 8.5 – Effect of Exchange Offer Announcement on share prices

Event – Exchange Offer	Event Related time (event = 0d)	Share price return	Share price return volatility	Trading velocity
Announcement Date	Event Window	(-1d,+1d) (normal)	(-1d,+1d) (normal or -)	(-1d,+1d) (normal)
	Extended Event Window	(-1d,+11d) (normal)	(-1d,+11d) (-)	(-1d,+11d) (normal)
	Post Event Window	(+1d, +11d) (normal)	(+1d, +31d) (-)	(+1d, +31d) (normal)
Effective Date	Event Window	(-1d,+1d) (-)	(-1d,+1d) (normal)	(-1d,+1d) (normal)
	Extended Event Window	(-1d,+11d) (-)	(-1d,+11d) (normal)	(-1d,+11d) (normal)
	Post Event Window	(+1d, +11d) (-)	(+1d, +31d) (normal)	(+1d, +31d) (normal)

Table 8.6 – Effect of Stock-Split Announcement on share prices

Event – Rights Issue	Event Related time (event = 0d)	Share price return	Share price return volatility	Trading velocity
Announcement Date	Event Window	(-1d,+1d) (-)	(-1d,+1d) (+)	(-1d,+1d) (+)

	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(-)	(+)	(+)
	Post Event Window	(+1d, +11d)	(+1d, +31d)	(+1d, +31d)
		(-)	(+)	(+)
Record Date	Event Window	(-1d,+1d)	(-1d,+1d)	(-1d,+1d)
		(normal)	(normal)	(normal)
	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(normal)	(normal)	(normal)
	Post Event Window	(+1d, +11d)	(+1d, +31d)	(+1d, +31d)
		(normal)	(normal)	(normal)
Ex-Date	Event Window	(-1d,+1d)	(-1d,+1d)	(-1d,+1d)
		(normal)	(+)	(normal)
	Extended Event Window	(-1d,+11d)	(-1d,+11d)	(-1d,+11d)
		(normal)	(+)	(normal)
	Post Event Window	(+1d, +11d)	(+1d, +31d)	(+1d, +31d)
		(normal)	(+)	(normal)

The evidence above shows that the initiation of corporate actions may have significant implications for the financial risks of market participants. The announcement of some of the corporate action types is likely to trigger increased return volatility and predictable trading activity patterns, as well as systematic movements of share prices. Some of these effects can also be observed on the other dates over the corporate action processing cycle (e.g. record and ex dates)

The effects of the corporate action types analyzed in this study can be divided into two categories:

- Direct effects on the cash flows of the firm; and
- Providing signals about the firm's future cash flows.

In addition to the direct effects on firms' cash flows, and providing signals about their current and future profitability, corporate actions can have further impacts on share prices and trading activity. These can include changes in trading costs in the secondary market, the clientele effect of investors, and transfer of wealth between equity and debt holders in the firm.

Corporate Actions, Cash Flows and Value of Firms

Corporate actions often affect firm's operations and their financing structure. To the extent that these changes also affect the value of the firm, announcement of such corporate actions is likely to result in increased share price volatility and trading activity in secondary markets.

One example of a corporate action with clear implications for a firm's cash flows is a takeover. Following the takeover, firms may alter their activities and financing structure, often resulting in cost and/or revenue synergies. For example, acquisitions can create synergies by:

- eliminating staff duplication;
- combining facilities, allowing excess property and equipment to be sold;
- creating economies of scale in purchasing, marketing and research development; and
- reducing cost of capital.

On the day when an acquisition is announced, these implications for firms' cash flows would be (partly) incorporated into the share prices. Although, over recent years, there has been considerable debate about the actual merits of mergers and acquisitions, empirical evidence suggests that, on average, they have a positive effect on the combined value of the two firms.

The value generated in the acquisitions does not, however, accrue symmetrically to the owners of the acquirer and target firm. In particular, takeovers, on average, result in a significant positive impact on the share value of the target companies, while the effect on the value of the acquirer is less clear.

Empirical evidence indicates that public announcements can influence traders' activity by altering their perception of the firm's value, and that the magnitude of this effect is likely to depend on the degree of disagreement between the traders. Therefore, announcements of corporate actions are likely to increase trading activity relative to some period before the announcement, and the magnitude of this effect will depend on the information content of news and uncertainty associated with the interpretation of this information.

For example, if the given corporate action has only a minimal effect on the value of the firm, and this effect is relatively certain, there is likely to be only a minimal increase in trading activity on the day of announcement of the corporate action. At the same time, if the given corporate action has a potentially significant impact on the firm's value, and there is clear disagreement among investors as to the significance of this event, there is likely to be a significant increase in trading activity around the announcement dates.

There are several other arguments regarding corporate actions in vogue in the financial circles like

- Spin-offs can increase the value of the firm through improved managerial incentives.
- Also, rights issues and exchange offers are likely to alter the firm's financial structure, affecting its financing costs and potentially its business strategy.

These corporate action events can therefore have a potentially significant impact on share prices and trading activity on different corporate action dates. The magnitude of the impact would depend on the degree to which these corporate actions alter the firms' cash flows, and whether these events affect the value of firms through other channels (e.g., by providing signals about future cash flows).

As can be seen in all the above examples, corporate action processing cycle can cause a significant impact on share prices and trading activity patterns. In particular, the analysis suggests that critical corporate action processing dates (e.g., the announcement date, record date and ex date) often result in significant alterations in share prices and trading activity relative to the period

Overall, this evidence demonstrates that corporate actions could have significant effects on share prices and trading activity of stocks, and—potentially most importantly—that these effects often emerge in a predictable manner around critical corporate action processing dates. These findings are consistent with the notion that corporate actions provide explicit or implicit new information about the future profitability and risk of companies, as well as resulting in indirect changes (eg, through changes in trading costs) in the attractiveness of firms. It also supports the conclusion that making available to the front office timely, accurate data on even routine corporate actions can help improve trading decisions and strategies made by a firm's trading desk.

9 Trends in Global Corporate Actions

9.1 Corporate Actions with reference to Basel II Operational Risk

A lack of standardization in Corporate Actions messaging formats has led many financial institutions to focus their resources on areas where efficiency gains could be made more easily, for example trade confirmation, settlement and reconciliation.

The regulatory push for more stringent risk management policies and new industry standards have been a key factor in prompting financial institutions to consider automation. In particular, the impending Basel II Accord coupled with a need to contain costs has elevated operational efficiency and STP to top priority. An interesting corollary of automation is that operational risk from corporate actions can be measured more precisely. This will be an important factor in measuring a company's operational risk when Basel II is implemented. This is now a growing concern among many financial institutions that this fact is neglected and shall be core area of risk mitigation, monitoring and control.

The introduction of the new SWIFT ISO15022 messages to replace the old ISO7775 series has provided a framework for automation. Although financial institutions initially focused their attention on implementing the ISO15022 messages for settlement and reconciliation, issues are now being addressed which will enable financial institutions to reap the benefits of these standards for Corporate Actions. With the advent of the new SWIFT messaging standards and the Basel II Accord, Corporate Actions is now, more than ever, entering the domain where automation is not only a realistic option, but is quickly becoming an essential requirement. Any financial institution, regardless of its size or the strength of its balance sheet, can ill afford to spend countless millions of dollars maintaining a predominantly manual Corporate Actions environment.

However, the most pressing drivers behind automation are the sheer levels of risk and cost that financial institutions are exposing themselves to in a manual environment. With Corporate Actions, any financial loss associated with manual error is compounded, as each event has the ability to affect hundreds or thousands of client accounts. The complexity of processing is being further exacerbated by the consolidation of international markets, extended product ranges, and increasing volumes, providing further encouragement for automation.

A brief into Operational Risk in Custodial Services for Basel 2 (New Accord)

Identification of the major risk events for a global custodian can be a major step forward in controlling the risk events. From the below table, it is clear that the main source of risk in Corporate Actions processing stems from the risks exposed in execution, delivery and process management in custodial operations.

Risk Category (Level I)	Risk Category (Level II)	Main Sources of Risk
Execution, delivery and process management	- Transaction capture - Execution and processing - Reporting and instructions - Account management - Vendors and suppliers	- Settlement and market risk - Processing risk - Credit risk - Account management risk

To list down the risks that are specific to the industry, it is useful however to look at the risks from the point of view of the main services provided by the custody industry: trading and settlement, safekeeping and corporate actions, reporting and communications, and relationship management.

Now, we look at the risk source for safekeeping and CA and the suggested control measures for this risk.

Risk Source	**Risk Mitigation and Control**
Safekeeping and CA risk	
Corporate action information inaccurate or incorrect	- Multiple vendors for information with procedures for treatment of discrepancies - Sub-custodians should be responsible and liable for providing data - Pricing comparisons over previous day to check possible corporate actions - Check press and other independent sources of data
Incorrect or late reporting to client for corporate actions	- Robust corporate actions reporting system - STP from notifications received from vendors and sub-custodians to generation of advices for clients - Reconciliation of advices generated and sent
Incorrect or late processing for voluntary corporate actions instructions	- Ensure robust information collection - Ensure minimal manual processing of corporate action advices to client and instructions to sub custodian - Monitor expected versus actual positions
Mismatch between depository and accounts (securities)	- Ensure daily and automated reconciliation - Ensure attention given to exceptions
Processing errors / market fraud	- Organizational procedures and audit checks - 'Dual control' and segregation of duties - System level checks to ensure controls
Contractual income collection	- Agreements should provide for reversal if funds are not received or are different from expected due to tax or other reasons

While the custody business has traditionally been attractive to banks because it is fee-based and volume- scalable, the requirement to set aside capital for operational risks under Basel II will make it imperative for banks to not only re-engineer their processes, but also to take adequate steps to measure, monitor and mitigate operational risks. The ability to leverage emerging technological solutions cost effectively will act as a key differentiator and allow the better managed banks to reduce capital allocations for operational risk.

Custody Loss Event Database

Banks should ensure that all loss event data is recorded in the loss event database. This will be required for maintenance of loss event history that can be used to adjust the models used for risk event simulation and modeling. Regulators will also look at the uses of this data for authorizing the model and economic capital justification. Typical data elements that need to be captured in the loss events database would include:

- Risk category (Basel categories or internal defined categories, at as detailed a level as possible)
- Cause of loss event
- Estimate / actual loss and recoveries
- Business line and geography where loss event occurred
- Operational area where loss event occurred
- Key risk indicators that may have predicted the loss event
- Other significant criteria like date, method of discovery, risk control put in place

9.2 Financial risk associated with Corporate Actions

The growth in the scope and complexity of world financial markets and the globalization of securities investment is transforming corporate actions processing. Traditionally the operational efficiencies at financial institutions has suffered due to the lack of standards across the value chain and manual-intensive back-office process on account of diverse communication channels. This has led to high costs, errors, customer service issues and at the same time missing an event results in "high cost of opportunity loss".

Financial costs are from the direct transaction costs that results from booking trades and technological and intermediary charges. In addition to the direct transaction costs, there is the risk of adverse market movements. If an unnecessary (mistaken) transaction occurs, it can often be unwound by a reverse transaction. If it is assumed that all the information contained in a corporate action announcement is immediately reflected in the market price, the unnecessary transaction and its reversal will take place at the 'correct' prices. Although there may be differences in the price of the security between the first and second transaction, on average these will be neutral. Hence, the average costs of reversing the mistaken trade are limited to the transaction costs, as set out earlier.

If, however, the price reaction to the information contained in a corporate action announcement is not instantaneous, the failure by individual fund managers or brokers to understand correctly the corporate action places them at a systematic informational disadvantage to the rest of the market. This disadvantage means that, if they trade unnecessarily because of the price change induced by the corporate action, the price will have systematically moved against them when they attempt to unwind their trade. Thus, in addition to the transaction costs, the trader will suffer a systematic loss as the market moves adversely, owing to that trader's informational disadvantage.

To incur a loss of this sort, the following conditions would need to be met:

– The corporate action must lead to a change in the price of the security, either at the time of the announcement or when the action has taken effect; and

– In the case of an immediate price change, there must be a period of adjustment (even if very short) during which the security is mis-priced and temporary trading/arbitrage opportunities arise.

It is likely that these conditions will frequently be met in relation to many corporate actions—for example:

– The announcement of a dividend payment of a specific amount payable to shareholders holding securities on a specific date may move the current share price (eg, if the amount differs from market expectations). The dividend payment itself will also cause the share price to fall as it goes ex-dividend. Assuming an average annual dividend yield of 3%, shares can be expected to fall on average by 3% upon going ex-dividend;

– Announcements of proposed mergers and takeovers can sometimes shift the share price by more than 10%. For example, the share price of Walt Disney Co. jumped 14.6% on February 11th 2004 following a takeover bid by Comcast;

– A discounted rights issue is likely to move both the existing share price and, if the discount is significant, change the share price once the additional shares have been issued

Other types of corporate action are also likely to move the share price and to set up dates when a specific share-price movement can be expected, since the economic value of the action transfers from the share to the entity that owned the share on that specific date.

9.3 Complex Instruments

The increasing sophistication of financial instruments adds yet another layer of complexity. For example, asset-backed securities (ABS), collateralized mortgage obligations (CMOs) and other structured securities are fast-growing segments of the debt market, owing in large part to the innovative features they offer market participants. From 2000 to 2002, the principal amount of new ABS and CMO issues coming to market through DTC has grown by close to 95%. The monthly distributions from these issues are much more intricate than regular income payments, reflecting the changing balance between interest income and principal prepayments. As a result, financial institutions must expend greater effort to understand and effectively process these securities.

By some counts, there are more than 100 different event categories. And responding to the messages often requires communicating decisions back through a daisy chain from investors to broker/dealers to asset managers to custodians to CSDs to registrars to issuers. Since few of these intermediaries have fully automated ways to receive or deliver messages, the potential for error is considerable.

Risk of Sub-optimal trading decisions

The information content of a corporate action announcement often represents new information about a specific company, and therefore its market value. The assimilation of this information by investors (or their agents) and other market intermediaries may lead to a change in the valuation of the company or the current share price (or bond price), or both. In addition, the corporate action itself may set up a future date at which the price of the shares (or bonds) will change in a predictable way (for example, when a share goes ex-dividend), or in a less predictable way (e.g., a close vote on a takeover).

Thus, corporate actions create (temporary) arbitrage opportunities for both brokerage and fund management firms trading either on behalf of their investors or on their own (proprietary) account. In this respect, trading desks within brokerage and fund management firms treat corporate action information as any other information of relevance to trading decisions.

In practice, trading desks tend not to rely on the corporate action information chain. This chain is simply too slow in many cases. Rather, information on corporate actions first tends to come through the initial notice of the corporate action in question, possibly in the form of ‘rumors’, which does not yet contain the precise details on the action.

This is the information acted upon by the trading desk in the first instance. Only at a later stage (often a few days later) does the more formal and detailed notice of the action come through, which is relied on by the back office to process the action.

It follows that a failure to understand correctly the corporate action can result in a misevaluation of the security by an investor or an intermediary trading on its own account. As a result, the investor may make trading decisions based on misinformation. Two types of risk are likely to flow from this type of trading: ***transaction cost risk and market movement risk***.

Indirect cost of ineffective corporate governance

Shareholder proxy voting is another example of a corporate action process, albeit slightly different in nature from the more traditional corporate actions. Although the process does not have an explicit financial element, the actual procedure for collecting the votes from the investors is parallel to that used for other corporate actions. In other words, although the nature of the action is different, the processing chain is very similar.

A review of the worldwide shareholder voting processes has revealed that the voting process seems to fail with reasonable regularity. This is an interesting observation given the evidence that traditional corporate actions using very similar processes tend to fail far less often. In other words, the corporate action chain seems to be far better at processing corporate actions that have a distinct monetary value, and therefore liability, attached to them.

Efficient voting procedures are valuable to companies, although the nature of the activity makes it very difficult to quantify the costs from lost votes. As a general rule, voting can be assumed to improve corporate governance—ineffective shareholder voting may enable managers to reap private benefits from the company, resulting in a loss to the shareholders. Therefore, to the extent that good corporate governance has a beneficial impact on the company, improved voting procedures will benefit the shareholders. Empirical evidence has revealed that between 1991 and 1999 the shares of those companies with the highest corporate governance standards produced on average 8.5% higher returns per annum on a risk-adjusted basis, compared with companies with the lowest governance standards.

While voting procedures represented only a very small fraction of the total corporate governance index used in the analysis, the result nevertheless highlights that voting might have an important impact on a company's long-run performance, by inducing improved corporate governance.

The above evidence suggests that corporate votes are valuable to investors. In practice, failures in voting procedures may often have only a very limited and indirect effect on companies' long run prospects. Nonetheless, occasions can be highlighted where failed voting could have had a clear impact; for example, the GlaxoSmithKline vote in May 2003, concerning the directors' remuneration package, was rejected by a very slim majority of 50.72% to 49.28%. In such cases, any lost votes could prove decisive.

Please refer Appendix for examples of risk calculation

10 Corporate Actions Solutions Products

Common-off-the-shelf (COTS)

1. Xcitek

XSP™ or Xcitek Software Plus is the advanced processing software solution from Xcitek®, which is an enterprise-wide, Corporate Actions automation solution for the global financial industry.

Some of XSP's Key Features & Functionalities include:

- Proven, Flexible and Scalable Solution
- Powerful Rules-Based Workflow Engine
- Robust Data Capture and Sanitization Tools
- Multi-Media Notification Management
- SWIFT ISO15022 Compliance
- eTRAN™: Comprehensive Web-Based Notification & Response Capture of Elections
- Complete Entitlement Processing
- Supports 30+ vendor interfaces
- Data scrubbing capabilities
- Risk management identification and reporting
- Historical data archiving
- Exception management
- Real-time event status
- Entitlement calculation and processing
- Reconciliation capabilities
- Standing instructions
- End-to-end process audit trail
- Withholding tax processing
- Transaction level detail
- User-defined event alerts

- Product Overview

XSP is the flagship software solution from Xcitek, the experts in enterprise-wide Corporate Actions automation. Accredited with the SWIFTReady Corporate Actions Label, XSP fully automates the Corporate Actions lifecycle for an area of securities processing that has long been considered one of the most challenging and high-risk operations for financial institutions worldwide. The achievement of this Label, awarded to applications that adhere to a strict set of criteria linked to the support of SWIFT messages and functionality, further validates XSP's status as the global STP solution for Corporate Actions.

XSP delivers the core features and functionalities of Corporate Actions automation including:

Data Management: XSP captures, scrubs and validates Corporate Actions data from more than 30 distinct market data vendor interfaces - in their own proprietary formats or the SWIFT ISO 15022 compliant format - to create the 'golden copy'/ 'composite record'.

Notification and Response: XSP matches events against holdings and transactions on a daily/intra-day basis, generating automated event notifications to, and responses from, decision makers across disparate locations and geographies, according to each user's parameters, preferences and desired notification methods.

eTRAN™ (Electronic Tracking Response and Notification). eTRAN is a comprehensive web-reporting tool, which allows decision makers to receive and review Corporate Actions announcements and submit responses and voting instructions from anywhere with intranet/ internet access.

Entitlements: XSP links to financial institutions' books and records to obtain entitlement and trade activity information. XSP calculates entitlements and integrates seamlessly with internal accounting engines to process the movement of cash or securities.

XSP's powerful rules-based event diary workflow engine manages the completion of each step within the Corporate Actions lifecycle, assigning a task due date, monitoring the completion date and trailing exceptions incurred in the process.

2. SmartStream

SmartStream Technologies offers a fully automated Corporate Actions solution designed with three key principles in mind: cost, time and risk. TLM Corporate Actions is an end to end, rules based system that can be configured to match an organization’s unique workflows, thus avoiding costly and time consuming business process re-engineering. Its modular design is flexible enough to integrate with even the most complex systems environments and interfacing is simple with new data formatting standards. Seamless integration with in-house position keeping applications such as stock lending and book / fund accounting and settlement systems, delivers complete workflow control, transparency within the Corporate Actions environment and effective risk management.

In evaluating the general Corporate Actions process, SmartStream has identified five key areas, which cover the entire front to back process for Corporate Actions, in all related business environments. These key areas are as follows:

- Data capture and cleansing
- Inbound / outbound communication
- Critical date management
- Voluntary response tracking
- Entitlement processing
- Workflow and exception management

Each of these key areas is managed within one or more of the three TLM Corporate Actions products. These products can be implemented to manage a particular functional area, or as a complete end to end Corporate Actions processing solution. These products are as follows:

- Event Management

- Entitlement Processing
- Workflow and Exception Management

Event Management

The Event Management product consists of the following modules:

Data Management

This module accepts data feeds from multiple sources in multiple formats (e.g. financial data vendors, market feeds and custodians). It transforms and stores the data in a normalized event repository, where the events are matched and grouped based on client defined rules.

Data Cleansing

This module allows discrepancies and incomplete data issues to be resolved online by analysts. With TLM Corporate Actions it is possible to define matching criteria for mandatory and optional fields, as well as fields that need to be checked for discrepancy by event and country type. This reduces the number of exceptions requiring manual repair, giving the highest possible STP rates in the cleansing of events and the creation of the Master Record.

Communications

The communication of the cleansed Master Record to downstream systems or clients can be achieved by a variety of methods including proprietary message / file formats, SWIFT message delivery or a web based GUI.

Entitlement Processing

The Entitlement Processing product is designed to work either with the Entitlement Manager or with third party cleansed Corporate Actions information. It uses the event information, downloaded positions (from host systems) together with soft configured rules to generate entitlements. These entitlements are tracked throughout the process and amended as appropriate, in line with any amendments, cancellations or late trades.

Voluntary Response Tracking

For voluntary events, elections can be monitored and chased via the Communication Module, using a web based GUI or via SWIFT. Client voluntary responses are processed against the underlying entitlements and actioned accordingly.

Claims Tracking

The system processes entitlements based on detailed, rather than summary positions. This allows for detailed claims tracking of outstanding trades, borrows / loans.

Workflow and Exception Management

Both the Event Management product and the Entitlement Processing product have built in capabilities for workflow and exception management, including critical date diary processing and alerts.

However, for a truly watertight approach to Corporate Actions processing, there is an additional 'safety net' that can be implemented, either together with, or independently, of the above two products. This is the workflow and exception management functionality of SmartStream's Transaction Lifecycle Management solution – TLM. Full integration with TLM enables the tracking of Corporate Actions throughout their lifecycles from parallel processing engines. For example, an investment manager could use TLM to monitor the results of the event / entitlement processes in-house with those calculated at the custodian to detect any exceptions at the earliest opportunity. For the investment manager the internal event / entitlement processing engine could be SmartStream's or that of a third party. This approach delivers the most secure method of Corporate Actions processing available, by removing the possibility of a single point of failure.

Integration

All of the above products form part of the TLM product suite. This enables the Corporate Actions products to benefit from other associated functionality. This includes reconciliations – ensuring that fully reconciled positions are used in the entitlement process – and the ability to derive synergies from linking exception and workflow processes across other areas of Asset Servicing, such as the settlements, treasury and stock lending environments.

3. Golden Source

The GoldenSource Actions™ solution allows organization to perform rules-driven, global corporate actions processing in real-time across the enterprise. GoldenSource Actions normalizes, automates and controls corporate actions. Its flexible routes and steps processing rules accurately capture data and workflow for custody operations, broker/dealers and mutual fund managers.

GoldenSource Actions provides a structural approach to managing corporate actions processing from both a customer and an enterprise perspective. By automating the manually intensive work in a corporate actions back office, companies achieve substantial cost savings.

4. ActionsXchange

ActionsXchange offers an intelligent corporate actions solution. They have three main products catering to different market segments

ActionSource: A turnkey software system, housed at a client's site, which electronically collects and compares information from multiple global sources and then consolidates that information.

ActionServices: Uses multiple commercial data sources, highly skilled analysts, and leading-edge technology to edit, synthesize, cleanse, and reformat corporate actions announcements into a single composite record

ActionCompare: Combines the multi-sourced and cleansed ActionService data with a client's custodian or proprietary data to create a flexible, customized, best in class ASP solution.

5. Checkfree

CheckFree eVent™ corporate action workflow solution is established as the standard for firms that want to capitalize on the benefits offered by market standards such as ISO15022 (as adopted by ISITC-IOA and Securities Market Practices Group). Our solution is built on the same financial messaging platform as the SWIFTReady Gold accredited CheckFree TradeFlow TPM solution, and CheckFree eVent, a SWIFTReady Gold Corporate Actions Application, is the only product of its kind to offer end-to-end lifecycle management for corporate actions.

The CheckFree eVent reduces project and product risk with workflow and exception management pre-configured to business best-practice scenarios. Real-world benefits are evident within weeks of starting implementation so that the risk of "buy then build" is eliminated. Costs and risks are significantly reduced when your corporate action processing is automated with e-Vent.

CheckFree eVent provides these competitive advantages:

- Custodians can enhance customer service by providing timely information about upcoming events to give their clients an increased window for their decision-making
- It is easy to deliver information via a variety of channels so your clients have more flexibility in choosing where and how they manage their side of the business
- Fund managers spend less time chasing data and more time analyzing it to improve the quality of their decision-making and ROI across their portfolios
- Broker/dealers are able to seize every arbitrage opportunity because corporate actions databases are in synch with trading books and stock loan systems
- MIS gives you greater efficiency because ongoing analysis of captured business intelligence allows an informed and proactive view toward evaluating and mitigating risks

6. Information Mosaic

Information Mosaic (IM) is a global provider of advanced middle and back office solutions for the securities services industry. There flagship corporate actions product CAMA™, a leading end to end corporate actions automation solution that is IS0 15022 compliant.

CAMA’s unique features are

- Unique rules based templates that streamline and automate corporate action processes
- Intuitive Interfaces that are easy to use and that simplify corporate action tasks
- Workflow and monitoring that facilitate efficient allocation of operational resources
- Built in rules that can manage European, US and Asian Pac corporate actions
- Tax Liability functionality supporting both local and double taxation rates
- Client Taxation and reclaim reporting
- A unique set of reporting tools for management information, regulatory and performance analysis

7. Mondas

Mondas is a leading supplier of asset-servicing solutions. Their flagship products Radica CAPS is a full end-to-end Corporate Actions Processing System. Radica CAPS electronically captures event notifications and processes election decisions in an STP environment. Auditable, compliant and paperless, it substantially reduces operational risk and transaction costs. In addition to core CA processing, Radica CAPS incorporates additional modules including Arbitrage and Manufactured Overseas Dividends.

8. Vermeg

MEGACOR is Vermeg's J2EE service based solution to fully automate the entire Corporate Action process with a flexible and modular design: it allows the tailoring of installations to meet the exact needs of clients, taking into account the specific type of activity being covered.

MEGACOR is built to provide efficient volume scalability, easy integration within the client's internal infrastructure and painless communication with external actors (data providers, custodians and counterparties) whatever their communication formats. This has not only allowed to achieve impressive volume results at an independent benchmark center, but also to be the first to be awarded the SWIFTReady Corporate Action label when it was introduced in 2003.

Main advantages of MEGACOR

- Exceptional flexibility and wide functional coverage
- Efficient workflow tool based both on user defined events/operations life cycles and an embedded rules engine.
- Accurate management of link between processing at sub-custodian/ CSD/counterparty level and processing at client level.
- Intuitive set up for the management of complex events thanks to the inclusion of the 15022 business logic within the system.
- Full multi entity and multi currency processing capability, making Megacor appropriate for BPO providers.
- Enhanced scalability and volume sensitivity thanks to the Java/J2EE architecture.

The following table discusses other COTS Products and Solutions

Product Name	Product Brief Description
Intellisol Development	Company has core domain knowledge in the area of Corporate Actions processing for the Financial Services industry. Their products are designed using a modular approach that allows plugging the components that are needed into existing processes at the points where they are needed. For customers that require a comprehensive solution, the workflow package allows to connect components into a process flow that meets customers' particular needs. The company plans to eventually develop components to handle all parts of the process in order to be able to provide a complete end to end process for situations where that is appropriate. The product/modules have a Data modeling and Data Mapping framework that allows mapping of the customer data to the Intellisol solution irrespective of the data format internally used
	http://www.intellisol-dev.com/

Message Standardization with SWIFTNET	The combination of ISO 15022 message standards and SWIFT connectivity provides the opportunity to standardize communication flows between information sources, local agents, global custodians and investment.
	http://www.swift.com/index.cfm?item_id=2800
NYSE Corporate Actions	NYSE has a Corporate Actions dataset which is comprised of two reports ("Daily" and "Ex-Date") and provides corporate actions details for all NYSE-listed equities including cash dividends, stock dividends, distributions and stock splits. The Daily Report provides all corporate actions as they are confirmed by NYSE Operations and the listed company. The Ex-Date Report provides a complete listing of corporate actions where "ex-date" = T+2.
	URL - http://www.nysedata.com/nysedata/InformationProducts/DelayedHistoricalData/CorporateActions/tabid/166/Default.aspx
ADP BSG capabilities	ADP Brokerage Processing Services offers comprehensive support for corporate action processing and reorg notifications. With the BPS Reorg system, ADP clients benefit from one of the most sophisticated systems available and gain access to robust processing capabilities including Automatic Booking of Maturities, Foreign Currency Processing, Cancel and/or Rebill of Booked Securities, and Over-subscription Processing. And, because ADP Brokerage Processing Services offers its clients value-added integration with its Investor Communication Services (ICS) group, the BPS Reorg system is linked to the ICS Reorg Notification application, which allows clients to quickly and easily notify customers of voluntary reorg offers. The BPS Reorg system is an on-line application that accepts multiple vendor data feeds based on client requests. Currently, ADP has links to the following vendors: ❑ FII ❑ DTC ❑ JJ Kenny ❑ Extel ❑ Telekurs ❑ Valorinform With the BPS Reorg system, the client has the ability to compile and maintain

	corporate action data, comprised of voluntary and mandatory offers, from the various vendors and have access to additional update information, on a CUSIP-level, throughout the entire lifecycle of the reorg event. The BPS Reorg system provides a wide range of vendor announcement types including: Tenders ❑ Odd Lot Tenders ❑ Dutch Auctions ❑ Merger with Elections ❑ Exchanges ❑ Name Changes ❑ Conversions ❑ Partial Calls ❑ Full Calls ❑ Maturities ❑ Redemptions The BPS Reorg system will also match the vendor announcement to the client's stock record and create a pending file with customer positions for those who are eligible to participate in the offer. The system will also interface with the client's Historical Stock Record for Odd Lot Tenders and Partial Calls, allowing the client to access customer positions up to 120 days past, and create a pending file based on the historical record or publication. This access helps maintain the historical accuracy of the appropriate customer activity for processing.
	http://bsg.adp.com/www/capabilities/corporate.html
Sungard Global One	The Dividends and Corporate Actions Module in the Global One suite is available to provide additional functionality to the Broker or Lenders modules. It is used to maintain data regarding dividends and corporate actions and to track dividends payable/receivable, and also to report on any relevant corporate actions, for the trades and collateral entered in the core system.
	http://www.sungard.com/products_and_services/ssf/global_one/globaloneoptdivandcorpact.htm

Shadow Financial ShadoSuite Corporate Actions	http://www.shadowfinancial.com/corporate_action.html - Could not access this one because of the Websense restriction
DTCC Global Corporate Actions	DTCC's Global Corporate Action (GCA) Validation Service works to simplify announcement processing by providing a centralized source of "scrubbed" corporate action announcement information.
	http://www.dtcc.com/gca/validation/index.html
XSP Corporate Actions Solutions software	Accredited with the SWIFTReady Corporate Actions Label, XSP fully automates the Corporate Actions lifecycle for an area of securities processing that has long been considered one of the most challenging and high-risk operations for financial institutions worldwide Flexible, scalable and feature-rich, XSP integrates easily with financial institutions' existing infrastructures. Implemented in live environments, XSP delivers the core features and functionalities of Corporate Actions automation including: - Data Management - Notification and Response - Entitlements XSP's powerful rules-based event diary workflow engine manages the completion of each step within the Corporate Actions lifecycle, assigning a task due date, monitoring the completion date and trailing exceptions incurred in the process.
NCS Corporate Action – TCS	http://xsp.com/section2a.cfm?article_level2_category_id=7&article_level2a_id=121 NCS Corporate Actions is an award winning solution based on a proven rule based corporate action engine. There are over a hundred pre-defined corporate actions available within the solution and it provides the facility to manage the state transitions for the corporate actions through its rule based engine and intuitive workflow. The NCS Corporate Action solution allows for new corporate action events to be defined as a combination of the security and cash credit/debit operations along with the various corporate action transition states. This is enabled by mapping the new events to one of the over 130 pre-defined corporate actions available within the solution. NCS Corporate Actions solution offers end-to-end lifecycle management for corporate actions to enable true STP of all corporate events thereby enabling better client servicing, lower operational

	costs, and increased efficiency. http://www.tcs.com/Banking/products/corporate_actions.aspx
Infosys Corporate Action Real-time engine (iCare)	The Infosys Corporate Action Real-Time Engine is an integrated system of modules that can handle corporate actions data feeds end-to-end. Over time, Infosys has created over 200 industry reference process maps as part of its work in the sector. While not an out of the box software product, the Corporate Actions Real-Time Engine can create a data hub with processing modules and integrate the hub with the organization through a configurable rules and process management framework. Infosys is embracing Web services using an XML standard due to its reliability for an organization and the ability to re-energize legacy applications with repositories of data. Infosys modules ensure that a golden data copy is created early in the process to eliminate manual intervention and exceptions. http://www.infosys.com/industries/banking/corporate-actions-realtime.asp

11 Corporate Actions - Examples

11.1 Examples of Mandatory Corporate Actions with options

- Assimilation/Pari Pasu – Change in the characteristics of the existing shares
- Bond Interest – Interest paid to the bondholder as a cash distribution. Payments are generally at fixed frequencies and payment rates are fixed.
- Bonus Issue/Rights – Event is a bonus issue or scrip issue or capitalization issue. Security holders are awarded additional assets free of payment from the issuer in proportion to their holding. A bonus issue is typically represented by shares, rights or warrants. Nominal value doesn't change. Holder may be offered choice of form.
- Call On Rights – Event is a call or exercise on nil-paid securities or rights resulting from a rights distribution (RHDI). This is to be used for the second event in those cases where the rights issue is dealt with in two events, the first event being the rights distribution (RHDI).
- Capital Reduction with cash payout – An event where a payment of cash is made to registered owners (and where applicable for the benefit of beneficial owners) when excess capital held in the company is distributed.
- Capital Gains Distribution – Event is the distribution of profits resulting from the sale of securities. Shareholders of mutual funds, unit trusts, or SICAVS are recipients of capital gains distributions and are often reinvested in additional shares of the fund.
- Capital Reduction with scrip payout – An event where a distribution of new securities or a new class of securities is made to registered owners (and where applicable for the benefit of beneficial owners) when excess capital held in the company is distributed.
- Following shareholders' approval in General Meeting, all or part of the assets is distributed to shareholders. No clear distinction is made between a capital reduction and a liquidation dividend.
- Capital Repayment – If a company is unable to utilize its excess cash reserves in a more profitable manner and also the Return on Investment is showing a decline then it may decide to repay a part of the capital to the shareholders by reducing(canceling) the number of outstanding shares in proportion to each shareholders holding. This is treated the same way as Capital Reduction.
    - Capitalsation Issue/Bonus Issue – They occur when a company feels it desirable to convert part of its reserves (profits from earlier years which have not been paid out as dividends) into new shares. This often arises when the number of shares in issue is small in relation to the total value of the business.
- Cash Dividend – Event is a distribution of cash to shareholders, in proportion to their equity holding. Ordinary dividends are recurring and regular. The shareholder must take cash and is not offered a choice in the form of distribution. A proportion of net earning paid periodically by the corporation in the form of a cash distribution to its stockholders as a return on their investment. For ADR’s (American Depositary Receipts) and foreign investors, a withheld tax payment form should accompany the dividend. Cash payment to shareholders distributed from current earnings or accumulated profits and taxable as income.
- Change – Event is a generic change. For example, a change in the terms of an issue, a change in the identification of a security, change of a board lot, a change from global to definitive.
- Consolidation – The combining of separate companies, functional areas or product lines into a single one. This differs from a merger in that a new entity is created in the consolidation. The shares of shareholders and debentures of the debenture holders of the

old companies are fully cancelled and fresh shares and debentures in the newly formed entity are issued as per the agreed ratio.

- Cumulative Dividend – A dividend paid on cumulative preference shares, that the company is liable for in the next payment period if not satisfied in the current payment period (i.e. the dividends accumulate). Unlike a dividend on common stock that the company can pay out to shareholders if they want, dividends on cumulative preferred shares are an obligation regardless of the earnings of the company. The unpaid accumulated preferred stock dividends must be paid before any common stock dividends are.
- Decrease in Value – Event is a reduction of the share capital and face value of a single share. The number of the circulating shares remains unchanged. It may include a capital pay-out to shareholder.
- Delisting – An event where the listing status of securities on the Exchange is withdrawn.
- Dividend - A taxable payment declared by a company's board of directors and given to its shareholders out of the company's current or retained earnings, usually quarterly. Dividends are usually given as cash (cash dividend), but they can also take the form of stock (stock dividend) or other property. Dividends provide an incentive to own stock in stable companies even if they are not experiencing much growth. Companies are not required to pay dividends. The companies that offer dividends are most often companies that have progressed beyond the growth phase, and no longer benefit sufficiently by reinvesting their profits, so they usually choose to pay them out to their shareholders also called payout.
- Dividend Option – Event is a distribution of a dividend to shareholders with the choice of payment method. The shareholder must choose the form of payment - stock, cash, or both.
- Dividend Reinvest – Event is a dividend payment type where cash dividend is rolled over into additional shares in the issuing company. Instead of receiving cash for dividends from stocks or interest from bonds the same is used to purchase additional shares or bonds at the prevailing market rates. It is an investment plan offered by some corporations enabling shareholders to automatically reinvest cash dividends and capital gains distributions, thereby accumulating more stock without paying brokerage commissions.
- Exchange Option – Event is an option for the shareholders to exchange their securities for other securities and/or cash. Exchange options are mentioned in the terms and conditions of a security and are valid during the whole lifetime of a security.
- Interest/Coupon Payment – An Interest Payment is an event where interest is paid to registered owners of interest bearing securities (and where applicable for the benefit of beneficial owners), at a fixed or variable rate.
- Liquidation and Winding up – Event is a liquidating dividend or liquidation that consists of a distribution of cash, assets, or both. Debt may be paid in order of priority based on preferred claims to assets specified by the security. The security holder may be able to choose the form of liquidation distribution. If a company is unable to continue trading i.e., its debts and liabilities exceed its capital reserve and it cannot obtain financial backing from the banks or other institutions, then a receiver may be appointed. The receiver will attempt to sell the business as a going concern otherwise the company assets will be liquidated. When the company is liquidated, the shareholders may obtain proceeds but this can take several years and the ordinary shares rank below other creditors. Once the company is liquidated the share holders may receive liquidation dividend before the company is de listed. In case the share holders are paid interim liquidation dividend then the securities continue to be listed till the time the company is completely liquidated and final liquidation dividend is paid.
- Merger – Event is a mandatory or voluntary exchange of outstanding securities as the result of two or more companies combining assets. Cash payments may accompany share

exchange. The combining of two or more entities into one, through a purchase acquisition or a pooling of interests. Differs from a consolidation in that no new entity is created from a merger. Shareholders of the entity which got merged would receive cash or stock of the acquirer entity proportionate to their holding in the merged entity as per the terms of merger. There are two kinds of merger they are horizontal merger – merger between two or more companies with similar product lines, vertical merger – merger of a vendor and its customer.

- Name Change Reclassification – Event is a name change. The issuing company changes its name. The event shows the change from old name to new name and may involve surrendering physical shares with the old name to the registrar. A new security number may be assigned to the new corporate name in which case all outstanding shares must be delivered off using the old number and received back using the new number.
- Plan Of Arrangement – A third party proposes a plan of arrangement to purchase shares for: a) Shares in a new company b) Cash c) Combination of a) and b) The Shareholder will have the election of a), b) or c).With Election: An event where registered owners (and where applicable beneficial owners) are obliged to dispose of the relevant securities in terms of a scheme for a consideration which may or may not be subject to an election as to its content and, if so, where the registered owner (where applicable acting on the instructions of beneficial owners) may exercise the election.
- Redemption – An event where the issuer repays the (loan) redeemable preference share capital or the debenture securities in full to the registered owners (and where applicable for the benefit of beneficial owners).
- Redenomination – Event by which the unit (currency and/or nominal) of a financial instrument is restated, e.g., the debt in a national currency is restated in Euro.
- Rights Distribution – Event is the distribution of rights to shareholders, in proportion to their equity holding.
- Reverse Stock Split – Event is a change in nominal value, a consolidation. It is a decrease in number of outstanding shares of stock without any change in the shareholder's equity or the aggregate market value at the time of the split. Stock price and nominal value are reduced accordingly. This allows the company to increase it’s per share price making their stock a more attractive investment. An action by which the issuer replaces outstanding, low-priced stock with a reduced number of shares, each at a higher proportionate market price. A reverse split can make the stock more attractive to investors who avoid low-priced stock in the belief that such securities are speculative.
- Special Dividend (Cash) – A non-recurring dividend paid to shareholders in addition to the regular dividend that is exceptional in terms of either size or date issued. Such a payment is made after a particularly very profitable year in order to reward shareholders or to celebrate anniversaries like silver jubilee or golden jubilee year.
- Spin-Off – Event is a de-merger or distribution or an unbundling. It is a distribution of subsidiary stock to the shareholders of the parent company without a surrender of shares. A spin-off represents a form of divestiture resulting in an independent company. Normally this is without cost to the parent issue shareholder. A corporation’s action to sever part of its operations and create a separate company. Shares in the new company are issued to corporation’s stockholders. Shares of the two companies then trade separately. Distributions of shares made by a corporation to its stockholders in shares of a controlled corporation after a part of the assets of the distributing company have been transferred.
- Stock Dividend – Event is a dividend paid to shareholders in the form of shares of stock in the issuing company or in another company. The shareholder must take stock and is not offered a choice in the form of distribution. Stock distribution made to shareholders based on the company’s decision to pay its shareholders a dividend in stock. The distribution of

shares to stockholders is in proportion to the respective number of shares owned by them. A proportion of net earnings paid periodically by the corporation to its stockholders as a return on their investment. If dividends paid are in the form of cash, those dividends are taxable. When a company issues a stock dividend, rather than cash, there usually are not tax consequences until the shares are sold.

- Stock Split – Event is a change in nominal value, a subdivision. It is an increase in a corporation's number of outstanding shares of stock without any change in the shareholder's equity or the aggregate market value at the time of the split. Stock price and nominal value are reduced accordingly. Shareholders' position with respect to number of shares being held increases as a result of company's revaluation of its stock but the percentage of holding in the company remains the same. This division of stock of a company increases the number of outstanding shares but does not increase the capitalization of the company. Each shareholder receives a set number of shares for every share held. A split usually represents an increase of more than 20% of the total outstanding shares which lowers the price of the stock proportionally. Division of an outstanding stock issue into a larger number of shares, each at a lower proportionate market price. The intent is to reduce the price per share, thus making the stock more affordable for investors and increasing trading activity.
- Variable Bond Interest – Interest paid to a bondholder as a cash distribution. Payments are generally at fixed frequencies and payment rates are variable.
- Withdrawal of Listing – Generally a Registered Stock Exchange would accept a security of a Public Limited Liability Company to be listed in its exchange for the purposes of trading. Withdrawal of Listing is the process of withdrawal of a proposed listing e.g. withdrawing shares that are not taken up in a rights offer or not taken up in a scrip dividend or withdrawal of already listed securities. These shares/securities cannot be traded after the withdrawal of listing.

11.2 Event Announcement Chains

Mandatory Entitlements without Option

- Declaration Date – The date on which a company's directors meet to announce the date and amount of the next dividend payment. Once the payment has been authorized, it is called a declared dividend, also called announcement date.
- Dividend Notification – A requirement that companies notify NASDAQ's Uniform Practice Department at least 10 days in advance of the record date of a dividend so that NASDAQ can set the ex-dividend date.
- Ex-Dividend Date – The first day of the ex-dividend period. The ex-dividend date was created to allow all pending transactions to be completed before the record date. If an investor does not own the stock before the ex-dividend date, he or she will be ineligible for the dividend payout. Further, for all pending transactions that have not been completed by the ex-dividend date, the exchanges automatically reduce the price of the stock by the amount of the dividend. This is done because a dividend payout automatically reduces the value of the company (it comes from the company's cash reserves), and the investor would have to absorb that reduction in value (because neither the buyer nor the seller are eligible for the dividend), also called reinvestment date.
- Ex-Date – For stock splits, the date that the share price changes to reflect the split.
- Record Date – Date, set by the issuing in order to be eligible to receive a declared dividend or capital gains distribution. The date is also used by the National Association of Securities Dealers (NASD) to set the ex-dividend date, also called date of record.

- Payable Date – The date a dividend will be paid to entitled shareholders. This date is set by the company on the declaration date.
- Distribution Period – The time between the declaration date and the record date, usually a few days.
- Decision Due date – The date by which the shareholders have to convey their decision to their custodian about their intention to or not to reinvest the dividend.
- Dated Date – The date from which interest begins accruing on new municipal bonds and other debt instruments. The buyer makes a payment to the issuer for the interest accrued from the dated date to the issue's settlement date. On the bond's first interest payment the buyer is reimbursed.
- Effective Date – The date from which the name change of the company or any such event becomes effective and binding on the company and the shareholders.
- Redemption Date – The repayment of the principal (par) amount of a debt security, or a preferred stock, at or before its maturity. Mutual fund shares are redeemed at net asset value when a shareholder liquidates their shares. The date on which the above repayment is done is known as redemption date.
- Maturity Date – The date on which the principal amount of a loan, bond, or any other debt instrument becomes due and is to be paid in full.

Mandatory Entitlements with Options and Voluntary Entitlements

- Declaration Date – The date on which a company's directors meet to announce the date and the ratio of the number of shares to be issued as part of Rights Issue. Once the payment has been authorized, it is called a declared dividend, also called announcement date.
- Ex-Date – The date from which the new buyers of the stock will not be eligible to subscribe for the shares issued through the Rights Issue.
- Record Date – Date, set by the Issuing in order to be eligible to subscribe for the shares issued through the Rights Issue. This date is also used by the National Association of Securities Dealers (NASD) to set the ex-rights date, also called date of record.
- Issuance Date – The date on which new shares applied for in the rights or secondary issue are allotted to the existing shareholders.
- Listing Date – The date on which the new shares allotted in the rights or secondary issue are listed on the stock exchange for trading.
- Deadline Date – The date by which the shareholders have to convey to their custodian their intent to receive the dividend in the form of cash or stock.
- Expiration Date – The date on which an option expires. It is the date on which the dividend option can be exercised. If it is not, the option is said to have expired.
- Subscription Date – The shareholders privilege to buy rights shares are valid for a relatively short period. The date by which the shareholder has to subscribe for the rights shares is known as subscription date (period). Failure to exercise or sell the rights may result in monetary loss.
- Rights Distribution Date – A certificate that evidences a shareholder's privilege to buy additional shares of new securities in proportion to the number of shares already owned. A company, when raising more funds by issuing new securities, may issue rights to its shareholders to give them the chance to buy additional shares before the general public. The date on which such certificates are distributed to the shareholders.
- Conversion – Conversions arise when convertible securities are converted in accordance with the relevant trust deed. Holders of convertible debentures, convertible preference

shares-, deferred shares and options have the right to convert all or part of such instruments into ordinary shares for a short period each year and by a certain closing date.

- Exchange Offer– Event is exchange offer or capital reorganization. It is an offer to shareholders to exchange their holdings for other securities and/or cash. Exchange offers are usually voluntary involving the exchange of outstanding security for a different security or securities and/or cash.
- Tender – Event is an acquisition or take-over or purchase offer or buy-back. It is an offer made to shareholders requesting them to sell (tender) their shares for a specified price usually at a premium over prevailing market price. Generally, the objective of a tender offer is to take control of the target company.

12 Appendix

12.1 Appendix A - Examples of Risk Calculation

Example 1: France Telecom rights issue (March/April 2003)

A rights issue has the typical characteristics of a voluntary corporate action event. This includes information outflow following the announcement, decisions made by the owners of the share, the instruction flow through the intermediaries following the decision, and the price impact that induces potential trading opportunities. Analyzing this process illuminates many of the problems involved in all voluntary corporate actions. In 2003, around 450–500 rights issues took place in the USA and Europe combined. Given the large number of intermediaries and investors involved in each of these, the risk that something might go wrong somewhere in the chain is not theoretical.

In a rights issue, the issuing company gives current shareholders an opportunity to buy new shares in the company proportionate to their current ownership. The holders of the shares are given a period of time to decide whether to buy the offered shares, to sell the rights in the market, or simply let their rights lapse by taking no action. If shareholders do not subscribe to the new shares, their ownership in the company will be diluted.

Upon announcement of the rights issue, information on the terms of the offer is passed from the issuer to the owner through the chain of intermediaries.

However, as the rights issue is likely to affect the company's share price, it may also present (temporary) trading opportunities to brokers' and fund managers' trading desks. Therefore, the information concerning the announcement spreads quickly through the 'unofficial' information channels, including commercial data vendors.

Typically, the new shares have to be offered at a discount to the current share price, in order to induce the shareholders to increase their holdings. The required discount is determined by the way shares are offered—whether or not the offer is underwritten—and the current perception of the company's prospects. A non-underwritten issue is likely to require a higher discount on to ensure that the offer price remains above the market price of the share. According to empirical evidence, the average discount to the market price in UK rights issues during 1987–96 was 21%. In essence, a rights issue therefore provides the current shareholders with an opportunity to buy the issuing company's shares below the market price.

If a fund manager or a custodian firm fails to process a client's instruction to participate in a rights issue, it normally needs to re-establish the position the client would have been in, had the failure not occurred—i.e., it needs to acquire (or sell) the appropriate number of shares from the market at the prevailing market price. The size of the exposure arising from such failure is dependent on the exact terms of the rights issue.

A particularly important factor from the intermediaries' perspective is the procedure for dealing with the rights that have either not been taken up or have not been sold. The common practice, at least in Europe, tends to be for the issuer or the underwriter to tender separately any lapsed rights, and credit the proceeds to the initial holder of the right. In other words, the right-holder receives the market price for that right, regardless of whether any action is taken. However, in some cases no such auction procedure for the lapsed rights exists. If the investors fail to take action prior to the closing date of the offer, the rights lapse and the entitlement is lost. In the absence of a separate auction process for lapsed rights, the corporate action intermediaries are also exposed to higher risks. If they fail to execute investors' buy instructions and have to purchase the shares from the market, the intermediary will normally lose the value of the discount on the issued shares; the shares may have to be purchased for the client at the market price, but only the offer price is received from the investor. If, however, the investors receive the market price of the rights in any case, the intermediaries' potential liability is limited to the share-price movements between the failure and the corrective action. Although the majority of the failures are identified reasonably quickly, in some cases this time lag could be up to two or three weeks.

Given the potentially large discounts involved, the rights themselves are valuable. It is common for fund management and brokerage firms to trade with the 'nil paid rights' attached to their shareholdings prior to the actual issue date. This trading activity acts as one factor increasing the risk of failure in processing the corporate action. Traders wish to trade right up to, and sometimes beyond, the custodian deadline, which puts pressure on the corporate action team to process the instruction correctly.

Potential risks in the France Telecom rights issue

(The values have been converted to $ only for convenience of understanding. All transactions were recorded in Euros)

To gain a better feel of the *potential* risks, a hypothetical example is considered here, based on a real event. On March 24th 2003, France Telecom announced a 19-for-20 rights issue with an offer price of $18.5 (€14.50) per share, with April 4th as the latest date for acceptance. At the time of the announcement, France Telecom shares were trading at $22.11 (€17.30). The issue was fully subscribed and raised a total of $19225m (€15,039m). On April 5th the France Telecom shares were trading at an ex-rights price of $26.3 (€20.60), so the new shares were effectively offered at a 29.4% discount on the ex-rights price, or $7.79 (€6.10) per share.

Table 12.1 gives a breakdown of France Telecom's share ownership. In March 2003, 35.4% of the 1.2 billion France telecom shares outstanding were held either by France Telecom employees or the general public. Although the shareholding information presented in the table does not contain any detail about the size of individual holdings, information from other sources indicates that various institutional investors had positions in France Telecom shares valued at several million euros.

Table 12.1: France Telecom shareholdings at March 31st 2003

Owner	Number of Shares held	Percentage of shares outstanding
French State	671,786,275	56.59
Public	383,179,333	32.28
Employees	36,829,897	3.1
France Telecom (Treasury Stock)	95,363,219	8.03
Total	1,187,158,724	100

Source: France Telecom.

Table 12.2 describes in more detail the exposure for intermediaries processing the instructions for large positions of France Telecom shares. The table reports the cost that intermediaries holding large share positions would have had to incur, had they failed to carry out instructions by their clients to participate in the issue. The risks of monetary loss arise here from the share price movements between the ex-rights date (t) and the date when the failure is corrected ($t + x$). (This is assuming that France Telecom auctioned the lapsed rights, and that the original holders of the rights received the difference between the offer price and the auction price, adjusted for the fact that the 19 new shares were offered for every 20 existing shares. In other words, no losses arose through this price differential, only through the subsequent share-price movement. For simplicity, the auction price is assumed to be equal to the closing price of the France Telecom share, on the final day of the offer $24.72 (€19.34). Therefore, the loss to the intermediary will be equal to the difference between the closing price at *t*, and the market price of the share on a subsequent trading day.) For example, if a fund manager had to go to the market one day after the offer day, to purchase shares for a client who originally held 500,000 France Telecom shares, this would have been at a loss of $734,754 (€574,750). Had the failure not been identified until 12 trading days later, the correcting transaction would then have been at a loss of over $1.278m (€1m). Risks related to any particular client can therefore be quite significant, and are much greater when a processing failure affects the accounts of multiple clients (or other intermediaries in the chain). Such risks are particularly high for custodian firms, as noted earlier. For example, in the above illustration, the largest private France Telecom shareholders are likely to have acquired custody services from one of the 20–30 largest global custodians. Therefore, these custodians' positions in France Telecom could have extended to tens, if not hundreds, of millions of shares.

As shown in Table 12.2, having to re-establish a position of, say, 50m shares on day *t* + 12 would have carried a cost in excess of $100m. This does not yet take into account the fact that a correcting action of this magnitude would itself probably have had a market impact (pushing the price up), thus making the cost of failure even higher.

Table 12.2: Exposure of Intermediaries following the Rights issue

		t + 1 day	t + 3 days	t + 6 days	t + 12 days
France Telecom share price ($)		26.2709145	26.462673	26.2581306	27.4214655
Size of holding (no. of shares)	**Value of holding at day t ($)**	**Potential risk**			
100,000	2,472,406	2,627,091	2,646,267	2,625,813	2,742,147
500,000	12,362,031	13,135,457	13,231,337	13,129,065	13,710,733
1,000,000	24,724,063	26,270,915	26,462,673	26,258,131	27,421,466
10,000,000	247,240,626	262,709,145	264,626,730	262,581,306	274,214,655
50,000,000	1,236,203,130	1,313,545,725	1,323,133,650	1,312,906,530	1,371,073,275

Note: The potential loss refers to the difference between the value of a shareholding at time t, and the value of the same holding at some subsequent trading day after t. Time t refers to April 4th 2003, which was the last day in the offer period, and the closing share price at that day was $24.72 (€19.34).

Source: Thomson Datastream; Oxera calculations. The calculations of costs in this section ignore the additional transaction costs that have to be incurred when making an extra trade (i.e., fees and market impact)

Example 2: The Vodafone/Mannesmann takeover (March 2000)

Mergers and takeovers are another class of corporate action that may present high potential risks for the parties in the corporate action value chain. The risks closely resemble those described above in the context of a rights issue; if there is a failure along the communication chain from the decision-maker to the share registry, the intermediary liable for the failure will normally have to compensate the clients for the potential loss, or re-establish the clients' positions to reflect the desired outcome.

In the case of a takeover, the acquiring company typically makes an offer to buy the outstanding shares of the acquired company. In return for their existing shares, the shareholders of the target company are typically offered cash, shares in the acquiring company, or a combination of the two. In essence, the shareholders will have to decide whether they want to accept the acquisition offer or sell their shares in the market.

The process failure may arise due to an intermediary not processing a client's instruction— i.e., neither accepting the offer nor selling the shares, or processing a wrong instruction. The latter could involve, for example, a fund manager selling the investor's shares, when the investor wanted to receive new shares in an all-share offer. When this type of failure occurs, the fund manager normally has to buy the new shares for the client at the prevailing market price.

Mergers and takeovers typically represent large corporate restructurings, so the impact on the company's share prices may be substantial. To demonstrate the risks involved, and the intermediaries' potential exposures to market movements, the Vodafone/Mannesmann hostile takeover in March 2000 is used as an example.

Vodafone launched the hostile offer on December 19th 1999, for the total value of Mannesmann's share capital. At the time of the bid, this was the largest hostile takeover in corporate history, valuing the Mannesmann share capital at $164.9 billion (€129 billion). Apart from being large, the deal was also very complex, involving several tranches of Vodafone securities. This made it a challenging and risky event to process for the corporate action intermediaries with large positions in Mannesmann shares. A further complicating factor was that Vodafone changed its bid during the intense negotiation process.

This was an all-share offer, which, in its final form, offered Mannesmann shareholders 58.96 new Vodafone shares for each Mannesmann share they were holding. At the time of the bid, Mannesmann had approximately 503m shares in issue. On February 17th 2000, the last date of acceptance for the first tranche of new Vodafone shares, the Vodafone shares traded at $6.711 (€5.25); however, on March 6th, two weeks after the offer, the share price had increased by 24.3%, to $8.34 (€6.53). To estimate the potential monetary exposures involved, Table 12.3 considers a hypothetical example of a corporate action failure related to the transaction. The table reports the total losses for an intermediary that sold a client's Mannesmann shares for cash on February 17th, when the investor in fact wanted to accept the offer and receive the new Vodafone shares.

Therefore, the required Vodafone shares had to be purchased at the prevailing market price, some time after that date.

As in the France Telecom rights issue example, the loss in this case arises from the difference in value of the Mannesmann shareholding at the time of the sale and the corresponding Vodafone shareholding when the mistake is identified. The table reports this value differential for various periods, and for various sizes of holdings affected by the error. The calculation ignores the effect that any purchase would have on the share price, which would further exacerbate the loss.

As is clear from Table 12.3, the potential risks for fund managers—and, in particular, custodians processing large numbers of Mannesmann shares—were substantial, in some cases up to several hundred million euros. Several investment funds had holdings of up to 100,000 Mannesmann shares at the time of the takeover bid. The holdings of the large global custodians could therefore have been in the order of millions of Mannesmann shares.

Table 12.3: Potential risks for large Mannesmann shareholdings (€)

		t+1	t+3	t+6	t+12
Vodafone share price ($)		6.5581407	7.0567128	7.5297171	8.3478867
Size of Mannesmann holding (no. of shares)	Value of holding at t ($)	Potential risk			
50,000	19,559,367	-225,968.22	1,243,822.33	2,638,239.01	5,050,202.99
100,000	39,118,734	-451,936.43	2,487,644.67	5,276,478.02	10,100,405.98
500,000	195,593,670	-2,259,682.16	12,438,223.34	26,382,390.11	50,502,029.92
1,000,000	391,187,340	-4,519,364.33	24,876,446.69	52,764,780.22	101,004,059.83
5,000,000	1,955,936,700	-22,596,821.6	124,382,233.44	263,823,901.08	505,020,299.16

Note: The potential loss represents the difference between the value of a Mannesmann shareholding at time t, and that of the corresponding number of Vodafone shares at a subsequent trading day after t. Time t refers to February 17th 2000, and on that date Mannesmann shares traded at $391.1 (€306).

12.2 Appendix B - Corporate Actions - Statistics

Table 12.4: Volume of Corporate Actions (approx) for various markets

	Number of Corporate Actions (000s)	% of global Total
North America	624700	66.8
Europe	203600	21.8
Asia-Pacific	62000	6.6
Others	44900	4.8
World Total	**935200**	**100**

Note: Figures do not include the 3m plus scheduled fixed-rate interest payments and scheduled maturities that occur every year.
Source: DTCC.

Table 12.4 shows that, in this period, the total number of corporate actions taking place globally was around 935,000. North America (mainly the USA) accounts for two-thirds of all corporate actions, followed by Europe (around 22%) and the Asia-Pacific region (6–7%). These figures do not include the 3m plus scheduled fixed-rate interest payments and scheduled maturities that occur every year.

Table 12.5 shows the breakdown by type of corporate action. Since the terminology and definitions used to describe corporate actions often differ across countries, the figures should be interpreted with some care. Nonetheless, the table gives some idea of the orders of magnitude involved.

Table 12.5: Break-up by type of Corporate Action

Types of Corporate Action	Worldwide	N. America	Europe	Asia-Pacific
Cash dividend	26.9	27.7	23	33.1
Income distribution	16.4	23.8	2.6	0
Partial call redemption	14.6	17.7	12.6	0.1
Full call	12.5	18.1	1.7	0.3
Meeting	7.1	0.6	18.7	18.4
Dividend omitted	2.7	0.8	3.5	18.7
Return of capital	2	1.6	3.7	0.5
Name change	1.8	0.8	5.2	1.3
Other	16	8.9	29	27.6
All corporate actions	**100**	**100**	**100**	**100**

Note: Figures refer to March 2003–March 2004. Definitions of corporate action types tend to differ across countries.
Source: DTCC.

It can be seen that dividend payments and income distributions are the most common types of corporate action worldwide (and in the three main financial regions, with the exception of income distribution in the Asia-Pacific region). All the other corporate actions in the top eight are of the mandatory type, which, by their nature, are relatively straightforward, as described above. Voluntary corporate actions (or mandatory actions with options)—which are more complex and hence involve greater risk —represent only about 10–15% of all corporate actions taking place. Nevertheless, globally, this translates into approximately 90,000–140,000 of such complex actions each year.

12.3 Appendix C - Websites referred

www.investopedia.com
www.swift.com
www.investorwords.com
www.tiaa-crefbrokerage.com
www.xsp.com
www.smartstream.com
www.dtcc.com
www.globalcustody.net