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IDENTIFYING BEST PRACTICES IN MORGAN STANLEY

A Major Qualifying Project Report:

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by

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Abstract

The project identified differences in Client Service between the New York and London branches of Morgan Stanley Prime Brokerage. The team analyzed Corporate Actions, Cash Journal Entry, and Backup Notes between these branches using process flows and fishbone diagrams. With the use of a scorecard, the group benchmarked New York and London's processes against each other to determine if either were a best practice. Finally, the students formulated recommendations to improve quality and reduce risk within these processes.

Executive Summary

The goal of this Major Qualifying Project was to identify best practices within the Client Service division of Morgan Stanley Prime Brokerage. **A best practice satisfies clients while remaining flexible to their needs. It delivers superior performance by minimizing risk, cost and time, allowing Morgan Stanley Prime Brokerage to become the worldwide benchmark for Client Service.**

More specifically, the group's main task was to identify differences between how the New York (Prime Brokerage) and London (International Prime Brokerage) offices perform similar tasks. Once these differences were identified, the team benchmarked PB against IPB to determine if either one could be considered a best practice.

The team took a systematic approach to accomplish the project's goal. The group conducted an initial round of thirteen interviews with people who had experience across both locations. This enabled us to uncover nineteen topic differences. The list was then presented to the Morgan Stanley liaisons, which narrowed it to three relevant processes for the team to study further. **The three topics selected were:**

- **Voluntary Corporate Actions**
- **Cash Journal Entry**
- **Backup Notes**

The students then conducted a second round of interviews to gain in-depth knowledge about each process in PB and IPB. Using this data, the students mapped each process flow in order to understand the general overview of information flow and to identify problems as well as risk areas within the process. The team used fishbone diagrams to discover the root causes pertaining to these problems. In addition, the group

administered a survey to Client Service Mangers in PB to find subjective patterns to validate our findings. Lastly, the students used a scorecard that included four evaluation criteria to determine if either the PB or IPB process would score as a best practice. The results and conclusions for each of the three processes were as follows:

The Voluntary Corporate Actions process is key for MSPB and their clients. Corporate actions are any event that brings material change to a company and requires action by its stakeholders. Such events present significant opportunity for non-market risk exposure. The group was able to break down the process in seven basic steps, finding major differences in four of them between PB and IPB. Within PB's process, the WPI team uncovered opportunities for improvement in three main areas. These were not enough automation in the process, the opportunity of missing an event deadline, and miscommunication on a decision both internally and externally. All of these contribute to the high volume of errors that the Corporate Actions process takes each year.

After scoring the process, it was determined that both are best practices. Therefore, the team did not recommend for PB to adopt IPB's model. Instead, they should integrate N&R into WorkQ, increase CANS usage, and formulate and disseminate golden rules for CSRs.

Moving along to Cash Journal Entry, the team determined that CSRs in PB are performing a high-risk activity. They are entering cash journals in the firm's mainframe system, instead of using a secure online tool that is available. The online journal tool mitigates risk because of its established business rules for all transactions and required authorization. However, it is lacking certain account ranges for moving cash such as transferring money from one client to another, which limits its usage. The main issue

with mainframe usage is that it has no levels of security in place, leaving opportunity for fraud and error. In IPB, CSRs do not have direct access to the mainframe, which makes the process efficient and safer from a Client Service perspective. The team discovered opportunities for improvement in PB, which include stricter enforcement of using the online journal tool, limiting mainframe access, and the completion of the journal tool.

The scorecard indicated that neither PB nor IPB processes were best practices. Therefore, PB should not adopt IPB's model. However, they should complete the online journal tool so that it includes all cash and security journals. Once this is done, mainframe access should be blocked from Client Service and this department should be responsible for handling all journal entries.

The final topic of study is Backup Notes. These notes are helpful for backups when the CSR is out sick, on vacation, or leaves the firm. They provide an efficient point of contact that includes crucial pieces of client information. In IPB, CSRs are required to keep backup notes on clients, while in PB they are not. The process in PB contains opportunity for improvement, because the current communication method is inefficient and at times creates more work for the backup. In addition, the tool for storing backup notes is very poor and not user friendly.

Once again, the process was scored using the scorecard. IPB's process qualified as a best practice, while the PB process did not. Because of this, the team recommends the adoption of IPB's process of keeping written backup notes. These notes should be stored in an improved tool located in PBToday and the CSRs should receive a WorkQ item quarterly to update them.

The team considers that by implementing these recommendations, these three processes will improve significantly. The enhancements will reduce risk to the firm, while maintaining high service quality. It will further enable MSPB to maintain its competitive advantages and remain as a leader in the prime brokerage industry.

Acknowledgements

The team would like to extend our sincere gratitude to everyone who aided in the development and completion of the project at both WPI and Morgan Stanley. We would like to express much thanks to our faculty advisors, Professors Arthur Gerstenfeld and Michael Ciaraldi, for their guidance and commitment to the project. The team would also like to extend our great appreciation to Bill Magnus, our primary advisor at Morgan Stanley, for all the time and direction he gave throughout the project. In addition, we want to thank Dominique Benz and Jay Maller for their senior support and hospitality throughout the process. Lastly, we would like to thank all the individuals at Morgan Stanley who took time out of their schedules to answer our questions. Without everyone's help, the successful competition of this project would not have been possible.

Authorship

Part of this project was completed in collaboration with another team in London, which included Daniel Ossa and Andres Sucre. The introduction, background, and methodology sections were completed together and are the same for both reports. In addition, some of the data gathering was done together. However, the analysis and recommendations sections remain completely separate. This report provides New York's analysis and recommendations, while the other has London's.

In this project, each team member contributed equally to its completion and it is not possible to separate one partner's work from the other's.

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1 Introduction

The financial services industry is fierce, competitive, and constantly changing. New deregulation parameters that allow banks to lend anywhere and engage in other financial activities have given rise to large financial conglomerates that are looking to achieve economies of scale. Stakeholders in the financial services industry have also become more demanding due to being better educated and the vast amount of financial information available today. Because of this, innovation of products and services with the use of advanced technology is at the front of every organization's business plan. These organizations are looking to develop customer relationships and seamless process operations. They are searching for ways to serve their clients better, cheaper, and faster. In summary, they are looking to gain an edge against each and every one of their competitors by exploiting their competitive advantages, which can be obtained through the use of best practices.

A best practice is the most effective way of accomplishing a task or process that aligns with the company's goals. However, a best practice today is not necessarily a best practice for tomorrow; it is based around continuous learning and improvement. In this project, the students identified best practices within the Morgan Stanley Prime Brokerage (MSPB) unit.

This unit provides various services such as clearing and settlement to hedge funds that require shorting and leveraging capabilities. The prime brokerage market is dominated by a few major players, and has seen robust growth from the increased popularity and success of hedge funds. Morgan Stanley is a major player in the prime brokerage industry worldwide. The firm's technological capabilities have become the

main source of competitive advantage, placing them at the top of the prime brokerage market.

The focus of this project was to determine which PB best practices should be adopted by the London office and which IPB best practices should be adopted by the New York office. More specifically, the project addressed how things are done rather than which things are done in Client Service. The students combined background research with on-site interviews to identify critical processes that need to be improved. From this, the students compared PB and IPB, identifying which were the best practices in each branch. Finally, the students formulated conclusions and recommendations regarding which best practices can be implemented in New York, and which ones in London. These conclusions will enable MSPB to improve the performance of the Client Service department in the New York and London offices.

2 Background

It is important to identify the objective and discuss the background of prime brokerage in order to understand how this complex business works. As one of the fastest growing financial services in the past decade, prime brokerage is tailored to the increasing needs of the hedge fund industry. Morgan Stanley, an industry leader, provides service within the United States as well as in Europe, Asia, and Latin America. The focus of this project is to benchmark Morgan Stanley's domestic and international prime brokerage in order to identify best practices that could be implemented from one location to the other.

2.1 Hedge Funds

Hedge funds use strategies to minimize risk and take advantage of market imbalances. These types of funds are "extremely flexible in their investment options because they use financial instruments generally beyond the reach of mutual funds, which have SEC regulations and disclosure requirements that largely prevent them from using short-selling, leverage, concentrated investments and derivatives. This flexibility, which includes the use of hedging strategies to protect downside risk, gives hedge funds the ability to best manage investment risks" [Emirates Financial Services, 2006].

The hedge fund concept has been around since 1949, but it was not until the past decade that the industry experienced exponential growth in the number of existing hedge funds [Hedge Fund Reader, 2006]. The industry grew from approximately 1,000 hedge fund managers in 1992 to more than 10,000 in 2006. Following an asset under

management strategy, the hedge fund industry administers over one trillion dollars. The main reasons behind the rising popularity of hedge funds are:

- Performance: Over-performing as an industry in general
- Access: One million dollar minimum investment requirement
- Talent: Managers attract some of the industry's top talent
- Minimize Risk: Hedge to protect their positions

Figure 2.1 illustrates the substantial growth in the industry since 1988 until today, as well as forecasting years to come.

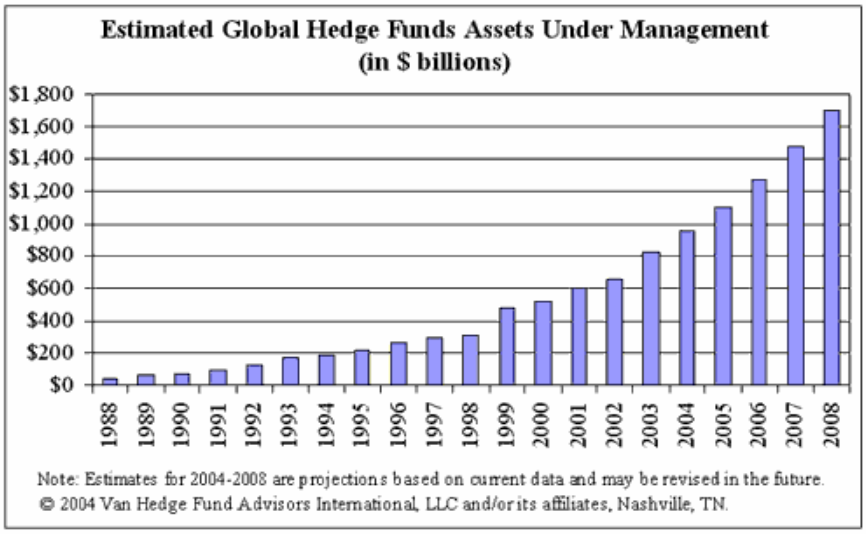


Figure 2.1 – Hedge Funds Assets Under Management
Source: Van Hedge Fund Advisors

Hedge Funds are commonly perceived as extremely risky investments, given that their management is not as tightly regulated as other investment funds [All About Hedge Funds, 2006]. Because of this, managers will often invest a large portion of their own personal wealth, proving their commitment to the fund. Due to the complexity and risk of the hedge fund environment, managers not only charge a fee as a percentage of the total assets in the fund, but also charge substantial premiums based on the fund's performance.

In order to mitigate risk, hedge funds use a wide variety of strategies that can provide extremely high returns while reducing risk [The Economist, 2005]. These strategies are not available to other funds due to SEC regulation. Figure 2.2 defines fifteen commonly known hedge fund strategies:

- ***Aggressive Growth:*** Invests in equities expected to experience acceleration in growth of earnings per share. Hedges by shorting equities where earnings disappointment is expected or by shorting stock indexes. Tends to be "long-biased." *Expected Volatility:* **High**

- ***Distressed Securities:*** Buys equity, debt, or trade claims at deep discounts from companies in or facing bankruptcy or reorganization. Profits from the market's lack of understanding of the true value of the deeply discounted securities. *Expected Volatility:* **Low - Moderate**

- ***Emerging Markets:*** Invests in equity or debt of emerging markets, which tend to have higher inflation and volatile growth. *Expected Volatility:* **Very High**

- ***Fund of Funds:*** Mixes and matches hedge funds and other pooled investment vehicles. This blending of different strategies and asset classes aims to provide a more stable long-term investment return than any of the individual funds. *Expected Volatility:* **Low - Moderate**

- ***Income:*** Invests with primary focus on yield or current income while utilizes leverage to buy bonds and sometimes fixed income derivatives in order to profit from principal appreciation and interest income. *Expected Volatility:* **Low**

- ***Macro:*** Aims to profit from changes in global economies, typically brought about by shifts in government policy, which influence interest rates, in turn affecting currency, stock, and bond markets. *Expected Volatility:* **Very High**

- ***Market Neutral - Arbitrage:*** Attempts to hedge out most market risk by taking offsetting positions, often in different securities of the same issuer. Focuses on

obtaining returns with low or no correlation to both the equity and bond markets. *Expected Volatility:* **Low**

- ***Market Neutral - Securities Hedging:*** Invests equally in long and short equity portfolios generally in the same sectors of the market. Market risk is greatly reduced; leverage may be used to enhance returns. Usually low or no correlation to the market. *Expected Volatility:* **Low**

- ***Market Timing:*** Allocates assets among different asset classes depending on the manager's view of the economic or market outlook. Unpredictability of market movements and the difficulty of timing entry and exit from markets add to the volatility of this strategy. *Expected Volatility:* **High**

- ***Opportunistic:*** Investment theme changes from strategy to strategy as opportunities arise to profit from events such as IPOs, sudden price changes often caused by an interim earnings disappointment, hostile bids, and other event-driven opportunities. *Expected Volatility:* **Variable**

- ***Multi Strategy:*** Investment approach is diversified by employing various strategies simultaneously to realize short- and long-term gains. Other strategies may include systems trading such as trend following and various diversified technical strategy opportunities. *Expected Volatility:* **Variable**

- ***Short Selling:*** Sells securities short in anticipation of being able to re-buy them at a future date at a lower price. This is due to the manager's assessment of the overvaluation of the securities, the market, or in anticipation of earnings disappointments often from accounting irregularities, new competition, and change of management. *Expected Volatility:* **Very High**

- ***Special Situations:*** Invests in event-driven situations such as mergers, hostile takeovers, reorganizations, or leveraged buyouts. May involve simultaneous purchase of stock in companies being acquired, and the sale of stock in its acquirer, hoping to profit from the spread between the current market price and the ultimate purchase price of the company. *Expected Volatility:* **Moderate**

- ***Value:*** Invests in securities perceived to be selling at deep discounts to their intrinsic or potential worth. Such securities may be out of favor or under-followed by analysts. *Expected Volatility:* **Low – Moderate**

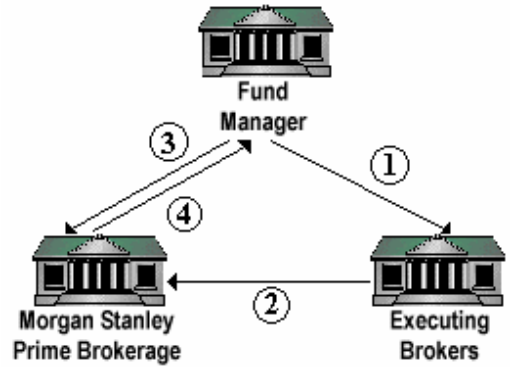
Figure 2.2 – Hedge Funds Strategies
Source: www.magnum.com

With the use of the aforementioned strategies, hedge funds can provide increasing returns to their investors by taking advantage of events in the market and the volatility of securities. Because of the expanding and successful hedge fund industry, the sectors that tailor services to these funds have been greatly benefited. Services such as trading, technical consultants, and prime brokerage, among others, have taken advantage of the hedge fund boom.

2.2 Prime Brokerage

Prime brokerage is a hard business to define because its clients vary in size, needs, strategies, and environment. Therefore, prime brokers have to support multiple business models adjusting to their client's needs. For example, the services required by the $10-$100 million dollar funds are not the same as those of multi-billion dollar funds. In general, prime brokerage is a collection of core services offered by investment banks to hedge funds. "Prime services acts as a subcontractor for many standardized services, allowing the fund to focus on its perceived edge" [Schorr, Altman, & Carrier, 2002, 2]. These services are especially valuable for fund managers and for those who are overseeing alternative investments for an endowment, a foundation, a family office, or a pension fund. The most important concept to understand about prime brokerage is that it is a relationship-based business as opposed to being transaction-based. This means that

partnerships with clients tend to last for several years. Figure 2.3 shows the connection between the fund, prime broker, and executing broker.



1. Manager executes with multiple brokers
2. Those brokers "give-up" the trades to the prime broker
3. Manager provides all trade information to the prime broker
4. Prime broker reconciles positions between client and brokers and consolidates all securities. It then reports back to the fund.

Figure 2.3 – How Prime Brokerage Works
Source: www.morganstanley.com

A prime broker's main functions can be divided into four main categories: client service, sales and marketing, capital introduction, and financing and securities lending [Hintz, Buechs, & Levy, 2005]. Within these categories, they offer basic services such as:

- Clearance and global custody: Asset custody (hold client's cash as collateral), asset servicing, and clearing of trades
- Securities lending/trading: Lend securities for clients to do "shorting" and settle trades at the end of each business day
- Financing: Facilitate leverage on client's assets
- Customized reporting: Have client technology to provide customized reporting to clients. An example of this is "hearsay reporting", which is a consolidated reporting for all trades settled with other brokers

- Operational support: Facilitate the contact between hedge fund's and other parties (primarily other brokerage houses) and smoothen the transactions process

The idea of "outsourcing" these services to investment banks surged after brokerage houses began offering consolidated portfolio management services to traders. They did this because they realized that it was impossible for traders to keep track of all of their own trades, consolidate their positions, and calculate their performance at the same time. This progression was very successful in portfolio management and was cloned by dominant brokerage firms to serve hedge funds. It was a brilliant idea as hedge fund managers did not have the time to perform the expensive and time-consuming activities necessary to run the fund. Figure 2.4 below provides a more specific explanation of how the trading process worked before prime brokers entered into the business and how it works today, with Morgan Stanley acting as the prime broker:

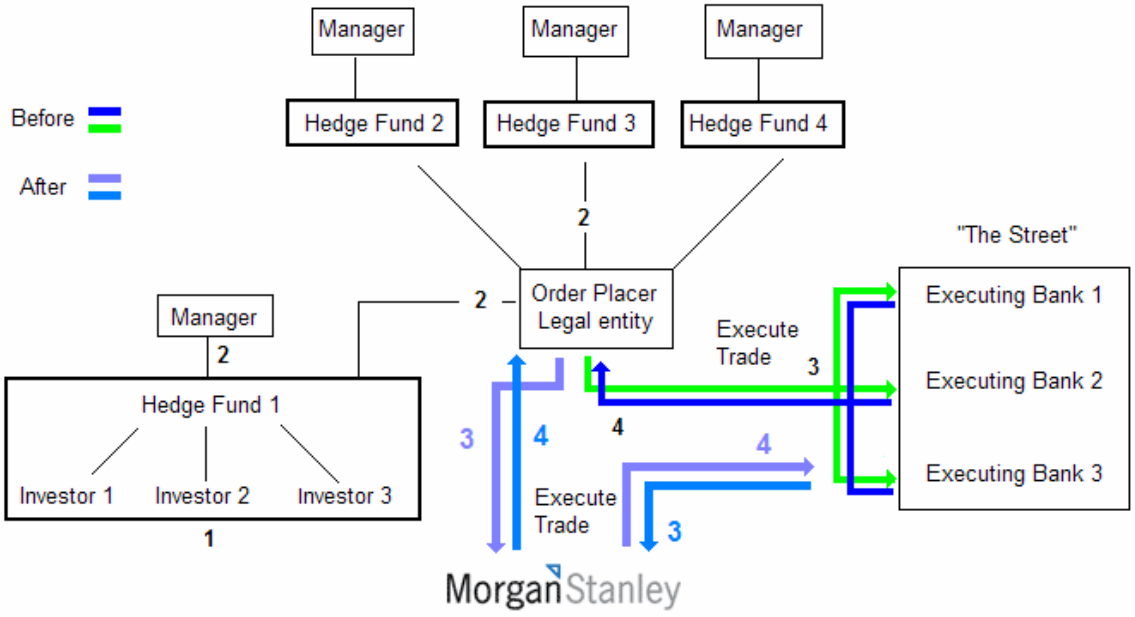


Figure 2.4 – Before and After Prime Brokerage

Before

1. Investors allocate money in hedge fund (1, 2, 3 …)
2. Hedge Fund (1, 2, 3 …) hires a manager and an order placer

3. Order placer trades securities with executing banks in the market
4. Execute trade:

   HF buys 100 XYZ stock from EB

   EB sells 100 XYZ stocks to HF

After

1. Investors allocate money in hedge fund (1, 2, 3 …)
2. Hedge fund (1, 2, 3 …) hires a manager and an order placer
3. Order placer trades with MSPB while MSPB trades with executing bank
   a. With an agreement to give up the rights to trade in the street
   b. Providing trading collateral to the prime broker
4. Execute trade

   Order placer trades through MSPB

   MSPB trades through executive bank

"Prime brokerage represents one of the few high growth, high margin businesses that has not yet been commoditized by competition" [Schorr, Altman, & Carrier, 2002, 2]. As a result, top firms such as Morgan Stanley, Bear Stearns, and Goldman Sachs, are estimated to have over one billion dollars each in annual revenue directly attributed to their prime brokerage operations [Hintz, Buechs, & Levy, 2005].

2.3 Morgan Stanley

Morgan Stanley launched its Prime Brokerage (MSPB) unit in 1981. Almost a decade later, in 1990, the investment bank started offering these services internationally [Morgan Stanley, 2005]. Today MSPB has units in New York, Chicago, San Francisco, London, Frankfurt, Tokyo, and Hong Kong. The firm's continuous objective is to be the leader in this business, and it has been successful in doing so.

Morgan Stanley is one of the top three prime brokers worldwide along with Goldman Sachs and Bear Sterns; together they control 55-65% of the global market

[Burgeoning Business, 2004]. According to the Prime Brokerage report prepared by Deutsche Bank securities in 2001, Morgan Stanley alone controls about 35% of the clients with assets above $1 billion, and 55% of those above $500 million. A survey cited in this document also considers the firm as being the best performer in four out of six categories evaluated (client service, reporting, technology, and operations) for clients with assets above $500 million. Morgan Stanley Prime Brokerage manages 800 accounts, which represent about 330 billion dollars in assets [Morgan Stanley, 2005].

Morgan Stanley provides the same core services described in the previous section. However, they also provide several value-added services listed below:

- Capital introductions
- Client consulting services/start-up services
- Risk / performance analytics
- Consolidated reporting

"Prime brokers generate income through a variety of activities, but mainly through securities lending, clearing and financing" [Hintz, Buechs, & Levy, 2005]. Within these activities, Morgan Stanley makes huge profits by taking advantage of different interest rates and charging fees. They generate profits in four main ways. The following shows an example of how each method works:

- Credit Spreads: Clients holding cash at MSPB are paid a 4% interest rate. MSPB invests this money and is paid a 5% interest rate, thus making 1%
- Debit Spreads: MSPB lends money at a 5% interest rate and has borrowed that money at a 4% rate. They make the 1% difference
- Stock Lending: MSPB lends stocks to clients who want to make money by shorting. The client is required to put an amount in cash as collateral. MSPB invests this cash earning a 5% interest rate. Because the client has used this cash

as collateral MSPB only pays them 3% interest. They make the difference between the interest earned and paid which is 2%

- Ticketing Fees [Morgan Stanley, 2005]

The main reason why clients choose Morgan Stanley over its competitors is their technology. This is not only one of the main barriers of entry for competitors, but also the firm's competitive advantage. These applications help Morgan Stanley perform tasks quicker, simpler, while minimizing the risk for errors. In the world of finance where things change by the minute, being quick and accurate is essential for clients; this is where Morgan Stanley prevails thanks to technology.

The prime brokerage unit has various internal business applications that present key client reference data. They allow Morgan Stanley to effectively and efficiently serve its clients and attract new business. The main applications used by client service representatives (CSR) are:

- PB Today: Web portal that consolidates prime brokerage news and client/account information
- WorkQ: Application that organizes different work tasks; this is heavily used by CSR's in MSPB
- Global CIA (Central Information of Accounts): Contains client data
- N&R (Notification and Response): Notifies CSR's of corporate actions and enables them to enter a response if required
- MSPA (Morgan Stanley Portfolio Accounting): Consolidates client's reports
- Whitaker Garnier: CRM system integrated with Microsoft Outlook
- EQS (Enterprise Query System): Provides information about the client's accounts; trades, cash transactions, and margins

Some of the tools available to the clients are:

- CANS (Corporate Actions Notification System): Notifies clients of corporate actions and enables them to enter a response if required
- ICE (Interactive Cash Entry): Enables clients to perform cash transactions directly
- Client Link: Portal given to clients that shows account and market information
- PQ (Portfolio Query): A system in client link that summarizes client's postings and activities as of yesterday
- Transaction Manager: Is an online application tool, which is available to clients and CSRs with the intention to help manage trade breaks and trade cancels and corrections.

Another competitive advantage that Morgan Stanley has is the quality of the service provided to their clients. Client Service is in charge of matching each client with the best fit representative. Morgan Stanley provides complete coverage to its clients regardless of their location or the type of query they might have. CSR's provide customers with the best service by combining their expertise and a thorough understanding of their client's ongoing needs [Morgan Stanley, 2006].

Prime Brokerage expects huge growth in the next few years because of the popularity in hedge funds. The hedge fund business is growing at a very fast pace, despite of some recent setbacks of popular hedge funds such as Amaranth that lost $5 billion in a week (and a total of $6 billion in a month). "Hedge Fund assets will grow at an average annual rate of 16.5 percent over the next five years, reaching US$2.1 trillion by 2009" [Burgeoning Business, 2004]. Consequently, the prime brokerage business should grow at the same pace, and so should its revenues. Figure 2.5 shows the estimated growth in revenues of the prime brokerage industry.

Figure 2.5 – Prime Brokerage Revenues
Source: www.celent.com

However, competition is getting stronger each day, while margins are getting tighter. Morgan Stanley must therefore continue improving and developing its technology through the constant implementation of best practices, keeping in mind that today's innovative idea is tomorrow's benchmark.

2.4 Best Practices

"A best practice is a business function, process, or system that is considered superior to all other known methods" [US Department of Defense, 2006]

A best practice, as stated above, is the best internal practice, strategy, approach, and/or process, which generates superior performance for a company [Project Management, 2005]. In order to ensure that best practices are being used, one has to know what the best alternative ways of doing different processes are. The process of determining best practices is called benchmarking. Benchmarking compares a particular practice to alternative methods. Within a business, the search for best practices should not be limited. However, it is not a realistic goal to be the best in every single process or

aspect of a business. The costs of doing this would simply be too high. A company should focus on the areas that will have the most impact or the greatest benefits to their clients and company. "Intelligent organizations reengineer the most critical of the processes first and then extend their successes to the other areas or processes of the organization" [Gupta, 2001, ch. 2, 19]. The following sections will identify how best practices are determined and how companies can increase their performance by committing to them.

2.4.1 Benchmarking

Benchmarking is widely known and recognized as a performance measurement tool. It is defined as searching for the best practices or competitive practices that will help define superior performance of a product, service, or support process [Industry Canada, 2005]. A benchmarking study compares certain aspects of a given company against competitors or subunits within an organization. In such a study, the company recognizes its competitive position and major performance gaps, ranking each of the categories compared. The following are the most common types of benchmarking:

- Strategic Benchmarking – Is used when organizations seek to improve their overall performance by examining the long-term strategies and general approaches that have enabled high-performers to succeed
- Performance Benchmarking or Competitive Benchmarking – Is used when organizations consider their positions in relation to performance characteristics of key products and services
- Process Benchmarking – Is used when the focus is on improving specific critical processes and operations

- Functional Benchmarking or Generic Benchmarking – Is used when organizations look to benchmark with partners drawn from different business sectors or areas of activity to find ways of improving similar functions or work processes
- Internal Benchmarking - Involves seeking partners from within the same organization, for example, from business units located in different areas
- External Benchmarking - Involves seeking outside organizations that are known to be best in class
- International Benchmarking – Is used when partners are sought from other countries because best practitioners are located elsewhere in the world and/or there are too few benchmarking partners within the same country to produce valid results [Public Sector Benchmarking Service, 2006]

The basic questions that a Benchmarking Process answers are:

- What are the differences between the processes?
- Where do the differences originate?
- What can be learned from the differences?
- What is the best practice in this topic?

Benchmarking allows a company to discover the best way of completing a particular task, having cost, quality, and time benefits. Rethinking and redesigning processes are important in maintaining competitive advantages and ensuring long-term success. Globalization, increased customer expectations, and mass customization are forcing corporations to rethink their businesses [Gupta, 2001]. Some benefits of redesign are combining several jobs, eliminating unnecessary steps, and allowing workers to make more or less decisions depending on the situation. Figure 2.6 identifies the simplified steps that must be considered and implemented when conducting this analysis. The team will be focusing on phase two: benchmarking different processes against each other and identifying best practices.

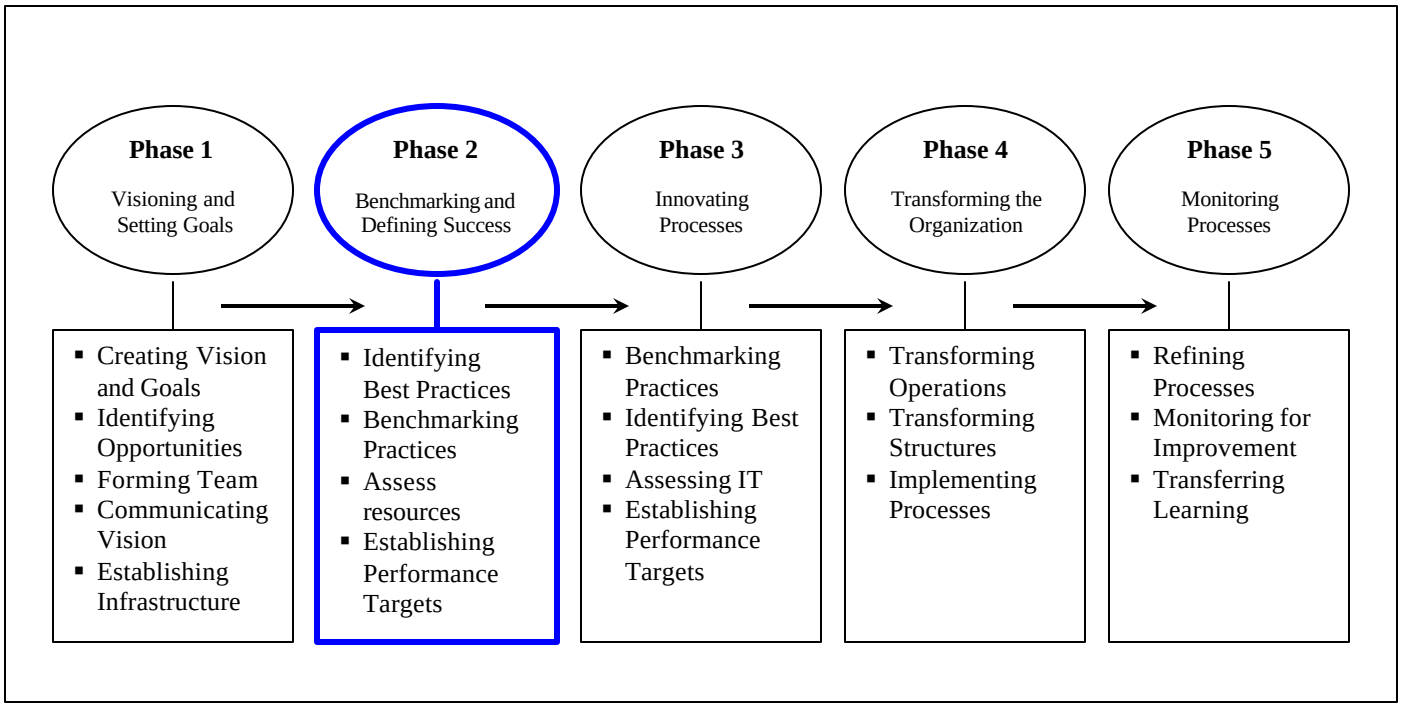


Figure 2.6 – Process Reengineering Framework Chart
Source: Internal Audit Reengineering Survey

Setting performance targets or metrics for the benchmarking study is critical. However, there is no standard or best criterion to use in a benchmarking study. The appropriate criterion to use depends on the goals and objectives of a particular business. To benchmark the processes against each other, gap analysis is used as a tool to identify the discrepancies between the best in class and the actual processes. Gap analysis can be defined as the process of discovering discrepancies between two or more sets of data flow diagrams [Schmidt, 2006]. In essence, this tool identifies the variances of the processes being analyzed by comparing the diagrams. Within this process, a fishbone diagram is a useful tool to use to identify the problems, and the root cause of why they exist. Figure 2.7 shows an example of a fishbone diagram. The problem is identified as the inability to meet project deadlines. Possible root causes are poor planning, teamwork, project management, and information technology.

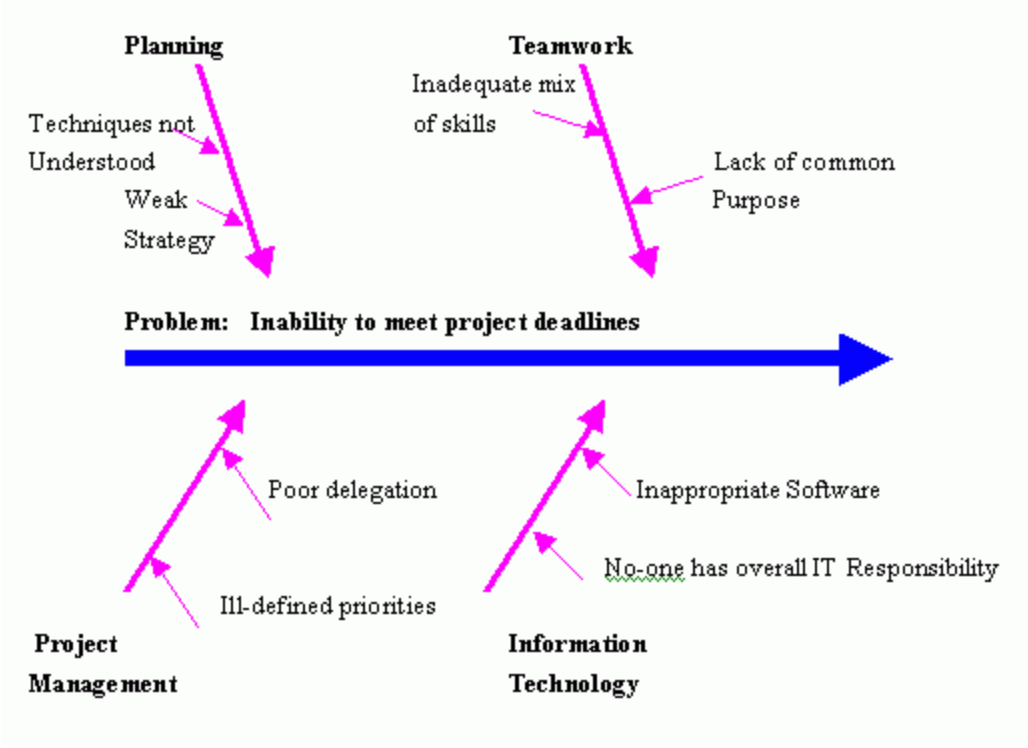


Figure 2.7 – Fishbone Example
Source: www.mycoted.com

After the entire process has been studied and the gaps identified, a scorecard is a useful way to provide a summary on each way of completing a process and compare the degrees in which one or the other is better. A company should not blindly adopt any best practice without weighing its benefits to the customer against its actual implementation cost [Gupta, 2001].

2.4.2 Scorecard

A scorecard is a measurement tool that compares two or more items or processes by assigning a score to a number of key criteria that are important for an organizations success such as cost, quality, and time. Scoring alternatives can be subjective or objective, but should remain complete, important, and simple. When combining subjective and objective measures a common scale is needed. A subjective criterion is

generated through knowledge or experience and is scored using a scale with an odd number of points (0-10). After every measurement criterion is scored, all of the items are added together to generate a total score. The total scores are then compared and the item or process with the highest score is considered the best choice. Figure 2.8 shows a scorecard example to select whether to build a new home or buy an existing one. The scoring criteria used are price, quality, and space. The scorecard indicates that buying an existing home is the better choice because of receiving a higher score.

House Selection Scorecard				
	New Home		Existing Home	
Price	375,000	(0)	290,000	(10)
Quality	Excellent	(10)	Good	(0)
Space	1008 sq ft.	(0)	1800 sq ft.	(10)
Total Score	10		20	

Figure 2.8 – Scorecard Example

Due to the competitive nature of the prime brokerage industry, it is important to focus on continual improvement. The use of benchmarking, fishbone diagrams, and scorecards will help the team identify best practices, aiding in Morgan Stanley competitive position. The next chapter will describe the team's methodology process for collecting and analyzing the data required to complete the project.

3 Methodology

The scope of the project was to determine a best practice for several processes within the Client Service departments of Morgan Stanley's Prime Brokerage (PB) and International Prime Brokerage (IPB) offices. The team had several objectives in order to complete its goal of identifying best practices:

1) Understand the business (client, products, market)
2) Discover the practice differences between PB and IPB
3) Achieve an in-depth knowledge of the selected processes
4) Determine a best practice for each process

The first objective was to understand the setting surrounding the project. This was achieved through background research before arriving at the site, so that the team would be properly prepared. From the information gathered, we were able to construct our first-round interview template and create our project plan forecast. This phase was done to ensure that the team would be well prepared once we got to Morgan Stanley.

Once on-site, the team received product demos to comprehend some of the discussion topics within the upcoming weeks. The team then proceeded to perform first-round interviews, which served to complete our second objective of defining the core task differences between PB and IPB related to each process. With these initial results, the students and the sponsors decided on several topics for further investigation. Each team then completed a second round of interviews to examine in detail the selected processes. From these, the WPI group proceeded to construct process flows, fish bone diagrams, and balanced scorecards to analyze the data. After the analysis phase was completed, conclusions and recommendations on best practices were formulated. A detailed schedule

of the different activities we executed to complete these objectives can be found in Appendix 1.

3.1 Background and Preparation

The team performed background research on the industries related to the project and on some methods that could be used for the identification of best practices. We investigated the hedge fund and prime brokerage industries, in order to understand the core business and environment where we would be performing our study. We also looked into several techniques to approach best practice identification, particularly researching flow diagrams, gap analysis, fishbone diagrams, and balanced scorecards. These methods would later serve as the backbone for the analysis phase of the project.

Once on-site, the students received product demonstrations from some of the product owners and client service representatives (CSRs), providing us with a general understanding of their functions and activities. These product demonstration sessions prepared us for the first-round interviews, helping improve the quality and focus of the questions. At the same time, it gave us a better notion of some issues that would arise in the upcoming interviews.

3.2 Discovering Practice Differences

An initial round of interviews was conducted among employees throughout PB and IPB, to identify the core task differences between the sites. The interviewees were selected based on a set of criteria previously agreed upon by the students and advisors in order to have the most effective sample. The initial list of criteria that the employees should have was:

1) *PB and IPB contact*: The employee's exposure to both the PB and IPB regions within the Client Service department was critical to his/her eligibility.
2) *Experience diversity*: We required our sample to have experience between a set of position levels within the Client Service department. We used this strategy to ensure a well-rounded view of the different practices.
3) *Seniority*: The candidates needed to have at least two months of experience in each PB and IPB in order to be included in our analysis.

With the aid of our advisors, we identified a group of fourteen potential interviewees for our initial study. A number of current client service representatives (CSR), client service managers (CSM), and senior managers for the Client Service Department integrated the sample. Several other interviewees had moved on to other positions within prime brokerage since Client Service, but maintained knowledge of the practices from their previous experience. Table 3.1 displays the specific characteristics of each individual in our sample focusing on their current position and background in PB and IPB.

Interviewee	Current Position	Current Location	Years at MS	Background
1	CSR	PB	3	In charge of Global Coverage team in HK IPB offices during 4 months
2	VP in BCS*	IPB	7.5	Worked for 7 years as CSR (2.5yrs in PB, 5 yrs in IPB)
3	Team leader for GC** team	IPB	9	In charge of 3 CSRs who manage both PB and IPB accounts
4	BCS*	PB	4	Worked in CCS IPB for 4 months
5	VP of Sales	PB	9	Worked in CS for 5 years (3 in PB, 2 in IPB)
6	VP in BCS*	IPB	9	CSR in IPB, and ran expansion of Tokyo and HK offices for 4 years (where he had contact with both PB and IPB accounts)
7	CSR	PB	7.5	CSR in San Francisco for 3 years, GC** CSR in IPB for 2 years, CSR in PB 2.5 years
8	CSM	PB	7	CS in PB and CSM in both PB and IPB

9	CSM	IPB	8	4 years in Position Services (CA), 4 years in CS where managed a GC team
10	CSR in GC** team	IPB	6	Started as Junior CSR in PB, 5 years in PB as CSR, 1 year in IPB as CSR
11	In charge of GC**	HKPB (IPB)	9	Worked in Controls, CSR in PB for 1.5 years and GC in HK for 1 year
12	CSR	PB	8	Worked at Morgan Stanley Trust Co. for 2.5 years, CSR IPB 4 years, CSR PB 1.5 years
13	Executive director in Product Development	IPB	12	9 years as CSR/CSM
14	N/A	-	-	-

*Business Consulting Services group
**Global Coverage team

Table 3.3.1 – Description of First-Round Interviewees

After identifying our sample, we finalized the first-round interview template (Appendix 2). The same template was used for all of the interviews we initially conducted, which gave consistency to our results. We decided that we would let the interviewees express themselves as much as they wanted, and the group would not try to constrain or narrow the answers in any way. The first two questions focused on the interviewee's background at Morgan Stanley. Their answers would provide us with a general understanding of the individual's exposure to both regions and the higher-level differences that he or she could point out. In addition, the questionnaire captured some opinions regarding the strengths and weaknesses of the two offices. Finally, each of the interviews ended by asking the interviewee to reference us to any documents or people who could be of aid to our research. Consequently, these final questions led us to other interviewees and relevant materials to our search. Proactively anticipating biased responses, possibly due to an employee's preference of one office over the other, we made sure that all of the information was verified with other interviewees before arriving to any conclusions. The advisors approved the questionnaire template as well as the procedure before beginning the interviews.

Additionally, the group came up with an interview procedure in order to carry out the questionnaire and document the findings. The students agreed that the group based at the location where the interview would take place, was in charge of conducting it, while the other group would participate through conference call. The on-site group would have one interviewer and one recorder. The interviewer conducted the questions and would be the only person leading the interview, while the recorder would document the interviewee's answers. At the end of each interview, the floor would be open to additional questions where every group member participated. Both of the on-site advisors were present throughout the entire first round of interviews. Once each of the interviews were finished, we all stayed in the meeting discussing the interview results. Table 3.2 shows the details of the interviews including the date of the interview, the interviewee's location, and who the interviewer and recorder were.

Interviewee	Week	Date	Location	Interviewer	Recorder
1	1	25/10/2006	London	Andres	Daniel
2	1	25/10/2006	London	Daniel	Andres
3	1	26/10/2006	New York	Fernando	Esteban
4	1	27/10/2006	New York	Esteban	Alan
5	1	27/10/2006	London	Andres	Daniel
6	2	30/10/2006	London	Daniel	Andres
7	2	30/10/2006	New York	Alan	Fernando
8	2	31/10/2006	London	Andres	Daniel
9	2	31/10/2006	London	Daniel	Andres
10	2	01/11/2006	New York	Fernando	Esteban
11	2	01/11/2006	New York	Esteban	Alan
12	2	01/11/2006	Westchester	Alan	Fernando
13 (cancelled)	2	02/11/2006	London	Daniel	Andres
14	2	02/11/2006	London	Andres	Daniel

Table 3.3.2 – Detail Description of First-Round Interviews

We completed the first round of interviews by the end of the second week of the project. From this, a list of differences between PB and IPB was constructed and presented to our advisors. Additionally, we looked at those differences from a feasibility

and importance perspective, and ranked them accordingly. Each group presented, in preference order, five possible focus processes as well as the rest of the list of differences to the sponsors. They then proceed to select our activities from the complete list. Once the advisors narrowed down the list to give the project a more specific focus, the students were able to move into the next stage.

3.3 In-depth examination

The team conducted a second round of interviews focusing on the previously selected processes. The purpose of these interviews was to obtain a complete understanding and further our knowledge of the processes and their flow of information. The students concentrated in gathering information from both PB and IPB in order to compare and benchmark the results. From these second-round interviews, we were able to construct process flows and fishbone diagrams that would map the functions, identify problems, and determine the reasons behind the differences of the selected processes.

The students designed a specific procedure for the second round of interviews as well. For one of the selected processes, the London group was assigned to reveal an overall understanding of the process in IPB, and the NY group would do the same for the process in PB. The other practices the groups focused on were done separately, and each team compiled information for both sites in their effort to fully understand these activities. The intention of these interviews was to grasp the processes in detail, discovering potential flaws, risks, and differences that could eventually leave room for improvement.

For the second round of interviews, both teams targeted individuals who had a great level of expertise on the focus procedures. The use of risk managers and process

'gurus' was aimed at achieving an overall description of the process from their extensive experience. Additionally, risk managers provided an explanation of why specific tasks are done in a certain way from a risk control perspective. The product owners offered us information regarding the use of each application including its purpose, development, functionality, and constraints. Interviewees from operations explained how they play a role in each of the processes, so we could have a clear understanding of the entire flow. Finally, CSRs provided us with an actual view of how the tasks are performed from a user perspective.

For the project, each group identified Corporate Actions and two more themes each to research independently. The London group decided to focus on the functionality of Transaction Manager for Trades Flow. Furthermore, the team looked into the differences between the way audit requests were being handled in PB and IPB. On the other hand, the NY group focused on the difference between IPB Reps maintaining Back-up Notes (which served as a tracking record for their accounts), while no similar practice presently existed for CSRs in PB. They also investigated the differences between the way CSRs entered journals on both sites, specifically looking at the tools that were available in NY to move cash and stocks that were restricted in London.

Corporate actions was chosen as a common theme between the two groups. This process was examined and analyzed as a whole by both the NY and London team, sharing any pertinent information gathered when possible. The London team gathered information on the IPB division while the NY team did the same for PB. However, each group did the analysis phase for this particular process completely on an individual basis. The other selected processes were approached on an individual basis by both groups.

From the second round of interviews with the product owners, operations, CSRs, process experts and risk managers, each group was able to build process flows for the selected activities. This method provided a graphical representation of the information stream for a better understanding of each process. To ensure an accurate representation of the actual flow, the process flow charts were confirmed with the process 'gurus'. We created process flow charts for both the PB and IPB divisions, which allowed each group to identify the gaps between both practices for further analysis. These differences became the initial themes each of the groups would have to pursue and understand.

Each group then constructed a fishbone or root-cause diagram to uncover why the process was different between the branches. This information came from both sets of interviews, and additional informal gatherings with people across the business unit and operations. With the use of the fishbone diagrams, the students were able to understand the reasons behind why each process is currently handled the way it is. We then used these as starting points for our analysis and recommendations. Between the flow charts and the fishbone diagrams, each group was able to fully understand the details and differences of each process in order to begin the analysis.

3.4 Determining a best practice

The final objective of the project was to determine a best practice in each of the chosen areas of focus. Using the information compiled from the data-gathering phase, the group used a series of techniques to identify the best practices. The students developed a best practice identification process observed in Figure 3.1. It displays the steps that we followed for the selected processes in order to identify the best practice. As we explained previously, the first task was to interview the flow experts, users, and

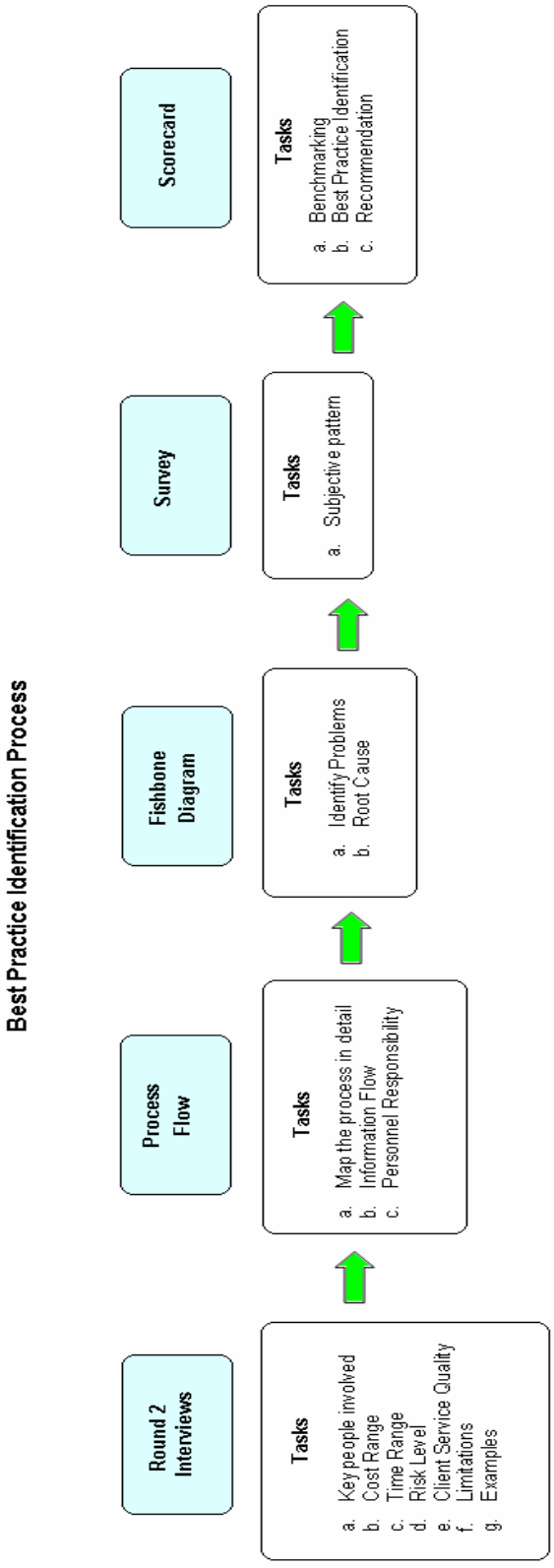


Figure 3.3.1 – Best Practice Identification Process

owners of the particular process to acquire detailed information on it. With this information, the students constructed process and fishbone diagrams to create information streams and identify problems within the activities. The team then conducted a survey to the CSRs in London (Appendix 3) and the CSMs in New York (Appendix 4) to gain additional knowledge and supporting evidence. Finally, the team completed a balanced scorecard for each of the tasks, which had a set of criteria that served as a measure of what a best practice should be.

The surveys were tailored differently to the CSRs in IPB and the CSMs in PB, because surveying the client managers in PB was more feasible than targeting the large number of client representatives in this department. The survey was structured to gain a subjective evaluation of each practice from a user perspective, and served to quantify our previous findings from the first and second-round interviews. Achieving a high response rate to obtain an accurate sample was a priority that we took into account when designing the survey. Therefore, a short survey was crucial so as not to discourage the responders from completing it. From this technique, we gathered relevant data that we used to evaluate each of the processes.

From background and continuous research, we identified a set of criteria that would be characteristic of a best practice. We compiled all the information obtained through our various methods to help us quantify each. The criteria used were the following:

- Priority - To what extent is the process given the level of precedence that it deserves?
- Client Service - To what extent does the process provide first-rate quality to clients?

- Quality - Internal - To what extent is the process designed in a way that optimizes resources and output?
- Risk Control - To what extent does the process have controls that prevent a loss?

By incorporating this set of criteria into the balanced scorecard template shown in Figure 3.4, we rated each of the selected processes and were able to quantify our findings. The scorecard focused on a scoring system that compared the PB and IPB processes, which led to the identification of a best practice.

Benchmark Scorecard					
Process:					
Description:					
Increase / Decrease	**Evaluation Metric**	**PB**	**IPB**	**Reasons for score - PB**	**Reasons for score - IPB**
⬆	**Priority** (5, 4, 3, 2, 1)				
⬆	**Client Service** (5, 4, 3, 2, 1)				
⬆	**Quality - Internal** (5, 4, 3, 2, 1)				
⬆	**Risk Control** (5, 4, 3, 2, 1)				
	Total Score (Best Practice - 4)				
Best Practice:					
Recommendation:					
Feasible in PB:					

5	Excellent
4	Good
3	Satisfactory
2	Needs Improvement
1	Unsatisfactory

Figure 3.3.2 – Balance Scorecard Template

Completing all of the methods outlined in this chapter helped us accomplish the goal of this investigation. It included a series of four objectives:

1) Understand the business (client, products, market)
2) Discover the practice differences between PB and IPB
3) Achieve an in-depth knowledge of the selected processes

4) Determine a best practice for each process

By completing the first objective, we were able to prepare ourselves for the on-site phase of the project. The next two objectives allowed us to identify and understand the items that would become our areas of focus. By meeting the last objective, we were able to define a best practice for each of the processes and make conclusions and recommendations. In the next chapter, we will discuss the findings that provided us with support for our recommendations.

4 Results and Analysis

During the first round of interviews we met with thirteen people in New York and London that had experience across PB and IPB. The interviews aimed at uncovering the main differences between the two locations. We selected interviewees who held various ranks within the organization to gain manager and non-manager perspectives. A complete listing can be found in the previous section in Table 3.1.

From the data collected in the interviews, we developed a list of processes performed differently in PB and IPB. The list includes nineteen topics ranging from specific, such as audit requests, to general, such as communication. Figure 4.1 shows the differences that round one interviewees stated and their frequency.

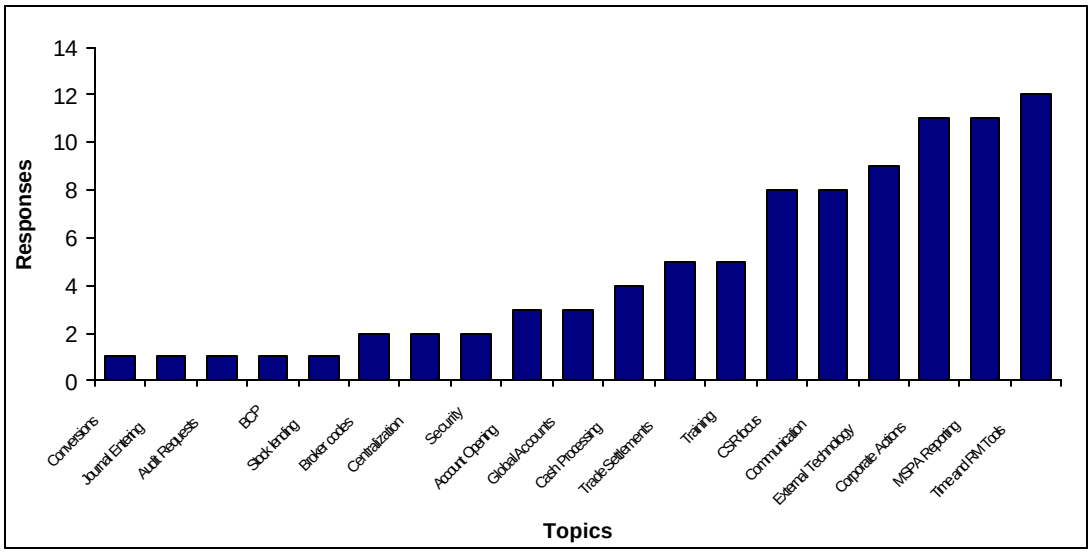


Figure 4.1 – Round One Interview Summary

The most mentioned topics were internal technology, MSPA reporting, and corporate actions. The least mentioned topics were audit requests, business continuity protocol (BCP), and conversions, among others. The overall themes of the interviews were:

- **Communication gap between the two locations:** PB and IPB are not completely aware about how the other branch is performing similar and/or different tasks.
- **Technology developed by PB for PB:** In most cases, PB develops technological applications focusing on PB's immediate needs for quick product release, without considering international needs.
- **Different business focus:** PB believes in being flexible to their client's needs, focuses greatly on accounting, and obtains stickiness through technology. IPB is more stringent with their clients and obtains stickiness through client management. These differences are mainly market driven. For example, in London, client's have external administrators that take care of accounting and reporting needs, whereas in New York, PB performs these tasks.

For a complete list of all differences uncovered in round one interviews, refer to Appendix 5.

The next task was to present the list of differences that we uncovered to the project liaisons. The team prioritized the top five differences in the list according to three selection criteria: frequency of occurrence, areas where the team could have an impact, and if manageable in a short time span. The top five student choices were:

1. Voluntary corporate actions
2. Client training
3. Backup notes
4. Cash journal entry
5. Broker codes

The topics chosen by our liaisons were a combination of what they felt was most crucial to the business and our prioritized list. The top five results were:

1. Voluntary corporate actions

2. Trade settlements
3. Backup notes
4. Cash journal entry
5. Broker codes

Of these topics, it was agreed that the team would focus on the first three, and have the last two as backups. This turned out to be useful because the information we gathered concerning trade settlements was not completely accurate and led to a task that was not manageable in a short time span. Thus, the topics that we focused on were corporate actions, backup notes, and journal entries.

To analyze these topics we setup a second round of interviews with people who had an in-depth knowledge of them. The purpose of these interviews was to understand the process as a whole and discover the associated risks and problems. This was done for PB and IPB in order to benchmark the processes against each other. Below, Table 4.2 shows a listing of the people used for second round interviews, their location, and the subject of the interview.

Round 2 Interviews			
Interviewee	**Current Position**	**Current Location**	**Subject**
1	Business Analyst	PB	Backup Notes - PB Today
2	*VP	IPB	Backup Notes - Requirements
3	**CSR	PB	Backup Notes - Requirements
4	CSR	IPB	Backup Notes - Requirements
5	ED and Risk Officer	PB	Corporate Actions - Process Identification
6	Product Manager	PB	Journal Entry - ICE and Online Journal Tool
7	CSR	IPB	Backup Notes - Requirements
8	PSCSGNY	PB	Corporate Actions - Process Identification
9	Information Technology	IPB	Journal Entry - Security and Functionality
10	CSM	PB	Journal Entry - Monitoring users
11	CSR	PB	Journal Entry - User
12	**CSR	PB	Journal Entry - User
13	PSCSGNY Manager	PB	Corporate Actions - Process Identification
14	Product Manager	PB	Corporate Actions - CANS and N&R
15	CSM	PB	Backup Notes - Requirements
16	Risk Officer	IPB	Corporate Actions - Risk

*Business Consulting Services group
**Global Coverage team
ED: Executive Director
PD: Product Development
ICE: Interactive Cash Entry
CANS: Corporate Actions Notification System
N&R: Notification and Response

Table 4.1 – Round Two Interview Summary

Using the information obtained from round two interviews, we developed process flow and fishbone diagrams that will aid us in our analysis. Next, we developed and administered a survey, with questions geared towards finding subjective patterns on each individual topic. Client Service Managers working in New York and San Francisco

completed this survey. A copy of the survey is available in Appendix 4. We will use the answers from the survey, the root causes in the fishbone diagrams, and the risk areas in the process flows to score each topic for London and New York. Based on this score we will determine if the process qualifies as a best practice. The following sections with show the teams results and analysis on Voluntary Corporate Actions, Cash Journal Entry, and Backup Notes.

4.1 Voluntary Corporate Actions

A Corporate Action is any event that brings material change to a company and therefore affects its stakeholders. These include both common and preferred stockholders, as well as bondholders. There are two major categories of events in Corporate Actions:

- **Mandatory:** These events contain no options requiring action or expiration dates. Examples of mandatory events are splits, mergers, name changes, or dividend payouts. These events are going to take place regardless of how they affect stockholders. Thus, input is not required.
- **Voluntary:** These events provide clients with options requiring action before an expiration date. Examples of these events are tender offers and optional conversions. Normally these decisions represent a monetary difference to the clients, and therefore they want to wait until the last minute to make sure they make the correct election.

Because Mandatory Corporate Actions do not require a decision from the client, we focused specifically on Voluntary Corporate Actions. Throughout the second round of interviews, the group came to understand how important this process is to PB and the firm. Because in each month there is a large volume of corporate events, it is in the firm's best interest to pay particular attention to this process. In October 2006, which is a low

volume month, PB and IPB had about 1600 client events. This is roughly three actions per client per month for PB and five for IPB [MS internal data].

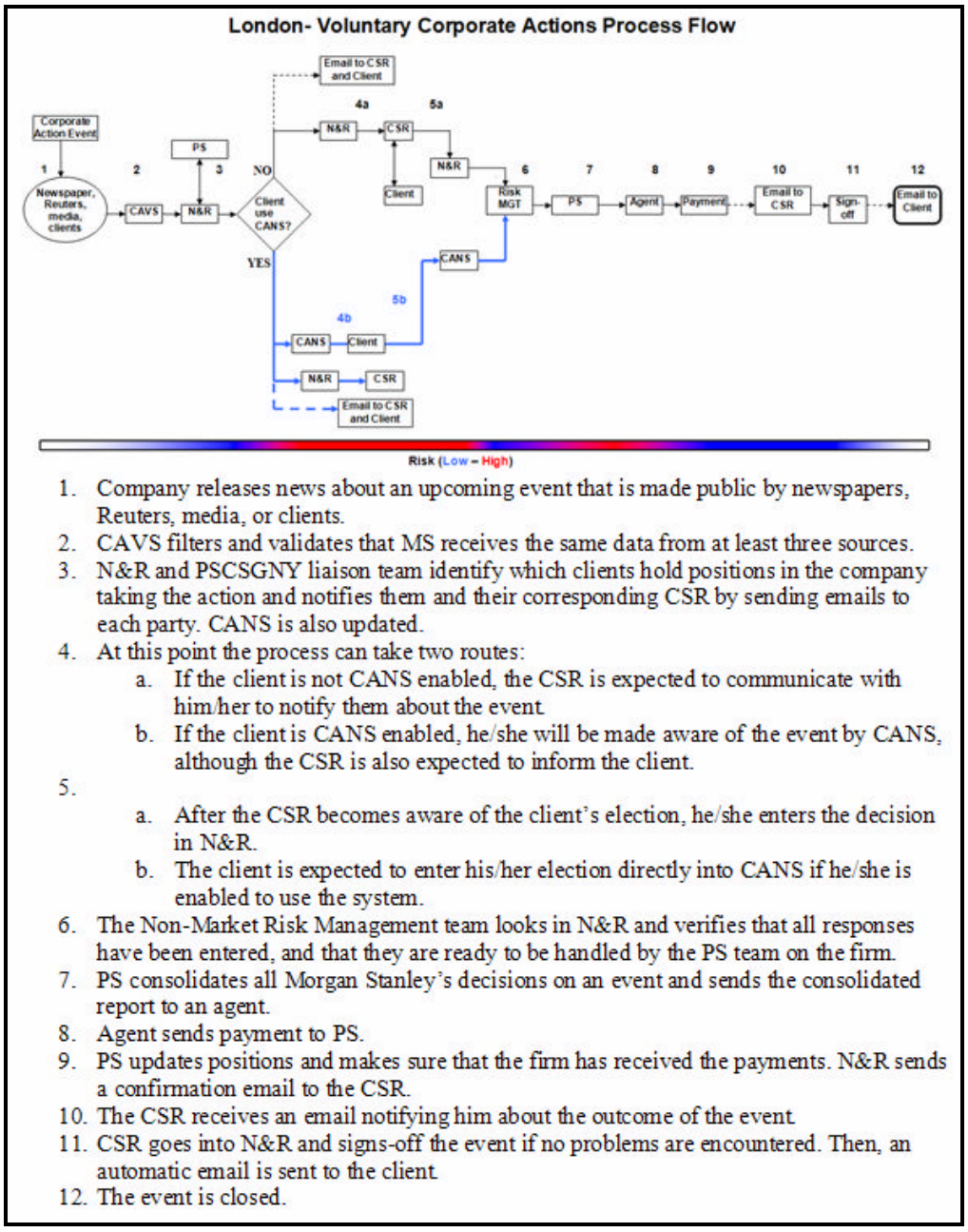
MSPB's goal is to provide seamless coverage to clients whose options on certain companies require action before expiration. In other words, MSPB's role is to make sure that the client is aware there is an event that requires a decision, to assist the client in making the election and, most importantly, to make sure that an election is entered before the deadline. After an election has been made, it is MSPB's responsibility to make sure the client is satisfied with the input.

4.1.1 IPB and PB's Processes

Before discussing the process in more detail, it is important to understand how it works in IPB and PB. The process flow charts below will explain the step-by-step processes in both locations. The most important teams and systems will be defined below for better understanding of the process diagrams:

- CAVS (Corporate Action Verification System): It validates event information and feeds it into MS systems
- CANS (Corporate Actions Notification System): Notifies clients of corporate actions and enables them to enter a response if required
- N&R (Notification and Response System): Notifies different parties of corporate actions and enables them to enter a response if required
- PS (Morgan Stanley Position Services group): Operations group that monitors event information and enters the entire firm's positions on an event.
- PSCSGLN (Position Services team specific to IPB): Support team for IPB
- PSCSGNY (Position Services team specific to PB): Support team for PB
- Non-Market Risk Management team: Team in PB and IPB that monitors activities that represent operational risk to the firm. Are independent of each other in PB and IPB, and have different tasks

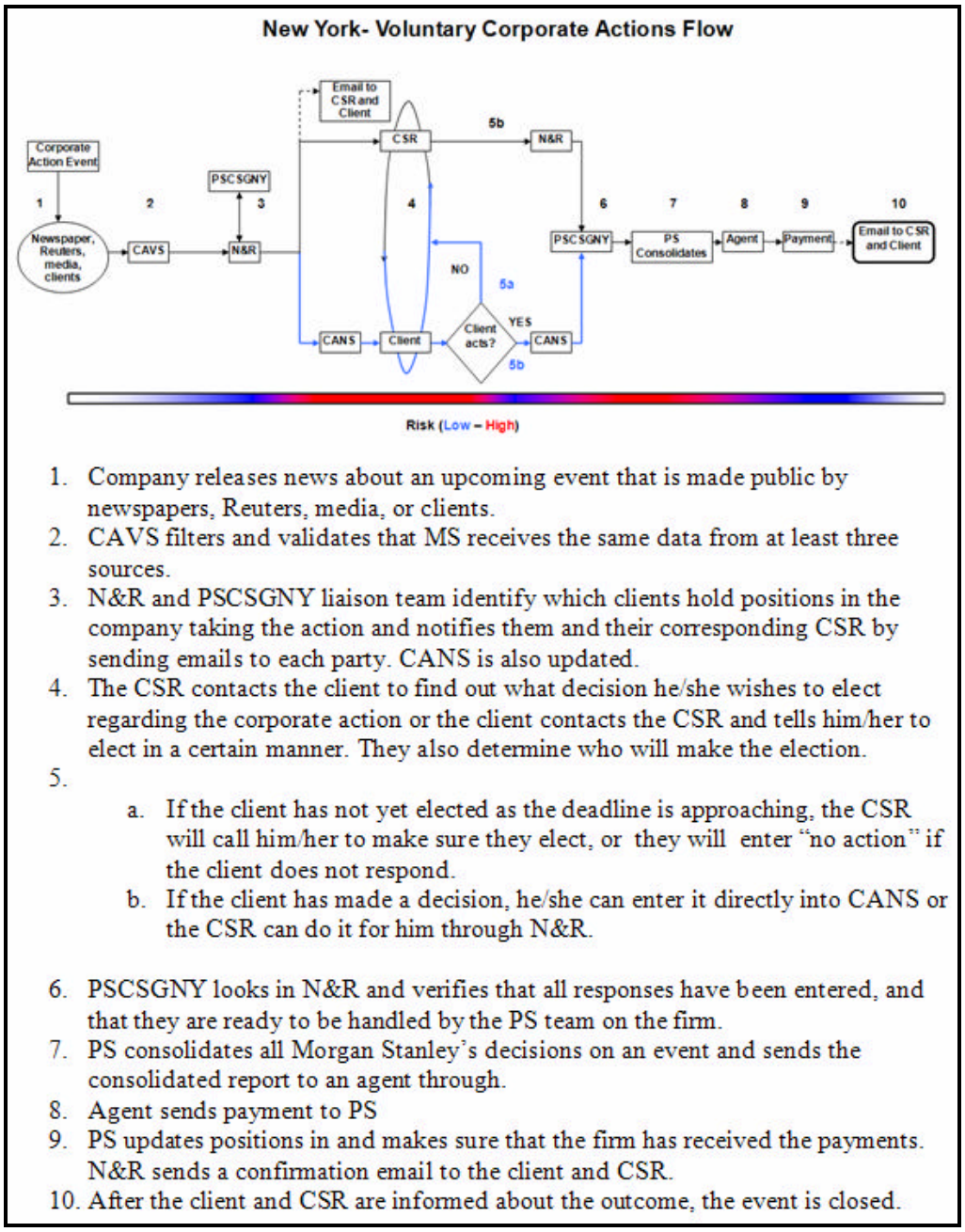
Figure 4.2 shows the step-by-step Voluntary Corporate Actions Process in London.



1. Company releases news about an upcoming event that is made public by newspapers, Reuters, media, or clients.
2. CAVS filters and validates that MS receives the same data from at least three sources.
3. N&R and PSCSGNY liaison team identify which clients hold positions in the company taking the action and notifies them and their corresponding CSR by sending emails to each party. CANS is also updated.
4. At this point the process can take two routes:
    a. If the client is not CANS enabled, the CSR is expected to communicate with him/her to notify them about the event.
    b. If the client is CANS enabled, he/she will be made aware of the event by CANS, although the CSR is also expected to inform the client.
5.
    a. After the CSR becomes aware of the client's election, he/she enters the decision in N&R.
    b. The client is expected to enter his/her election directly into CANS if he/she is enabled to use the system.
6. The Non-Market Risk Management team looks in N&R and verifies that all responses have been entered, and that they are ready to be handled by the PS team on the firm.
7. PS consolidates all Morgan Stanley's decisions on an event and sends the consolidated report to an agent.
8. Agent sends payment to PS.
9. PS updates positions and makes sure that the firm has received the payments. N&R sends a confirmation email to the CSR.
10. The CSR receives an email notifying him about the outcome of the event.
11. CSR goes into N&R and signs-off the event if no problems are encountered. Then, an automatic email is sent to the client.
12. The event is closed.

Figure 4.2 – London Voluntary Corporate Actions Flow

Figure 4.3 shows the step-by-step Voluntary Corporate Actions Process in New York.



1. Company releases news about an upcoming event that is made public by newspapers, Reuters, media, or clients.
2. CAVS filters and validates that MS receives the same data from at least three sources.
3. N&R and PSCSGNY liaison team identify which clients hold positions in the company taking the action and notifies them and their corresponding CSR by sending emails to each party. CANS is also updated.
4. The CSR contacts the client to find out what decision he/she wishes to elect regarding the corporate action or the client contacts the CSR and tells him/her to elect in a certain manner. They also determine who will make the election.
5.
    a. If the client has not yet elected as the deadline is approaching, the CSR will call him/her to make sure they elect, or they will enter "no action" if the client does not respond.
    b. If the client has made a decision, he/she can enter it directly into CANS or the CSR can do it for him through N&R.
6. PSCSGNY looks in N&R and verifies that all responses have been entered, and that they are ready to be handled by the PS team on the firm.
7. PS consolidates all Morgan Stanley's decisions on an event and sends the consolidated report to an agent through.
8. Agent sends payment to PS
9. PS updates positions in and makes sure that the firm has received the payments. N&R sends a confirmation email to the client and CSR.
10. After the client and CSR are informed about the outcome, the event is closed.

Figure 4.3 – New York Voluntary Corporate Action Flow

4.1.2 Main Differences between IPB and PB

Having explained both processes systematically, there are four differences that are evident up front and important to highlight. These are:

1. Flexibility of election

2. Backup monitoring teams
3. Post-payment sign-offs
4. CSR role

4.1.3 Flexibility of Election

IPB is strict on who inputs the election into the system. According to their policies, if a client is CANS enabled, he or she has to enter the election through the system. The CSR in this case is only available for assistance, and to remind the client about the deadline. If the client is not CANS enabled, then the CSR is the one expected to enter the client's decision into the system through N&R. Some reasons for this were:

- Controls miscommunication risk
- Provides a clearer task assignment for both the CSR and client
- Aligns with the department's ideology to roll-out applications for clients only if they are going to use them
- Allows CSR to focus on other things rather than chasing down the client
- Reduces the CSR's liability if something goes wrong with CANS enabled clients

However, PB allows both the client and the CSR to enter a response regardless if the client uses CANS or not.

From round two interviews, we identified that IPB has an exception to this rule. In every Client Service team, there is a "super-user" that, with proper authorization, has the ability to input a client's election into N&R in the extreme case that the client cannot do it. This, however, happens under special circumstances.

In this sense PB seems to be more flexible because it gives more options to the client and does not force him or her to enter their election strictly through CANS. The reasoning behind this flexibility is that PB's clients are the biggest funds in the market (MS controls 55% of funds over $500 million and 35% of those over $1 billion), and the

more options they provide the better. Such clients have several prime brokers and do not want to enter responses into different systems used by their different prime brokers.

PB's ideology is that by offering both options, the service to the client is improved. Furthermore, the options given to the client are seen as a risk benefit to PB because in the event that the CANS enabled client is unavailable for election, he or she can easily inform the CSR of their election. According to PB CSMs, CSRs know their clients and are always aware of who must act. Because the CSR is primarily responsible for any errors in the process, he or she should always have the ability to enter a response.

4.1.4 Backup Monitoring Teams

In both locations, it is expected that the CSR validate client's elections and make sure the decision makes sense. It is also part of the CSRs job to monitor and be fully aware about the details of events involving their clients. However, the firm has backup teams for added security that provide support in case CSRs miss any details or the event itself.

In IPB the Non-Market Risk Management team, part of the business unit, is the team that monitors the process of checking that an election has been made and that the decision is consistent with the client's options. This team monitors in N&R if an election has been entered and if there are any over or under-elections. They will also contact the CSR and/or client directly if no action has been taken. PSCSGNY's counterpart in IPB, PSCSGLN, is there specifically to answer any questions that the CSR cannot answer for the client.

In PB, it is PSCSGNY that does the monitoring. PSCSGNY is part of an operations group called Position Services (PS), specific for PB, but not part of the

business unit. This means that the CSR is the only party within the business unit that is expected to validate client's elections after being entered. The PSCSGNY team monitors and makes sure that an election has been input, in addition to checking for any over or under-elections. They must contact the CSR if elections have not been made and if they find a mistake. The PB Risk Management team only intervenes in voluntary corporate action events when a certain threshold has not been met (determined by number of clients involved or monetary value) or for extended deadlines, but not for ordinary events.

The volume of corporate actions events can explain the difference in Risk Management intervention between locations. As mentioned previously in this section, PB's volume is about three times greater than that of IPB. Thus, even if the Non Market Risk Management team would be the most appropriate to provide backup coverage as they are part of the business unit, they do not have the necessary capacity. This is why PB must outsource this function to the operations team. The negative aspect behind this is that any loss caused by the PSCSGNY team will have to be assumed by the business unit because operations does not generate revenue.

However, in IPB, the volume is less and the risk team is able to do the task. This is a better business strategy because if the business unit makes a mistake, it assumes its own losses. They also seem to have better expertise in verifying that an election has been input and making sure that the client has not made any mistakes. Table 4.2 identifies the specific roles of each of the monitoring teams for IPB and PB.

		Tasks on Client's election on CA's	
		PB	IPB
Business Unit	Risk Management	Intervene when a big deal is taking place, but generally do not Approve for deadlines to be pushed	Make sure election was made Make sure client's/CSR's election makes sense Call CSR and/or Client directly if election hasn't been made Call CSR and/or Client directly if election doesn't seem correct Sign-off election before payment (control more than actually sign) Monitor focus deals that are critical Approve for deadlines to be pushed
Operations Unit	PBCSG	Make sure election has been inputted Call CSR if election hasn't been made Answer questions Check if clients are over or under elected	Answer questions that CSR cannot answer
	PS	Creates CA events in N&R Consolidates elections for MS as a firm Enter MS's elections as a firm Receives payment confirmation from agent Sends out payment confirmation to CSR	Creates CA events in N&R Consolidates elections for MS as a firm Enter MS's elections as a firm Receives payment confirmation from agent Sends out payment confirmation to CSR

Table 4.2 – Business Tasks for Corporate Actions

4.1.5 Post-payment Sign-offs

Sign-offs are another main difference between IPB and PB. Within the process, IPB requires CSRs to sign-off events after payments have been executed, forcing them to check for mistakes. When the CSR signs-off the event in N&R, the client automatically receives a confirmation email. If the payment is incorrect, the CSR needs to get it fixed and sign-off after the payment is correct.

Post payment sign-off's are important in the IPB process because CSRs are less accounting focused, thus, they are less likely to monitor MSPA and detect mistakes on their own. Having to sign-off, as mentioned before, forces them to double-check each corporate action event. The downside to this is that CSRs are not always on top of signing off events and might forget to do it. If this happens, they end up having to do it through the "back door" so that the client will not get a late email that reflects his or her CSR was not on top of the sign-off process.

PB has a quite different approach. In PB, the system sends post-payment emails automatically to both the client and the CSR, closing the event. The CSR is still expected to review the payment and pick-up any mistakes. Because PB CSRs are very accounting focused, they will pick-up mistakes on the MSPA application that they monitor

constantly during the day. Therefore, signing-off is not cost effective and does not minimize operational risk for PB since the payment has already been made. Signing off in IPB only prevents the client from receiving an email with information that reflects a mistake on the payment. The client, however, can still detect the error by accessing his or her accounting reports.

4.1.6 CSR Role

The WPI team identified that CSRs in IPB and PB have different roles when handling Voluntary Corporate Actions. From round one and two interviews, the team noted that IPB CSRs are more proactive when monitoring their client's actions. CSRs check N&R more frequently and therefore are constantly aware of each event. This task is the number one priority in the list of "10 commandments", a daily task guide for IPB CSRs. Table 4.3 shows the first task of the "10 commandments" for IPB CSRs.

1. N&R Access N&R by typing 'GPSNR' into your IE browser. "N&R Work Queue This needs to be checked first thing in the morning, throughout the day, before you leave, and should be kept clean at all times – if you are unable to action a WorkQ for a valid reason you should add a note to the item. N&R Open items This needs to be checked first thing in the morning, throughout the day and before you leave at the end of the day. You need to be aware of approaching deadlines. At the end of the day you should check for any Far East deadlines which may not occur in usual European working hours. You should also monitor your open items to ensure that corporate actions which have paid, have been correctly signed off.

Table 4.3 - 10 Commandments for CSRs

In our interviews, the group perceived that even though corporate actions events are a priority in PB, CSRs do not check N&R as often as they do in IPB. Certainly, it is not number one on their priority list. They are more used to working with WorkQ, which

does not currently notify them of corporate action events. As reflected by the results of our survey seen below in Figures 4.4 and 4.5, a great amount of the responsibility is shifted to PSCSGNY, which is a support team. PB CSRs are relying too much on obtaining information from other groups within the firm.

Figures 4.4 and 4.5 show the answers to two of the survey questions answered by CSMs in PB.

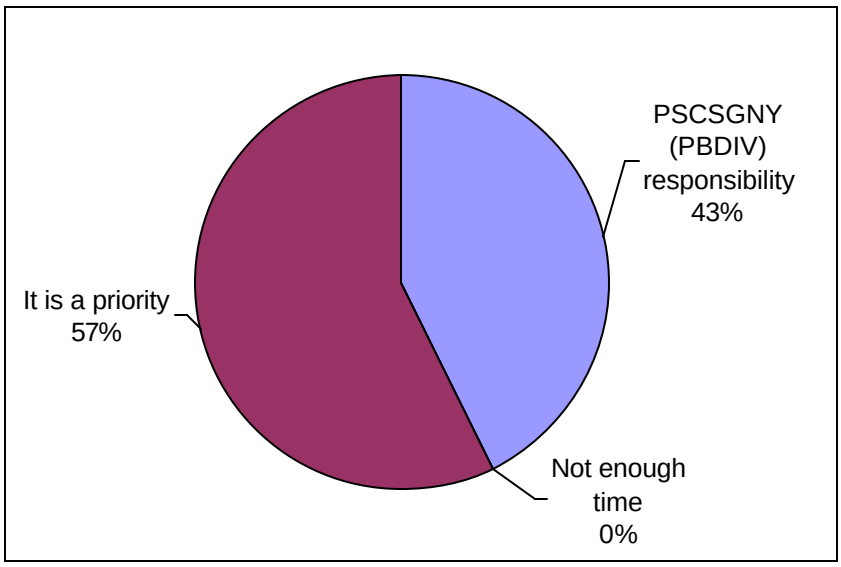


Figure 4.4 Monitoring Corporate Actions in N & R

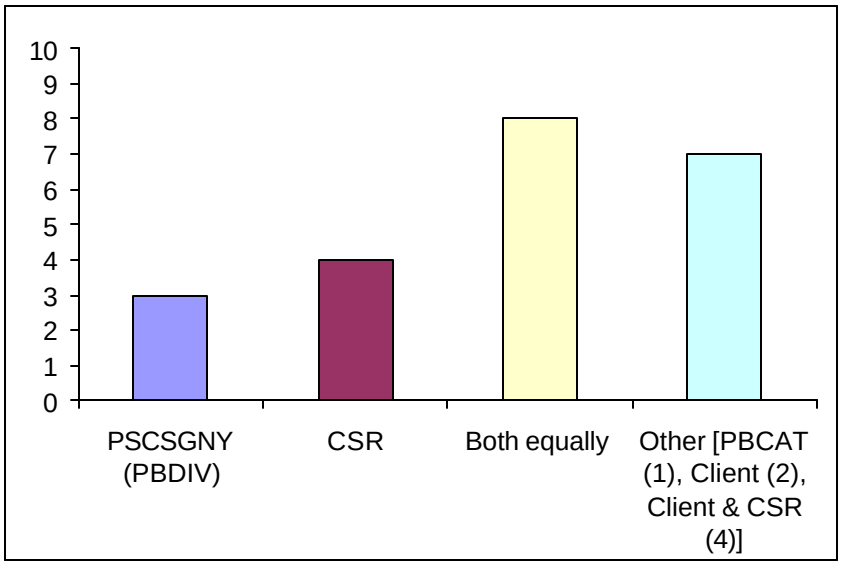


Figure 4.5 – Responsibility in handling Corporate Actions

The swimming pool process flow charts for IPB and PB in Appendices 7 and 8 illustrate the four main differences pointed out in this section more clearly. These differences highlight the main problems identified in the PB process, described in the next section.

4.1.7 Main Problems in PB

The group identified several problems from both the PB and IPB processes. However, because this WPI team was based in New York, this section will focus on discussing the issues with the PB Voluntary Corporate Actions process.

The main problem with this process is that it still takes in a considerable amount of errors, increasing the financial exposure of the firm. There is an increasing trend in both number of errors and fiscal loss for Morgan Stanley, although the number of errors in 2006 can potentially be lower than in 2005. Corporate action's is one of the top five processes with the most errors, which means that there is an opportunity for improvement in this process [Morgan Stanley Internal Document]. Figure 4.6 shows the top five

processes with the greatest amount of errors. As seen in the figure, Corporate Actions represent 8% of the total errors taken by the firm in 2005 and 2006.

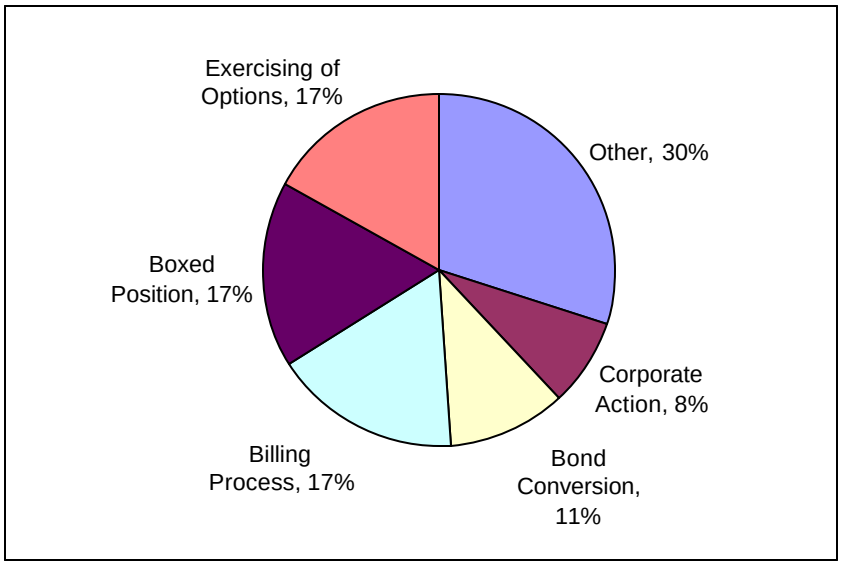


Figure 4.6 - Errors taken by Morgan Stanley
Source: Morgan Stanley Internal Document

Even though there are four other processes with significantly greater error percentages, we must keep in mind that the financial loss for a corporate actions is significantly large. The most common errors overall are the following:

- **Communication failure** : This is the most prominent error. It is important to note that the issue of communication failure has moved from external to internal according to the root causes, probably a sign that MS has to invest more in training and better documentation of communication
- **Procedure not in place:** Procedure not followed accounted for increasing number of errors in 2006
- **Confirmation errors:** These contributed to a significant portion of the financial loss in the business unit in 2004 and 2005 but it has gone down in 2006, the potential reason is the implementation of systems like CANS
- **Client/counterparty and communication-external:** These have remained one of the top five causes from 2004 – 2006, but client/counterparty is steadily increasing, while communication-external is decreasing

- **Manual processes:** This is a major root cause for financial loss but the financial impact has gone down significantly in 2006, although it remains one of the top 5 root causes in 2006 [Morgan Stanley Internal Document]

  Figure 4.7 shows the top five error types from 2002 to June 2006.

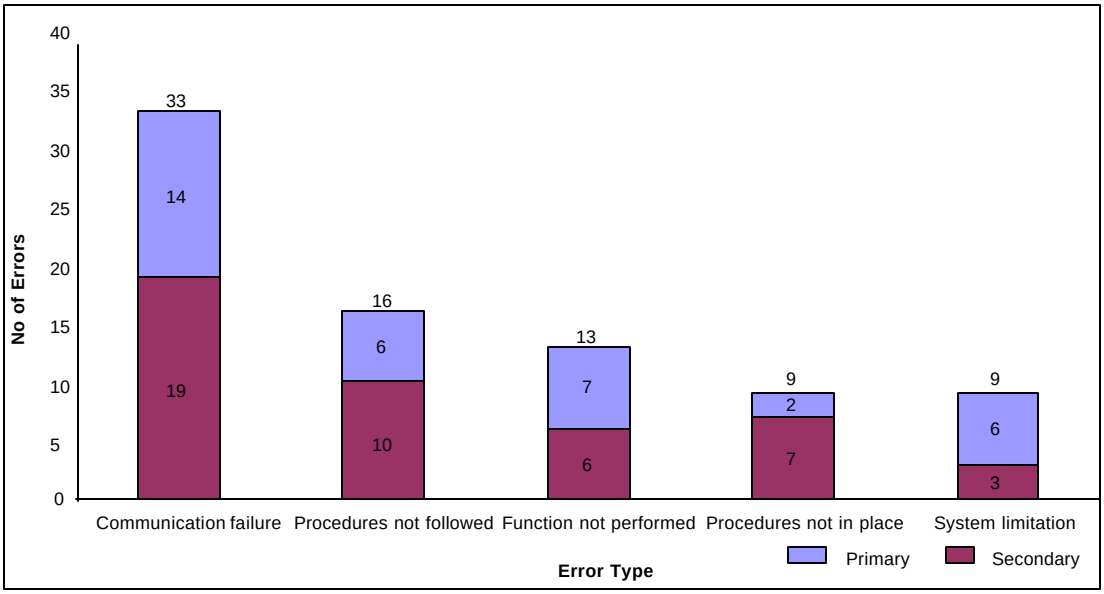


Figure 4.7 – Error Types

Now, referring more specifically to Voluntary Corporate Actions, the team identified the most common errors that present risk to the firm. The first main area of risk is entering the election. This involves making sure that a response is entered and that the CSR and the client both know who is expected to elect. This is one area where the IPB and PB significantly differ. IPB's clear methodology seems better at mitigating this risk, as it might be clearer to the CSR and the client who is supposed to elect. However, PB's method is more effective in the case a CANS enabled client is not able to enter a response, because the CSR can easily enter the response for them. In IPB, the "super-user" would be the only one able to perform this task. The team believes there is no right answer between who does it better, and the right approach would perhaps be an in-

between solution. This means not being as flexible as PB because it might cause miscommunication, but not being as strict as IPB because complications arise when a CANS enabled client cannot enter his or her decision. Figure 4.8 summarizes the data on election in PB and IPB for October 2006.

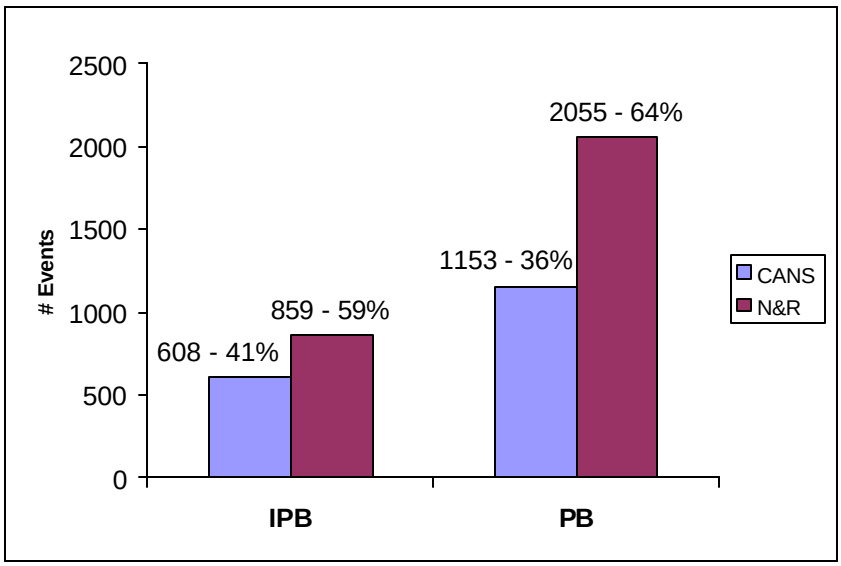


Figure 4.8 - Elections for Corporate Actions October 2006

October 2006 data on Voluntary Corporate Actions elections shows that they way in which elections are made is split between CANS and N&R. In both PB and IPB, most of the responses are still entered through N&R. Comparing this to the data on the number of users enabled on CANS, it is evident that PB's approach of entering an election is more realistic. Figure 4.9 summarizes the data on CANS enabled clients for PB and IPB.

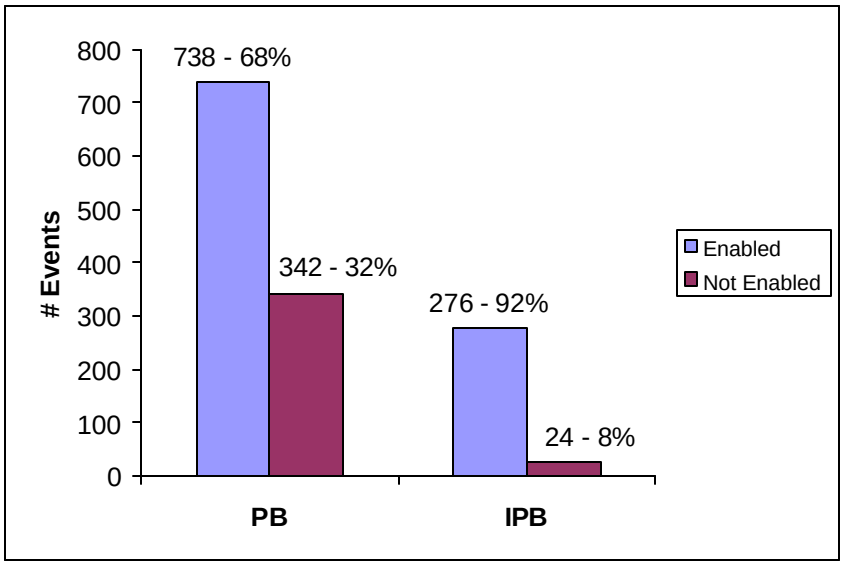


Figure 4.9 – CANS Enabled Clients

The data in Figures 4.8 and 4.9 reveal that even though London claims to have a strict approach, it may in fact not be that strict. The 92% CANS usage by IPB clients is not reflected in October 2006's data because only 41% of elections were made through CANS. This means that 59% of the elections were entered through N&R despite of the fact that only 8% of their clients have this option. PB has a smaller percentage of CANS enabled users, 68%, and usage, 36%. This data concludes that PB's approach is more effective because clients still rely on PB and IPB to enter their responses for them, even if they can do it themselves.

Another high-risk area in the process is when the PSCSGNY team gets involved. Communication between the CSR and them is not always accurate, leading to mistakes. In addition, there is risk when Position Services transfers the information regarding Morgan Stanley's elections to the agent (this aspect will not be discussed because the project focuses specifically on Client Service). Figure 4.10 shows CSM's opinions about where the risk of errors lies within the process for PB.

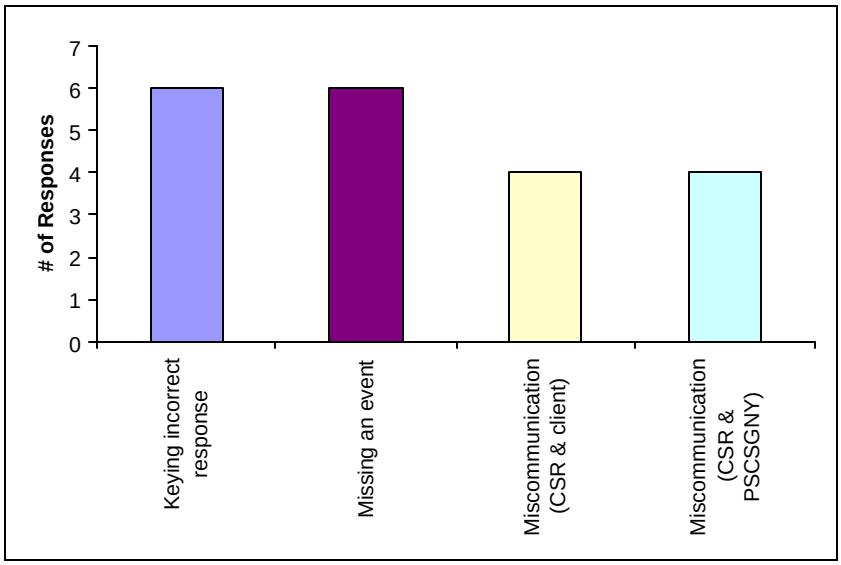


Figure 4.10 -Risk in the Corporate Actions Process

It can be seen that keying in an incorrect response is a big concern. This is surprising, considering the levels of safety and monitoring that are in place. Incorrect responses should never go through; they should be detected and fixed before the event's information is sent to the agent. In addition, missing an event was also a very popular answer among CSMs. The risks associated with missing an event are:

- That a deadline is missed
- The inefficiencies of entering a last minute decision

These issues highlight once again the lack of CSR pro-activeness and the fact that responsibility is shifted towards a support team, PSCSGNY, as represented by CSM's survey responses. CSRs should not rely on receiving email notifications and take a more pro-active approach, like checking N&R. Email is not the best tool for CSRs to get notifications of corporate actions as they can be easily ignored, deleted, or not received at all.

Another situation that factors into missing an event, is the possible scenario of a CSR being absent on an important day. As of now, it is PSCSGNY's responsibility to look in the system and find which CSRs are absent. They then need to notify the backup CSR of any events that must be taken care of. This procedure is manual and leaves room for mistakes. In the case that a person in PSCSGNY does not identify an absent CSR, the backup would not get the email reminder and the corporate event would be missed.

Lastly, miscommunication turned out to be a risk concern, according to the results of CSM's responses. On one hand, it is a good idea to have several teams involved in the process to support each other and make sure the process is completed without any mistakes. Yet, it also leaves the door open for miscommunication between the different parties. As mentioned previously, external communication (that between CSR and client in this case) is improving, which is good news for PB. Internal communication, nonetheless, is getting worse. Round two interviews reflected this to a certain extent. Members of the PSCSGNY team mentioned that communication with CSRs was not easy because they constantly ignored PSCSGNY's notifications on expiration dates.

The fishbone diagram for the Voluntary Corporate Actions Process in figure 4.11 identifies communication, enforcement, technology, and validation/policing, as the four overall sources for problems.

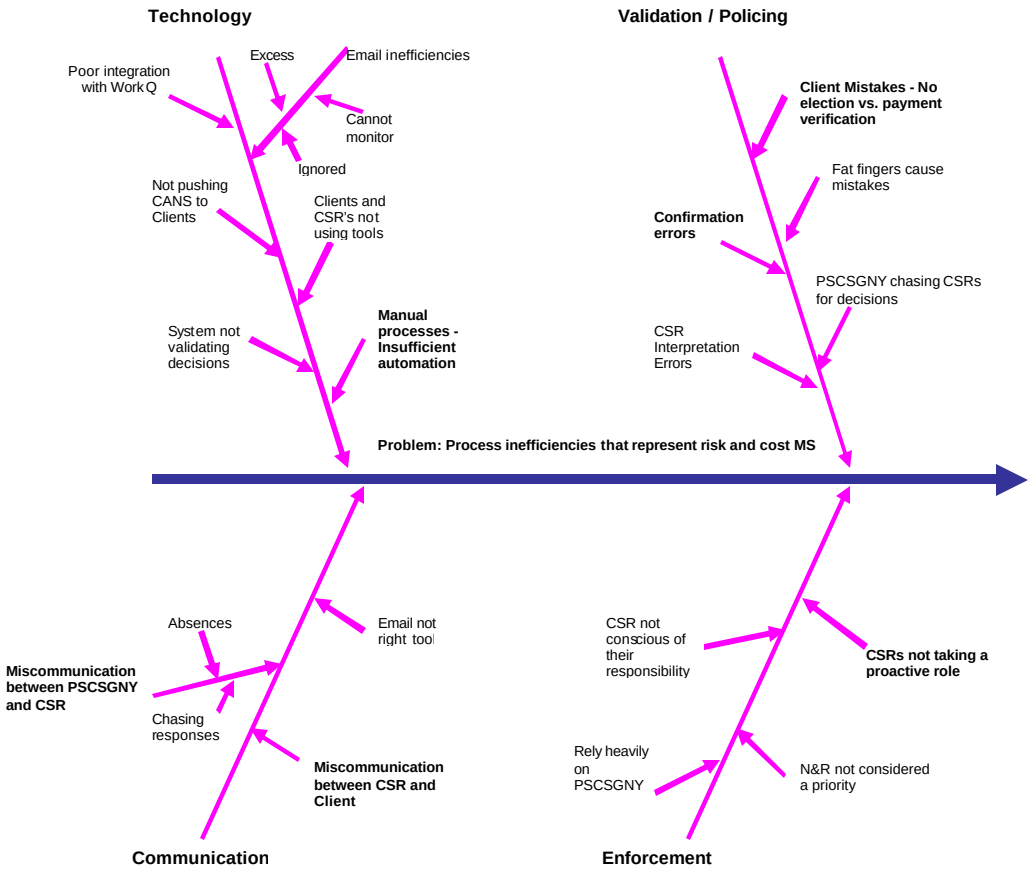


Figure 4.11 – Voluntary Corporate Actions Fishbone Diagram

In conclusion, the main problems that have been identified for Voluntary Corporate Actions in New York are:

- The election process
- Communication between PS and agent
- Large percentage of errors
- Probability of missing an event

The main causes, as highlighted in the fishbone diagram, are:

- Communication
    - Internal
    - External
- Manual process
- Client mistakes

- Confirmation errors
- CSR pro-activeness

4.1.8 Best Practice

The last step of the analysis used a scorecard to see if the process qualified as a best practice. It is worth mentioning beforehand that the Voluntary Corporate Actions Process is very complex, and even with the large percentage of errors and the losses it represents to the firm, it is still very efficient in handling a large volume of transaction.

Process: Voluntary Corporate Actions		
Description: To provide seamless coverage to clients whose options on certain companies require action before expiration date		
Evaluation Metric	**PB**	**IPB**
Priority (5, 4, 3, 2, 1)	**4**	**5**
Client Service (5, 4, 3, 2, 1)	**4**	**4**
Quality - Internal (5, 4, 3, 2, 1)	**4**	**3**
Risk Control (5, 4, 3, 2, 1)	**3**	**3**
Total Score (Best Practice: 4)	**4**	**4**
Best Practice: PB and IPB		
Recommendation: PB should not adopt IPB's model		

Reasons for score	
PB	**IPB**
+ Client satisfaction + Several support teams + Flexible to client's needs + Able to handle volume - Not fully STP - Miscommunication	+ Client satisfaction + Several support teams + 10 Commandments - Not fully STP - Post payment sign-off delay

Figure 4.12 - Voluntary Corporate Actions Scorecard

The scorecard indicates that the process was a best practice in both IPB and PB as they received a scored of 4. However, there is ground for improvement. There are still a large number of errors, communication issues, and resource inefficiencies.

4.2 Cash Journal Entry

In accounting, the journal is the point of entry of business transactions into the accounting system. It shows chronologically the record of all movements, the accounts involved, and the amount of the entries. Figure 4.13 below shows the format of a journal entry.

Date	Name of account being debited	Amount		Description
	Name of account being credited		Amount	Description

Figure 4.13 – Journal Entry Example

The type of the entry depends on the accounts involved in the transaction. There are five types of accounts:

1. Assets
2. Expenses
3. Liability
4. Equity
5. Revenue

Morgan Stanley has a web-based application that enables the CSRs to manage the cash movements requested by their clients. It also allows the firm to re-allocate any incorrect debit or credits back into their client's account. The Online Journal, as it is called, is a sub-application of the ICE platform discussed in our background section. The format of the Online Journal tool complies with all the requirements set forth by the GAAP (Generally Accepted Accounting Principles) and follows the same format as any other journal. The screenshot in figure 4.14 shows the general input view of the online journal tool.

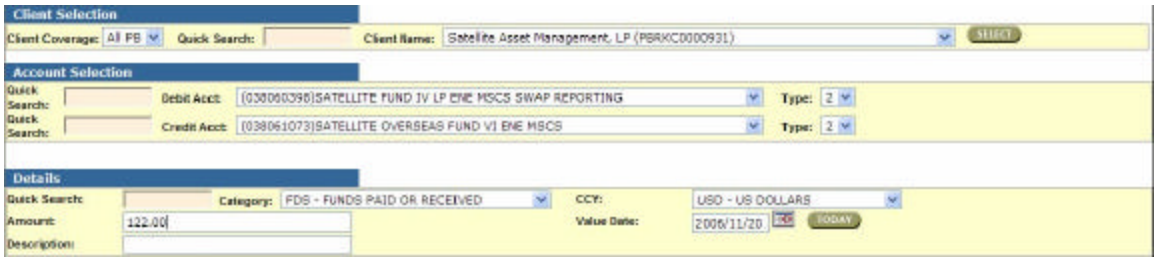


Figure 4.14 – Online Journal Tool

As can be seen in the screenshot above, the tool shows the debit and credit accounts, the amount, the description, and the date. This tool is only used internally, and therefore, displays other categories such as the currency, the type of the transaction, and the name of the client. The tab showing **Client Name** displays the legal name of the client and its **Business Unit** (BU) account. It is important to note that each hedge fund may have several accounts for different purposes, and some of those accounts can actually be other funds. The **Type tab** shows the type of cash transaction from the debit account to the credit account. There are four different types:

1. Type 1 – Cash on books through IPO
2. Type 2 – Cash
3. Type 3 – Collateral or short cash
4. Type 9 – Operations movement

The processes for journaling cash entries in IPB and PB are represented in the figures 4.15 and 4.16 below. Between the two locations the process differs.

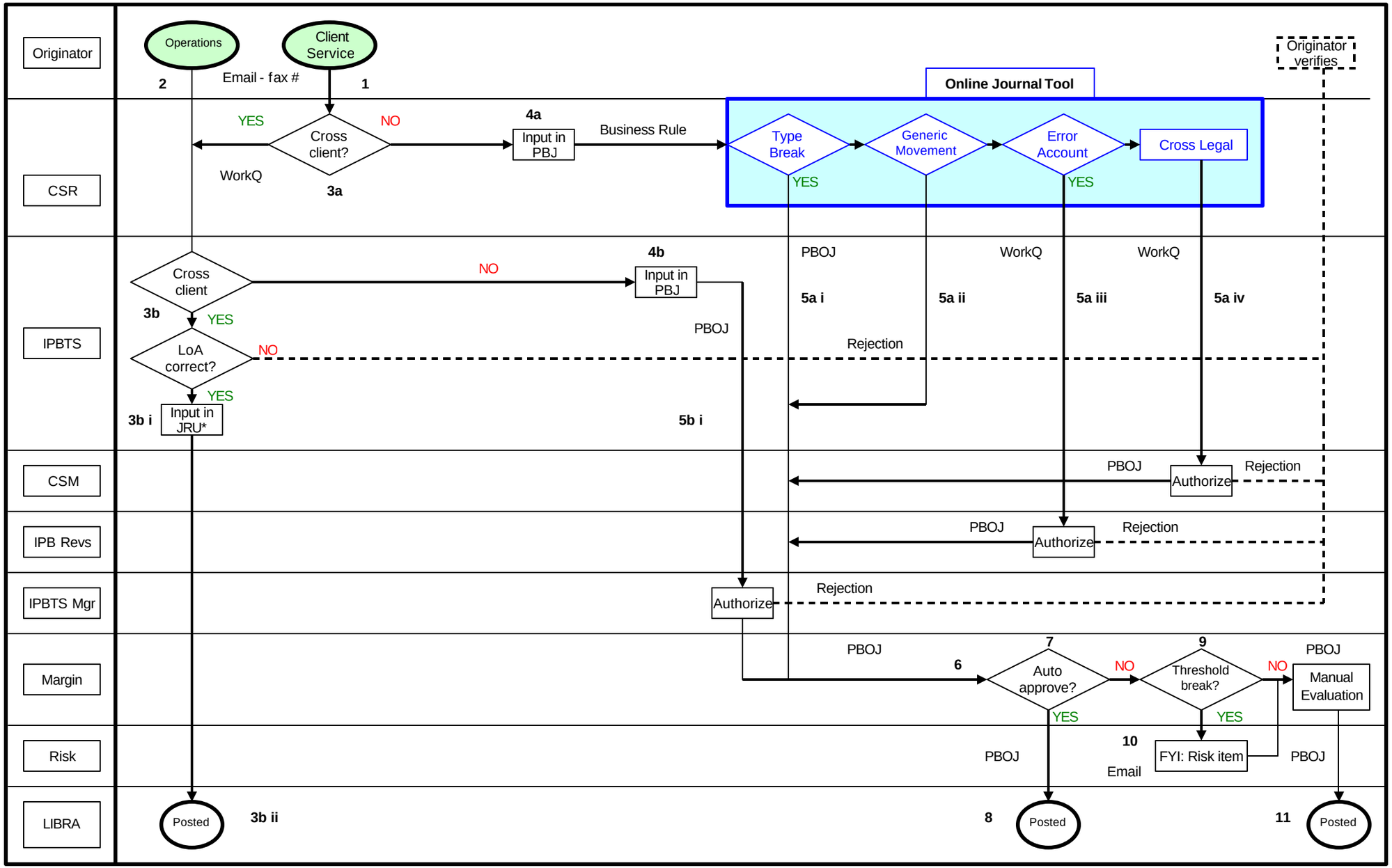


Figure 4.15 – London Cash Journal Entry Process

1. The process begins with a request from the client to transfer cash from one account to another. It can also begin as a correction to a Morgan Stanley error.
2. If the process begins by an error correction, the operations team, IPBTS, originates it. If the process begins by a client's request, the CSR can either input the entry or send it to IPBTS to do it, via WorkQ.
3. If the entry crosses clients
    a. The CSR has to send it to IPBTS
    b. IPBTS has to verify the LoA
        i. If the LoA is correct, the entry is input in JRU*
        ii. The entry is posted in LIBRA
4. If the entry doesn't cross client
    a. CSR inputs in PBOJ
    b. IPBTS inputs in PBOJ (this would only happen if the entry was originated by operations)
5. Type of Entry → Authorization party
    a. If the entry was input by CSR in PBOJ, requires authorization of:
        i. Type Break → No authorization
        ii. Generic Movement → No authorization
        iii. Error Account → IPB Revs
        iv. Cross Legal Entity → CSM
    b. If the entry was input by operations in PBOJ, requires authorization of
        i. IPBTS manager
6. Once the entry is authorized by the CSM, IPB Revenues, or the manager in IPBTS, it flows via WorkQ/Enterprise WorkQ to the Margin team. The item shows in the system as "pending margin evaluation." If the item was not authorized, it is sent back to the originator.
7. Margin evaluates the entry
8. If there are no problems with the entry, it is posted in LIBRA
9. If there are problems with the entry, it is sent to Edit Checks within Margin.
10. If the item is classified as a "risk" issue, the Risk team gets an FYI email from Margin. However, they do not act on this item, Margin has to approve it.
11. If it passes the edit checks, it is posted in LIBRA. If not, it is rejected and sent back to the originator.

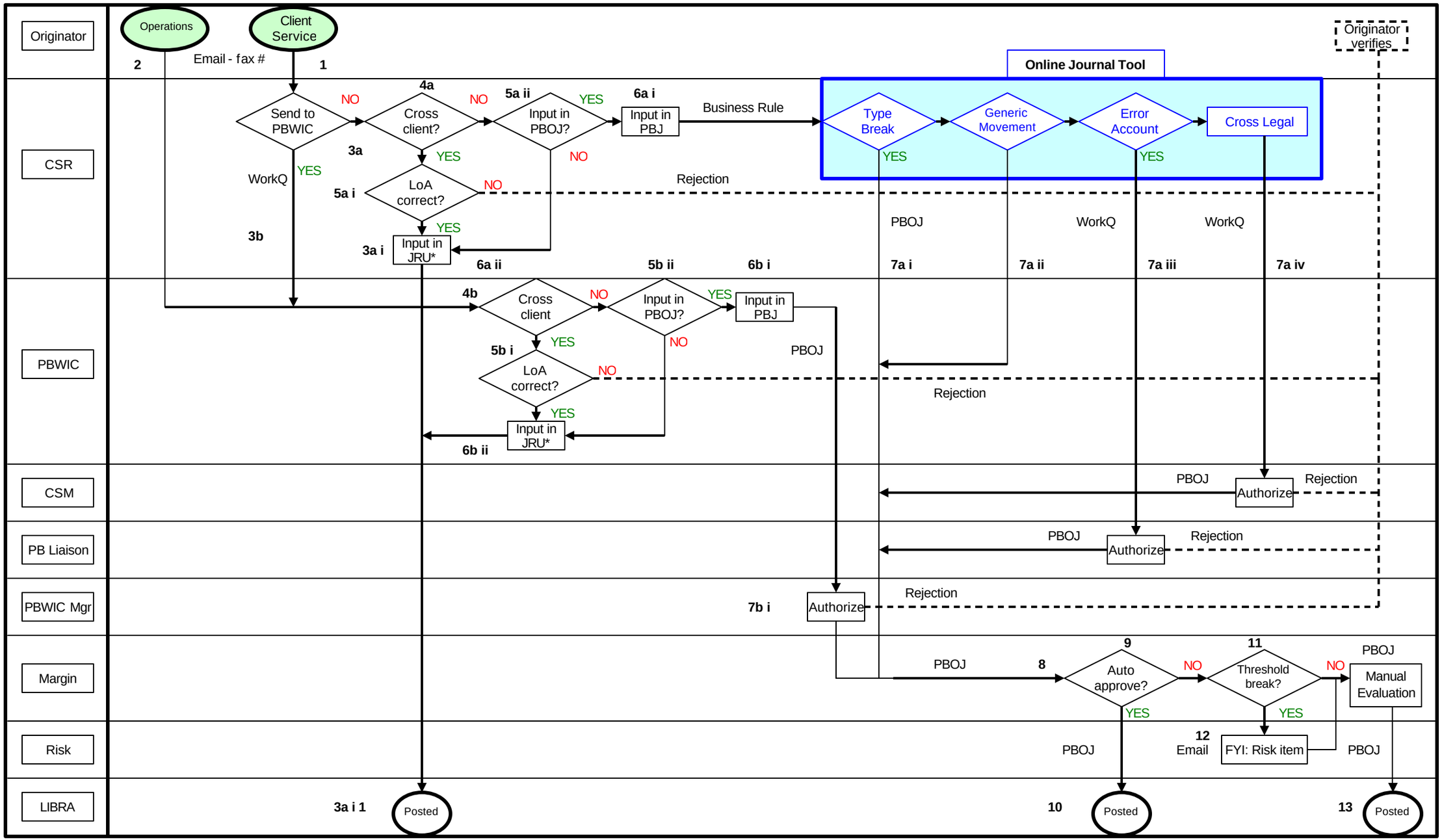


Figure 4.16 – New York Cash Journal Entry Process

1. The process begins with a request from the client to transfer cash from one account to another
2. If the process begins by an error correction, the operations team, IPBTS, originates it
3. The CSR sends it to PBWIC?
    a. If he or she doesn't, he or she has to verify if it crosses clients
        i. If the LoA is correct, the entry is input in JRU*
            1. The entry is posted in LIBRA
    b. If he or she does, see 4b
4.
    a. CSR checks if the entry crosses clients
    b. OPS checks if the entry crosses clients
5.
    a.
        i. If Yes, Verify LoA? (Reject if no match)
        ii. If No, Input in PBOJ?
    b.
        i. If Yes, Verify LoA? (Reject if no match)
        ii. If No, Input in PBOJ?
6.
    a. CSR inputs
        i. PBOJ
        ii. JRU*
    b. PBWIC inputs
        i. PBOJ
        ii. JRU*
7. Type of Entry → Authorization party
    a. If the entry was input by CSR in PBOJ, requires authorization of:
        i. Type Break → No authorization
        ii. Generic Movement → No authorization
        iii. Error Account → IPB Revs
        iv. Cross Legal Entity → CSM
    b. If the entry was input by operations in PBOJ, requires authorization of:
        i. IPBTS manager
8. Once the entry is authorized by the CSM, IPB Revenues, or the manager in IPBTS, it flows via WorkQ/Enterprise WorkQ to the Margin team. The item shows in the system as "pending margin evaluation." If the item was not authorized, it is sent back to the originator.
9. Margin evaluates the entry
10. If there are no problems with the entry, it is posted in LIBRA
11. If there are problems with the entry, it is sent to Edit Checks within Margin.
12. If the item is classified as a "risk" issue, the Risk team gets an FYI email from Margin. However, they do not act on this item, Margin has to approve it.
13. If it passes the edit checks, it is posted in LIBRA. If not, it is rejected and sent back to the originator.

4.3 Differences

The processes in PB and IPB seem quite similar at a first glance. The beginning and end of the processes are in fact the same. However, there are two major differences regarding when operations are used and who has access to the mainframe. First, CSRs in IPB only send the operations team journal entries if they cannot do them in the online journal tool whereas CSRs in PB send the operations team a journal entry for multiple reasons. Second, PB has granted CSRs access to the mainframe system, JRU*, while in IPB, CSRs have no access to mainframe. These two issues are the main differences between PB and IPB and will be explained in this section.

Online Journal Tool

The online journal tool was developed by IPBIT (International Prime Brokerage Information Technology) less than a year ago. Since this team developed the tool, they mostly considered the needs and requests of their department, and neglected some of the crucial issues that could provide better global usage.

As of now, the online journal tool allows CSRs and operations to journal entries from one fund of a client, to another fund of the same client, for clients in PB and IPB. The tool also allows "Type Break" entries, which are movements within the same account and "Errors" which are movements credited and debited to Morgan Stanley accounts. It has several business rules in place that manage the authorization levels required. The online tool is completely secure, minimizes manual error when choosing accounts and clients, and it provides a safe and fast method for cash journals. For specific information on the online journal tool, please refer to Appendix 8.

In PB, the CSR, the CSM, and the PBWIC (Prime Brokerage Wire Initiation Centralization) team, all have access to the Morgan Stanley mainframe, JRU*. PBWIC is an operations team, which handles every cash wire that is requested by Morgan Stanley clients. It is also is a support team for Client Service and functions as a safety net in the process. After interviewing with the CSRs, CSMs, and the PBWIC team, we confirmed there are no limits as to the functions that the users have when they log into the mainframe. The mainframe allows its users to add, edit, and delete information without any restriction. This application is open for client data manipulation and cash and asset movements without any verification or authorization required. With its use, the firm is widely exposed to internal risk. Because of this, no one in Client Service should have access to such sensitive information. Having become aware of this irregularity, the group determined that it was important to determine why these groups have access to the mainframe when there is an online journal tool that enables them to journal cash without going into JRU*. For a complete list of JRU* features, refer to Appendix 9.

In IPB, the CSR and the CSM do not have access to the mainframe. Because of this, CSRs in IPB have to make an initial choice based on if the functionality in the online journal can handle the transaction. If the client has requested a cash movement that cannot be handled in the tool, the CSR automatically forwards the request to the operations, also known as IPBTS (International Prime Brokerage Trade Settlements) team in Glasgow, Scotland. If the request does not involve crossing clients, then the CSR has to input the entry into the online journal tool.

The functions of the IPBTS team involve providing support to CSRs in matters such as journaling stocks, journaling assets, and journaling cash movements from one

client to another. Once they receive the forward from the CSR, they will confirm that the entry crosses clients, and will proceed to verify the letter of authorization. This team is the sole user of JRUL, which is the mainframe for IPB, and they will input the entry into this platform. Once IPBTS completes this, it will go straight into LIBRA, and it will be effective next day.

In PB, the initial choice that the CSR has to make is not based solely on the functionality of the online journal tool, but also on the promptness of the matter, and the CSR's schedule. CSRs can send PBWIC journals that cross clients, as well as error movements, type breaks, generic movements, and other types of journal that involve account ranges included in the online tool. If the entry is a matter that requires urgent action, the CSR will proceed to input it him or herself, without sending it to the operations team. If the journal is not urgent, the CSR has the choice to send it to PBWIC depending on the type of journal, or do it him or herself later in the day.

Furthermore, if the journal crosses clients, the CSR in PB has the ability to input the entry him or herself, because they have access to JRU*. If the CSR decides to input the entry, he or she will verify the letter of authorization, and proceed to journal the movement in JRU*, without being checked or verified by anyone. This is a major difference from the London model, since only the IPBTS team has access to the mainframe. In New York, Client Service has access to JRU* in order to journal cash movements, as well as PBWIC.

The process for journaling entries should be as similar as possible in both locations. There are no regulatory or market driven obstacles in place that could force either model to adopt a different process flow. The fact that CSRs and other groups who

should not have access to the mainframe, have it, increases the firms risk exposure and compromises their internal procedures.

4.4 Identifying Problems

In order to determine whether the process is a best practice it was crucial to identify the causes of the main problem, which was why are CSRs using the mainframe and not the online journal tool for cash entries.

The four root causes of this problem are:

1. Not a priority
2. Security and risk
3. Technology
4. Enforcement

4.4.1 Not a Priority

The online journal tool was developed by IPBIT as a journal entry application to be used by internal Client Service and operations groups. The project plan consisted of a two-phase implementation, where phase one would include the basic requirements and phase two would consist of adding new features. The completion of phase one was a success and the product was launched in early 2006.

The completion of phase two was compromised because the process for application development is client driven. Thus, resources for product development are allocated to the products that clients request, considering client feedback. The online journal is an application used internally and, therefore, it was pushed back due to other priorities.

The lack of senior push is also affecting the completion of the tool. The business model is client driven, but the lack of senior initiative to continue development also factors in. Senior influence is critical for development support because if the tool is not perceived as useful, valuable and efficient, then it will probably be neglected. From a Client Service perspective, the online journal tool provides the CSRs with more secure and efficient tools to manage their client's requests. For example, an entry input in the online tool will be effective in less than one hour whereas this would take one day to go through using the mainframe.

Client Service should handle all cash entries, and at this moment, they are not doing this. Significant amounts of entries are being forwarded to the operation teams. From an operations perspective, PBWIC and IPBTS are wasting resources by handling journal entries that should be input by the CSR. These teams are for support, and should not be used as a primary source of input. They are specifically responsible for wire transfers. However, because not all of the features are available in the online journal tool, the operation teams have to assist Client Service. Once these features become available, it no longer should be the responsibility of the operations team.

4.4.2 Security and Risk

The problem with JRU*'s security is that there is not any. The users of JRUB have unrestricted access, which enables them to perform any sort of modification to any account. For example:

- CSRs can debit/credit from an account that does not belong to their client
- CSRs can debit/credit the wrong account
- CSRs can move assets and allocate incorrectly throughout the accounts

- CSRs can plug the money and leave it outstanding.

In addition, there are no measures in place that verify that movements are done correctly.

A consequence of using JRU* is that the monitoring team, Margin, does not receive a report until the next morning that includes entries solely made in JRUB, specifically movements that bypassed Margin and became effective overnight. Because of this, Margin will not be able to match the closing reports from the day before to the new reports from the next day. This mismatch generates discrepancies across accounts and requires Margin's manual corrections. Figure 4.17 below shows the results to one of the questions in the CSM Survey.

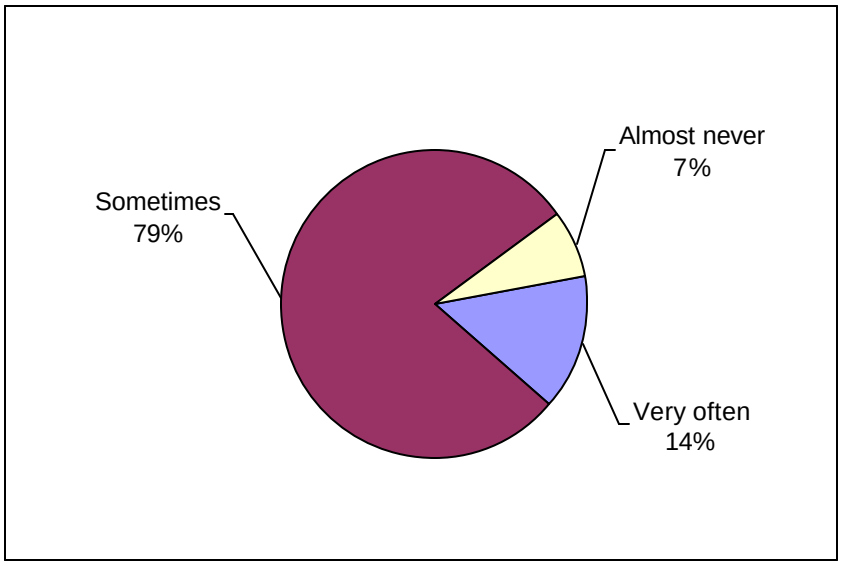


Figure 4.17 - Frequency of Errors in Cash Journals

The results from this question reflect that 79% of the CSMs agree that sometimes entries are input incorrectly. We are concerned as to why entries are sometimes input incorrectly. In theory, the answer should be almost never given that there is a secure method for journal entry and several support teams are in place.

4.4.3 Technology

There are two major explanations as to why CSRs use the mainframe instead of the online tool:

1. Lack of cash ranges in the online tool
2. The ease of use of JRUB

As mentioned, several account ranges have not been incorporated into the online journal. CSRs cannot journal movements from one client to another and they cannot journal securities. In addition, some perceive that the authorization required by their CSM just delays the process. The system also contains some delays. Although the tool interacts with WorkQ, the items do not show in real time from other applications. The WorkQ delay does not cause a major conflict; however, it delays the process. In urgent matters, it may be a reason why some CSRs avoid using the online tool. Figure 4.18 shows the results from the survey concerning which tools should be added to the online journal tool. Security entry is clearly one of the main issues to address in the online tool. In addition, the ability to move cash from one client to another also appears to be one of the other main categories to consider when adding new features.

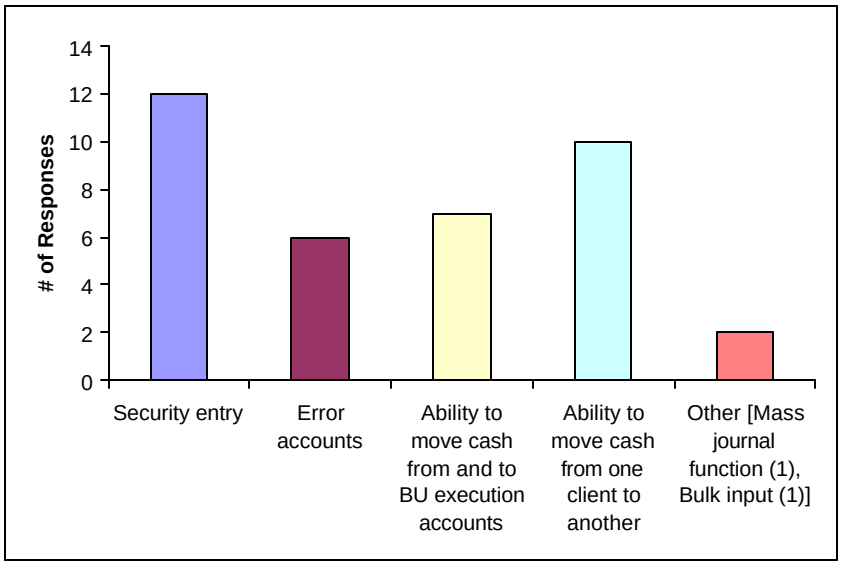


Figure 4.18 - Most Crucial Features to add to PB Journal

CSRs feel extremely confident in using JRU* because it is easy to use and because they have been using it for along time. This "old habit" is part of their daily routine, and changing the way things have been done is not an easy task. It is clear that a sudden change is not the appropriate course of action. A gradual transition will diminish the effects of the platform change and will allow a training interval for the users of the application.

4.4.4 Enforcement

CSM enforcement is a viable alternative to senior management push. However, CSMs do realize the risk involved in journaling through JRUB, and the potential consequences of a mistake. The lack of CSM monitoring and enforcement are explained by two Factors:

1. The tools that CSMs use to monitor are not efficient
2. There are no written procedures stipulating the use of the online tool

On a weekly basis, CSMs monitor the journal entries of each of their CSRs. However, this process is manual because they have to print the ledger of all the entries, and verify if any were input incorrectly, or through JRUB. Furthermore, metrics describing which accounts were credited/debited through JRUB could help identify the CSRs that are not using the online journal tool.

There are no written procedures that force CSMs to monitor CSRs and their usage of the online journal tool. As can be seen in the figure below, 29% of the sample believes that the enforcement from the CSMs is somewhat strict. Additionally, 21% describes a "rare" enforcement, which would explain why CSRs still use the mainframe. Figure 4.19 shows the results from the survey concerning the enforcement of the online journal tool.

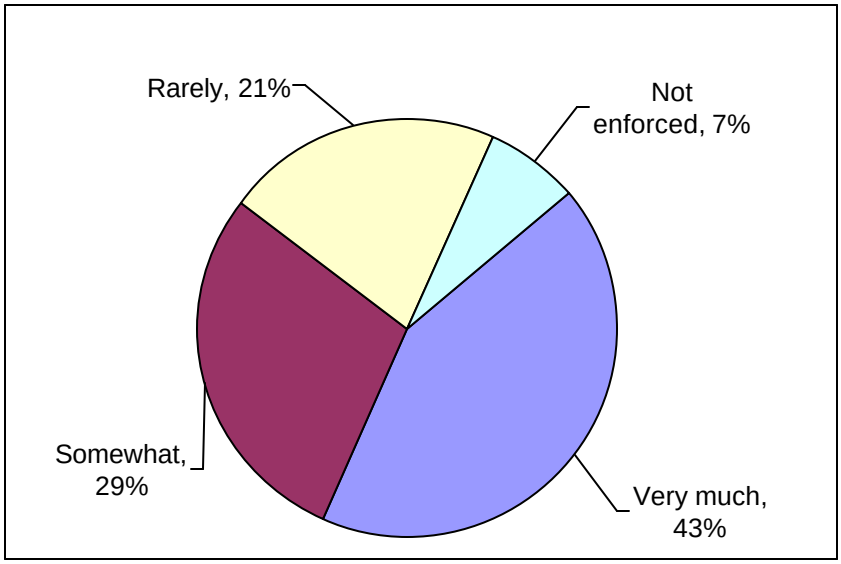


Figure 4.19 – Enforcement of Cash Entries

Figure 4.20 shows that 44% (8 out of 18) of the CSMs agree that lack of features drives users away from using the online journal and encourages them to use JRUB. In addition, 33% (6 out of 18) argue that the mainframe is much easier to use than the online

tool. These two items are the major drivers of why some CSRs still use the mainframe to journal cash entries.

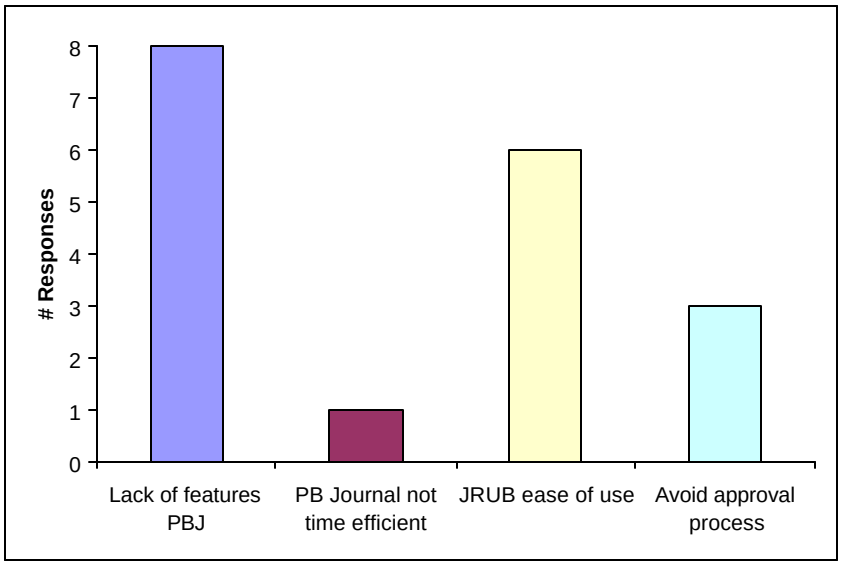


Figure 4.20 - Reasons for using the Mainframe for Cash Entry

All of the problems previously described are identified in the fishbone diagram in figure 4.21 below.

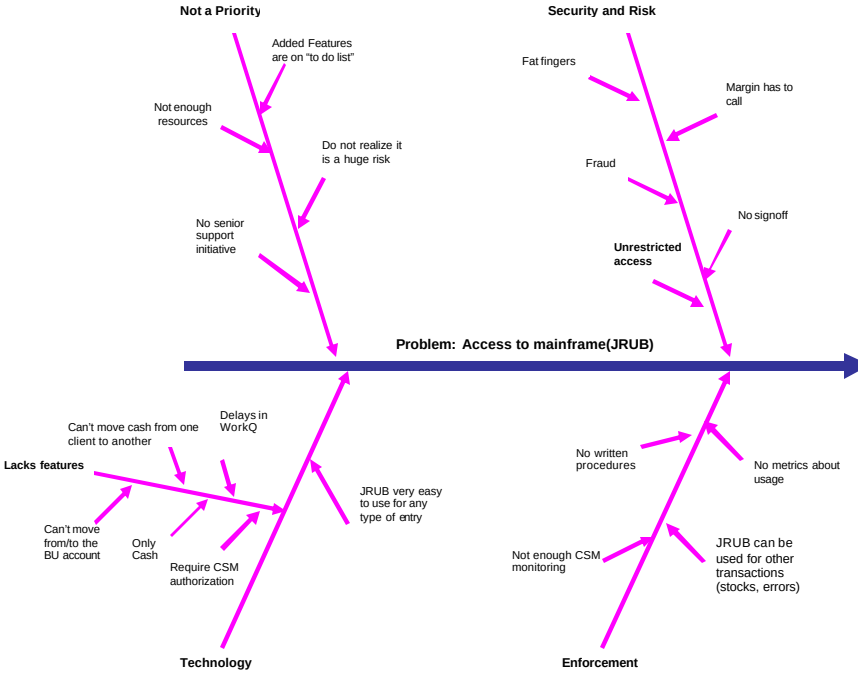


Figure 4.21 – Journal Entries Fishbone Diagram

4.5 Best Practice

After analyzing the process from start to end by identifying its problems, the risk areas, and considering how efficient it is, the concluding step was to determine if it is a best practice or not. The scores for the process of journaling cash entries are shown in the scorecard below.

Process: Journaling Cash Entries		
Description: Complying with business rules and client's request when journaling cash entries		
Evaluation Metric	**PB**	**IPB**
Priority (5, 4, 3, 2, 1)	**3**	**3**
Client Service (5, 4, 3, 2, 1)	**3**	**3**
Quality - Internal (5, 4, 3, 2, 1)	**2**	**2**
Risk Control (5, 4, 3, 2, 1)	**2**	**3**
Total Score (Best Practice: 4)	**2.5**	**3**
Best Practice: Neither		
Recommendation: Do not adopt IPB's model		

Reasons for score	
PB	**IPB**
+ PBOJ enhanced security	+ PBOJ enhanced security
+ PBOJ input posted faster	+ PBOJ input posted faster
- Rely too much on operations	+ Client service no mainframe access
- Unfinished product	- Unfinished product
- Lack of security in mainframe	- Lack of security in mainframe
- Mainframe posting next day	- Mainframe posting next day

Figure 4.22 - Cash Journal Entry Scorecard

The current process for journaling cash entries received a 3 in IPB and a 2.5 in PB. Thus, neither location qualified as a best practice.

4.6 Backup Notes

Backup notes are very helpful when a CSR is out sick, goes on vaction, or leaves the firm. The notes provide an easy point of contact to update the backup CSRs on most crucial information concerning the account. Backup notes contain key contacts, account numbers, daily tasks, and sensitive information regarding the client. Through the series of first round interviews, the team discovered that in IPB CSRs keep backup notes while PB CSRs do not. Keeping backup notes allows the backup CSR to have information that will enable him or her to provide seamless coverage to the client.

4.6.1 IPB's Model

The purpose of the second round of interviews was to uncover specifics on the backup note process in IPB. It was important to understand what types of client data are kept, how they are stored, and what benefits they provide. In IPB, CSRs are required to keep backup notes, and are reminded to update them every two months. During a Business Continuity Planning (BCP) drill, IPB discovered that they needed backup notes because all crucial information regarding the clients was lost. Currently, they use an MS word template to keep these notes. The notes are initiated by the client consulting services team (CCS) when a client is in the process of going "Live," and then passed to the CSR. The notes are stored in three places: on the network drive, hard copy on the CSR's desk, and in hard copy at the BCP site. They keep many types of information in their backup notes. This information includes:

- Account name and address
- Account numbers
- Main contacts

- Account strategy
- Daily tasks

For an example of the template, refer to Appendix 6.

The overall feedback was that these notes provide a huge benefit to the client in regards to providing seamless coverage, and are very useful for the backup CSRs. CSRs appreciate good backup notes when they have to backup a client where the notes are of poor quality. They are also useful for reference by the primary CSR for information that is not known by heart, but is vital.

Figure 4.23 shows the current IPB backup note process. When the client goes live, the CCS team initiates the backup notes. Then, the CSR is responsible for updating the backup notes every couple of months. The notes are stored on the network drive, kept in hard copy on the CSRs desk, and at the BCP location. When the CSR leaves for vacation or a new job, the backup CSR uses these notes.

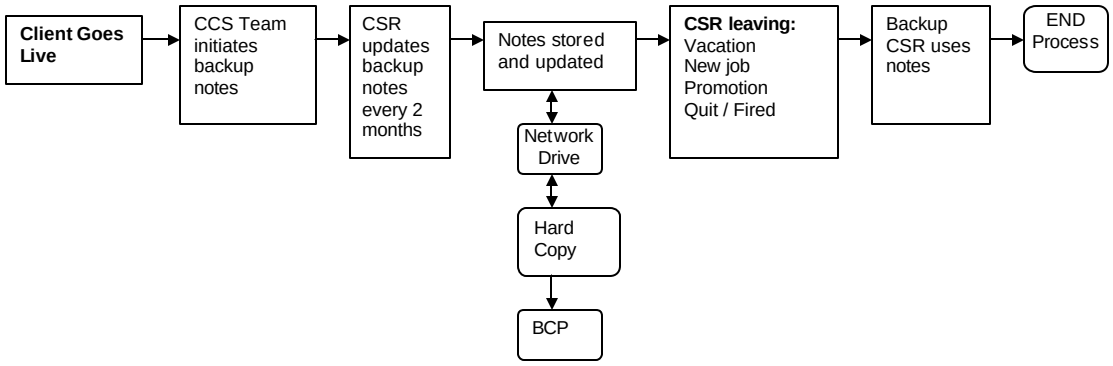


Figure 4.23 – IPB Backup Note Process Flow

4.6.2 PB's Model

From our first round of interviews, the team learned that PB does not keep written backup notes. The group used second round interviews to determine what they do as a

substitute, the kind of information that would be useful if they kept backup notes, and how much benefit they would provide. PB does not keep backup notes because it is not a company policy. When a CSR is absent for whatever reason it is his or her responsibility to communicate the needed information to the backup CSR either verbally or by email. There is no structure to this process and some CSRs do it better than others. If it is a hectic day before the CSR leaves, the backup could receive minimal to no guidance.

The categories indicated by the interviewees that would be useful to keep in backup notes were:

- Key contacts
- Key account numbers
- Hot buttons
- Sensitive issues
- Ad-hoc tasks
- Free space

The interviewees felt that the daily contacts and account strategy would be most useful. Once the initial backup note shell was setup, they estimated that it would need to be updated quarterly. The consensus was that backup notes would provide more value than the cost of writing them. They would offer smooth continuous backup coverage, and prevent hunting around for needed information or loss of credibility from looking bad to the client. Overall, the interviewees said that they were needed.

Figure 4.24 shows the current backup process in PB. When the CSR leaves for vacation, it is his or her responsibility to update the backup CSR. If there is time, they will update the CSR verbally with what may be incomplete information. If there is no time, the backup CSR will be “flying blind.”

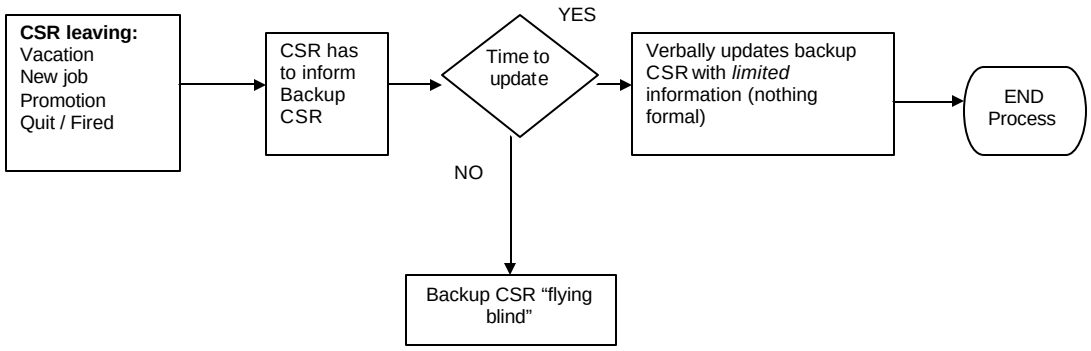


Figure 4.24 – PB Backup Process Flow

4.6.3 Main Problems

After conducting the series of second round interviews, the team found several problems within PB's current backup CSR process. When the primary CSR is out, the backup CSRs are not well prepared. The problems with the current process are broken down into four categories: work environment, communication, technology, and enforcement.

In the Client Service work environment, there is high CSR turnover. This means that clients are dealing with many new CSRs who are not too familiar with their needs. Without a document to update them on hot buttons issues, the coverage they provide might not be seamless. In PB, there has not been a need perceived for written backup notes because Morgan Stanley has not lost clients due to poor backup coverage. Furthermore, keeping backup notes is not in the BCP protocol, and are not a written policy of PB. Thus, if any type of event happened, backup CSRs would have no summarized information on clients to work with.

The current method of updating backup CSRs by verbal or email communication is not optimal. It is possible that a CSR could forget to tell the backup crucial information, or the backup could just forget. Because CSRs are extremely busy managing

the daily issues of their clients, there have been times when they were not able contact the backup CSR before they left, leaving them with no updated client information.

The technology for keeping backup notes is not optimal either. Currently, there is a very pool tool called Coverage Notes, which is available in PBToday. Practically no one uses the tool. In fact, many people are not even aware that it exists. The tool is not user friendly and has many problems. It is not easy to use because it contains many mandatory fields that make the process more time consuming and difficult than necessary. If a CSR tried to print out a hard copy of the notes, the formatting would be off, and not easy to work with. There were suggestions made to make updates to the Coverage Note tool, but MSPB identified this as a low priority.

Keeping backup notes is not enforced in PB. It has been overlooked by CSMs and never had a senior enforcement. Because of this, it is not a priority and not included in CSRs job description. Figure 4.25 outlines all of the problems pertaining to PB's current process.

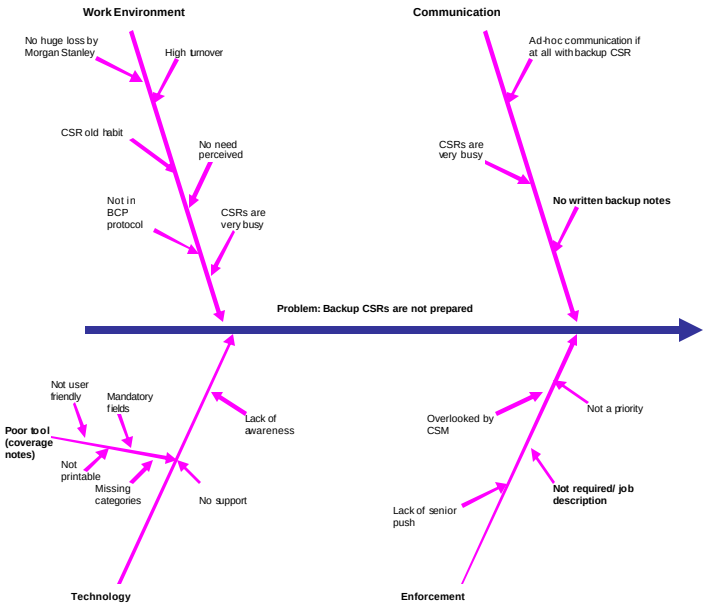


Figure 4.25 – PB Backup Notes Fishbone Diagram

In IPB, the team found many reasons that demonstrate why CSRs are better prepared than in PB. With keeping notes, backup CSRs have a quick point of reference to refer to whenever necessary. However, the team found problems pertaining to there process. The way in which backup notes are stored, word document, is not optimal. With this method, they are not able to link to any of the data already available in PBToday. Thus, they have to go in and manually update some information that could be pulled for them automatically. Linking not only creates less work, but also protects against CSRs forgetting to update information. In addition, PBToday is a better location for storage because everyone has access to it. The layout and organization of the template also could be improved. It is missing information that could be useful for backup CSRs to have such as a free note section and the ability to upload extra documents. Lastly, the time and monitoring of when backup notes are updated could be improved. A more formal process should be used to make sure updates are completed.

From the survey the team conducted with PB CSMs, the group learned many helpful pieces of information. The results indicated that CSRs do not keep backup notes because it is not a requirement and there is no tool available. This is interesting because there is in fact a tool available. Thus, CSMs must not have been aware of its release. In addition, the CSMs indicated that backup notes would need to be updated quarterly. Lastly, the results reflect that backup notes would provide some or significant benefit.

Figure 4.26 shows the answers that the CSMs replied to why CSRs do not keep backup notes: 0% said that it was not important, 10% said that there was a poor tool to use, 20% said there was not enough time, 30% said that there was no tool available, and 40% said it was not a requirement.

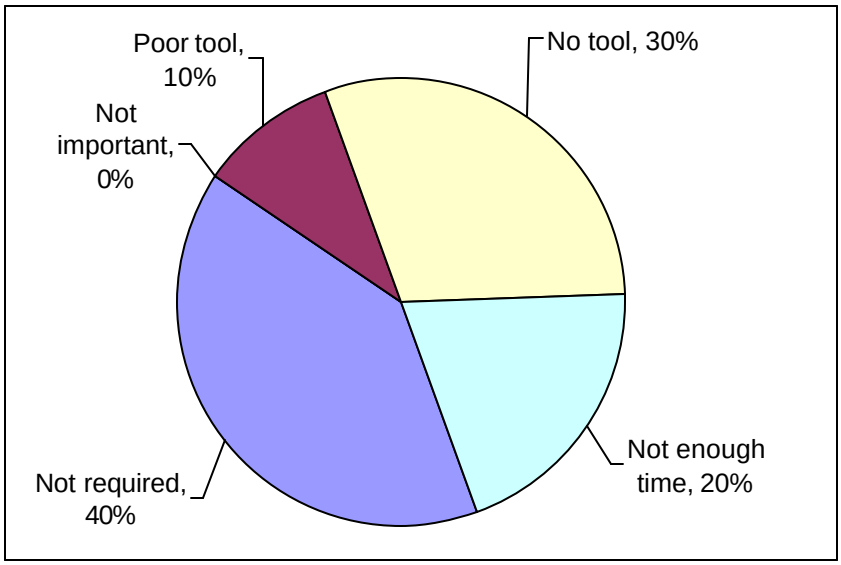


Figure 4.26 – Why CSRs do not keep Backup Notes

Figure 4.27 shows the answers that the CSMs replied to how often should client's backup notes be updated: 0% said never and once a year, 7% said daily, 13% said once a week, 20% said once a month and when needed, and 40% said quarterly.

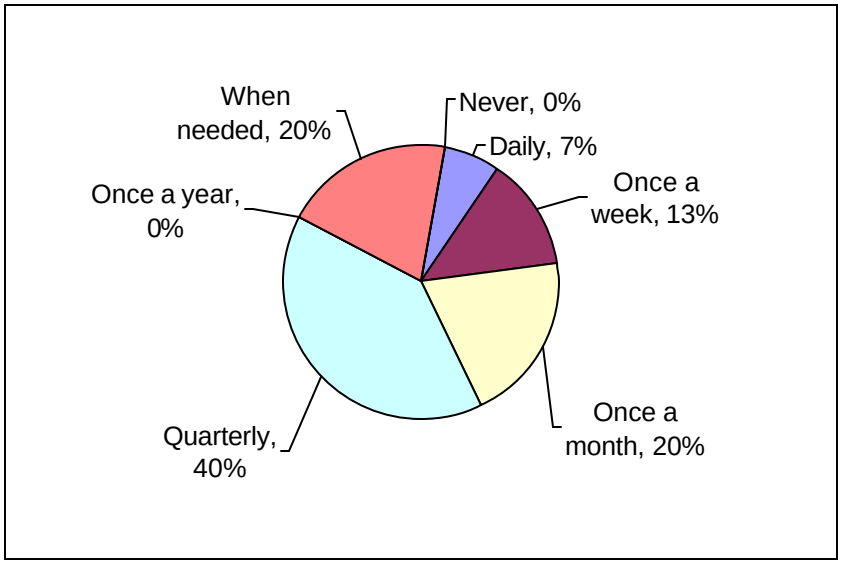


Figure 4.27 – When to Update Backup Notes

Figure 4.28 shows the answers that the CSMs replied to how much benefit would backup notes provide: 0% said very little and none, 43% said significant, and 57% said some.

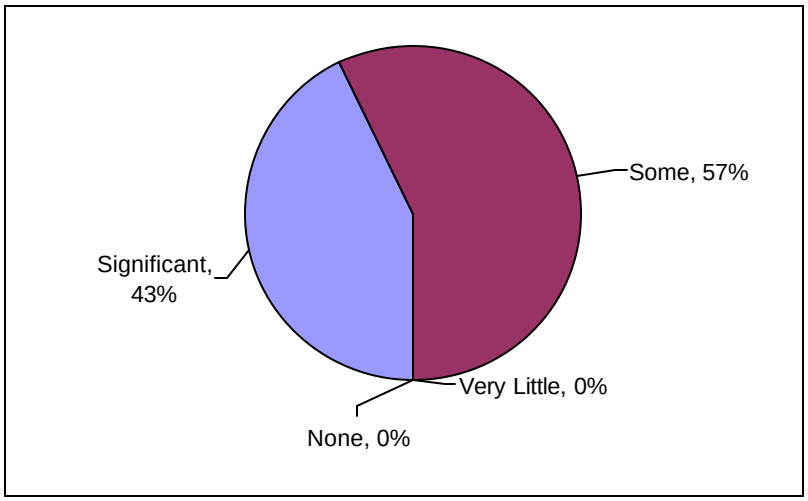


Figure 4.28 – Benefit Backup Notes Provide

4.6.4 Best Practice

Using all of the information from the interviews and survey, the team completed a scorecard for both PB and IPB to determine if either of their processes would score as a best practice. Figure 4.29 shows that the IPB practice received an overall score of 4, which qualifies as a best practice. It received this score because IPB requires its CSRs to keep written backup notes. These notes provide security to the backup process by providing backups with a reference to important client information, and take little time to create. However, there are areas in which this process can and should be improved. PB received an overall score of 2.5. It received this score because poor communication makes the backup process more time consuming than necessary. The group recommends that PB adopt IPB's model.

Process: Backup Notes		
Description: The process regarding CSRs keeping updated client information for reference and backup coverage		
Evaluation Metric	**PB**	**IPB**
Priority (5, 4, 3, 2, 1)	**2**	**4**
Client Service (5, 4, 3, 2, 1)	**3**	**4**
Quality - Internal (5, 4, 3, 2, 1)	**3**	**4**
Risk Control (5, 4, 3, 2, 1)	**2**	**4**
Total Score (Best Practice: 4)	**2.5**	**4**
Best Practice: IPB		
Recommendation: PB should adopt IPB's process		

Reasons for score	
PB	**IPB**
+ Work in teams + Verbal communication + WorkQ integrated - Notes not required - Key info not summarized - Poor tool	+ Work in teams + Notes required + Key info summarized - Inconsistent storage

Figure 4.29 - Backup Notes Scorecard

Using interviews, process flows, fishbone diagrams, and scorecards, the team determined if each topic of study qualified as a best practice in PB and IPB. The group looked for areas where risk could be minimized and quality could be improved, making suggestions accordingly. The next section will outline the conclusions and recommendations for Voluntary Corporate Actions, Cash Journal Entry, and Backup Notes.

5 Recommendations and Conclusions

This section describes the team's recommendations based on the issues described in the previous section. They focus on solving the problems identified and improving PB's processes for each of the selected topics. In addition, they are geared toward making those that are not best practices, as best practice, and to make current best practices better, as there is always room for progress. The following sections describe each topic.

5.1 Voluntary Corporate Actions

The group has come up with four recommendations that can improve the Voluntary Corporate Actions process in PB. Even though the existing model is considered a best practice, as it is very effective in handling a large volume of events, there are opportunities for improvement. In other words, the 4 score can become a 5. The recommendations are the following:

1. Do not implement the IPB model in PB
2. Integrate N&R into WorkQ
3. Increase CANS usage
4. Implement and disseminate list of "Golden Rules" for CSRs

Do not implement the IPB model in PB

The current process in PB is considered a best practice, meaning that there is no reason to switch to the IPB model. As a matter of fact, the Voluntary Corporate Actions process in PB handles a far greater volume of transactions than IPB's model. Some of the differences identified in the analysis section further suggest that IPB's process does not

fit PB's business model. In this case, drastic change to PB's process would be a mistake. PB should therefore remain with its current process.

Integrate N&R into WorkQ

PB should integrate N&R into WorkQ as fast as possible. We are aware that there are plans to do this in the near future and we believe that this is the correct approach. In the next few days, WorkQ will start notifying CSRs about event deadlines. Another functionality that will go live is the ability of entering ad-hoc conversions. This reflects that PB is moving in the right direction.

However, MSPB should not limit WorkQ to do these two specific tasks. There should be a complete integration of the N&R and WorkQ systems that enable CSRs to enter responses, monitor their client's inputs, and verify payments using WorkQ. This would mitigate the risk of manual tasks by eliminating or at least limiting the use of email for event notification. It will also reduce some of the ambiguity created by PB's unclear methodology of inputting the election, and improve overall communication between the parties.

WorkQ is a system that PB CSRs are accustomed to use throughout the day, making their job easier and the overall process smoother. Its use would not only ensure that the CSR is fully aware of an event, but would also give CSMs the ability to monitor Voluntary Corporate Action activities.

Some additional functions that the team suggests are:

- **Adding a double-check feature:** Have CSR double check clients' elections (entered through CANS) in WorkQ, before deadline. This will not stop the transaction from going through, but will guarantee that the CSR acknowledges

their client's decision. In other words, it will ensure fewer errors in payments by detecting them before they occur. In the long run this will also help maintain MSPB's impeccable reputation as clients will feel more confident about the service provided.

- **Creating a post-payment automatic sign-off:** Have technology that matches the expected payment with the actual payment received on each specific account. If the payment is correct (the client was supposed to receive X amount of cash and received X amount of cash) a confirmation email is sent to the client and the WorkQ event is closed for the CSR. If the payment is incorrect (the client was supposed to receive X amount of cash and received Y amount) the CSR would receive a WorkQ notification. An email will not be sent to client until the problem is fixed and the WorkQ item has been closed by the CSR. This will increase the probability of detecting mistakes on time and prevent clients from noticing a mistake before MS does. This will as well contribute to maintaining an excellent reputation.

Increase CANS usage

The third recommendation is to continue pushing PB clients to use CANS. MSPB must make a serious effort to get their clients to input their own elections. They need to make clients aware that it is in their best interest to enter their responses themselves.

This will reduce communication errors by making it clear that the client is always expected to elect and reduce the risk of the CSR misinterpreting a client's decision. It will also diminish Morgan Stanley's risk by making the firm less liable for mistakes caused by inputting an incorrect response.

Implement and disseminate list of "Golden Rules" for CSRs

MSPB Client Service needs to develop and disseminate a list of rules for CSRs handling Voluntary Corporate Actions. This list of "Golden Rules" must contain specific procedures that CSRs must follow every time one of their clients is involved in events that require an election. Table 5.1 below contains an example of this list of rules.

	Before WorkQ is implemented	After WorkQ is implemented
1	Monitor N&R and check email for Voluntary CA events notifications	Monitor WorkQ for CA event notification
2	Contact client to discuss approach and decide election before deadline	Contact client to discuss approach and decide election before deadline
3	Enter election in N&R or double check client's election if entered in CANS, before deadline	Enter election in WorkQ or double check client's election if entered in CANS, before deadline.
4	Check email for payment confirmation and verify in MSPA that payment is correct.	Monitor WorkQ for any incorrect payment notifications sent by the system. Event will be closed automatically if payment system detects no inconsistencies.
5	Event closed if no inconsistencies	If payment is incorrect, make/order pertinent changes, verify, and close event.

Table 5.1 – CSR Golden Rules

The list should be distributed among CSMs and CSRs to ensure that they put these procedures into practice in the same way that IPB CSRs do with the "10 Commandments". This can be done by including these procedures in a future best practice training program for CSRs. The best practice is for CSRs to have a systematic approach to the Voluntary Corporate Actions process where they will monitor events and double check client's entries. This will reduce the probability of the CSR missing an event, while increasing the awareness of the importance of this process.

5.2 Cash Journal Entry

The team focused on developing recommendations that would address the issues previously described in PB. Due to the nature of the business, the implementation of the recommendations has to be gradual, following the steps outlined in this section. The focus of the recommendations for cash journal entry will be on:

1. PB Online Journal Tool
2. Client Service
3. Cash Journal Entry Process

PB Online Journal Tool

The first step is to include all the account ranges for this tool. As previously mentioned, the only types of transactions that were enabled by the tool were:

- Type Breaks
- Error Accounts
- Cross Legal Entity
- Generic Movement

The cash account ranges that are missing are:

- Cross client
- Cross branch client

Crossing a client was not part of the initial implementation phase. Developers agreed that it would be better to test the other journals that do not require a high level of expertise and evaluate user feedback. However, the risk exposure that mainframe access generates and the fact that CSRs have had a significant period to test the tool, compel the next step to be completed as soon as possible. In addition, it would be useful if CSRs were able to journal movements from 038 clients to 04F clients. Therefore, crossing

branch clients is also required. Once this is completed, there will be no need for CSRs to have mainframe access for cash related journals.

Phase two of the online journal tool should involve adding account ranges that enable CSRs to journal securites. This implementation however, requires a complete business unit analysis, determining which parties will be involved, the business rules, authorization levels, security checks, thresholds, and characteristics of the add-in application. This is not included in the scope of the project; nonetheless, Morgan Stanley has to address this issue in order for this process to be considered a best practice.

There are two technical recommendations for the online journal tool. Currently, the tool experiences WorkQ delays when items are forwarded to the operations teams (PBWIC and IPBTS). MSPB relies on WorkQ for their everyday activities, and it is critical that WorkQ does not experience delays since it is the primary information feed of the firm. The second technical recommendation is to add a link to the GDS system. This will allow the user to verify the letter of authorization against the system used in operations, which stores them in PDF format. This verification would minimize the delay that the verification process generates.

Client Service

The main recommendation for Client Service is to restrict cash mainframe access to CSRs, once all cash account ranges are included in the online journal tool. As can be seen in Appendix 10, there are functionality codes for each user. Modifying the functionality codes for Client Service and limiting the access to cash related movements needs to be done. Once phase two is completed, Client Service should adopt IPB's model and restrict all access to the mainframe. There is no reason why CSRs need access to this

application because it is free format entry and there are no levels of security or authorization.

It is also critical to keep enforcing the use of the online tool. From the survey results, we determined that there is no strict enforcement from the CSMs and this is why some of the CSRs are still using JRU*. We recommend for the department to conduct a detailed analysis and obtain metrics on JRU* usage. Once Client Service knows which CSRs are still using mainframe, then it would be possible to enforce the use of the online tool on them. Training CSRs who are not familiar with the use of the online tool is also critical. New features will be included in the online tool, which means that CSRs must learn how to use the system effectively. Once these issues have been addressed, Morgan Stanley will not be exposed to potential fraud or non-market risk by mainframe usage.

Cash Journal Entry Process

There are also recommendations concerning the following two topics:

1. Sending journals to operations
2. Function of Risk and Margin teams

Currently, CSRs are sending journals to operations because they are too busy to handle them. The team believes this is a Client Service responsibility and it should be stopped. The operations team should not be involved with any kind of journals for cash, securities, or other assets. This, however, will not be possible until all account ranges have been included in the online tool and phase two is completed. Once this happens, it is a priority to remove mainframe access from Client Service and enforce the use of the tool. Thus, operations should have no reason to journal any entries.

If an entry in the journal process does not meet a certain threshold, it is flagged as "RISK" item and an FYI email is sent to the Risk Management Team. The problem in the

process is that the Margin team, who authorizes the item, does not know if the Risk Team has analyzed the item, verifying that it is under the threshold. Thus, this current FYI email serves no purpose unless Margin is told by Risk that the item was evaluated and passed all the edit checks. It is important that Margin gets a notification, automatically generated if possible, verifying that someone in the Risk team handled the item. Again, we are proposing the use of WorkQ or Enterprise WorkQ for this. When Risk receives an item flagged as "Risk" and an action has been taken, it should feed the WorkQ of the Margin team, which lets them know that someone in Risk has already acted upon the item. This increases efficiency in the communication process.

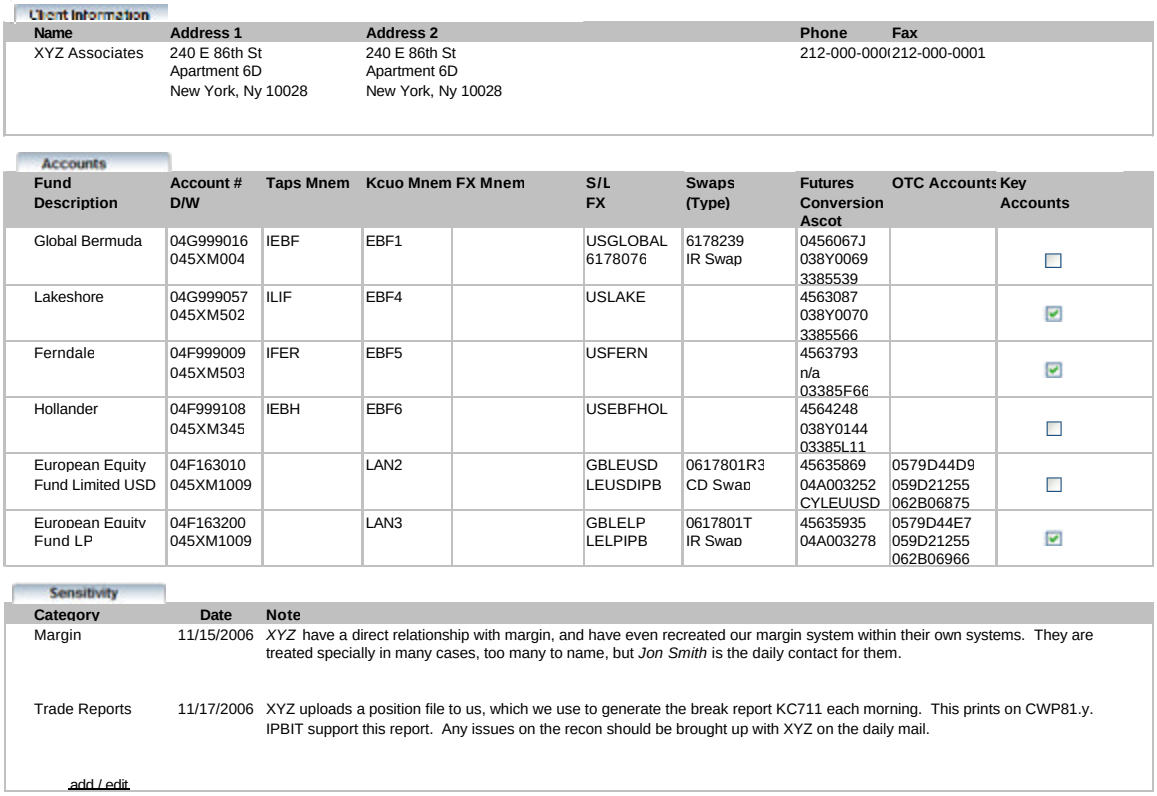
5.3 Backup Notes

The backup notes process in PB does not qualify as a best practice. The lack of summarized information makes the backup process more difficult and time consuming than necessary. The team formulated three recommendations to improve the PB process. They are as follows:

1. Adopt IPB's process of keeping written backup notes
2. Send CSR a WorkQ item quarterly to update backup notes
3. Store backup notes in an improved coverage note tool in PBToday

The group recommends the adoption of IPB's process because backup notes provide better and continuous service to clients. The team feels that these notes will be of great benefit to backup CSRs and protect the firm at a cost less than keeping them. In addition, they are a good source for the primary CSR for information that they do not use all the time. However, the group believes that some of the IPB process is not ideal and improvements should be made. The process should be better regulated. Therefore, we

suggest that each CSR be sent a WorkQ item to update backup notes, once every quarter. Doing this allows CSMs to monitor the process and make sure backup notes stay continually updated. Lastly, the location where IPB's notes are stored should be changed. The group suggests that backup notes be kept in an improved version of the coverage note tool in PBToday. This is a better location because it is a central storage web based tool where certain pieces of information can be linked and updated automatically. Figure 5.1 shows and example of how the team believes the tool should look and what information it should include.



Client Information

Name	Address 1	Address 2	Phone	Fax
XYZ Associates	240 E 86th St Apartment 6D New York, Ny 10028	240 E 86th St Apartment 6D New York, Ny 10028	212-000-000(	212-000-0001

Accounts

Fund Description	Account # D/W	Taps Mnem	Kcuo Mnem FX Mnem	S/L FX	Swaps (Type)	Futures Conversion Ascot	OTC Accounts	Key Accounts
Global Bermuda	04G999016 045XM004	IEBF	EBF1	USGLOBAL 6178076	6178239 IR Swap	0456067J 038Y0069 3385539		☐
Lakeshore	04G999057 045XM502	ILIF	EBF4	USLAKE		4563087 038Y0070 3385566		☑
Ferndale	04F999009 045XM503	IFER	EBF5	USFERN		4563793 n/a 03385F66		☑
Hollander	04F999108 045XM345	IEBH	EBF6	USEBFHOL		4564248 038Y0144 03385L11		☐
European Equity Fund Limited USD	04F163010 045XM1009		LAN2	GBLEUSD LEUSDIPB	0617801R3 CD Swap	45635869 04A003252 CYLEUUSD	0579D44D9 059D21255 062B06875	☐
European Equity Fund LP	04F163200 045XM1009		LAN3	GBLELP LELPIPB	0617801T IR Swap	45635935 04A003278	0579D44E7 059D21255 062B06966	☑

Sensitivity

Category	Date	Note
Margin	11/15/2006	*XYZ* have a direct relationship with margin, and have even recreated our margin system within their own systems. They are treated specially in many cases, too many to name, but *Jon Smith* is the daily contact for them.
Trade Reports	11/17/2006	XYZ uploads a position file to us, which we use to generate the break report KC711 each morning. This prints on CWP81.y. IPBIT support this report. Any issues on the recon should be brought up with XYZ on the daily mail.

add / edit

Contacts

Name	Role	Key	Country	Phone	Email	Note
Kelly Shelquist	Operations	☐	USA	001-952-476-7208	kelly.shelquist@ebf.com	
Kate Mahigan	Operations	☐	USA	001-952-4762747	Kate.Mahigan@ebf.com	
Jarrett Isaacson	Daily Contact	☐	USA	001-952-745,7445	Jarrett.Isaacson@ebf.com	
Dana Zuraff	Corporate actions	☑	USA	001 952-745-4429	Dana.Zuraff@ebf.com	
Amy Barker	Operations	☐	USA	001-952-476-7205	amy.Barker@ebf.com	
Chris Parks	Corporate actions	☑	USA	001 952-476 7274	Chris.Parks@ebf.com	
Kristin Merkel	Operations	☐	USA	001-952 475 7311	Kristin.Merkel@ebf.com	
Nikki Lance	Operations	☑	USA	001-952-745-4411	nicole.lance@ebf.com	
Kim Stallman	Operations	☐	USA	001-952-476-7206	Kim.Stallman@ebf.com	
Sue Lam	Accounting	☑	USA	001-952-476-7229	sue.Lam@ebf.com	
Summer Barkema	Accounting	☐	USA	001-952-476-7213	Summer.Barkema@ebf.com	
Lisa Kennedy	Ascots	☑	USA	001-952-476-7228	lisa.kennedy@ebf.com	
Lynne Olson	Operations	☐	USA	001-952-476-7207	Lynne.Olson@ebf.com	
Brandon Lew	Accounting	☑	USA	001-952-475-7314	Brandon.Lew@ebf.com	
Paul Brewer	Margin/risk	☑	USA	001-952-475-7310	Paul.Brewer@ebf.com	
Kevin Freuchte	Margin/risk	☐	USA	001-952-476-7248	kevin.fruechte@ebf.com	
John Cagney	Margin/risk	☑	USA	001-952-745-4412	John.Cagney@ebf.com	
Tracey Calderon	Legal	☐	USA	001-952 475-7304	tracey.calderon@ebf.com	
Mary Fahey	Legal	☐	USA	001-952-745-4451	mary.fahey@ebf.com	

edit

Daily Tasks

Category	Note
Breaks	Send an e-mail to XYZ in morning with day's k/o's and position breaks (aka the daily rec)
Payments	Check payments and receipts from previous day to make sure they hit
Reporting	Fax marked up DTC report to Joh Smith
Follow ups	Discuss fails and DTC break with John Smith in the afternoon, following up where needed
Monitoring	Monitor execution / donewith account

add / edit

Strategy

Fund Description	Fund Strategy	Products Traded
Global Bermuda	Market Neutral Fund – primarily CB Arb in global markets (Europe/Japan/US) Market Neutral Fid – repo trading	Repos
Lakeshore	Euro L/S – Long/Short equity in European markets Euro Opp – Event driven in European markets	
Ferndale	Nth Am Opp - Event driven in US markets Technology Fund - Technology and Biotech stocks – global markets	Stock Loans
Hollander	Nth American L/S – Event driven equity in US markets Global Aggressive - Event driven - trading in equities, bonds and currencies in global markets	
European Equity Fund Limited USD		
European Equity Fund LP		

add / edit

Ad-hoc Tasks

Category	Frequency	Date	Note
Corporate Actions	Weekly	mm/dd/yyyy	Example
Reporting	Monthly	mm/dd/yyyy	Example
MSPA query	Weekly	mm/dd/yyyy	Example

add / edit

Morgan Stanley Contacts

Name	Role	Phone	Email	Key
Alan	CSR	212-762-5340	alan.podmostka@morganstanley.com	☐
Fernando	CSM	212-762-5341	fernando.olloqui@morganstanley.com	☐
Esteban	SRM	212-762-5342	esteban.paez@morganstanley.com	☐
Daniel	ED	44-207-425-4(	daniel.ossa@morganstanley.com	☑

Third Party

Name	Address	Phone	Fax
XYZ Attorneys at law	1221 Av of the 22nd Floor New York, Ny 10020	212-762-0000	212-000-0001

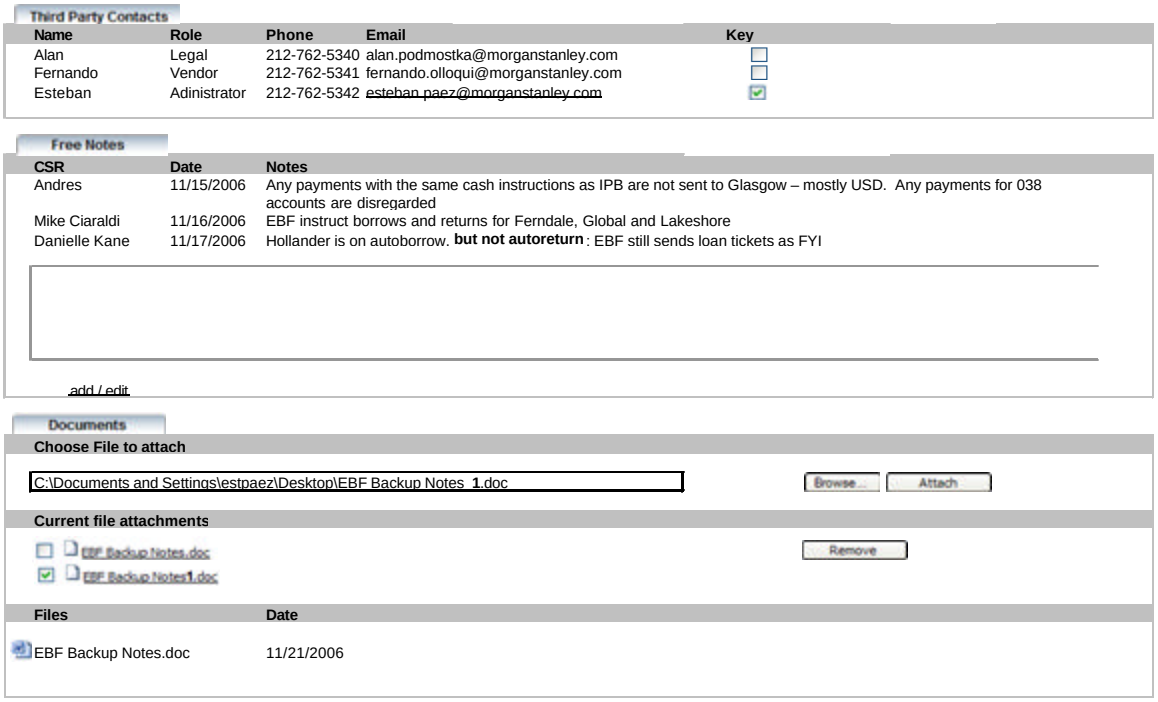


Figure 5.1 – Backup Notes Template

The template is prioritized in order of importance, where the most crucial information is located at the top of the page. It has both information that needs to be manually updated and that which will be automatically updated. The following fields will be updated automatically:

- Client information
- Accounts
- Contacts
- Morgan Stanley Contacts
- Third Party
- Third Party Contacts

Because it is possible to have many items under these criteria, each will have a key field, which allows sorting to highlight key items. Anything that is a manual field can be updated by simply clicking the add/edit feature, which brings the user to a data entry

screen where they can type the information they desire and click save. Within this tool, there are no required fields so that the tool remains flexible and easy to use. In addition, it is important that the backup notes remain printer friendly.

In summary, PB should require its CSRs to keep written backup notes in an improved tool located in PBToday as outline above. They should be reminded to update these notes quarterly through a WorkQ item. Figure 5.2 shows the best practice backup note flow. When a client goes live, the CCS team should initiate the backup notes. Then, the CSR is responsible for updating these notes and receives a quarterly WorkQ reminder. These notes are stored in PBToday and in hard copy for ease of use. When the CSR leaves, the backup uses the notes.

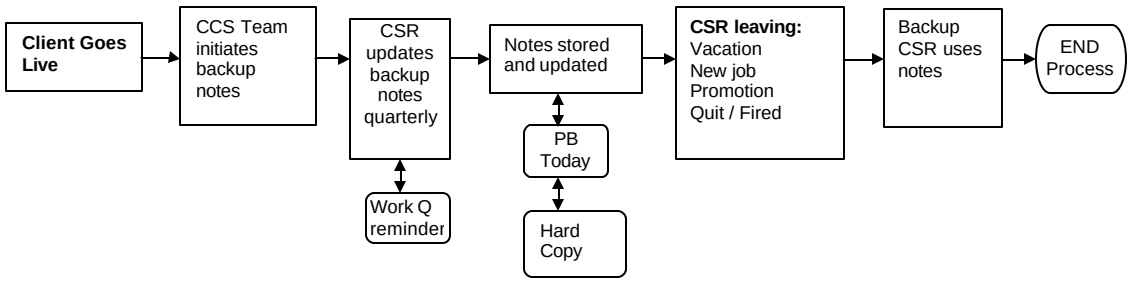


Figure 5.2 - Best Practice Backup Notes Process Flow

5.4 Conclusion

This set of recommendations should be easy to fix for MSPB, as they do not require any outsized investments. In addition, they align with some of the projects that are currently being performed at the firm. Still, it is necessary to stress how important it is for senior management to push these initiatives all the way through the end; their success will depend completely on this factor. The implementation of the WPI team's suggestions will make these processes more enhanced and, as a result, MSPB will be less exposed to

operational risk. Furthermore, they will enable these processes to align with MSPB's future objectives by adapting to the firm's organic growth, while helping the firm remain as the number one prime broker worldwide.

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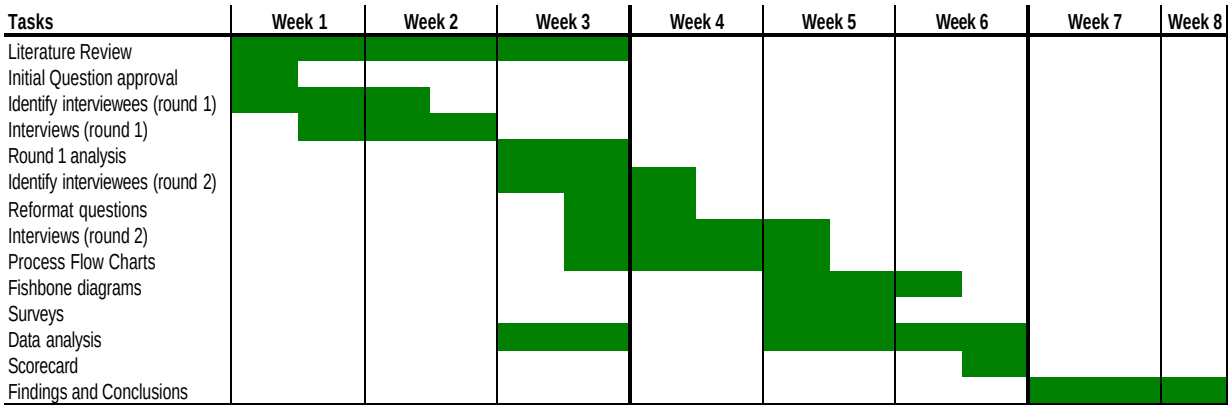
6 Appendices

Appendix 1: Project Plan

The following Gantt Chart mentions our main tasks and the detailed schedule we expect to keep once we are in the second phase of the project.



Appendix 2: Round One Interview Questionnaire

Best Practices Questionnaire

We are a group of college students split across New York and London completing a project for Morgan Stanley. We are currently conducting a series of interviews with people who have knowledge of Client Service in both PB and IBP. We want to determine how things are done in London and New York, in order to identify differences between them and determine which practice Morgan Stanley should adopt. All your answers will remain confidential.

1. What is your current position, and how long have you worked for Morgan Stanley?

2. Can you briefly describe your background at Morgan Stanley focusing on your experience across PB and IPB?

3. Can you describe any differences in the way New York (PB) and London (IPB) perform similar tasks (i.e. account opening and closing, corporate actions, technology usage, financial instruments, etc.)?
   (Optional) Why do you believe there are these differences?

According to us, a best practice satisfies clients while remaining flexible to their needs. It delivers superior performance by minimizing risk, cost and time, allowing Morgan Stanley Prime Brokerage to become the benchmark in Client Service

4. Based on this definition, which of the differences previously described do you think PB does best?

5. Which do you think IPB does best?

6. Do you have any documents that could aid our research?

7. Do you know of any other people who could be of aid to our research?

Thank you for your time.

Appendix 3: IPB CSR Survey

The following shows the survey that was administrated to client service representatives to aid in the team's research process.

WPI CSR Survey

This will be an anonymous survey. All your answers will be used soley for the purpose of this study.

1. Please rank the following activities according to how much priority you give them. (1= Most Critical)

Daily Checklist (Emails, Work Q, etc)		Relationship Building	
Corporate Actions		Client Queries	
Trade Activities		Other (please specify)	

Corporate Actions

2. How often does your team have to deal with a Corporate Action problem during high season?

1-5 times a week		10-15 times a week	
5-10 times a week		more than 15 times a week	

3. What is the most common cause of a Corporate Action problem?

Misscommunication (CSR-Client)		Clients Don't respond on time	
System Errors		CSR doesn't respond on time	
Market Situations		Other (please specify)	

4. On average, how long does it take to resolve a Corporate Action problem?

.50- 1 hour		3-5 hours	
1-3 hours		an entire work day	

5. How often do you have to deal with late elections during high season?

1-5 times a week		10-15 times a week	
5-10 times a week		more than 15 times a week	

6. How often do you discover errors on Corporate Action payments before signing them off?

Never		3-5 times per year	
1-2 times per year		more than 5 times per year	

7. Who generally takes the loss when a Corporate Action Fails.

Client	
Operations	
IPB	

8. Do you think that both the CSR and the Client should be allowed to elect on the same event?

Yes		No	

Why or why not?

Trade Flow

9. What is the most strenuous task when dealing with trades?

Trade Execution		Cancel and Correct	
Trade Breaks		Other (Please Identify)	
Formating Errors			

10. In terms of risk for IPB, do you think the implementation of Transaction Manager:

Reduces risk	
Has no effect on risk	
Increases risk	

11. Do you think Transaction Manager benefits the Trade Flow within IPB?

Yes		No	

Why or why not?

Appendix 4: PB CSM Survey

The following shows the survey that we administrated to client service managers to aid in the team's research process.

WPI - CSM Survey

Please mark your answer with an 'x' in the chosen cell.

Corporate Actions - Sign-offs

1. Where does most of the risk lie in the Corporate Action Process?
   - ☐ CSR or client keying in an incorrect response
   - ☐ Missing an event
   - ☐ Miscommunication between CSR and client
   - ☐ Miscommunication between CSR and PSCSGNY (PBDIV) team

2. Why is monitoring Corporate Actions in N&R not identified as a priority by CSRs?
   - ☐ PSCSGNY (PBDIV) responsibility
   - ☐ Not enough time
   - ☐ It is a priority

3. How often does the Corporate Action process take an error?
   - ☐ Once a day
   - ☐ Once a week
   - ☐ Once a month
   - ☐ Almost never

4. Who has most of the responsibility in handling Corporate Actions?
   - ☐ PSCSGNY (PBDIV)
   - ☐ CSR
   - ☐ Both equally
   - ☐ Other: _____

Journal Entry

5. How strictly is the usage of PB Journal enforced for cash entries?
   - ☐ Very much
   - ☐ Somewhat
   - ☐ Rarely
   - ☐ Not enforced

6. Why might CSRs use the mainframe (JRUB) for cash entries (select all that apply)?
   - ☐ Not enough functionality in PB Journal
   - ☐ PB Journal takes too much time
   - ☐ Easier to use
   - ☐ Avoid approval process

7. How often are cash journals entered incorrectly?
   - ☐ Often
   - ☐ Sometimes
   - ☐ Almost never

8. What are the most crucial features to add to PB Journal (select all that apply)?
   - ☐ Security entry
   - ☐ Error accounts
   - ☐ Ability to move cash from one client to another
   - ☐ Ability to move cash from one legal entity to another
   - ☐ Other: _____

Communication - Backup notes

9. Why do CSRs not keep backup notes (select all that apply)?
   - ☐ Poor tool to use
   - ☐ No tool available
   - ☐ Not enough time
   - ☐ Not a requirement
   - ☐ Not important

10. How often should client's backup notes be updated?
    - ☐ Daily
    - ☐ Once a week
    - ☐ Once a month
    - ☐ Quarterly
    - ☐ Once a year
    - ☐ Never

11. How much benefit would backup notes provide?
    - ☐ Significant
    - ☐ Some
    - ☐ Very little
    - ☐ None

Appendix 5: Round One Difference List

The following lists in no particular order the nineteen core differences that the team uncovered through round one interviews.

1. Corporate Actions
   - IPB: CSRs are more international knowledgeable and aware of client's corporate actions
     - Either client or Rep is allowed to make an election, but not both
   - PB: Handled by a separate department (PBDIVS)
     - Both client and CSR are allowed to make an election (Flexibility)
2. Trade Settlements
   - IPB: CSRs have to request for cancel and corrections through the mainframe via email to the operations team so that it can be processed. (Manual)
     - Prematch → 2% failure rate, preventing Trade Breaks
   - PB: Uses Transaction Manager to handle cancel and correct functions (automated)
3. External Technology (client)
   - IPB: Clients tend not to use MSPM as they have external administrators
   - Clients widely use
     - CANS (Corporate Actions)
     - PQ (Balances)
   - PB: Developed to tailor to client's needs
     - MSPA as a query tool where client's can "do it themselves"
     - Accounting-based
     - Provides detailed Cost Accounting (P&L, Tax-lots, etc)
     - i.e. "To Do List" in Client Link
     - i.e. Allow clients to manually override and price their own portfolios.
4. Time and Risk Management Tools (internal technology)
   - IPB:
     - PBToday: CSRs are not given all of the functions available (i.e. cannot see balances in module)
     - WorkQ: Has few feeds
       - CSRs use it only a couple times per day for immediate action items
       - Initial acceptance but still hesitant (because of loss of confidence) to use it
         - Problems displaying accurate data.
   - PB:
     - PBToday: Provides Reps with everything they need to know about their client
       - Provides value-added tools
     - WorkQ: Used as a daily checklist of "things to do"
5. Conversions – Authorization process
   - IPB: Requires Reps to obtain manager approval, IPBREV's approval, risk approval and legal approval

- PB: Clients sign off on most documentation and Reps are not required to seek for legal or manager approval

6. MSPA Reporting
   - IPB: Provides fewer reports to client (Balance and Trade Statements)
     - Simpler reports (Standardized)
   - PB: Provides all accounting reports to client
     - Supports Hearsay reporting (consolidated reporting)
     - Customizes reports to client's needs/strategies
       - MAC reporting
       - P&L reports
7. CSR focus
   - IPB: Custodian
     - IPB clients have an external administrator (handles their accounting).
     - Achieve "Stickiness" to client through client management and core tasks.
   - PB: Accounting - plays an administrator like role to clients that self administer
     - The tools PB provides are often used by the client as their books and records
     - Focus on Portfolio accounting
     - Achieve "Stickiness" through Technology→ a broad selection of offerings.
8. Journal Entering
   - IPB: Uses a split system→ the Online Journal Tool for cash entries and stock journals via Journal request tool which requires sign-offs (Stock movements are done the old way)
     - Developed journal cash tool globally
     - Does not have access to JRUB.
   - PB: CSRs are able to enter cash journals directly into the mainframe through JRUB (no sign-offs required)
     - PB Reps are supposed to use Journal Cash but prefer JRUB to do both
9. Audit Requests
   - IPB: Takes a long time (30 days) since the operations group in Glasgow prints all statements and send them in a box. (manual)
   - PB: Takes only about one day or less, Baltimore operations uses a system to auto-generate a CD with all the statements and then FedEx's. (automated)
10. Cash Processing
    - IPB: CSRs send email or fax to centralized unit (manual)
    - PB: When faxes are received they feed directly into WorkQ (automated)
11. Trade Rejections
    - IPB: CSRs get rejections via email (manual)
    - PB: Feeds into WorkQ and then linked to Transaction manager so rep can immediately resolve (automated)
12. Account Opening
    - IPB: Only one account is opened for the client
      - PRIMO is the sole document that is needed
      - Tasks are centralized

- PB: Takes 2-3 hours, they are split among several 038 accounts.
    - Create a DEMO account while waiting for all the clients data and contact information to come in
    - Tasks are split among different teams/groups (CCS, CS, etc)
    - More paperwork

13. BCP (Business Continuity Planning)
    - IPB: Takes a lot of time because reps wait for a fax to make a transaction (manual)
    - PB: With use of WorkQ easier to retain faxes from clients (automated)
14. Centralization
    - IPB: Provides one point of contact
    - PB: Multiple teams work in different areas
15. Communication
    - IPB: Writes backup notes to use when reps are on vacation
    - PB: No backup notes used
16. Broker codes
    - IPB: Are given the tools to get the codes themselves
    - PB: Have to contact PB trades to get codes
17. Training
    - IPB: The preliminary introduction and when the CSR are introduce to the client are different.
        - CSR are introduced earlier to the client, and provide more training opportunities
    - PB: Reps introduced to clients later.
18. Overall Focus
    - IPB: Relationship management
    - PB: Flexibility toward client
19. Stock lending
    - IPB: Better understanding of the process
        - Clients can choose not to short the stock immediately
    - PB: Clients have to short the security borrowed

Appendix 6: IPB Backup Note Template

The following shows an example of the current backup note template used by the CSRs in IPB.

[Account Name]

Description	Acc No. D/W Acc.	Taps Mnem.	Kcul Mnem.	S/L Acc FX Acc Swaps Acc	Futures Acc Conv Acc	DTC Acc D/W Acc

Description	Acc No. D/W Acc.	Taps Mnem.	Kcul Mnem.	S/L Acc FX Acc Swaps Acc	Futures Acc Conv Acc	DTC Acc D/W Acc

Address

Tel:
Fax
Email:

Main Contacts

Additional individuals

Administrator

[Company]
[Name] ph: [ ] email: [ ]

Account Strategy

Stock Loan

Corporate Actions

Please send all notifications to:

Cash Payments

Trade Transmission

Foreign Exchange

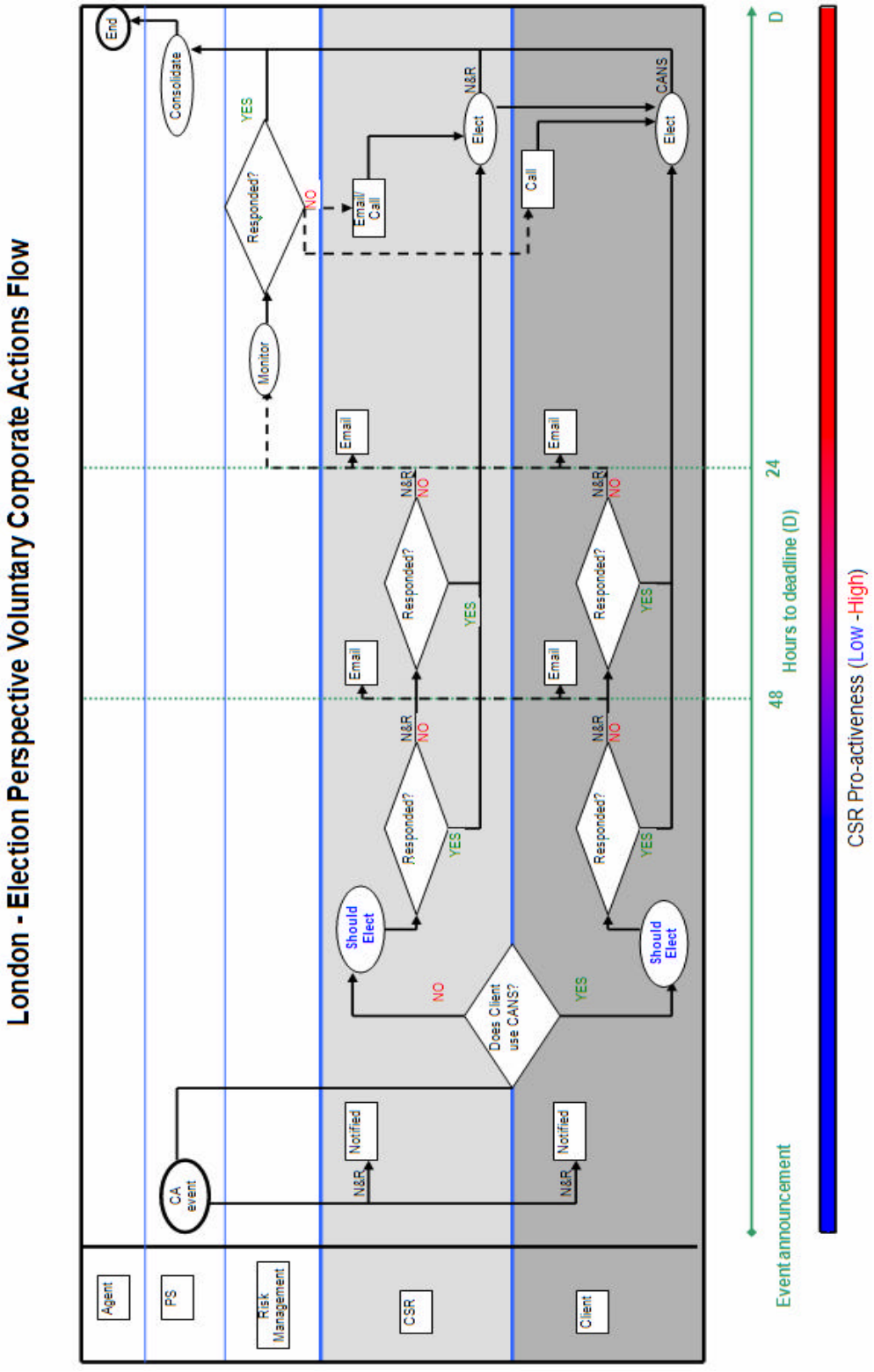
Futures

Portfolio

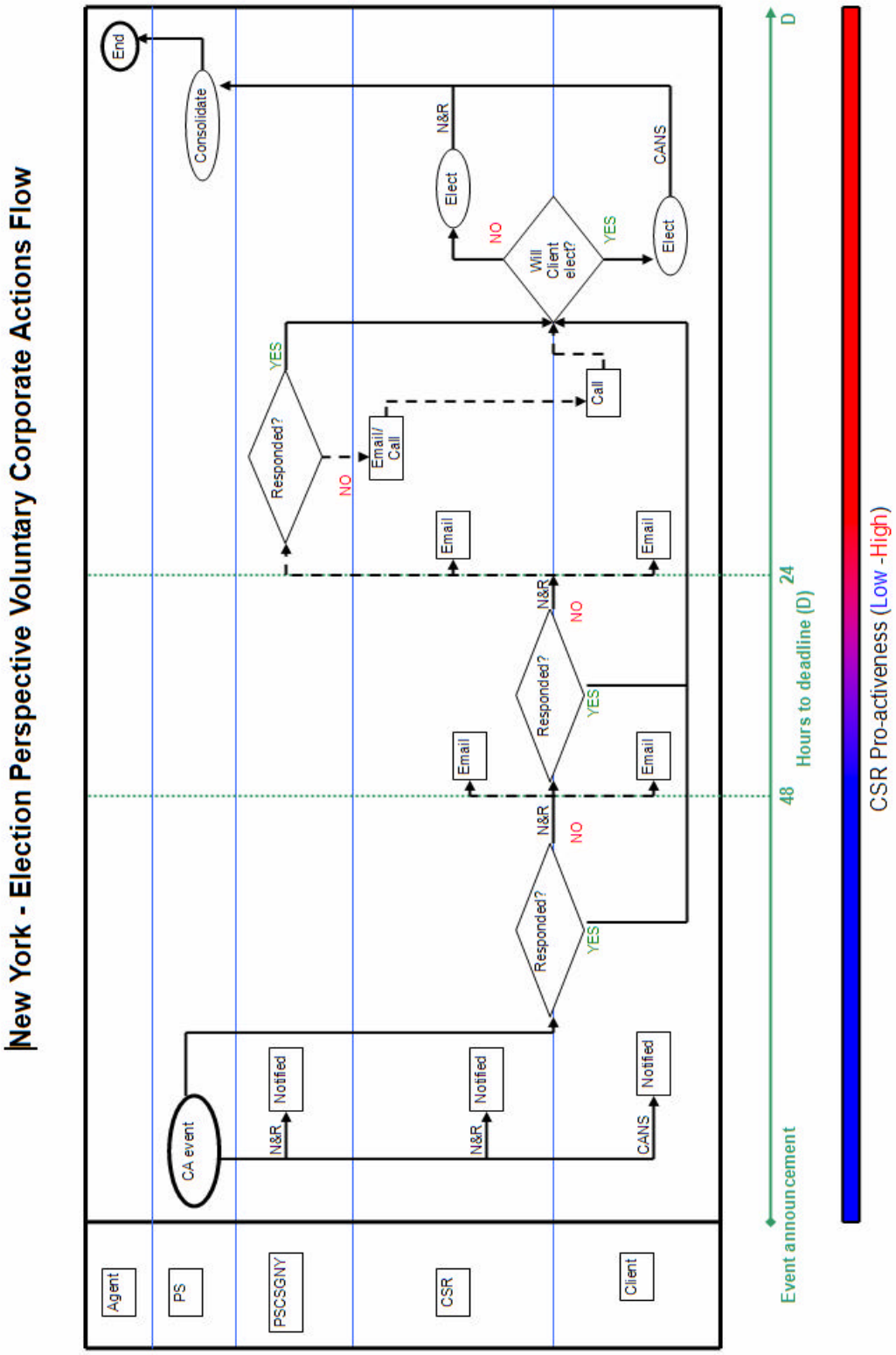
Daily Tasks

- Check CAT
- Check trades and payments on Cash Report
- Check stock loan & return confirmations
- Check fails
- Ensure that shorts are covered
- Monitor done-with a/c

Appendix 7: London Voluntary Corporate Actions Flow



Appendix 8: New York Voluntary Corporate Actions Flow



Appendix 9: PBOJ and JRU Features*

The functionalities of the online journal tool are:

- Allows cash journals from a PB account (038) to another PB account (038) within the same legal entity.
    - i.e. Pequot Fund A → Pequot Fund B
- Allows cash journals from an 04F account to another 04F account within the same legal entity.
    - i.e. HBK Investments Fund A → HBK Investments Fund B
- Allows cash journals considered *Type Breaks*, which are entries within the same account.
- Allows cash journals considered *Errors*, credited and debited to the Morgan Stanley accounts.
- Any corrections are sent back to the originator
- Integrated with Enterprise WorkQ
- Integrated with WorkQ
- Integrated with email
- High Levels of security access in place
    - Some entries require authorization from CSM or manager in PBWIC
    - Margin has to evaluate and approve all entries (manually or automatically)
- Account threshold verification

  The table below shows the threshold limit for cash movements for PB and IPB. If the entry is above the threshold, an email will be sent to the Non-Market Risk Unit.

Business Rule: Threshold Verification

Rule	Business Unit	Email sent to risk?
Movements greater than 20mm USD	IPB	Yes
Movements greater than 50mm USD	PB	Yes
Movements greater than 10% of equity	IPB	Yes
Movements greater than 50% of excess	PB	Yes

- Very easy to identify who inputs the entry
- Very easy to select accounts involved in the transaction

- Extremely user friendly
- Several business rules in place
    - Type of entry, input team, and required authorization (see figure 0-3)
- Risk of incorrect input minimized
- Posted in Custody in less than one hour

The table below shows the authorization level required for a certain type of journal entry, based on the party that inputs it.

Type of Input / Authorization Matrix

Client Service / Operations	Authorization required by:		
	Operations Manager	Client Service Manager	IPB Revs / PB Liaison
CS Type Break	N	N	N
CS Cross Legal	N	Y	N
CS Error / Wash	N	N	Y
CS Execution	N	Y	N
Generic CS Movement	N	N	N
OPS Type Break	Y	N	N
OPS Cross Legal	Y	N	N
OPS Error / Wash	Y	N	N
OPS Execution	Y	N	N
OPS Generic CS Movement	Y	N	N

The limitations of the online journal are:

- Ability to journal cash from one client to another client
    - Pequot Fund A → Satellite Investments Fund A
- Ability to Journal cash from an 038 account to an 04F account
    - Pequot Fund A → HBK Investments Fund B
- Ability to journal assets
- Ability to journal securities
- Does not interact with Global CIA
- Delays in WorkQ
- Search criteria limited

JRU*

The main features of the JRU* platform are:

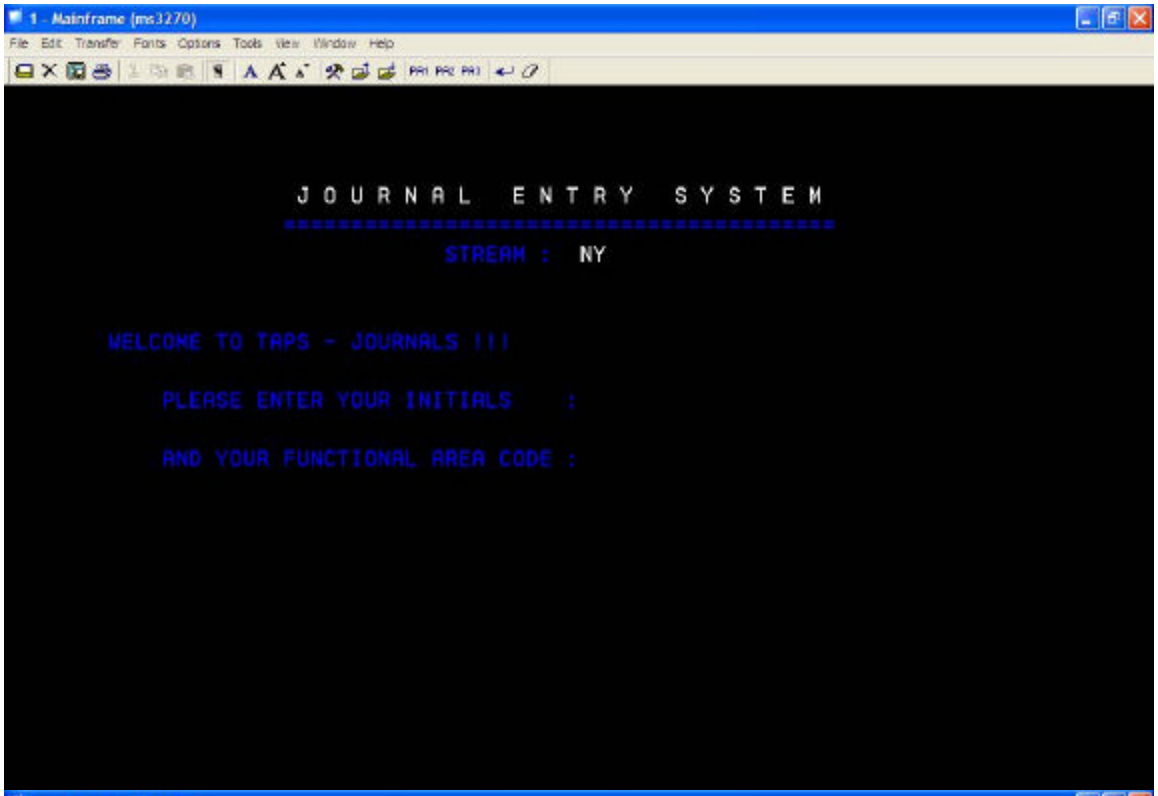
- Ability to journal assets
- Ability to journal securities
- Journal cash from one client to another client
    - Pequot Fund A → Satellite Investments Fund A
- Journal cash from an 038 account to an 04F account
    - Pequot Fund A → HBK Investments Fund B
- Ability to input cash journals from an 038 account to another 038 account within the same legal entity.
    - i.e. Pequot Fund A → Pequot Fund B
- Ability to input journals from an 04F account to another 04F account within the same legal entity.
    - i.e. HBK Investments Fund A → HBK Investments Fund B
- Easy for data input

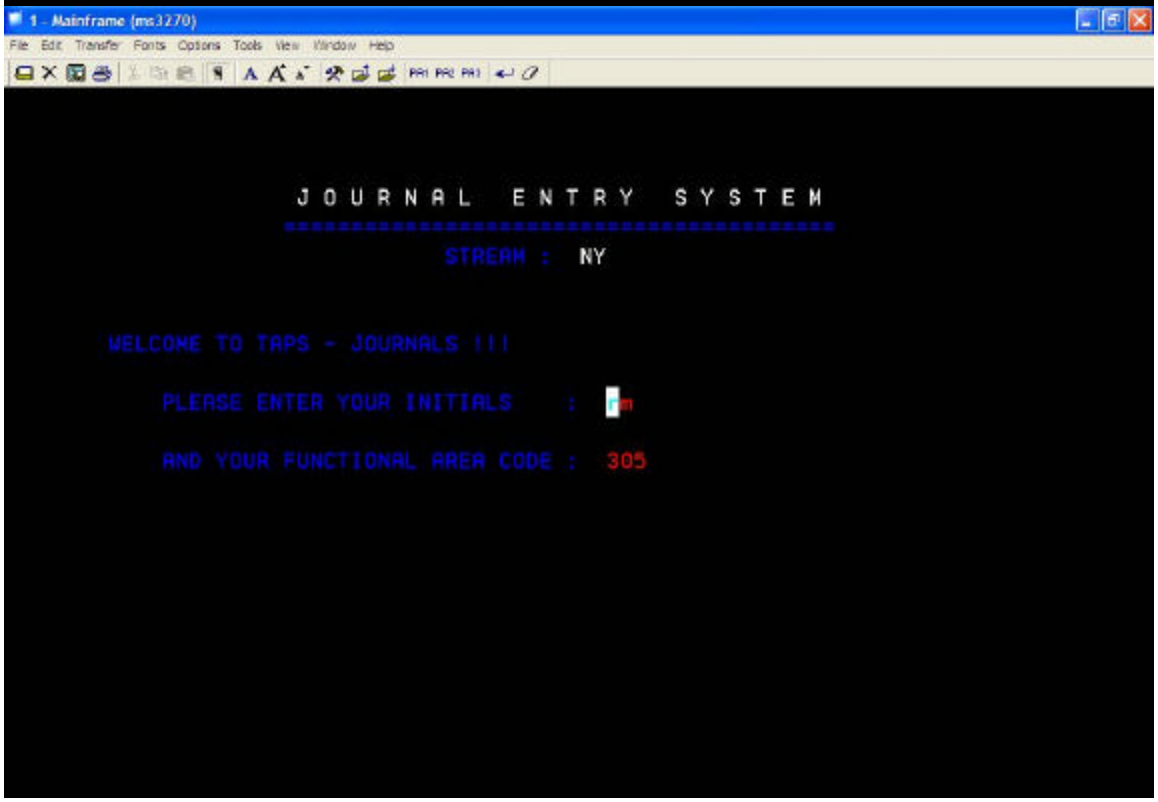
The main limitations of JRUB are:

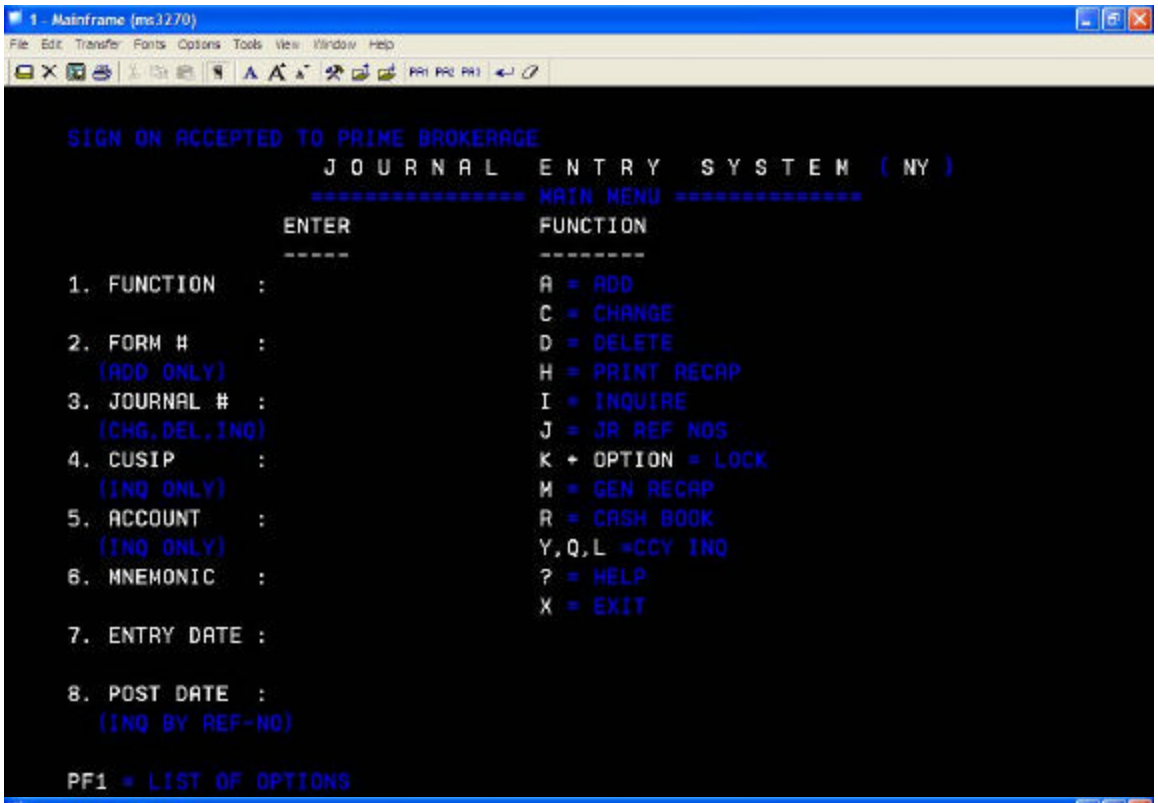
- Not integrated with WorkQ
- No search criteria
- Bypasses security
    - Manager's authorization
    - Margin
    - PB Liaison / IPB Revenues
- Risky due to manual input
- Type incorrect:
    - Credit account
    - Debit account
    - Amount
    - Type of journal
- It is posted at the end of the day
- Lack of restrictions and security gives the user the possibility to:
    - Create fraud
    - Create a plug (debiting from one account without crediting to another one)
    - Use inappropriate client

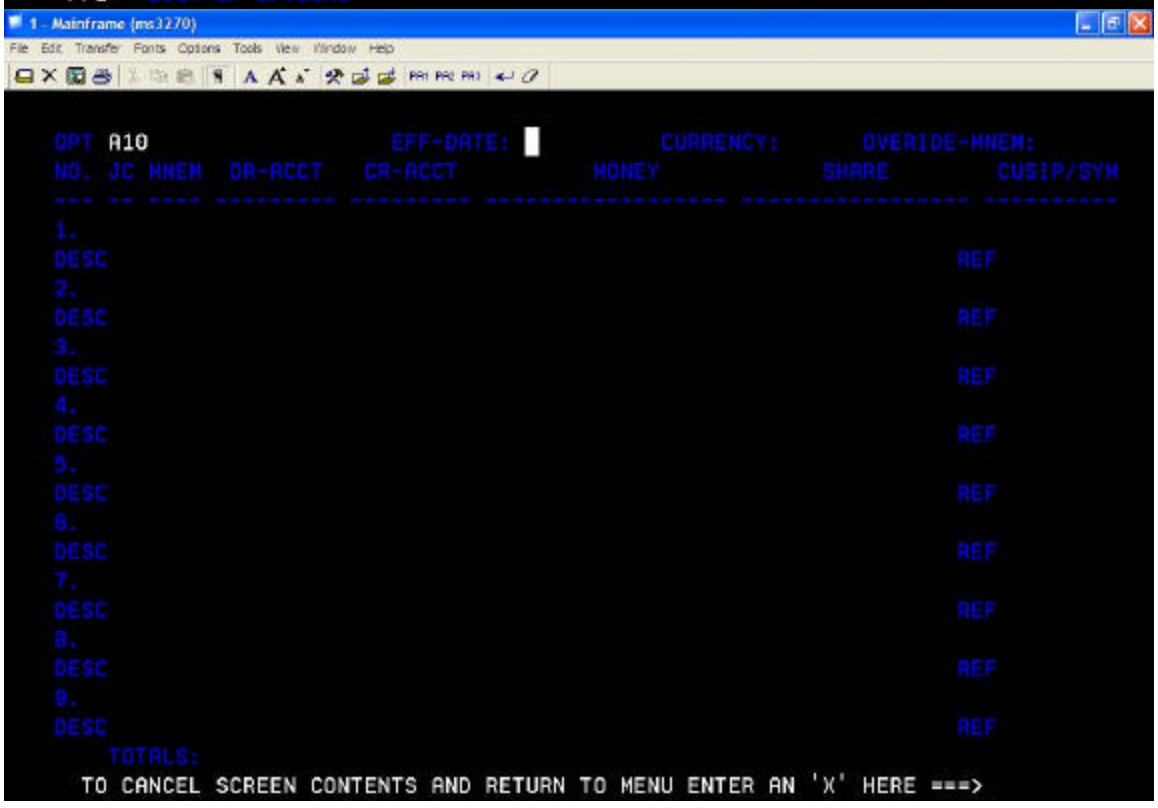
Appendix 10: Mainframe

Below shows screenshots from the mainframe system.






1 - Mainframe (ms3270)
File Edit Transfer Fonts Options Tools View Window Help
SIGN ON ACCEPTED TO PRIME BROKERAGE
JOURNAL ENTRY SYSTEM (NY)
MAIN MENU
ENTER
FUNCTION
1. FUNCTION :
2. FORM # :
(ADD ONLY)
3. JOURNAL # :
(CHG,DEL,INQ)
4. CUSIP :
(INQ ONLY)
5. ACCOUNT :
(INQ ONLY)
6. MNEMONIC :
7. ENTRY DATE :
8. POST DATE :
(INQ BY REF-NO)
A = ADD
C = CHANGE
D = DELETE
H = PRINT RECAP
I = INQUIRE
J = JR REF NOS
K + OPTION = LOCK
M = GEN RECAP
R = CASH BOOK
Y,Q,L =CCY INQ
? = HELP
X = EXIT
PF1 = LIST OF OPTIONS


1 - Mainframe (ms3270)
File Edit Transfer Fonts Options Tools View Window Help
OPT A10
EFF-DATE:
CURRENCY:
OVERIDE-MNEM:
NO. JC MNEM DR-ACCT CR-ACCT MONEY SHARE CUSIP/SYM
1.
DESC REF
2.
DESC REF
3.
DESC REF
4.
DESC REF
5.
DESC REF
6.
DESC REF
7.
DESC REF
8.
DESC REF
9.
DESC REF
TOTALS:
TO CANCEL SCREEN CONTENTS AND RETURN TO MENU ENTER AN 'X' HERE ===>