

B&FS Domain Consulting Group
**Investment Management - Separately Managed
Accounts**
Business-IT Model
Version 1.20



Document Control

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Table of Contents

1.0	Introduction	6
2.0	SMA Industry Definitions	8
2.1	Separately Managed Accounts	8
2.2	SMA - Major Business Entities	9
2.2.1	Sponsor	10
2.2.2	Investment Manager	10
2.2.3	Registered Investment Adviser (RIA) / (Financial Adviser)	11
2.2.4	Custodian	12
2.2.5	Broker / Dealer	12
2.2.6	Account	15
2.2.7	SMA Program	16
2.2.8	Investment Style / Model	17
2.2.9	Portfolio Order	17
2.3	SMA – Business Processes	18
2.3.1	High Level Process	18
2.3.1.1.	Account Management	19
2.3.1.2.	Portfolio Management	20
2.3.1.3.	Investment Accounting	23
2.3.1.4.	Investor Services	24
2.4	SMA - Business Segments	26
2.4.1	Separate Account Consultant Program (Outside Consultant Wrap)	26
2.4.2	Proprietary Consultant Programs	28
2.4.3	Mutual Fund Advisory Program (Mutual Fund Wrap)	28
2.4.4	Rep-As-Portfolio Manager (Rep-As-Manager)	29
2.4.5	Fee Based Brokerage (Fee In Lieu)	30
2.5	SMA – Products and Services	32
2.5.1	Sponsor Products	32
2.5.1.1.	Multiple Style Portfolio	33
2.5.1.2.	Unified Managed Account (UMA)	35
2.5.2	Investment Manager Products	35
2.5.3	SMA – Services	36
2.5.3.1.	Sponsor Services	36
2.5.3.2.	Investment Manager Services	37
2.5.3.3.	Financial Advisory Services	38
2.6	Organizational Structure - Sponsor	39
3.0	SMA Industry Analysis	41
3.1	Industry Evolution	41
3.2	Market Players and their Performance	41
3.2.1	Sponsors	41
3.2.2	Investment Managers	43
3.3	Market Trends, and Analysis	44
3.3.1	Market share by program segment	44
3.3.2	Separate Account Consultant Wrap Programs	48



3.3.3	Market Analysis by Sponsor (Provider) Categories	49
3.3.4	International Managed Account AUM by Program Type	50
3.3.5	Emerging Trends - Unified Managed Accounts	50
3.4	Conclusion	52
3.5	Industry Technology	53
3.5.1	Overview	53
3.5.2	Functional Support	53
3.5.3	Existing COTS Products - Feature Comparison	55
3.5.4	Notes on Specific Vendors / Service Providers	55
3.6	Industry Utilities	62
3.6.1	DTCC SMAS	62
3.6.2	Central Trade and OASYS by Omgeo	63
4.0	SMA Sponsors and Managers – Current Business-IT Model	64
4.1	Customers	64
4.2	Products	64
4.2.1	Sponsor Products	64
4.2.1.1.	OCW Program	64
4.2.1.2.	Fee Based Brokerage Program	65
4.2.2	Manager Products	66
4.3	Services	69
4.3.1	Sponsor Services	69
4.3.1.1.	SMA Program Management Services	69
4.3.1.2.	Account Management Services	69
4.3.1.3.	Order Management	70
4.3.1.4.	Clearing and Settlement	70
4.3.1.5.	SMA Record Keeping	71
4.3.1.6.	Custody	71
4.3.2	Investment Manager Services	71
4.3.2.1.	Portfolio Management Services	71
4.4	Revenue Model	73
4.5	IT Profile	76
4.5.1	Sponsor Systems	76
4.5.2	Investment Manager Systems	78
5.0	SMA Sponsors and Managers - Business Strategy	81
5.1	Sponsor Firms	81
5.1.1	Business Goals	81
5.1.2	Business Objectives	81
5.1.3	Critical Success Factors	82
5.1.4	Constraints and Challenges	82
5.1.5	IT Goals and Strategy	84
5.1.6	Trends in Sponsors IT	85
5.2	Investment Manager Firms	85
5.2.1	Business Goals	85
5.2.2	Business Objectives	86
5.2.3	Critical Success Factors	86
5.2.4	Constraints and Challenges	87



5.2.5	IT Goals and Strategy	89
5.2.6	Trends in Managers IT	89
6.0	SMA Sponsors and Managers – To Be Business-IT Model	91
6.1	Customers	91
6.2	Products	91
6.3	Services	92
6.4	Revenue Model	92
6.5	IT Profile	92
6.5.1	Sponsor System	92
6.5.2	Investment Manager System	94
6.5.3	Other Industry Requirements	94
6.5.4	Alternate IT Models	94
6.5.5	End Note	96
7.0	Appendix	97
7.1	Sponsor Organization - Roles and Responsibilities	97
8.0	References	100



1.0 Introduction

This document supports the consulting projects in the Separately Managed Accounts (SMA) industry. It describes the Business – IT model for the industry, which can be used as a reference for Cognizant to develop a blue print and a road map for banks and financial institutions who provide products and services to the SMA industry.

A Business – IT model is the method of doing business by which an institution can comply, grow, be profitable, and compete in the industry. The model specifies the following:

- Industry overview and market analysis – Important definitions, market characteristics, various types of industry players, current and future market trends, competitive landscape etc.
- For target enterprises within the industry –
 - Strategic objectives, products and services, and where they are positioned in the value chain, who are their customers and how are they using the products and services, and what are their needs
 - How is the business organized to provide products and services and cater to the needs of the customer
 - How is the business performing currently and what are the performance objectives for the next 3 to 5 years
 - Operational processes and organization that the institution should have to service the market
 - What is the current IT model, and what should be the target IT model to meet the Strategic and Operational Requirements.

The table below defines the structure of the document.

Chapter	Description
2. SMA Industry Definition	This chapter defines the Industry (e.g. Separately Managed Account), business entities (Industry Participants) involved, various business segments, services required by these segments, market (for this industry) size, organizational structure of entities who provide these products and services (e.g. Front Office, Middle Office, Back Office), major operational processes, IT environments and industry utilities if any.
3. SMA Industry Analysis	This chapter describes in general the market place, customers, industry players - products and services

	<p>they provide, or intend to provide, how they are organized, their size, major trends or developments in the market, along with a summary of our conclusions.</p> <p>Also detailed are any major IT products, which are in use or emerging, and an assessment of the technology, i.e. business processes they service, and any other qualifications.</p>
4. SMA Sponsor and Managers - Current Business-IT Model	This chapter describes the customers, products, services, etc. and IT environment of sponsors and managers
5. SMA Sponsors and Managers - Business Strategy for the SMA industry	This chapter defines Business strategy in terms of goals, objectives, critical success factors and constraints, issues, time frames, etc. The focus of this chapter is more geared towards interpretation and understanding of business strategy which can be applied to formulate a Business-IT plan that can be generically applied to the enterprises falling in the Sponsor and Manager segments
6. SMA Sponsors and Managers - To Be Business–IT Model	This chapter describes a typical model covering the future customers, products, services, growth and performance, along with IT requirements for both Sponsors and Investment Managers



2.0 SMA Industry Definitions

2.1 Separately Managed Accounts

Separately Managed Accounts (SMA) are investment accounts maintained with a sponsor of a SMA program, where an investor's funds are placed with one or more money managers. All administrative and management fees, along with commissions are wrapped into one comprehensive fee, which is often paid quarterly. More often, the fees vary from 1% to 3% of the assets. The minimum investment at the time of writing this document is USD 25,000 though it varies by program (e.g. account minimums in Outside Consultant Wrap (OCW) are much higher, of the order of USD 100,000 to USD 250,000) and the average account size is about USD 250,000.

A managed account investment program combines several services in a customized solution to investing. These services include investment planning, policy development, manager search and selection, portfolio management, performance measurement and trade execution. All of these valuable services are wrapped together into a comprehensive investment program. Rather than paying separately for these services, investors using a managed account pay a single fee.

There are two types of separately managed accounts, viz.

Bundled Separately Managed Account

A bundled separately managed account is one in which the investor pays a single fee for all of the services provided by the separately managed account program. Under this arrangement, the product fee is generally negotiated between the investor and the sponsor, while investment managers are similar to sub-advisors who have little interaction with investors. In a bundled separately managed account, fees paid to an investment manager are negotiated between that firm and the program's sponsor.

Unbundled Separately Managed Account

An unbundled separately managed account is one in which the investor enters into separate agreements with the program's investment manager and sponsor. The investor's agreement with the investment manager details the level of management fees, while the agreement with the sponsor covers all other program services.



2.2 SMA - Major Business Entities

There are multiple business entities like sponsors, investment managers, broker/dealers, registered investment advisors, and custodians providing various services to the investor's managed account.

The Managed Account Programs provider could be a broker/dealer, an investment manager, a bank or an insurance company. The Investor will have a direct relationship with the Managed Account Programs provider.

The diagram below depicts the main entities in the SMA world and their relations with each other. These entities are explained in detail in the following subsections.

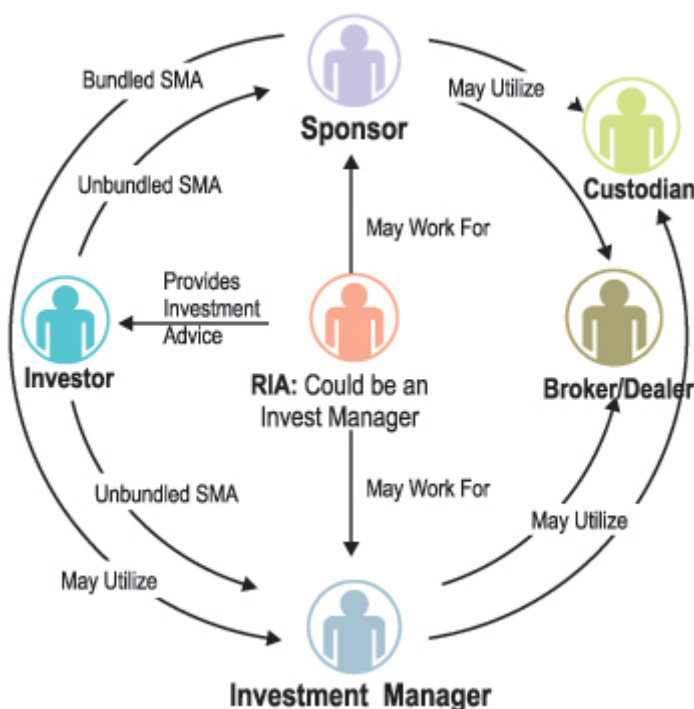


Figure 1: Entities in the SMA world

1. RIA provides investment advice to the investors.
2. RIA could work for a Sponsor (such an RIA is known as Rep-as-Manager) or an Investment Manager (independent or employed within Investment Management firm)
3. Investor opens an SMA account with Sponsor in case of Bundled SMA.
4. Investor opens an SMA account with Sponsor or Investment Manager in case of Unbundled SMA.
5. Sponsor may utilize unaffiliated Investment Manager, Broker/Dealer or Custodian.
6. Investment Manager may utilize unaffiliated Broker/Dealer or Custodian.

Note: Various terms like Rep-as-Manager, bundled and unbundled SMA are explained in the subsequent sections.

2.2.1 Sponsor

Sponsor is a firm that establishes, organizes, maintains and in most cases markets separately managed account programs that offer investment management, brokerage and custodial services for asset-based fee.

Characteristics of Sponsor

- Traditionally, Sponsors are large broker/dealers, but can also include a variety of financial services firms like banks, insurance companies and third party asset management firms.
- Sponsors typically receive a fixed fee from the Investor (although some Programs allow for variable fee components). The sponsors in turn could utilize other firms for investment management, custody, record keeping and reporting functions and may pay a portion of the fees/commissions to these firms.

Sponsor Segments (Providers Of SMA Programs¹)

Sponsors can be classified into different segments based on the overall nature of business and services they offer. These are:

- Wirehouse Brokerages
- Regional Brokerages
- Independent Broker / Dealers (IBDs)
- Discount Brokerages
- Bank Brokerages / Trusts
- Third Party Vendor (TPV)

Refer to [Section 3.2.1](#) for more details on each of these sponsor segments.

2.2.2 Investment Manager

Investment Manager is an individual or firm that charges a management fee for investing the pooled funds of investors in securities appropriate for its stated investment objectives. The investment manager is also called as the Asset Manager, Portfolio Manager or Money Manager.

Source: Dictionary of Finance & Investment Terms

¹ The definition of SMA programs is followed as given by Cerulli. SMA programs include all types, such as OCW, Mutual Fund Wrap, Fee In Lieu, etc.



Characteristics of Investment Manager²

- Using a set of investment models, the investment manager performs investment management based on the investment objectives set by the end investor.
- The investment manager could be within the Sponsor firm or external to it.
- In case the investment manager is external to the Sponsor, the investment manager may provide investment management services for accounts under multiple sponsor programs.
- The investment manager could be appointed directly by the Sponsor in the case of Bundled SMA programs or could be appointed by the investor in case of the Unbundled SMA programs.
- Some investment managers specialize in high net worth individuals or households; these managers are called ‘traditional’ managers in the sense that their money management business model predates that of the SMA manager. In these cases, minimum account sizes range from between \$1 mil and \$5 mil. In other cases, managers may handle institutional accounts such as mutual funds or pensions. These types of investment managers will be called ‘institutional’ money managers.

2.2.3 Registered Investment Adviser (RIA) / (Financial Adviser)

Registered Investment Adviser (RIA) is a SEC-registered individual or firm that acts as an investment adviser. RIA generally maintains direct relationship with the investors and helps them pick appropriate SMA programs and investment managers. They focus on financial planning for the investor based on risk and financial goals.

The RIAs also called as Reps, which are segmented into three tiers as follows:

Tier I These are ‘elite’ group of reps accounting for about 4% to 5% of the total rep population. Most of them work for Wirehouses. They are the early adopters of fee-based programs. Investment planning is a cornerstone of their practice. They work with fewer clients and offer the most comprehensive and personalized level services. A Rep-as-Portfolio-Manager is a tier I advisor.

² An investment manager may be involved as a money manager in an SMA program and be either affiliated or unaffiliated to a sponsor. Alternatively they may be involved in a traditional business will do all the activities of a sponsor, an advisor, as well as an investment manager and will design, create and manage the entire portfolio for the investor.



- Tier II** These reps have a reasonably good understanding of fee-based programs. They account for about 30% of the total rep population and most work for Wirehouses. They require more training to provide comprehensive fee-based programs.
- Tier III** This is the largest segment of reps. These reps do not see the appeal of fee-based programs; they principally concentrate on commission-based sales. This group requires most of the training to provide fee-based programs.

Characteristics of RIA

- RIA helps the investors to formulate a financial plan based on his/her risk return profile.
- RIA may also act as an investment manager (in case of Rep-as-a-Portfolio Manager)

2.2.4 Custodian

Custodian is a financial institution, which holds stocks, bonds and other securities for guaranteed safekeeping. Related services include the collection of income on custody securities, the settlement of transactions, the investment of cash overnight and the provision of accounting reports.

Characteristics of Custodian

- The Custodian maintains the book of records for cash and custody positions. Investment Managers reconcile their shadow books with the Custodian's book of records.
- In addition to the custodial services (as mentioned in the definition above), the custodian may offer services such as performance evaluation and analysis, on-line reporting, global custody, margin money (lending) and securities lending.
- In most cases, the sponsor organizations appoint an affiliated or unaffiliated custodian. Investors may decide to keep their own Custodian in rare cases. In some cases, particularly in the traditional segment, investment managers may appoint the Custodian.

2.2.5 Broker / Dealer

Broker/Dealer is an individual or institution that acts as a principal in a securities transaction. Broker/Dealers take the orders to the exchanges / ECNs for execution and trade for their own account and risk. When buying from a broker acting as a dealer, a customer receives securities from that firm's inventory. Since most



brokerage firms operate both as a broker and as a Principal (dealer), the term broker/dealer is commonly used.

Characteristics of Broker/Dealer

- Most of the sponsor firms have their own broker/dealer arm.
- Investment management firms may or may not have a brokerage arm.

Most trades on SMA accounts are executed by the designated Broker / Dealer firm (generally the Sponsor's brokerage arm). In some cases trades may be executed by non-designated Broker / Dealer (referred to as 'trading away'). Trade Away's are a growing trend in the industry.



Shown below is the next level representation of major business entities covering both the participants and other entities.

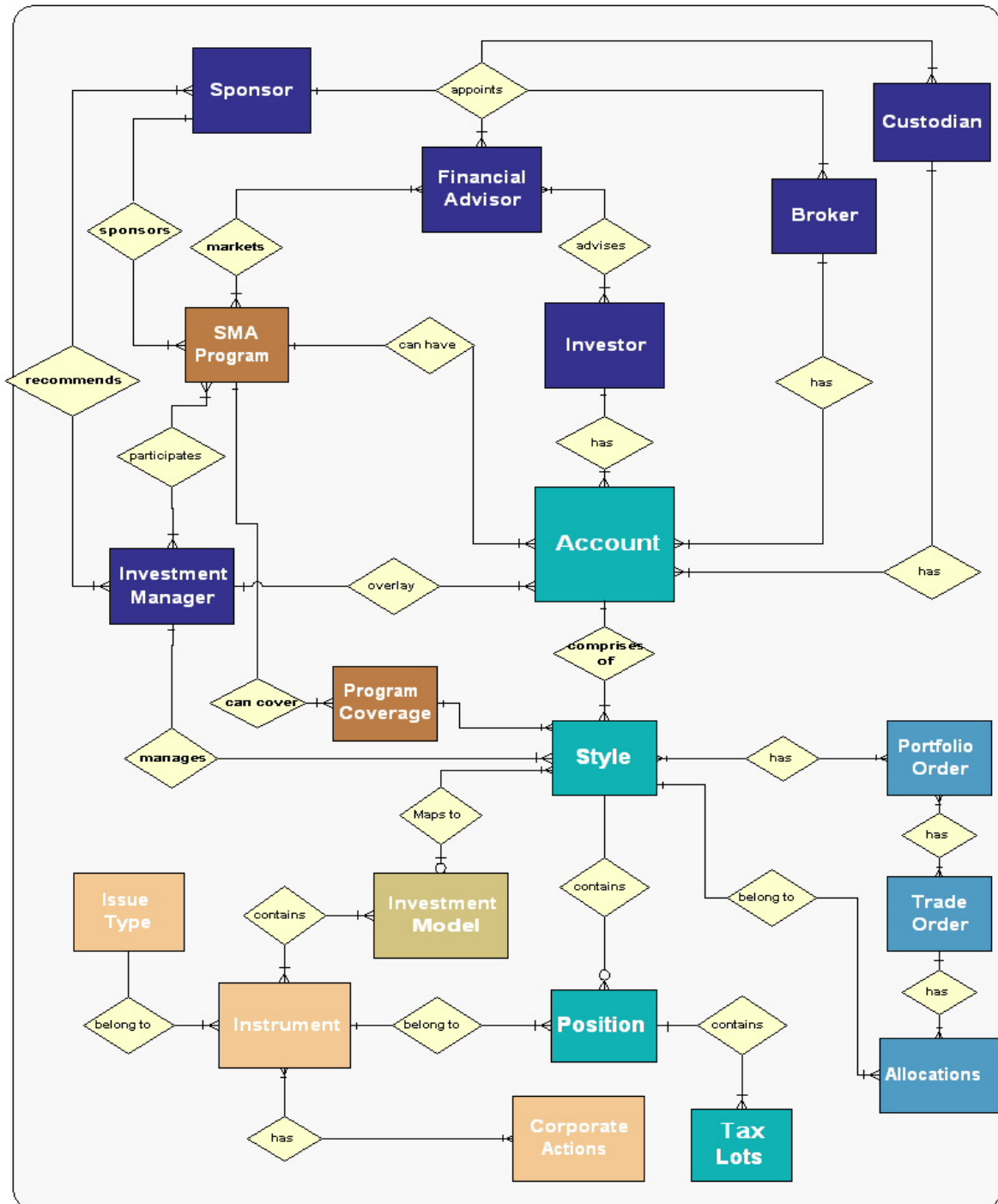


Figure 2: Entity Relationship Diagram

The entities such as sponsor, investment manager, broker, custodian and financial advisor (RIA) have already been discussed in Section 2.0. Following four entities and other related entities are described in the following sections.

- Account
- Program
- Investment Style / Model
- Portfolio Order

2.2.6 Account

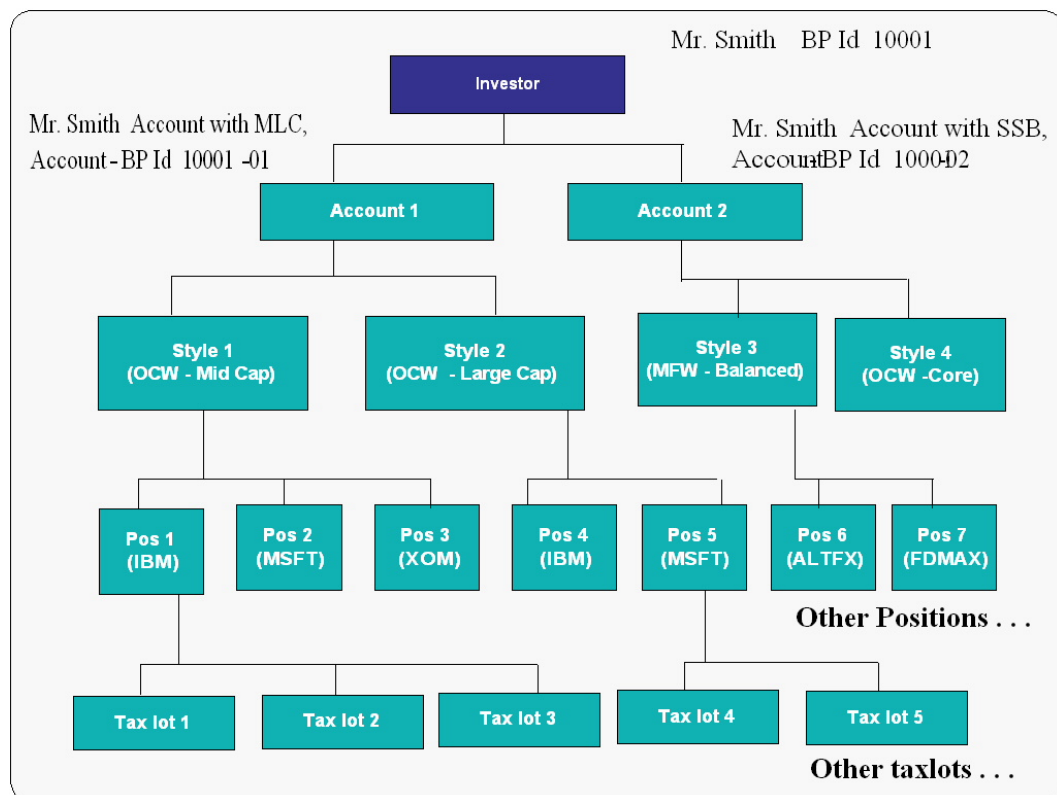


Figure 3: Entity Relationship from the Account perspective

At the center of the system is the investor's Account.

- An **Investor** can have one or more **Accounts**.
- Each **Account** is associated with one or more **Styles**.
- These styles are determined based on the investor's **Investment Model**.
- As outlined by the style, there would be multiple **Positions** in a particular **Instrument**.
- For each position, there could be multiple **tax lots**.

- An Account can have several **Account options** and **Account restrictions**

2.2.7 SMA Program

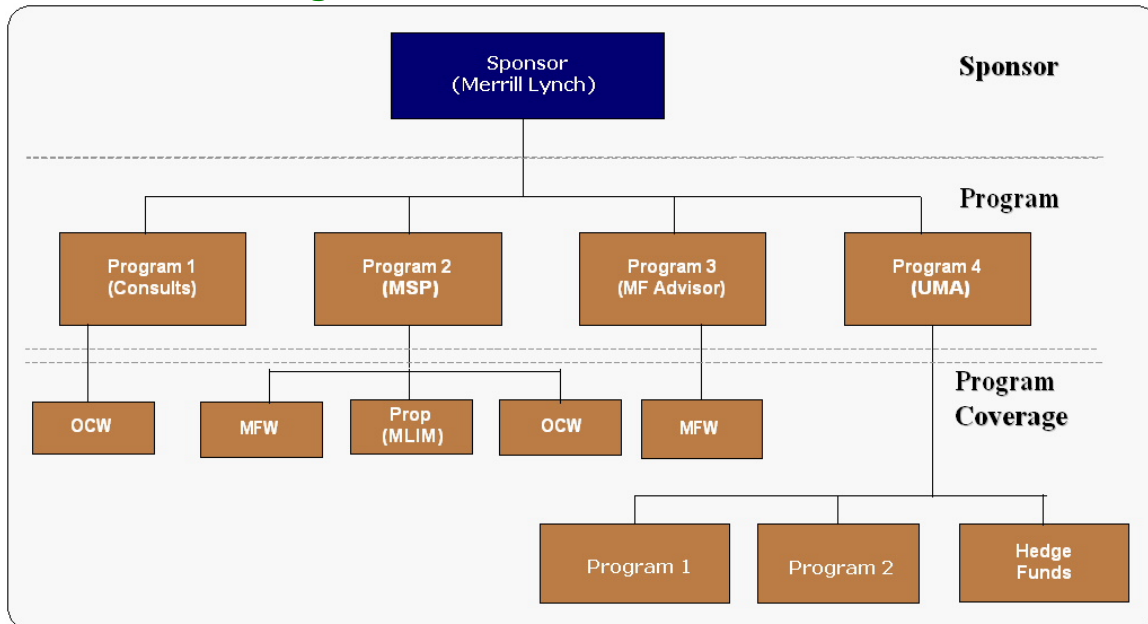


Figure 4: Entity Relationship from the Sponsor Program perspective

- **Sponsor** offers multiple **programs**.
- **Programs** are marketed by **Financial Advisors**.
- Each program can cover one or more Investment Styles.
- Multiple **Investment Managers** participate in a single program.

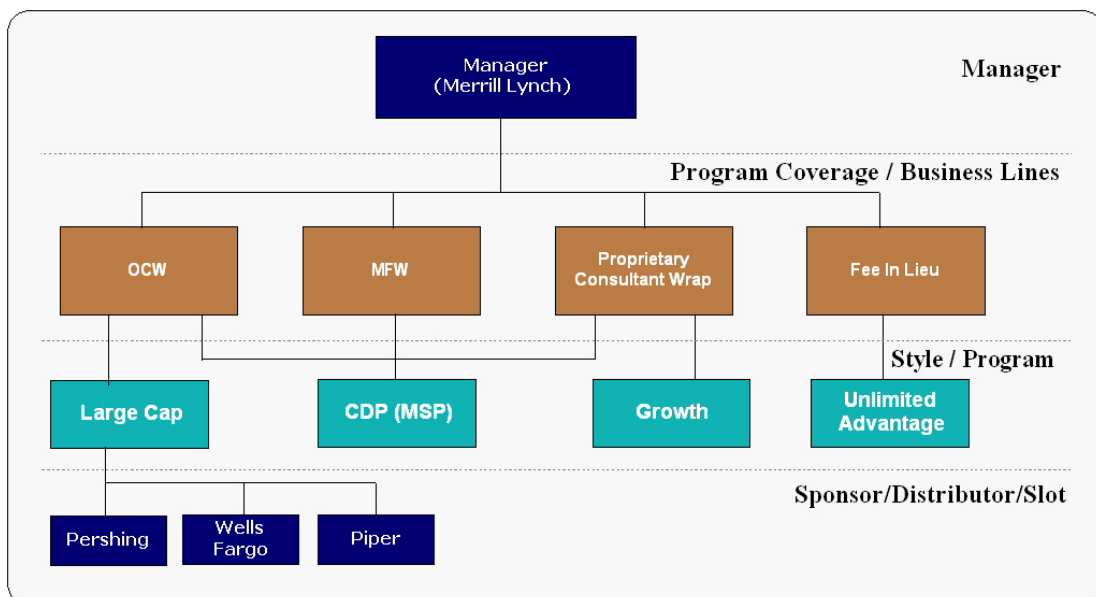


Figure 5: Entity Relationship from the SMA Manager perspective

2.2.8 Investment Style / Model

- A **Program** can have one or more **Investment Style**
- Many **Investment Managers** may offer a given **Investment Style**
- Each **Investment Style** is associated with one or more **Models** depending on the manager who is managing the Style.
- A **Model** comprises of several **Instruments** that determine the asset allocation.
- A **Model** can have **Replacement Instruments** to take care of situations where certain account level restrictions (For e.g. - do not invest in a Tobacco stocks) apply.
- An **Account** can have one or more **Models** associated with it. For e.g. in a Multiple Style Portfolio each style could have a different model associated.

2.2.9 Portfolio Order

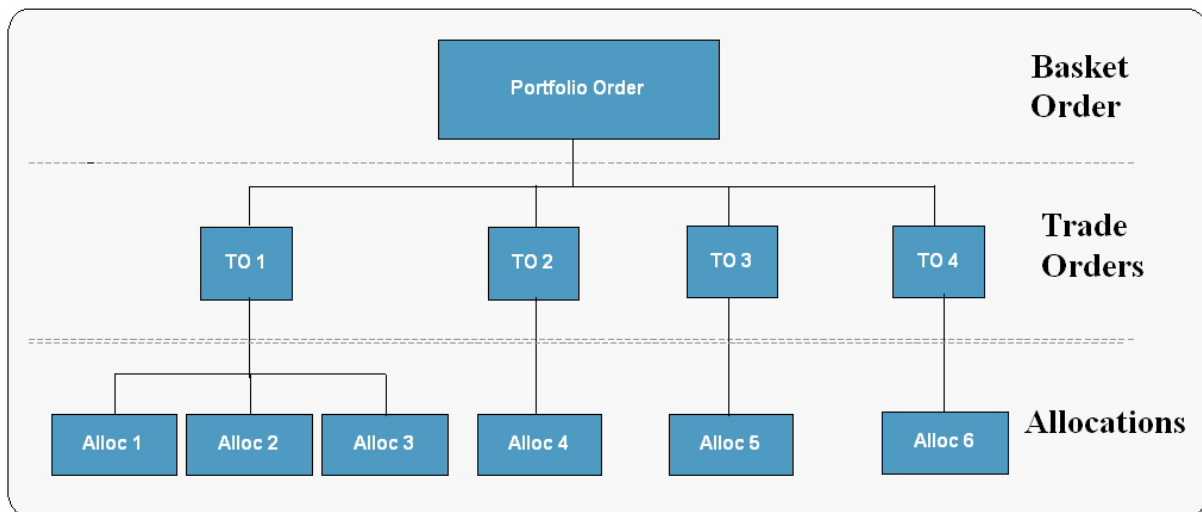


Figure 6: Entity Relationship from the Portfolio order perspective

- A single **Portfolio Order** can have multiple trade orders.
- **Trade orders** have **Allocations**.
- Allocations on a tax lot are done based on the style associated with the account.

2.3 SMA – Business Processes

2.3.1 High Level Process

At a high level the various processes in an SMA industry can be divided as given below:

Service Area	Processes
Account Management	Investor Profiling Proposal Preparation Account Creation & Maintenance Style Setup Position Setup
Portfolio Management	Portfolio Order Initiation Trade Order Generation Trade Order Management Trade Allocation Order Management
Position and Balance Maintenance	Trade Matching Position Maintenance Process Corporate Actions Reconciliation
Reporting and Support Processes	Performance Analysis and Reporting Billing Risk Monitoring, Audit and Compliance Management Information Customer Relationship Extracts Deposit / Withdrawal of Cash & Custody
Reference Data Management	Business Partner Setup Instrument Setup Market Data Program Setup and Maintenance User Setup Model Setup



These services form the core process map for SMA. Following chart depicts the flow among the processes.

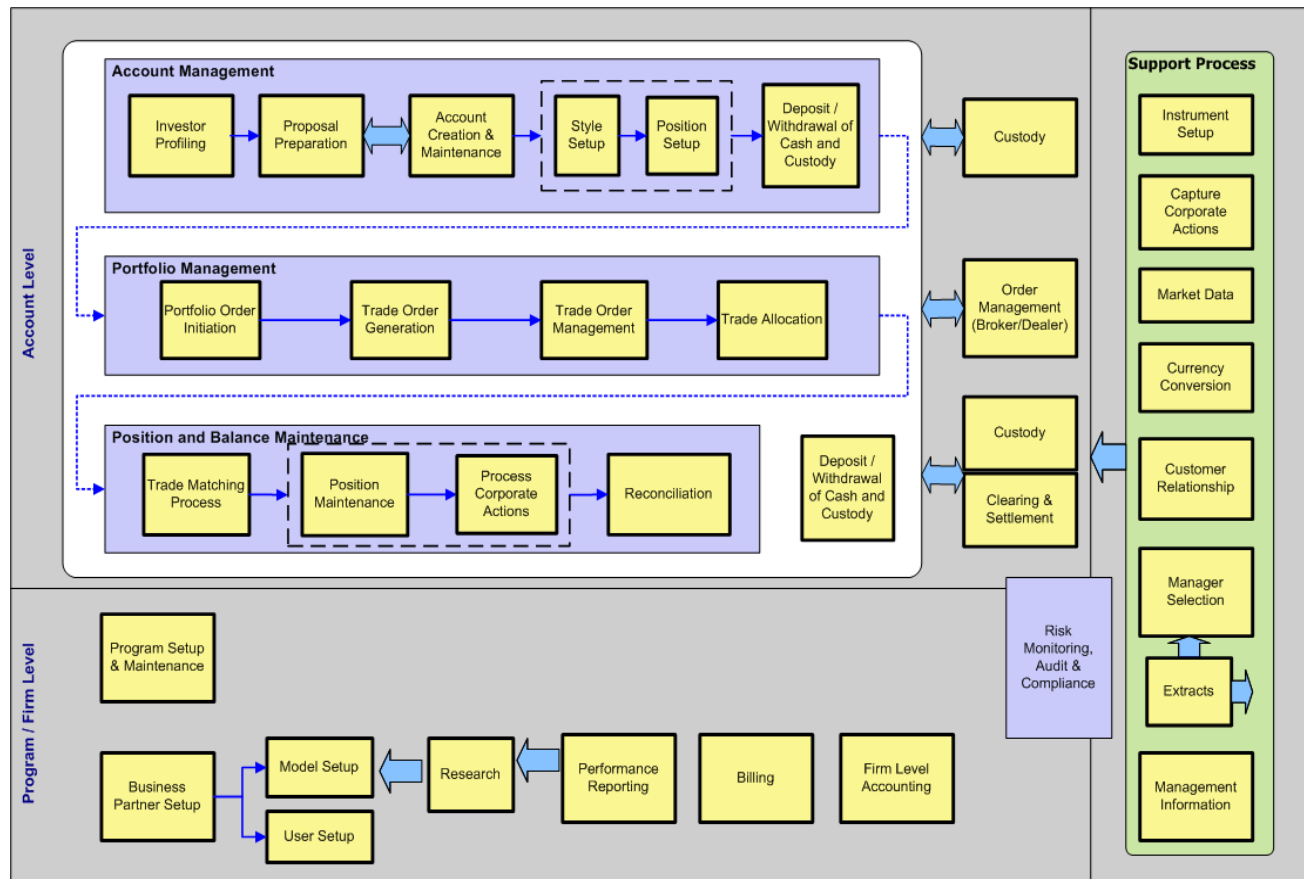


Figure 7: Business Process Map for SMA

The following paragraphs contain details of the typical process flows associated some of the major processes associated with the SMA industry. The complexity of the business processes lies in the fact that there are multiple business entities viz. financial advisor, investment manager, sponsor, broker/dealer and custodian that involved at various stages in these processes.

2.3.1.1. Account Management

Investor Profiling and Proposal Preparation

This process is usually performed by a financial advisor or RIA. The RIA may be affiliated with a particular sponsor or may be an independent RIA and offers investment advice to investors and help them make investment decisions.

- Sponsors provide the details on the SMA products they offer to the financial advisors.
- The financial advisor approaches the investors and markets various sponsor programs.
- The financial advisor fills out a questionnaire along with the investor to elicit information on Investor's demographic profile, financial position and collects the investor's investment objectives. The advisor may use tools/software that analyses the answers to the questions assign appropriate scores and suggests an investment mix for the investor.
- Based on the investment objectives of the investor the financial advisor prepares an Investment Proposal which determines which sponsor program has been recommended as well the investment style and investment manager who the investor desires.

Account Creation and Maintenance

- The Investment Proposal is forwarded by the financial advisor to the sponsor for review.
- Sponsor performs required suitability reviews and validation. Depending on the review, the sponsor approves the proposal.
- The investor then signs a contract containing the terms and conditions under which the SMA would operate with the sponsor. The sponsor facilitates opening of a custody and broker account for the investor.
- The investor deposits the initial minimum investment amount into the custody account in a combination of cash and eligible securities.
- The sponsor also sends the details of the account to the money manager to create and manage the account. This process involves substantial amount of paperwork.
- The money manager performs data validation and suitability checks on the received account information.
- After manager review is successfully done the new account is created in the portfolio management system.
- The investment manager operates the account on behalf of the investor as per the defined plans. If the account contains securities that do not match the manager's style, the manager may request the sponsor to sell off the securities. This sell off is called blow out. After this the account is ready to trade.

2.3.1.2. Portfolio Management

Investment Model Setup

- Investment managers set up the investment models to be applied to their respective accounts. Investment models streamline account management by



enabling the manager to determine the portfolio composition of the accounts being managed by them for a particular investment style.

- The investment models are based on the risk return profile of the investor. The money manager develops a formal risk-return strategy that decides the asset – allocation for the portfolio. The strategy involves investment in a diverse basket of securities and may include equities, fixed income, exchange traded funds and derivatives.
- Often, investment managers associate restrictions with the models. These restrictions impose certain constraints on the composition of the model on the way in which the manager might operate the accounts. For example:
 - ✓ Duplication of securities held in other accounts and thus reduce concentration risk
 - ✓ Certain stocks or industries for "socially conscious investors" Example: tobacco, alcohol, gambling.
- The models are very often designed to be tax efficient.
- While creating a model the manager must define a list of securities that would comprise the model and the percentage of the total portfolio value that would be allocated to that security.
- The manager may also specify tolerances to the percentages that have been defined for each security

Security	Allocation	Upper Tolerance	Lower Tolerance
IBM	10%	10.5	9.5
Microsoft	12%	13	11
Exxon	8%	8.5	7.5
Pfizer	15.5%	16.5	14.5
Time Warner	9.5%	10	9
Intel	15%	16	14
US Treasury 10 Year Note, Coupon 4.25, Maturity 11/15/2013 –	12%	12.2	11.8
US Treasure 3 Month Bill, Maturity 2/19/2003	5%	5.2	4.8
General Electric 5 year Corporate Bond, AAA rated	8%	8.4	7.6
Cash	10%	12	8

Portfolio Order Initiation and Routing

The investment manager is responsible for generating the orders for the various accounts being managed. In most case the buy / sell decision is based on the model that is associated with the account.



- The manager might use various decision making tools for deciding the securities to buy or sell. By the inherent nature of SMA accounts, there aren't frequent transactions done for the account. Periodically the investment manager rebalances all the accounts that follow a particular model and that have drifted from the desired allocations.
- Using the re-balancer tool buy and sell orders are generated to realign the account. Alternative, the manager might use what-if tools, cash generating tools (in order to generate cash by selling securities)
- Based on the simulated portfolio, a block order is created comprising of buy and/or sell orders. The block order could be for multiple accounts, for multiple broker/dealers (this is because the manager may rebalance accounts belonging to different sponsor programs) and for multiple securities.
- The order is reviewed for account level constraints. Account level constraints indicate the personal preferences & restrictions of the investor. The deviations, if any, are corrected.
- The block order is then broken up and made broker/dealer specific. The order is further tested for trade restrictions of the manager and sponsor compliance.
- Once the portfolio orders pass the above checks the manager commits them to be routed to the broker/dealer. In most cases the broker/dealer is the same as the sponsor who owns the accounts. However occasionally the manager may route orders to an external broker, such a scenario is known as 'trade away'.

Order Management

- Once the orders have been routed by the manager to the broker dealer (sponsor), they are sent to the trading desk.
- These orders are combined with other orders and are routed to the exchange for execution.
- Upon getting traded the broker/dealer sends the Notice Of Executions back to the investment manager.

Allocations and Trade Confirmation/Affirmation

- Upon receiving the Notice of executions for orders, the executed trade is allocated to respective accounts on the basis of best trade practices or rules governing trade allocation. This is because the manager would have combined orders belonging to different accounts for the same security while routing it to the broker.
- In the instance where the order is fully filled, the trades are allocated to all the accounts comprising that order. However if the order is partly filled, the manager uses one of the following rules for allocation
 - ✓ Pro-rate: The executed quantity is allocated basis of the proportion ordered.
 - ✓ Random: Executed units are randomly allocated to the accounts
 - ✓ Manual: This approach is used if the order was partially executed.



- ✓ Account Order: Executions are allocated account-wise in descending order until all accounts are filled
- Upon allocation the manager sends the allocation details to the broker/dealer firm and to the custodian. Manager sends the allocation to the broker/dealer either through OASYS or through other interfaces.
- The broker dealer in turn sends the details to the DTC.
- The investment manager then receives trade confirmations from the DTC. These confirmations have to be matched with the actual allocations made by the manager and affirmations are sent back to DTC.
- **Note:** In some cases the confirmation – affirmation process may be done by the custodian on behalf of the manager. In some situations such a rep as manager or in cases where managers use the sponsor's system this process may be done by the sponsor themselves.

2.3.1.3. Investment Accounting

Position Keeping

- The responsibility of maintaining the book of records for the investor accounts lies with the custodian. However both, the sponsor and the manager will also maintain shadow book of records using custom built or off the shelf portfolio management systems.
- Position keeping involves keeping track of the securities that are bought / sold for the account as well as keeping track of any contributions/withdrawals made to the account, interest accruals, dividends received, corporate actions, expenses such as fees etc.
- Positions are maintained at the tax-lot level such that each trade done for the account can be tracked for the purpose of tax-lot accounting and for tax efficient portfolio management.

Income Processing

- The sponsor also is responsible for processing income received on account of coupon payments, cash dividends etc.

Dividend Reinvestment

- Depending on the type of account, the dividend received may be re-invested. Else the investor may wish to periodically withdraw all income received.

Cash Management

- The investor account usually has some unutilized cash as this might be required in case of account rebalancing.
- In order to ensure that the cash does not remain idle the sponsor may offer cash management service so that excess cash may be swept into short term in short



term, highly liquid interest bearing instruments such as money market instruments.

Reconciliation

- Since the custodians books are considered to be final, the sponsors and managers have to reconcile their shadow books periodically with the custodian's books. Usually this is done daily.
- The sponsor receives daily files from the custodian containing the following information:
 - ✓ Cash (Book-keeping) Transactions and Cash Balances
 - ✓ Trades and Positions
- The information from the custodian is reconciled with details maintained in the sponsor systems. Any reconciliation errors have to be corrected as this has implications on the overall performance of the account.
- In case the manager also maintains books of records separately they may reconcile either with the custodian or with the sponsor.
- Although the reconciliation process may be automated using tools and systems the process of handling reconciliation exceptions is manual and time consuming.

Corporate Actions Processing

- Corporate actions are normally processed by the custodians and the details of the entitlements as a result of a corporate action are made known to the sponsor/manager.
- In case the sponsor/manager system has processed corporate action in anticipation this has to be reconciled with the custodian book of records.

2.3.1.4. Investor Services

Performance Analysis and Reporting

- Performance measurement is the determining factor or how well the investment manager has performed vis-à-vis the benchmark which could be an exchange index or any standard industry benchmark (such as Russell 2000, S&P 500, Nasdaq 100 etc.).
- The performance of an account represents the growth in its value during a particular period (monthly, quarterly, year-to-date etc.). It takes into account the market value of the portfolio at the beginning of the period, factors in any withdrawals/contributions made to the account, income received, expenses incurred and the market value at the end of the period while determining the growth.
- Usually sponsors/managers use Time Weighted IRR or Dollar Weighted IRR methodology for computing the performance of the account.



- At the end of each reporting period the sponsor provides the investor a set of standard pre-defined reports showing the performance of the account vis-à-vis various benchmarks. In some cases, sponsors may offer investors with detailed performance attribution reports.
- Besides investor level performance reporting, sponsors may also evaluate the performance of the investment manager managing a particular investment style against other managers offering the same style.

Billing

- The Billing process involves charging the investors for the services offered by the sponsor and manager for the SMA account.
- Although investors are charged a single wrap fee, they are billed quarterly based on the market value of the portfolio.
- The sponsor may have different fee schedules for different asset classes and may offer discounts as the portfolio value increases.
- Investor may pay the fees by either asking the sponsor to debit their account or may pay separately.
- While the investor pays directly to the sponsor, the sponsor in turn pays part of the fee to the investment manager (and other entities like financial advisors) depending the agreement that they have.



2.4 SMA - Business Segments

2.4.1 Separate Account Consultant Program (Outside Consultant Wrap)

The Separate Account Consultant Programs are those programs where the unaffiliated investment managers manage the investors' assets.

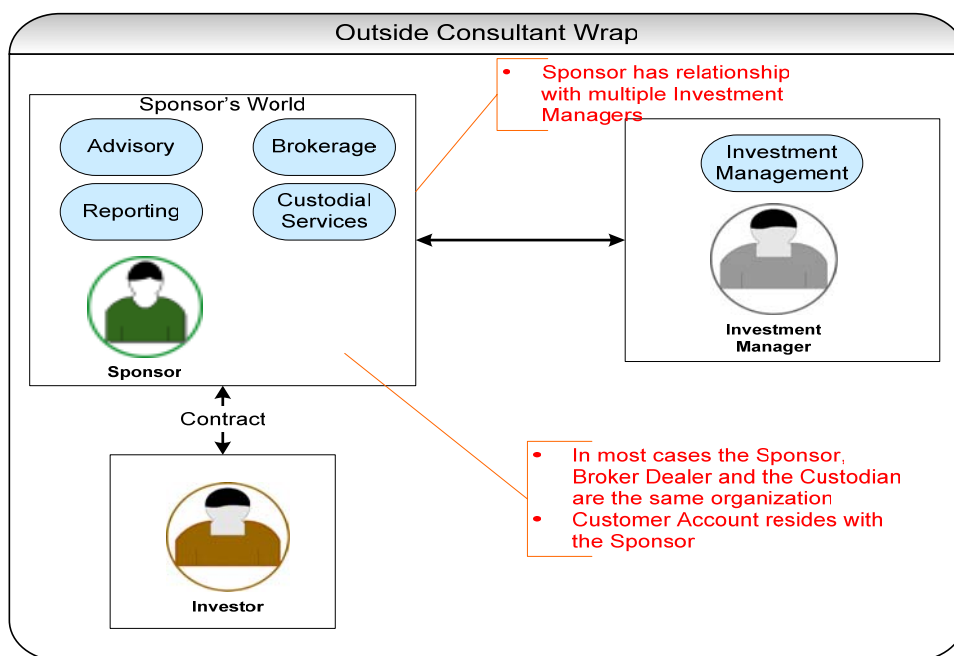


Figure 8: OCW Relationship³

The investor enrolls for a program offered by the sponsor by signing a contractual agreement specifying the services offered and the fees. The contractual agreement covers areas such as performance reporting, program requirements, etc. The sponsor charges a bundled- asset based fee to the investor for providing following services

The two types of OCWs are sub advisory relationships and the open programs:

Sub Advisory Relationships

These are single contract arrangements in which a sanctioned roster of 40 to 60 investment managers is listed on the platform in which Sponsors determine minimums and management fees.

³ Sometimes the Investment Manager may provide custodial services.



Figure 9: Sub Advisory Relationship

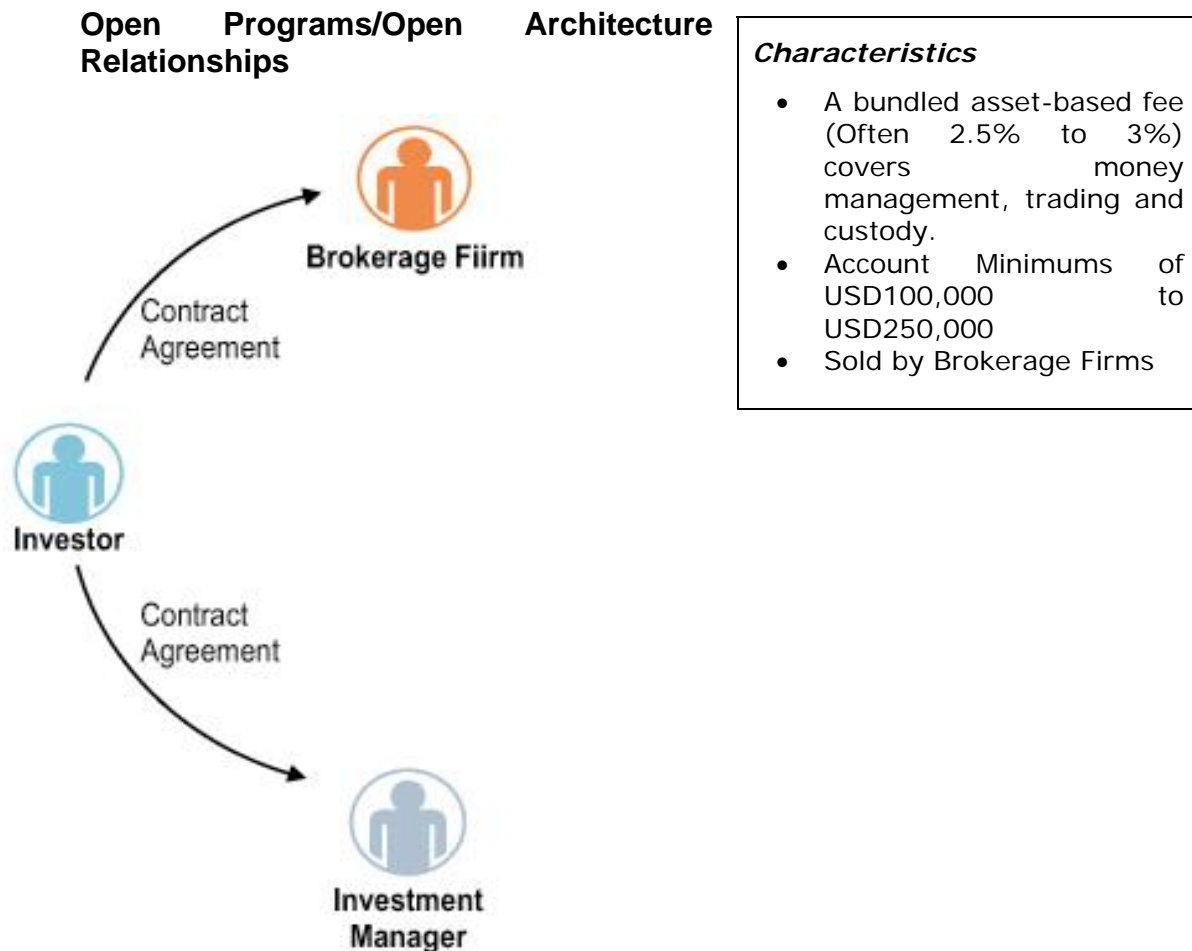


Figure 10: Open Programs/Open Architecture Relationship

In these programs, a much higher number of managers are available on the platform, and investment managers maintain an additional contract directly with the investor. Investment managers rather than the Sponsors determine investment minimums and management fees (Example: Merrill Lynch SPA).

2.4.2 Proprietary Consultant Programs

The Proprietary Consultant Programs are discretionary fee-based (or commission-based or a combination) separate account assets managed by a brokerage firm's internal asset management unit and gathered "off-platform" (i.e., outside of a brokerage's own separate account consultant program) via the retail rep force (Example: Citigroup's private portfolio group) or sales people.

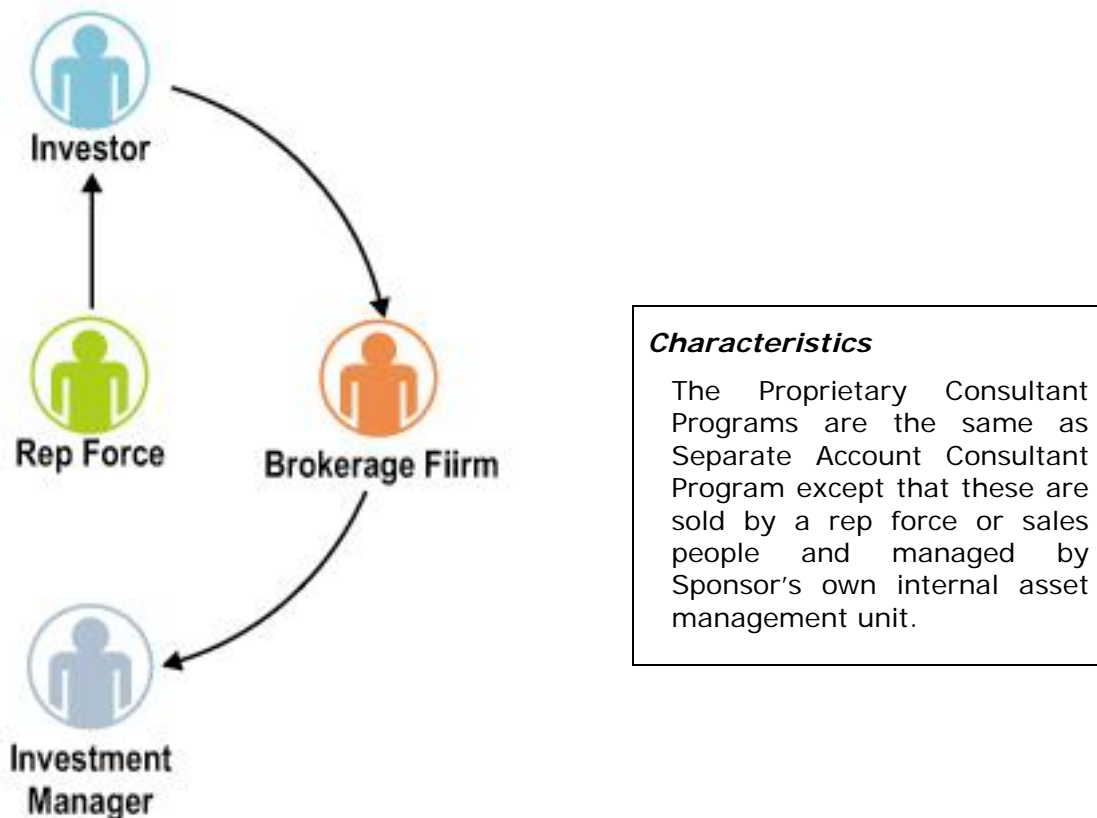


Figure 11: Proprietary Consultant Program

2.4.3 Mutual Fund Advisory Program (Mutual Fund Wrap)

The Mutual Fund Advisory or the Mutual Fund Wrap (MFW) programs are designed to systematically allocate investor's assets across a wide range of mutual funds. Both sponsors and investment management firms can offer MFW programs. The services offered by the MFW include client profiling, account monitoring, and portfolio rebalancing.

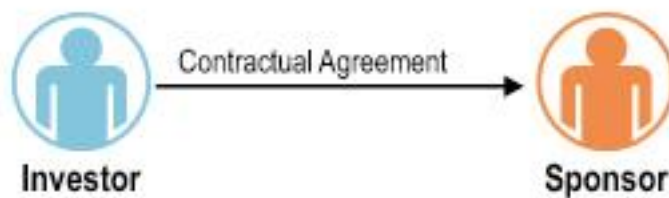


Figure 12: Mutual Fund Advisory Program/Mutual Fund Wrap

Characteristics

- As the name suggests, the Mutual Fund Advisory or the Mutual Fund Wrap programs invest primarily in Mutual Funds, although some allow for equities to be held, and some allow ETF's.
- The account minimums range from USD10,000 to USD50,000 in the case of MFWs.
- The asset based fee between is 1 to 1.25%
- Cerulli categorizes programs into packaged, hybrid and open depending upon the level of product choice and the rep's ability to influence the recommended portfolios.
 - Packaged programs are most structured, while open arrangements are least structured.

2.4.4 Rep-As-Portfolio Manager (Rep-As-Manager)

In the Rep-as-Portfolio-Manager programs, the financial advisors (RIAs) act as investment managers for their clients (Investors) by taking full responsibility for selecting a portfolio of securities.

Reps go through rigorous internal training to qualify, and usually only a small number are approved to participate in these programs (although there are exceptions such as Wachovia). There are often a Guided and Full Discretion versions of the program and there is a difference in the security/ model selection between the two. Guided reps usually follow some form of instruction from the sponsor firm/home office, while the more senior reps have full discretion over the account.

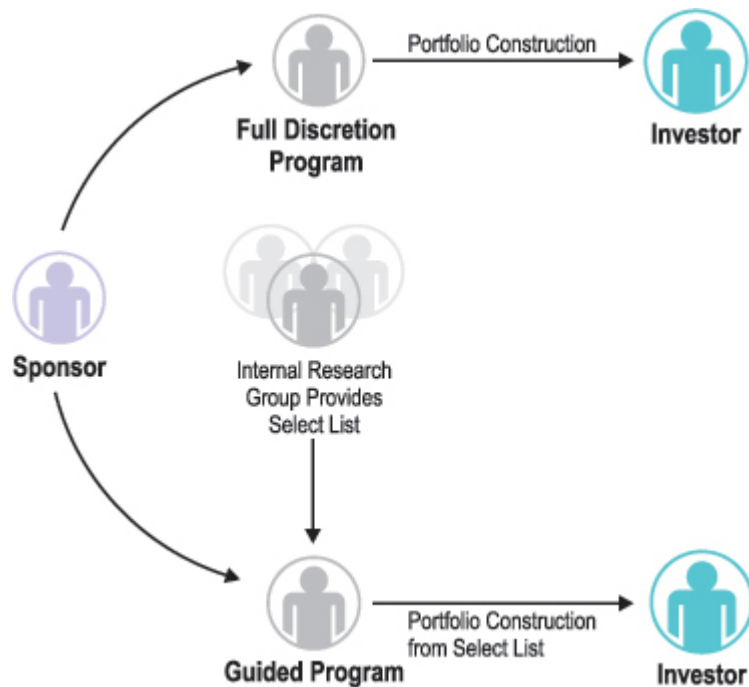


Figure 13: Rep-As-Portfolio Manager

Characteristics

- The RIAs market the programs and manage the portfolios
- Investors maintain primary contact with the RIAs
- Clients are charged an asset-based fee.
- There are stricter compliance rules for reps
- RIA's carry out on-going reviews of the investor's portfolio.
- Trend in the industry is for increased monitoring of these accounts by Home Office and Branch Managers

2.4.5 Fee Based Brokerage (Fee In Lieu)

In case of Fee based brokerage programs, the active traders pay a flat asset-based fee (usually about 1%) for all trading activity instead of a commission for individual trades. There is usually a limit to the number of trades per period. After that, the client is usually charged a commission.

Historically there has been no advisory element to these programs. However, to combat the growing popularity of online trading, many of these programs are now incorporating advice. These programs offer mutual funds, individual securities and other investment vehicles.

This is the fastest growing segment within the Managed Accounts industry.

Characteristics

- Investors act as investment managers themselves
- Most investors generally use a portion of their assets for Fee Based Brokerage
- The Fee based brokerage programs are offered by brokerage firms (Sponsors)
- Brokerage firms are analyzing these programs more carefully, including monitoring tools to determine if accounts are fee appropriate
- With popularity of online trading and general shift towards fee-based charging, these programs are gaining some momentum



2.5 SMA – Products and Services

2.5.1 Sponsor Products

For sponsors of SMA accounts the products that they offer to investors are known as SMA programs. These products usually map to one of the business segments described in the previous segment.

OCW Programs

An OCW program offered by a sponsor might specify the different investment styles supported by the program and also a list of investment managers managing the respective investment style. In a typical OCW program, most of the managers are unaffiliated managers who may offer other products besides wrap accounts. The larger sponsors who have their own investment management arm may also manage these accounts in which case the program takes the variation of a proprietary program. [Section 4.2.1.1](#) gives an example of an OCW program highlighting some of the typical features.

Rep as Manager Program

A Rep as Manager program is typically offered and managed by the sponsor. The sponsor decides the investment styles as well the asset allocation. The accounts are managed by reps (RIAs) who may either be affiliated (employees) with the sponsor or independent RIAs. Depending on the expertise of the RIA, the sponsor may either decide the model associated with the account or may give full discretion to the RIA.

Fee Based Brokerage Program

As seen earlier most of the sponsors are brokerage houses whose primary business is offering sell side services such as trading. However, as investment firms came up with more and more investment products at a low fee, SMA being one of them, traditional brokers saw their brokerage customer base dwindling. The fee-based-brokerage is an innovative program designed to offer the best of both worlds. A single asset based fee as opposed to paying brokerage per trade done at the same time the full discretion on ones investments rather than depending on an investment manager. [Section 4.2.1.2](#) gives an example of a fee based brokerage program highlighting some of the typical features.

Mutual Fund Wrap Program

Although SMA programs are direct competition to mutual funds, the fact remains that mutual funds continue to be the most popular investment vehicle in terms of assets managed. The Mutual Fund Wrap program is designed to offer investors the opportunity to invest in the best of mutual funds at the same time avoiding the hidden costs associated with mutual funds.



2.5.1.1. Multiple Style Portfolio

The Multiple Style Portfolio (MSP) is an investment account vehicles provided by a sponsor to manage the accounts in multiple portfolios matching the risk profile of the investor. MSPs, also known as Multiple Discipline Accounts (MDA) allows for a blend of investment styles from various investment managers in a single custodial account, providing benefits to the investor, the sponsor and the investment manager.

Most MSP programs involve a Master or Overlay Manager who is responsible for the management and maintenance of the MSP. In many cases, this Overlay Manager will handle all of the account operations, while in other cases the Overlay Manager will oversee the work of individual style managers.

There are several different types of MSP programs; each is known within the industry as a “generation”, which reflects the progression of the program.

MSP programs are getting increasingly popular and are showing strong growth in terms of both volume and value.

MSP Model	Characteristics
1st Generation	The asset management division of the sponsor firm controls the styles and trading of an MSP account. (Overlay and Sub Managers from Sponsor firm)
2nd Generation	Program sponsor partners with a single asset management firm that is responsible for trading on the account and for providing all the strategies within the MSP product. (Overlay Manager and Sub Managers– NOT part of Sponsor's firm)
3rd Generation	<p>Program sponsor selects several unaffiliated managers for their MSP program; each manager provides a model for their individual investment advisory.</p> <p>Active Overlay Strong Overlay Manager from Sponsor's organization is responsible for rebalancing (Sponsor may employ an independent party as overlay)</p> <p>Passive Overlay Weak overlay manager – Manager from Sponsor is not responsible for rebalancing the account across sleeves.</p>
4th Generation	Sponsors allow investors or Financial Advisors to select managers and allocations dynamically. (Can be for a strong or weak overlay)



Characteristics

- The MSP offers style diversification to the investor as opposed to standard SMA.
- Some firms offer MSPs for as low as USD25,000, though USD100,000 is a typical minimum
- MSP programs involve a Master or Overlay Manager and multiple style managers (sub-managers) – each one responsible for a portion of the overall portfolio
- Single account handling multiple portfolios, there is no need to open multiple accounts for multiple managers. In the past, a financial advisor would need to convince a client to open multiple accounts for proper diversification (this was a system limitation).
- The administrative functions related to managing account are simplified, including the sales process, paperwork, staffing needs and communications.
- The financial advisor can alter style allocations to quickly match an investor's changing risk profile at any time. If an investor has a change in risk aversion – probably because a child is approaching college age, or the investor is nearing retirement – the allocation of assets is quickly adjusted in one step within the MSP. Once adjusted, the manager trades the account to bring it in line with this new allocation.
- Paperwork is minimized; account opening is simplified with everything handled in a single account. In addition, clients receive one statement encompassing his or her holdings along with the performance of individual styles.
- Staffing needs are streamlined; less staff is needed for account administration and reconciliation. The need to communicate among multiple manager firms is reduced; for example, when a withdrawal request is initiated, only one manager needs to handle this task; no need to break up the request among multiple accounts.
- Previously, a tax sensitive trade request was needed to be spread across multiple accounts, now with all holdings in one MSP account, this request is handled in one step.
- Rebalancing is made simpler with one step to its multiple style allocations. By rebalancing the account to its original asset allocation, the investor's risk is mitigated and assets are realigned with minimal work.
- Performance values are calculated on the style level, as well as at the total account level.



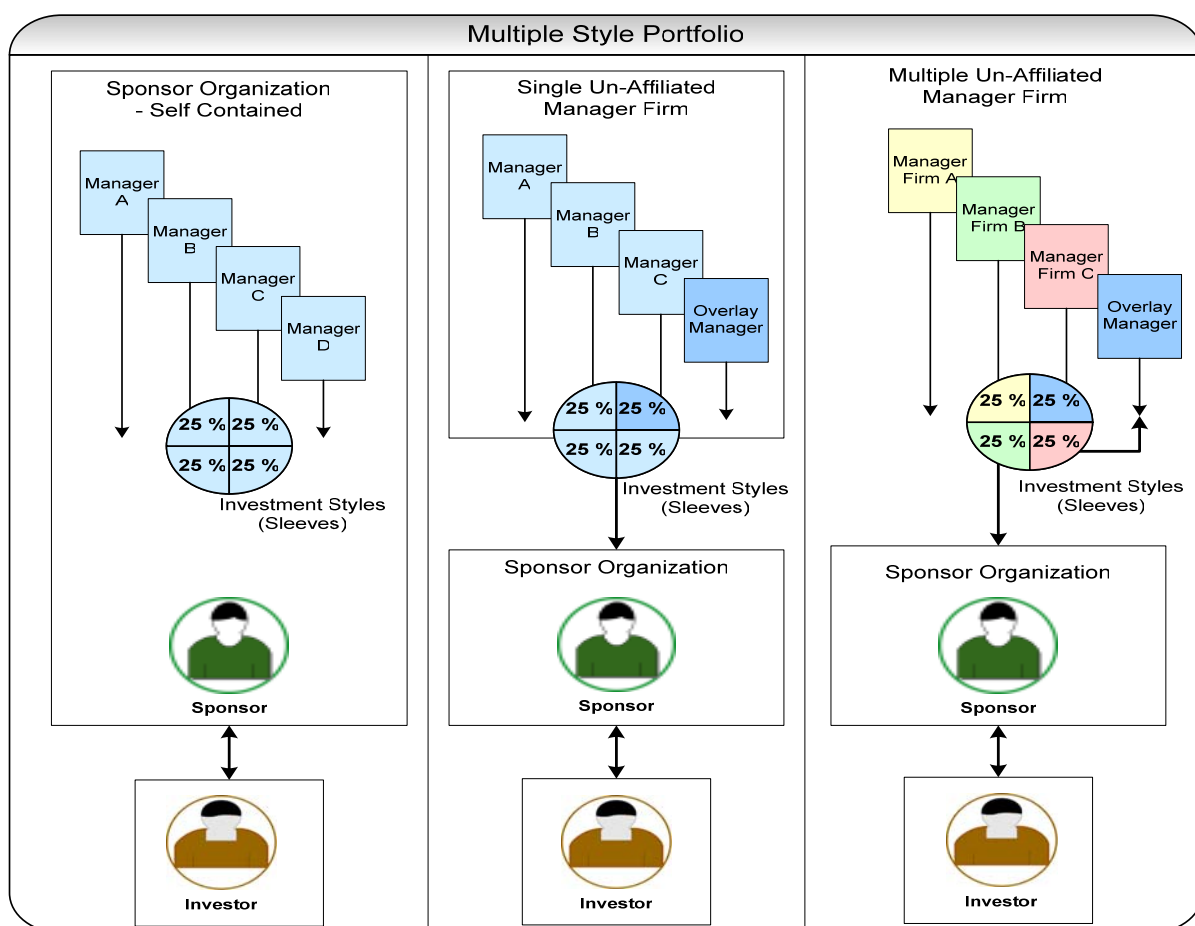


Figure 14: Multiple Style Portfolio

2.5.1.2. Unified Managed Account (UMA)

Unified Managed account is an emerging trend in the SMA industry wherein sponsors are looking to consolidate different types of investment accounts that investors have with them under a single umbrella UMA so as to offer several benefits such as a consolidated view of all accounts, reduced costs etc. refer to [Section 3.3.5](#) for more details on UMA.

2.5.2 Investment Manager Products

When it comes to Investment Managers the main product they have to offer is the Investment Style that they specialize in. An Investment Style defines the nature of investments that would be made and essentially specifies the portfolio composition. Some of the most common Investment Style are:

- **Large Cap Growth** – For e.g. this style would focus on investments in equities with a large Market Capitalization and that have demonstrated a high growth historically and consistently outperformed the Index (for e.g. Microsoft, IBM etc.)

- **Large Cap Value** – These investments focus on equities with large market capitalization and that have shown consistent performance
- **Mid Cap Growth** – This style seeks investments in mid cap stocks that have consistently outperformed the benchmarks
- **Fixed Income** – This style focuses on fixed income securities such as corporate bonds, municipal bonds, US Treasuries etc. that would offer a less but assured fixed returns.
- **Balanced** – This style offers a blend of equities having potential to offer high returns and fixed income investments that are relatively safe.
- **Large Cap International** – This investment styles offers growth potential by investing in large cap stocks across various countries. For e.g. this portfolio might comprise of stocks such as British Petroleum, Nokia, Vodafone etc.

Thus, each investment style has a distinct investment objective and this essentially implies the level of risk associated with it.

2.5.3 SMA – Services

The major business entities in the SMA industry are Sponsors, Investment Mangers and Financial Advisor. Given below are the some of the services offered by each of these business entities to the investors/customers. This section covers the services in brief. A detailed description is available in [Section 4.3](#)

2.5.3.1. Sponsor Services

These are the services provided by the back office operations of an SMA sponsor. This section is created to provide an insight into the type of core services required by the sponsor segments. The business process flows will provide the detail functions, processes and dependencies with in and with each of these services. Some of these services may be provided with in SMA sponsor, while some services will be provided by external providers like external broker/dealers or custodians.

SMA Program Management Service

These are the services that the program sponsors should have to manage the SMA program they provide to investors. Some of the activities are

- Program definition and maintenance

Account Management Service

An account is a contractual relationship between a buyer (investor) and a seller (sponsor). Since the sponsor is the owner of the investor account he has the responsibility of provided services to maintain the account for the investor. Some of the activities involved in account management are:



- Account Registration & Creation
- Account Maintenance
- Account Performance Reporting

Order Management Service

Sponsors, in most cases also act as the broker/dealers through whom the managers route the orders for the accounts. Order management process starts from the point when orders are received to the point when execution details are sent back to the managers. This service is offered by the brokerage arm of the sponsor firm and includes activities such as

- Order Receipt/Capture
- Order Validation
- Order Routing and Execution Processing
- Open Order Maintenance

SMA Record Keeping Service

These are services provided by sponsors of SMA programs to maintain account and account activity records for the account holder. It includes capturing and reconciling records of the investor. Some of the activities included are:

- Investment Accounting
- Income Processing
- Cash Management
- Reconciliation

2.5.3.2. Investment Manager Services

Portfolio Management Service

Portfolio management services are provided to manage the portfolio of the investor, these services help the portfolio manager or investment manager to make sophisticated investment decisions that permit to classify, estimate, and control both the kind and amount of expected risk and return. The following are the sub-services in portfolio management

- Asset Allocation Models
- Order initiation and Routing
- Confirmations/Affirmations
- Trade Allocations
- Settlement/Delivery instructions



- Posting and Balance Maintenance
- Investment Accounting

2.5.3.3. Financial Advisory Services

In the SMA industry, the role of the financial advisor is mostly investor facing. They are responsible for marketing the various SMA products to investors and helping the investors in choosing the appropriate product based on their risk appetite. Occasionally, as in the rep as manager programs, financial advisors may also actually manage the investors account. Some of the services offered by financial advisors include:

- Investor Profiling
- SMA Proposal Management
- Portfolio Management



2.6 Organizational Structure - Sponsor

The sponsor organization can be classified into three groups based on its size:

- Large (500+ employees)
- Medium (100-500 employees)
- Small (less than 100 employees)

In the case of the medium and small sponsor organizations, about one third of the employees work exclusively on the SMA related activities.

A typical sponsor organization has four groups:

Support services	The support services group provides the support functionality to the managers by performing services related to account creation, portfolio administration, compliance and client reporting.
Marketing and Consulting	This group works on marketing the programs to the clients, i.e. the investor.
Brokerage and Client Services	Based on the program segment in which sponsor offers programs, this group can provide portfolio and order management services. In case of the Rep-As-A-Manager, the brokerage and client services group provides order management services, while for the RIA, it performs the portfolio management services.
Advisory and Due Diligence	<p>This group works on providing research and other information to the managers.</p> <p>Each of the divisions focuses on and performs specialized functions as listed in the diagram below.</p>



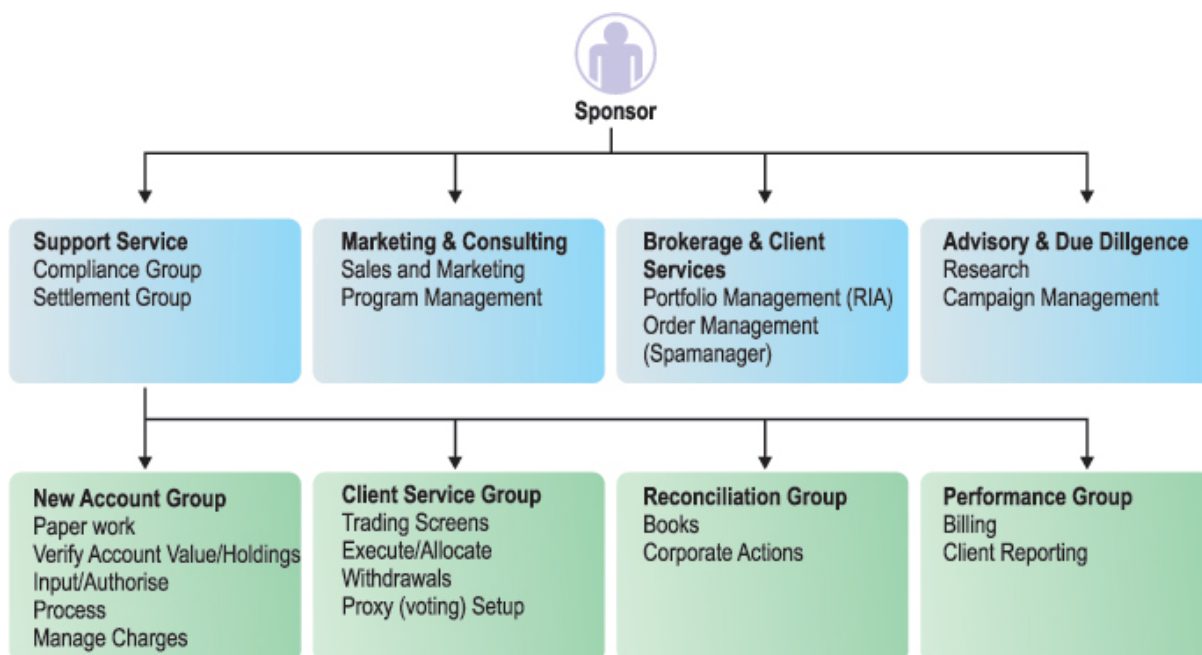


Figure 15: Typical Sponsor Organizational Structure

In case of a sponsor organization offering WRAP programs, the support services group further has six sub groups:

New Account Group	Performs functionality related to account creation and its administration.
Client Service Group	The client service group focuses on the order administration.
Reconciliation Group	As the name suggests, the reconciliation group works on the books and processes corporate actions.
Performance Group	This group works on client billing and reporting functions.
Compliance Group	This group tracks and reports on legal compliance.
Settlements Group	This group works with the custodians, brokers, and clearing firms to track trade settlements, passing on exceptions to the Reconciliation group.

3.0 SMA Industry Analysis

3.1 Industry Evolution

The Separately Managed Accounts industry traces its origin to 1970s when E.F. Hutton the then popular brokerage firm in US started offering Investment consulting services to retail clients. . With the formation of Hutton Investment Management in 1975 the first SMA program was offered to investors.

The 1980s saw the entry of the large players like Shearson Lehman Brothers through their Portfolio Management Program and Merrill Lynch who started offering fee based business through their Consults program. Other big players like Prudential and Paine Webber also started testing the SMA waters. This period also saw the emergence of technology with Mobius and Security APL (both purchased by Checkfree Investment Services) offering technology solutions.

In early 1990 Mutual Fund SMA programs were offered as alternatives to traditional consultant SMA. By 1993 the mutual fund SMA assets had touched \$ 7 billion as opposed to \$62 bn. for consultant SMA. The nineties was the golden period for the US stock markets with the Dow Jones crossing 5000 on November 11, 1995. In 1997 the mutual fund SMA business had grown to \$54 billion and consultant SMA to \$137 bn. This was the year Citigroup pioneered a new approach to SMA investing called the multi discipline account (MDA) or multiple style portfolio (MSP) thus allowing investors to take benefit of multiple investment styles with the advantage of diversification along with tax awareness. The Money Management Institute (MMI) was also formed in 1997 to serve as a forum for the managed account industry's leaders to address common concerns, discuss industry issues and work together to better serve investors.

The current decade so far has seen an exponential growth in assets managed by SMA programs, some of it at the expense of mutual funds. It has also seen the emergence of a number of variations in the program segments the latest amongst them being Unified Managed Account (UMA).

3.2 Market Players and their Performance

3.2.1 Sponsors

The SMA industry can be classified by the distribution channel:

Wire house Brokerages: These are the traditional heavyweights with a global presence and offering a comprehensive range of investment services including brokerage, wealth management, custody etc. and comprise of five firms. The are:

- Merrill Lynch



- Smith Barney
- Morgan Stanley
- UBS Financial Services
- Wachovia Securities.

They dominate the managed accounts business, controlling 67% of the assets. The Wire houses mostly have their in house systems to cater to their SMA programs but may go to the technology providers for services that are not provided in house.

Regional Broker Dealers: Regional brokerages are generally similar to wire house firms, but they have fewer capital resources at their disposal and typically concentrate on building strong regional branch networks. Some of the major players in this segment are:

- DB Alex Brown
- RBC Dain Rausher
- AG Edwards
- Legg Mason
- Edward Jones
- Oppenheimer & Co.
- US Bancorp Piper Jaffray

The regional brokerages control the third largest pool of managed account assets with approximately 8% market share.

Independent Broker/Dealer: IBD advisors function as independent contractors, rather than employees. IBD firms exert little control over which products and services advisors offer individual investors, and the firms vary widely in terms of size and advisor sophistication. The major players in this segment are:

- Amex Financial Advisors
- LPL Financial
- Financial Services Corp
- Securities America Advisors
- Raymond James
- IFG Network Securities
- AXA Financial

Unlike the wire house and regional channels where separate account consultant programs rule the day, mutual fund advisory programs account for more than 55% of IBD managed account assets.

Discount Brokerage: Discount brokerages manager about 3% of the managed accounts industry assets, they are expected to grow along with the industry in the next 5 years but their share may not be higher than the 3%. The Top Discount Brokerages are:

- Fidelity Investments
- Charles Schwab



- Harris Direct
- E*Trade

Their focus is primarily on fee based brokerage and mutual fund wrap programs.

Bank Brokerages: Bank brokerages cater to a minor percentage of the total managed accounts industry assets. A range of hurdles stands in the way of bank brokerages before they can shift from commission basis to fee basis. The top bank brokerages are:

- Wells Fargo
- Banc One Securities Corp.
- Bank of America

Third Party Vendors: TPVs (also known as Turnkey Asset Management Providers) provide a full range of turnkey managed account services for both broker/dealers and independent RIA's. Services range from clearing and custody, to due diligence and portfolio construction, to the production of client statements, newsletters, collateral materials, sales support and advisor training universities.

- SEI investments
- Charles Schwab
- Lockwood Financial
- FundQuest
- Envestment PMC
- London Pacific Advisors
- Brinker Capital
- Asset mark
- Sungard Advisor Technologies

Third Party vendors may have their own technology systems and may be the competitors of Technology providers.

3.2.2 Investment Managers

The following table lists down the top 20 investment managers by Assets Under Management. It shows a break-up of the assets for proprietary and third party (outside consultant wrap) programs.

Figures in million \$

	Manager	Owner ship	Proprietary	Third Party	Total Separate Accounts 2Q 2004 AUM
1.	Citigroup Asset Management	P	67,709	7,761	75,470
2.	Merrill Lynch Investment Managers	P	26,264	8,413	34,677



	Manager	Owner ship	Proprieta ry	Third Party	Total Separate Accounts 2Q 2004 AUM
3.	Brandes Investment Partners	I		32,971	32,971
4.	Nuveen Investments	H		30,223	30,223
5.	Lord, Abbett & Co.	I		18,491	18,491
6.	Lazard Freres & Co, LLC	O		12,251	12,251
7.	TCW Investment Management Company	O		10,600	10,600
8.	The Phoenix Companies	H		10,197	10,197
9.	Alliance Capital	O		9,887	9,887
10.	AMVESCAP	H		9,357	9,357
11.	Eagle Asset Management	P	8,551	376	8,927
12.	Neuberger Berman	O		8,543	8,543
13.	Morgan Stanley Investment Management	P	5,891	2,007	7,898
14.	Affiliated Managers Group*	H		7,470	7,470
15.	Mellon Financial	H		7,350	7,350

Ownership: H = Holding Company, I = Independent, O = Other, P = Proprietary *AUM includes estimates for 2Q 2004

Source: Cerulli Associates

3.3 Market Trends, and Analysis

The current market size is USD 1086 billion as of 2nd quarter of 2004, according to Cerulli Report and it is expected to grow to USD 2.1 trillion by 2011. Most of the future growth is predicted upon advisors increasing their fee-based business. These are mostly Tier II and Tier III advisors. The tiers are projected based on IMCA membership. The Tier 2 reps account for 15% of Separate Account Consultant program flows and Tier 3 reps account for 5%.

The following sections show the trends based on different parameters.

3.3.1 Market share by program segment

Highlights

- Total AUM USD 1086 Billion as of 2Q 2004, a 27.7% jump over 2Q 2003
- Estimated growth – USD 2.1 trillion representing 12.5 million accounts by 2011.



- Majority under Separate Account Consultant Wrap & Proprietary Consultant Wrap (OCW) segment
- The managed accounts industry has been growing at the rate of 32% CAGR and there is evidence of significant movement in to fee based advisory programs as compared to retail investment programs like mutual funds.
- The top five wire houses, viz. Merrill Lynch, Smith Barney, Morgan Stanley, UBS Financial Services, and Wachovia Securities, are leading the change towards fee based managed accounts. They manage about 67% of the industry assets; followed by IBD's who are growing at the fastest pace and have a market share of 9% and regional brokerages that control 8% of the AUM.

MANAGED ACCOUNT ASSETS AND GROWTH RATES

Assets (\$ billions) Growth Rates

Assets				Growth			
Q2 2003	Q4 2003	Q1 2004	Q2 2004	Q2 2004	YTD	Trailing 12 months	
\$438.2	\$501.6	\$528.3	\$541.4	2.5%	7.9%	23.6%	



333.3	387.5	408.9	421.6	3.1	8.8		26.5

[illegible]

75.1	79.6	85.9	87.3	1.6	9.7		16.2
190.3	234.4	250.7	254.4	1.5	8.5		33.7

\$850.9	\$993.9	\$1,060.5	\$1,086.8		2.5%	9.3%
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Note: Numbers represent most currently available industry data. Source: Cerulli Associates

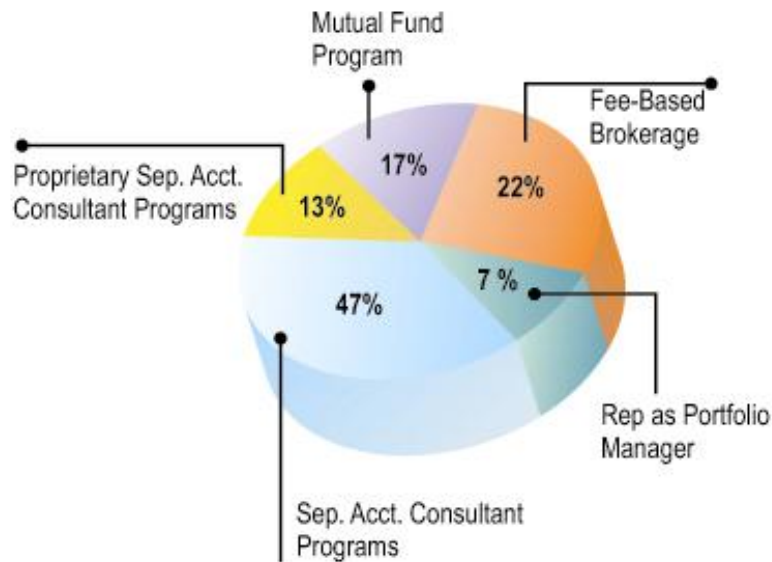


Figure 16: Market Share by Program Segment

3.3.2 Separate Account Consultant Wrap Programs

With the estimated AUM of USD 533 Billion by 2005 Separate Account Consultant Wrap Programs are in the spotlight:

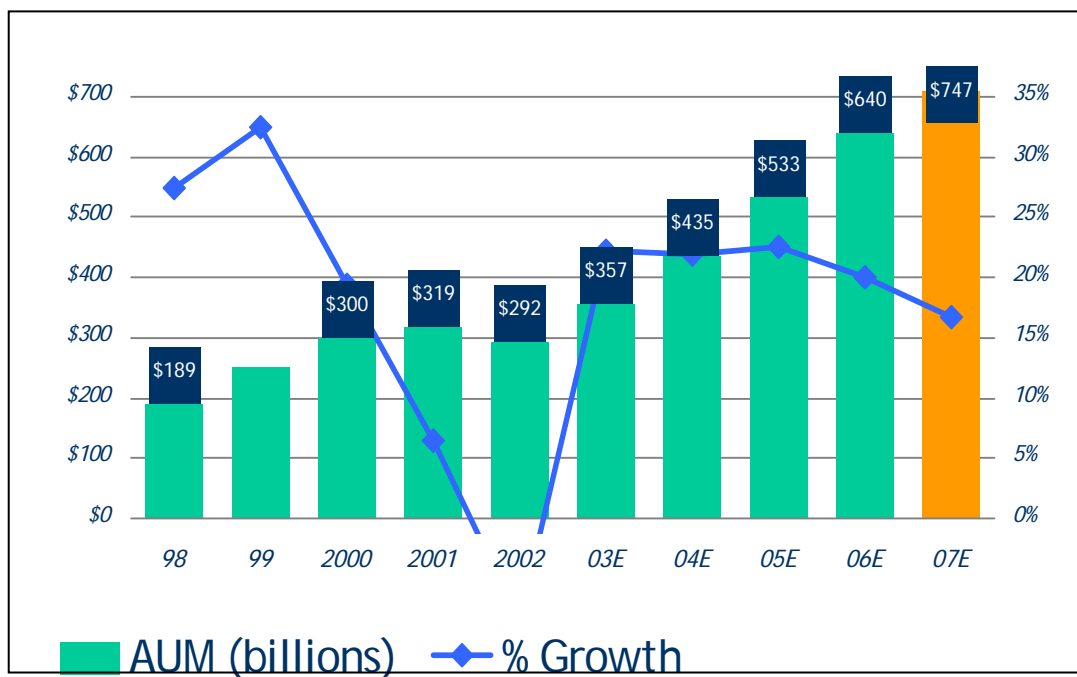


Figure 17: Expected growth in the OCW segment

3.3.3 Market Analysis by Sponsor (Provider) Categories

Provider				#Firms		Advisor Count	Head			
WireHouses	5	57,747	20 %	USD521	33 %	69 %	63 %			
Regional	161	47,925	17 %	USD96	39 %	13 %	11 %			
IDB	740	146,423	51 %	USD41	34 %	5 %	10 %			
Discounters	69	17,211	6 %	USD23.5	41 %	3 %	3 %			
Banks	187	18,381	6 %	USD7	45 %	1 %	1 %			
TPVs	NA	NA	NA	USD63.5	58 %	8 %	12 %			

* The figures given in the table are for the year 2003. – Source: Cerulli Associates

Highlights

- Wirehouses continue to dominate the market (~ 67% market share)
- Independent Broker Dealers (IBDs) and Third Party Vendors (TPV) expected to grow at higher rates
- Almost all of the segments would see a significant asset growth as well. The development of platforms like MSP and UMA would help organizations grow faster.



3.3.4 International Managed Account AUM by Program Type

Highlights

- Total AUM of US USD 260 Billion as of year-end 2002 – 30% compared to domestic market AUM
- More assets under MFW as compared to OCW

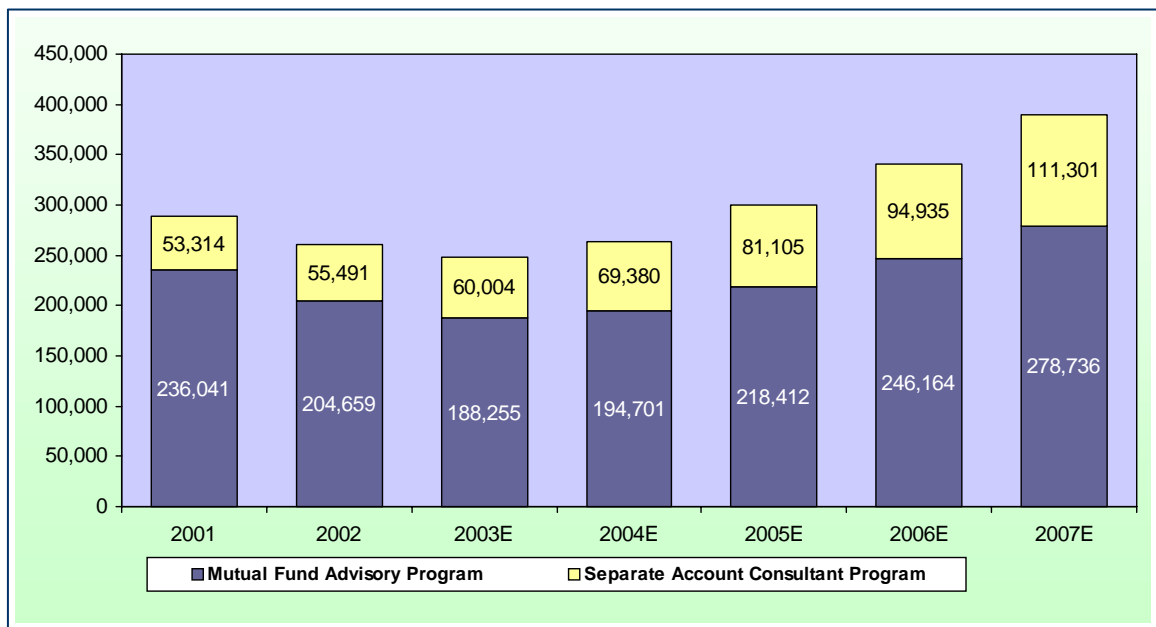


Figure 18: International Managed Account AUM by Program Type

3.3.5 Emerging Trends - Unified Managed Accounts

UMA is a single offering that acts as an umbrella under which an investor may hold assets in multiple types of investment vehicles – including separate accounts, mutual funds, hedge funds etc. In this environment, investors will see a co-ordination of efforts and a focus on a comprehensive investment-planning approach to the rep-client relationship. As such, the UMA is focused on client needs rather than the investment vehicle or the program.

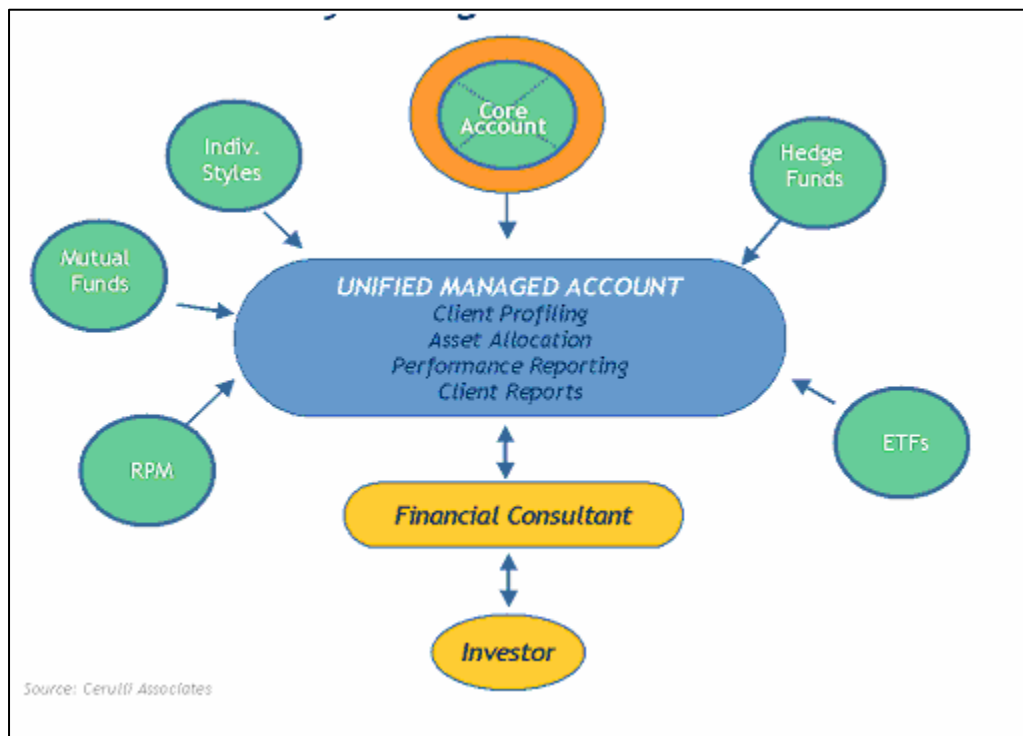


Figure 19: **Unified Managed Account**

Characteristics

- UMA provides simplified, and consistent advice delivery platform centralizing client profiling, performance reporting, investment vehicle selection, and asset manager research with a single asset based fee.
- Provides portfolio diversification with multiple investment vehicles like SMA, ETFs and mutual funds.
- Client profiling is centralized and all his investment needs are met with a single platform.
- UMA also centralizes performance reporting, investment vehicle selection and investment manager research, providing a holistic view of all of the client's investments.
- The fee structure is simplified as a single asset based fee, for all services listed above.
- MSP could be an account within UMA; all benefits of MSP are in UMA.
- UMA with its centralized research would help hedge funds in a managed account setting.
- Support for aggregated account reporting across multiple sponsors / broker dealers will also be included within the scope of UMA. Sponsor or a financial consultant could be a client in such scenarios.

3.4 Conclusion

- A comparison of the expected growth in number of accounts vis-à-vis the projected growth in Assets under management clearly indicates that the account minimums will continue to get reduced.
- The rapid growth in accounts means that both service providers as well as participants such as managers and sponsors will have to adopt high end and scalable technology to reduce cost of operations.
- Fee based brokerage program segment seems to witness a high growth rate indicating a higher appetite on behalf of investors to move from traditional transaction based investing to fee based investing.
- Complex and investor oriented products such as UMA are gaining popularity amongst sponsors and investors alike.



3.5 Industry Technology

3.5.1 Overview

The technology or systems should support the SMA sponsor organization and automate the process as much as possible to eliminate expensive manual errors. The systems should mainly support the operations group but should also provide support to other groups such as Marketing, sales, Product Management & development and Due Diligence.

The main system should support activities relating to portfolio management and record keeping and may have external interfaces to order management, clearing and settlement, custody, corporate actions, pricing services to update holdings value.

The supporting systems like Client contact management systems for marketing and sales division, campaign management systems for marketing, money manager search systems for sales, asset allocation software for investment managers, call center systems for phone service center as well as system to capture research data and provide query capability on the research data for compliance and product management groups are required by the SMA sponsors. These systems should have interfaces to the core systems based on the sponsors requirement.

A data warehousing system to provide analytics to the group management division, product management and reporting is also essential for an SMA organization.

3.5.2 Functional Support

This section gives an over view of the functional support an SMA organization requires. The functions can be divided into core functions, supporting functions and Interfaces to external functions. This section is at a high level and gives a good input to the “SMA Solutions Profile” from a functional perspective.

Core Functions

These are functions such as Portfolio Management and accounting, administrative functions such as Account setup and maintenance, SMA program setup and maintenance, Asset Allocation setup and maintenance, rebalancing, performance reports and record keeping.

Supporting Functions

These are functions such as tax optimization, contact management systems, campaign management systems, money manager search engines, call center support systems and data warehouse systems that support analytics, research and product development.

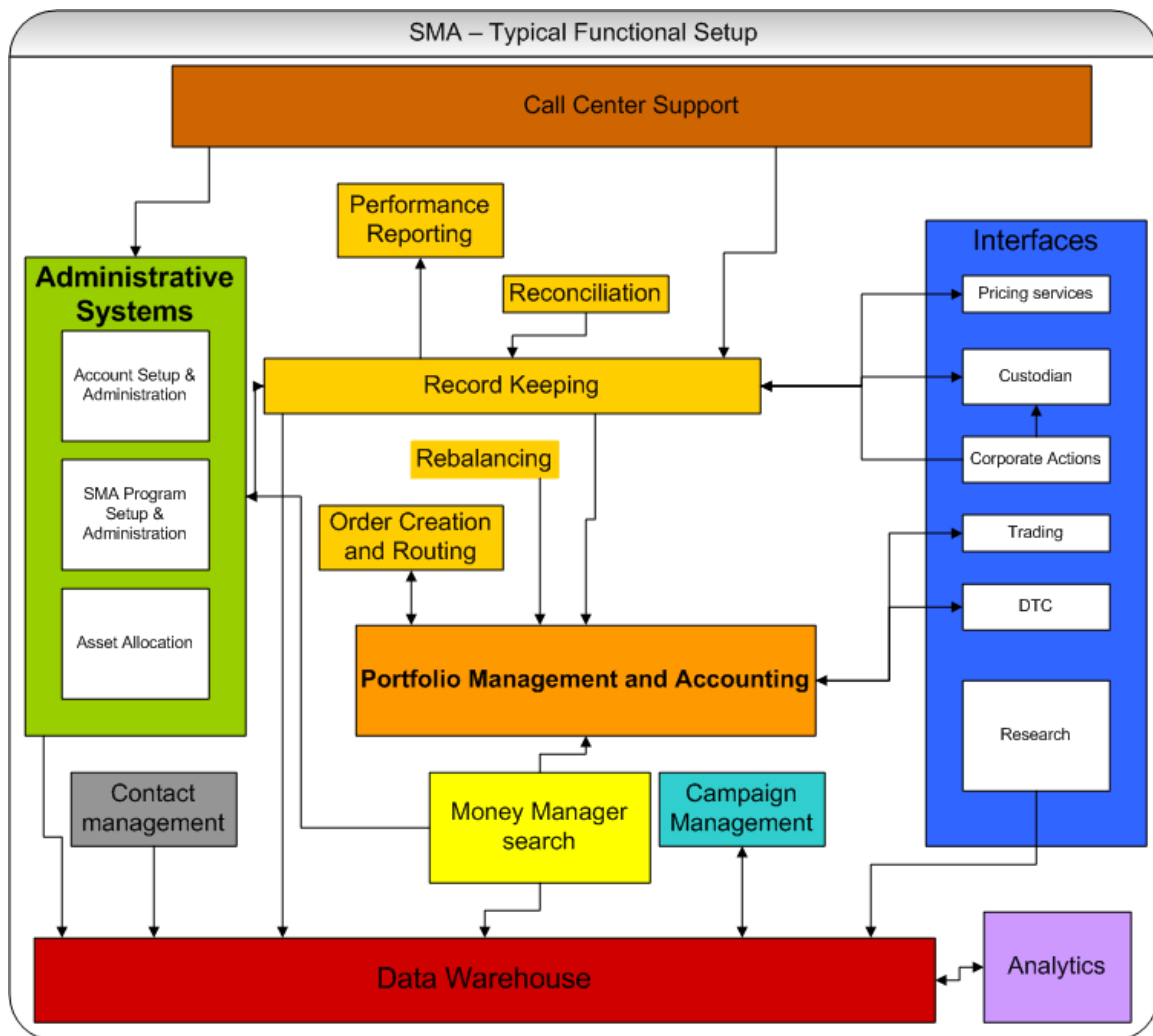


Interfaces

These are functional interfaces to external systems that provide pricing data, custody information, corporate actions, and external research providers, trading.

Functional Diagram

The functional diagrams show the various core systems, support systems and interface systems that an SMA business would have. This diagram illustrates the relationships between the systems at a high level. The solutions profile and architecture and the detail enterprise systems design would provide the detail of all the dependencies and interfaces the systems would have with each other internally and to external systems.



3.5.3 Existing COTS Products - Feature Comparison

	APL	DST	Sungard	IDS	State Street	Eagle	Thomson Financial	Effron	Princeton	Croesus Finansoft	Wall Street Office	FMC	Global Investment Systems	INDATA	Sanchez	x.eye	Advent
Instruments supported																	
Market Data																	
Transaction Processing Capabilities																	
Position Update and Maintenance																	
Cash Processing																	
Trade Entry																	
Corporate Actions Processing																	
Interest Accrual/OID/Yield/Amortization																	
Mortgage Processing																	
Fees and Commissions Processing																	
Performance Calculations																	
Performance Attribution																	
Multi-Currency Accounting																	
Fund Accounting																	DK
Tax Lot Accounting																	
Audit and Compliance																	
Reconciliation																	
Reporting																	
Import/Export/Interfaces																	
ASP services																	
Implementation/Integration Support/HelpDesk																	

■ Full Capability
 ■ Part Capability
 ■ Little/No Capability

(Sources: Wall Street & Technology www.wallstreetandtechnology.com, www.advent.com)

For the purpose of the above table, Sungard's IMPower was considered as the primary product in this space, while for Advent the Advent Office product suite was compared with others.

3.5.4 Notes on Specific Vendors / Service Providers

The following vendors / service providers offering products to cater to the SMA industry are described in brief in this section:

- [APL](#)



- [DST](#)
- [Advent](#)
- [Sungard](#)
- [IDS](#)
- [ADVISORport](#)
- [StatementOne](#)
- [Effron](#)
- Lockwood / [Osprey Partners](#)
- [Vestmark / Portia \(Thomson Financial\)](#)

APL

APL is Checkfree Investment Services' portfolio management system that caters to the needs of investment managers (both traditional and wrap) and sponsors. CIS is the market leader in the managed account space with over 300 clients (sponsors and managers) managing more than 1 million portfolios.

APL's versatile features include

- Tax-lot accounting
- AIMR compliant performance measurement
- Integrated trading system with a number of trading tools such as What If, Account Rebalancer, Cash Rebalancer, Account Adjuster, TBA Swap etc.
- Interfaces with leading sponsors/brokers, custodian banks, DTC and others
- Support for multiple style portfolio

APL has been developed over the past 20 years and is a legacy system with inherent limitations. CIS is currently executing a project to completely re-engineer its portfolio management and accounting platform to provide a cutting edge integrated and open architecture based solution. The proposed solution will be called EPL (Enhanced Portfolio Lifecycle).

DST

DST International has operations in 55 countries worldwide. The parent company DST system Inc. services 8,000 mutual funds and over 87 million accounts and had annual revenue of \$2.38 billion in 2002.

DST International offers a suite of portfolio management applications implemented in a multi-tier architecture, which provides a solution that is scalable with web



integration possibilities. It consists of various modules that are offered as an integrated solution or individually as best of breed products, licensed or ASP.

- **HiInvest** is a comprehensive suite of front-office applications for the institutional fund manager including Decision Support, Order Management, and Compliance.
- **HiNet** is an Internet-based real-time multi-currency position tracking, transaction processing and accounting solution with comprehensive tax lot accounting functionality.
- **HiPerformance** is a stand-alone multi-currency, multi-asset class performance measurement, attribution, and risk management system.
- **HiData** is a multiple vendor market data interface that consolidates the data and automates the process of collection, checking and validation of indicative and market data.
- **HiReporting** is a highly sophisticated client report generation infrastructure incorporating an underlying standard report writer and relational reporting datamart.
- **HiMessaging** is a messaging application that provides a complete end-to-end Straight Through Processing (STP) solution, encompassing connectivity, messaging, workflow, and exception handling.

DST works on the same model as CIS, i.e. out-sourcing, while Advent and IDS work on the in-sourcing model. DST suite/modules have been installed at over 600 clients.

Advent

Advent Software, Inc.® provides software products, data integration tools and web-enabled services for investment advisors, banks, trust companies, brokerages, partnerships, hedge funds, financial planners, insurance companies, universities, and foundations.

Geneva® is a sophisticated portfolio accounting system for large global investors.

Advent Office is a suite of solutions to automate the entire spectrum of investment management functions:

- **Axys** provides portfolio accounting, performance measurement, fixed income processing, reporting, with multi-currency capability, electronic interfaces to data vendors, custodians, and brokerage firms, and open GL interface
- **Moxy** is an automated trading and order management solution, provides order generation tools, matching and allocation, trade compliance, reporting and real-time profit and loss
- **Qube** is an integrated client and relationship management database
- **Advent Browser Reporting** provides web-based portfolio reporting



- **Advent Partner** provides partnership accounting, including allocations, tax compliance, performance incentive fees processing, and reporting
- **Advent Custodial Data** streamlines management of custodial relationships
- **Rex** is the automated reconciliation management component of Advent Office
- **Advent Warehouse** is a business intelligence platform that allows investment organizations to integrate portfolio data from a variety of relational and non-relational data sources, query and analyze the data, and create customized reports for specific users and requirements
- **Advent Corporate Actions** provides integrated Corporate Actions processing

Advent products have been licensed by over 60,000 professionals managing over \$8 trillion in assets at 6,500 firms worldwide, generating a revenue of \$159 mn.

Sungard

SunGard Investment Management Systems provides in-house and ASP solutions to the buy-side investment management market for trading, portfolio management, compliance, investment accounting, investor accounting, private banking, and performance measurement and attribution applications.

- **IMpower** is a global, real-time, browser-based portfolio management, trading, accounting, performance measurement, and reporting system integrating the front and back-office by automating the pre-trade and post-trade settlement cycle in order to achieve internal and external STP with open API's for T+0 settlement
- **INVEST ONE** is a scalable investment accounting solution featuring comprehensive functionality in asset classes, portfolio types, transactions, and world coverage; it shares a Web architecture with XAMIN, SunGard's performance and portfolio attribution solution
- Various products from Sungard Investment Management Systems manage over \$8 trillion in assets.

IDS

Integrated Decision Systems (IDS)_provides portfolio management solutions to brokerages, wealth management firms, securities lending divisions, and managed accounts environments.

- **Global Investment Manager (GIM)** is a single database solution for multi-currency portfolio accounting, management, modeling, compliance, performance measurement, attribution and trading
- **GIM Wealth Management** has all the functionality of GIM including multi-tiered modeling, tax efficient trading, etc. with high-throughput, high-security feature designed for private client and wrap environments



- **GIM Performance** is a stand-alone AIMR/GIPS compliant performance calculation and reporting engine
- **CALiPER2** is a high-volume performance calculation engine that can process millions of records in tight processing windows

IDS products are used by investment management enterprises managing over \$4 trillion in assets.

ADVISORport

ADVISORport offers financial advisors and brokers an online investment consulting platform, covering client profiling, asset allocation, manager and mutual fund selection, proposal generation, investment monitoring, and client reporting.

- Automates all essential back-office functions
- Allows client reports and documents to be private labeled
- Provides a carefully selected roster of distinctive separate account managers
- Enables integration of separate accounts, mutual funds, proprietary products, and brokerage accounts in a single portfolio
- Offers automatic client profiling, asset allocation and investment proposal generation

ADVISORport claims to be competitively-priced relative to other products.

ADVISORport has been recently acquired by PFPC, a member of The PNC Financial Services Group, Inc.

StatementOne

Founded in 1993, StatementOne provides technology solutions to the retail wealth management market. For financial institutions, it consolidates enterprise investment account data in a scalable data warehouse for business planning, analytics, product development, compliance and CRM. For financial advisors and their clients, it delivers a web based consolidated statements and performance reporting solution.

The intuitive user interface of the StatementOne application, which is 100% web-based, is easy to use, and includes a variety of the most useful reports, including:

- Statement
- Statement Summary
- Portfolio Summary
- Holdings by Investor
- Holdings by Portfolio



- Holdings by Classification
- Transaction by Investor
- Transaction by Portfolio
- Asset Allocation by Type
- Asset Allocation by Investment Objective
- Comparative Holdings
- Cost Basis
- Model Portfolio Rebalance
- Portfolio Value and Benchmark
- Multi-Period Performance Reporting
- Advisor Reports for Client Data-Mining

and many more, including Below-the-Line Asset Entry for both Tracked and Non-Tracked Holdings. Ongoing maintenance is completely handled by StatementOne.

StatementOne currently has over 70 installed financial institution clients, servicing more than 60,000 financial advisors.

Effron

Effron (now Informa Investment Solutions) has been providing portfolio accounting and performance measurement solutions to the investment management industry since 1976. Effron's product mix includes Performer, The Performance Measurement Service Bureau, Performer IQ, and Performer Facilities Management.

- **Performer**, the core offering, is a fully integrated portfolio accounting and performance reporting engine, providing crisp graphics, extensive analytics, scalability, and flexibility and is available via an in-house installation or as an ASP
- **The Performance Measurement Service Bureau**, in operation since 1976, is a fully outsourced solution, in which the expert performance measurement consultant becomes an extension of the clients' internal staff and is responsible for all data collection, data reconciliation and report production and delivery
- **Performer IQ** is the online data query and report delivery vehicle
- **Performer Facilities Management** solution offers full IT back office support and service, including synchronous replication and hot offsite backup

Osprey Partners

Osprey Partners, LLC, is a company dedicated to producing innovative portfolio management software for investment professionals. Osprey develops financial



services products, portfolio management software, and electronic commerce solutions for many of the world's leading financial institutions.

- **OSP** product combines portfolio management, modeling, trading, and interactive accounting to create a integrated account management solution for investment firms. OSP works with a variety of custodians, broker/dealers, and industry-standard transaction infrastructures to provide a maximum amount of flexibility for clients.

Osprey Partner's clients and partners include The Bank of New York and Lockwood Financial Group.

Thomson Financial

Thomson Financial provides integrated information and technology applications to the global financial services industry. Working in partnership with the clients, individual workflow solutions are developed that answer specific data and analysis needs.

- **PORTIA** is an integrated multi-user data repository, portfolio management, trading support, and accounting system. Since its first installation in September of 1986, PORTIA has grown steadily to become the leading portfolio management system for mid to large-size firms. Clients include investment advisors, banks, pension fund managers, corporate cash managers, hedge funds, plan sponsors, and insurance companies.
- **Vestek** suite consists of Vestek Portfolio Analyzer, Portfolio Builder, Vestek Select, and Strategy Developer modules that provide tools for developing portfolio strategy, evaluating portfolio risk and return, portfolio profile reports, portfolio analysis to see the impact of investment decisions, portfolio construction, and mutual fund research.

Thomson Financial operates in 22 countries worldwide and has annual revenues of USD 1.5 billion. Portia is used by more than 400 money managers in 40 countries, managing more than three trillion dollars in assets under management. Apart from the above 2 products it offers many other products to the financial services industry, such as Thomson One (workflow for Fixed Income securities), Oneva Trade Eq (a gateway that links traders with brokers, exchanges and ECNs), Quantec (portfolio design and risk management tools for the management and analysis of both asset allocation and stock selection), etc.

Others

It is likely that competitors in addition to the firms listed above either currently exists, or will come into existence over the next few years. Two smaller portfolio accounting firms – Odessey, which was recently purchased by Bank of New York, and Vestmark, which has a strategic alliance with Thomson Financial – are likely competitors in the future.



3.6 Industry Utilities

Following are a few utilities and platforms that are emerging and may gain wide acceptance:

3.6.1 DTCC SMAS

The participating sponsors and Money Management Institute approached DTCC to create an industry utility that would help all the participants, envision industry utility for SMA industry. The utility is expected to be the messaging hub that is based on messaging and processing standards. The following is a summary of the progress of this process.

- Establish industry information message and processing standards
- Provide a single conduit for data and message flows
- Directly or via service provider
- Utilize existing connectivity into DTC / NSCC
- Provide Central Infrastructure

Version 1 (SMA features)

- Client Profile – Account Set Up
- New Account Funding – Account Set Up
- Trade Authorization – Account Set Up
- Account Termination - Maintenance
- Funding - Activity
- Withdrawal - Activity

Version 2 (Expansion of features)

- Broker Changes - Maintenance
- Restrictions - Maintenance
- Custodial Changes - Maintenance
- Resume / Halt Trading - Maintenance
- Client Profile Updates - Maintenance
- Tax Trading - Activity
- Corporate Actions - Activity
- Proxy - Reporting
- Short - Reporting



- Debit - Reporting
- Fee Calculation - Reporting

Version 3 (Reconciliation)

Version 4 (Trade Notification)

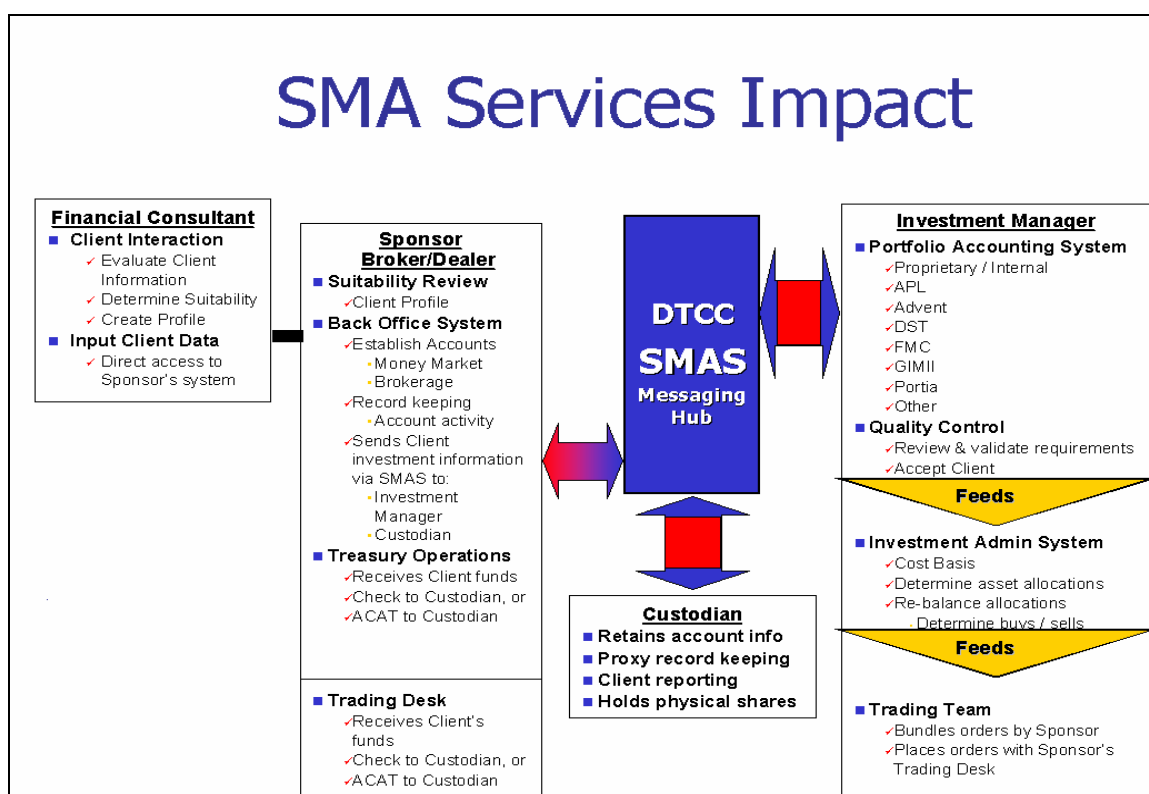


Figure 20: Impact of Emerging Utility - DTCC SMAS

3.6.2 Central Trade and OASYS by Omgeo

Omgeo OASYS is the U.S. domestic industry-standard trade allocation and acceptance service, communicating trade and allocation details between investment managers and broker/dealers. OASYS automates trade processing, which creates efficiencies and reduces the risk of trade failure. OASYS helps investment managers and broker-dealers with automated and faster trade matching and communication.

Omgeo Central Trade Manager (CTM) is a STP solution for processing trades from execution through settlement. Omgeo CTM enables same- or next-day settlement for cross-border and domestic trades, for both fixed income and equity securities.

4.0 SMA Sponsors and Managers – Current Business-IT Model

4.1 Customers

The typical customers of SMA products are high net worth individuals with a significant amount of money to invest and who are looking for professional investment managers to manage their portfolio.

Although initially SMA was targeted only at very high net worth individuals with account minimums of at least \$ 1 million, over the past years, with the gaining popularity of SMA vis-à-vis mutual funds investment minimums have come down to as much as \$100,000 and SMA as an investment vehicle is now accessible to a much wider profile of investors.

4.2 Products

4.2.1 Sponsor Products

Section 2.5.1 earlier, gave an overview of some of the products that sponsors offer to investors. This section elaborates on some of the products by way of examples representing actual sponsor products.

4.2.1.1. OCW Program

The table below gives the features of a typical SMA program derived from a real program prospectus of RBC Dain Rauscher, a sponsor.

Program Features	Description	Comments
Program Name	<ul style="list-style-type: none"> Managed Account Program 	
Minimum Account Size	<ul style="list-style-type: none"> Varies by money manager, at least \$100,000 	Account minimum is specified for the program
Custody	<ul style="list-style-type: none"> At RBC Dain Rauscher or another custodian 	Custody could be with the sponsor or an external appointed custodian
Eligible Money Managers	<ul style="list-style-type: none"> List of money managers that are associated with the sponsor and who would manage the investor's money 	
Fees	<ul style="list-style-type: none"> The annual fee is based on account minimum and investment style Fees do not include money manager 	Fee could differ based on the investment style and the asset type and are based on



	fees <ul style="list-style-type: none"> Minimum quarterly fee is \$300 for equity/balanced accounts and \$162.5 for fixed income accounts Fees may be invoiced, debited or billed to a separate account 	the market value of assets under management. Minimum fees are also specified. Normally sponsors prescribe multiple fee schedules
Billing Cycle	<ul style="list-style-type: none"> MAP Accounts are billed quarterly in advance during the first month of each calendar quarter (January, April, July, October) The first billing cycle begins on the account inception date 	Billing cycle could be monthly, quarterly or semi-annually and may vary from sponsor to sponsor.
Billing Value	<ul style="list-style-type: none"> The quarterly billing value is equal to the closing market value of all securities on the last business day of the previous quarter. 	Billing value may be based on the closing value, average of first and last day of the billing period or a daily average during the billing period.
Deposits /Withdrawals	<ul style="list-style-type: none"> Financial Consultant must inform the money manager of any deposits / withdrawals 	
Performance Reporting	<ul style="list-style-type: none"> Clients receive quarterly performance reports. The account must be open at least one full calendar quarter before a performance report is generated. FC is responsible for sending performance reports to clients. 	

4.2.1.2. Fee Based Brokerage Program

The table below is an example of a Fee Based Brokerage program offered by the same sponsor as mentioned above. Note that, depending on the business segment that the program caters to, some of the features of the program may vary.

Program Features	Description	Comments
Program Name	<ul style="list-style-type: none"> Investment Choice 	
Minimum Account Size	<ul style="list-style-type: none"> \$50,000 in cash and / or eligible securities 	The investors contribution could be made in cash or securities that are in the list of eligible securities specified by the sponsor
Custody	<ul style="list-style-type: none"> Assets must be custodied at RBC Dain Rauscher 	
Eligible Assets	<ul style="list-style-type: none"> Equities: ADR, Designated option strategies, Exchange traded IPO, Rights and Warrants, Stocks, 	Sponsor may specify the list of eligible securities that the investor can trade in



	Designated UIT <ul style="list-style-type: none"> • Fixed Income: CDs, Convertible bonds, Corporate bonds, Municipal bonds, Mortgage backed securities, Treasury bonds & notes, Preferred stock • Mutual Funds: FAS eligible funds 	
Fees	<ul style="list-style-type: none"> • The annual fee is based on account size and investment mix • Minimum quarterly fee is \$375 regardless of the account size • Fees are automatically deducted from the account • 12(b)-1 fees on all accounts are to be paid to FC 	In a fee based brokerage account the fees charged is based on AUM irrespective of the number of trades done by the investor. Sponsor may charge additional fees such as 12(b)-1 fees over an above the fixed fees
Trading	Unlimited Trading <ul style="list-style-type: none"> • Internal monitoring based on assets, usage and fees will be performed • Accounts where trading is deemed to be excessive will be reviewed for termination 	Note: Sometimes sponsor may specify the maximum number of trades per billing cycle beyond which an additional fee per trade might be charged
Billing Cycle	<ul style="list-style-type: none"> • Investment Choice Accounts are billed quarterly in advance during the first month of each calendar quarter (January, April, July, October) • The first billing cycle begins on the account inception date 	
Billing Value	<ul style="list-style-type: none"> • The quarterly billing value is equal to the closing market value of all securities on the last business day of the previous quarter. 	
Automatic Account Closing	Investment Choice accounts may be automatically closed if: <ul style="list-style-type: none"> • Market value of the account falls below \$30,000 at the quarter end • Ineligible securities are purchased/transferred into the account 	Sponsor may specify additional clauses such as account termination under specific conditions

4.2.2 Manager Products

Investment Style and Model

Given below is an example Merrill Lynch Investment Manager's Diversified Portfolio. This is an MSP program that seeks to strike a balance between bonds for current



income and stocks for growth of capital through investments that target an asset allocation of 45% equities and 55% fixed income.

TARGET ALLOCATION

INVESTMENT DISCIPLINE	RISK CATEGORY III MODEL ALLOCATION (%)			BENCHMARK
	TARGET	MINIMUM	MAXIMUM	
Large Cap Growth Equity	15.0	5.0	20.0	Russell 1000® Growth
Large Cap Value Equity	15.0	5.0	20.0	Russell 1000 Value
Mid Cap Equity	7.5	0.0	15.0	Russell 2500™
International Equity	7.5	0.0	15.0	MSCI EAFE®
Total Equity	45.0	40.0	55.0	
Fixed Income	55.0	45.0	60.0	ML Domestic Master Bond

Based on the percentage allocations of the individual styles the Investment Management firm may associate a risk profile with the investment style as shown below.

CONSULTS RISK CATEGORY



As can be seen the each investment style has a certain target allocation with a certain maximum and minimum value specified. Each style also has a **benchmark** (which is usually an Index such as Russell 1000 Growth, S&P 500 etc.) against which its performance will be evaluated

Each investment style may be managed by a different **investment manager** and will have an **Investment model** associated with it, which defines the asset allocation. Given below are the details of each investment style along with the top five holdings for each style. Typically a model would have anything between 30 – 50 securities



PORTFOLIO CONSTRUCTION

Large Cap Growth Equity

Managed by Bob Doll and his team

Pursues long-term outperformance versus the benchmark through the application of a proprietary quantitative model and fundamental research to identify those securities believed to have good prospects for growth.

TOP FIVE HOLDINGS

1. General Electric Co.	0.8%
2. Microsoft Corp.	0.8
3. Intel Corp.	0.8
4. Pfizer Inc.	0.7
5. Cisco Systems Inc.	0.7

Large Cap Value Equity

Managed by Ty Nutt and his team

Seeks consistent and superior results through the application of a top-down, valuation-based sector strategy, a proprietary multifactor model and bottom-up fundamental research.

TOP FIVE HOLDINGS

1. FleetBoston Financial Corp.	0.7%
2. Ingersoll-Rand Co.	0.6
3. Hartford Financial Services Group	0.6
4. Boeing Co.	0.6
5. Baxter International Inc.	0.6

Mid Cap Equity

Managed by Elise Baum and her team

Seeks long-term capital growth through the application of a bottom-up, research-intensive process to identify undervalued mid cap companies with catalysts to drive share price appreciation.

TOP FIVE HOLDINGS

1. Tech Data Corp.	0.2%
2. CNF Inc.	0.2
3. Raytheon Co.	0.2
4. Cendant Corp.	0.2
5. Protective Life Corp.	0.2

International Equity

Managed by Paul Gerard and his team

Seeks long-term capital growth by investing in securities of companies located outside the United States through bottom-up fundamental research and a top-down regional and sector allocation strategy.

TOP FIVE HOLDINGS

1. BP PLC	0.3%
2. Vodafone Group PLC	0.2
3. Millea Holdings Inc.	0.2
4. Barclays PLC	0.2
5. BHP Billiton Ltd.	0.2

Fixed Income

Managed by John Kuzan and his team

Pursues both growth and income potential through interest rate anticipation and yield curve analysis.

FIXED INCOME ALLOCATION

Corporate bonds	15.4%
Government obligations	10.5
Government agencies	8.8
Mortgage-backed securities	19.8
Cash & cash equivalents	0.5
Total	55.0



4.3 Services

This section elaborates on the services offered by sponsors and managers that were discussed briefly in sections 2.5.3 and 2.5.4.

4.3.1 Sponsor Services

4.3.1.1. SMA Program Management Services

The SMA program management services are the services that the program sponsors should have to manage the SMA program they provide to investors.

4.3.1.2. Account Management Services

Account Registration & Creation

This is a service to capture the information relating to an investor, in terms of demographics, account type, custodian information, investor options, capture details of third parties and beneficiary, setup fee schedules etc. It also involves validating the account based on paperwork requirements, funding, suitability check to a program etc.

Account creation involves many steps including approvals from different departments and creation of all linkages (such as IM, custodian, bank, and so on). This makes it a good candidate for a workflow solution.

Account Maintenance

This is a service to capture any changes to the account relating to

- Investor Name Changes
- Address Changes
- Account Custodian Changes
- Beneficiary Changes
- Third Party Changes
- Account Options Changes
- Fees schedule changes
- Performance reporting changes

Account Performance Reporting

This is a service to compute the performance of the account periodically and generation of performance reports for the account. For Example: the account may require performance by style, by sector, by security type, by geography etc.



Sponsors have to comply with AIMR standards while calculating performance.

4.3.1.3. Order Management

Order Receipt/Capture

Order can be potentially received through various media. Usually managers send orders to sponsor firms electronically in flat files in a format defined by the sponsor. However, increasingly use of standard protocols like FIX is getting prevalent. Sometimes managers might directly call the broker over the phone and place an order.

Order Validation

These are services provided to validate an order, validation criteria could be limits on quantity, estimated principal value, determination of aggregate open positions, verifying margin balances, computing mark to market profit loss etc.

Order Routing and Execution Processing

This is a service that the sponsor (broker) provides to investment managers to route orders to exchanges like NYSE, AMEX, Regional Stock Exchanges, NASDAQ, ECN, derivative exchanges, foreign exchanges, internal crossing, matching against own inventory, market makers and broker/dealers.

Once the notices of execution (NOE) are received, the broker/dealer routes them back to the investment manager. NOE may be sent through various media similar to order receipt.

Open Order Maintenance

These are services provided to manage open orders or partially executed orders. These services allow the open portion of the orders to be modified or cancelled.

4.3.1.4. Clearing and Settlement

These are services provided to communicate with clearing corporations like NSCC, DTC etc., based on the type of security. The services include sending clearing and settlement instructions, movement of funds from the buyer to the seller and booking the transaction in the accounting system. This process follows the confirmation/affirmation process in an order's life cycle.



4.3.1.5. SMA Record Keeping

These are services provided by sponsors of SMA programs to maintain account and account activity records for the account holder. It includes capturing and reconciling records of the investor.

Investment Accounting

This service involves maintaining the security positions and cash balance. The security positions are maintained as at a tax lot level so as to support tax-efficient investment. Besides this, sponsors may also offer income processing (posting pay downs, interest payments, dividend reinvestment etc.) and cash management services

Reconciliation

It also includes reconciliation with the holdings and cash balances that the custodian sends to the sponsor. Typically reconciliation involves a lot of manual effort, and hence it is a separate major function in most organizations.

4.3.1.6. Custody

These are services provided by a custodian. Custodian is a person or firm that provides safekeeping of securities of a client and providing services such as

- Maintaining accounts of securities of a client
- Collecting the benefits or rights accruing to the client in respect of securities. (Corporate Actions, income accruals)
- Keeping the clients informed of the actions taken or to be taken by the issue of securities, having a bearing on the benefits or rights accruing to the client
- Maintaining and reconciling records
- Providing statements for compliance and tax reporting

4.3.2 Investment Manager Services

4.3.2.1. Portfolio Management Services

Asset Allocation Models

Asset allocation models help in the apportioning of investment funds among different categories of assets such as equities, fixed income, cash equivalents, derivatives etc. Asset allocations are made based on the risk tolerance of investors and expected returns and in certain cases based on tax implications. In the case of managed accounts based on the type of account and style, various asset allocation models



could be created. The models also have built in analytics to check the performance and drift in an account and suggest rebalancing when necessary.

Some of the common asset allocation models are based on investment styles such as large cap growth, large cap value, international, fixed income, balanced, emerging markets, indexed equity, indexed bond etc.

Order Initiation and Routing

The investment manager would generate orders under several circumstances, the most common being by rebalancing all the accounts that have drifted from the associated model. They may use automated tools for rebalancing. Alternatively that may generate orders to raise cash, adjust the account's portfolio or when the investor makes a contribution or withdrawal.

In the case of managed accounts, orders of similar securities and those belonging to the same sponsor (i.e. same broker) are combined to form Block orders. This aggregation of orders is based on the rules of the managed account program. The broker in turn would execute the order (Trade) at an appropriate exchange.

Confirmations/Affirmations

When a trade is executed the details are sent to the investment manager in the form of NOE's or notice of execution. The broker also sends the confirmation details to DTC, who in turn sends it to the investment manager. The investment manager matches confirms to trades and sends the affirmation to DTC.

Confirmation/Affirmation services are services that cater to the receipt of confirmations, matching trades to confirms, creating affirmations and sending them to DTC and other interested parties.

Trade Allocations

Allocation is the process of allocating a trade to an account; the allocations could be based on certain allocation algorithms. Allocations can be generated automatically and can be provided at the time of order creation or when the NOE's are received.

Trade allocation services are services that support the allocation process.

Settlement/Delivery Instructions

Settlement is a process in which a trade is settled when the customer (investment manager on behalf of the customer) has paid the broker for securities bought or when the customer delivers securities that have been sold and the customer receives the proceeds from the sale. The settlement instructions are instructions to the clearing corp. and depository (NSCC/DTC) indicating where the funds would be paid from in case of buy or from where the securities would be delivered in case of sell. The investment manager or custodian on behalf of the investment manager can send Settlement/Delivery instructions.



Settlement/Delivery instructions services are services that support the settlement/delivery process.

Investment Accounting

Just like the sponsor, the investment manager also maintains a shadow book of accounts using an investment accounting system, based on the transactions that occur during the day.

The manager may reconcile their position details with the custodian's book of records or with the sponsor.

4.4 Revenue Model

SMA by definition are wrap accounts in which the investor is charged a single asset based fee for a variety of services offered by the sponsor, manager etc.

Generic Revenue Model

- Most SMA programs involve the investor entering a contract with a sponsor. The agreement between the sponsor and the investor lists the terms and condition as well the services that will be offered to the investor under a single wrap fee. Usually the fee includes charges for services such as custody, brokerage, portfolio management and other administrative and account management fees.
- The fees are calculated based on the market value of the assets under management. The sponsors would normally associate a fee schedule with the account. This schedule determines the fees to be charged based on value of the assets in the account portfolio.
- Normally, investors are charged different fees structures for different types of assets viz. equities, fixed income, mutual funds etc. A typical fee schedule is given below:

	Asset Class	AUM	Fee Percent
	Equities	0-100000	1.50%
		100001 – 200000	1.25%
		>= 200001	1.00%
	Fixed Income	0 - 200000	1.25%
		200001 - 500000	1.10%
		>= 500001	1.00%

- Additionally the sponsor may specify a minimum fee of say 400\$ per quarter.
- In certain cases sponsor may offer discounts on the total computed fee.



- Fees are usually charged quarterly, but in some cases they may charge monthly, semi annually or annually.
- Also the sponsor may specify the method used for calculating the AUM. This may either based on the market value at the end of the billing period, beginning of the period, average of the start and end of the billing period or in some case daily weighted averages.

For example:

Assume that an investor has an SMA account with the sponsor a fee schedule as mentioned in the table. The billing period is quarterly and based on period end market value.

Also assume that at the end of a billing period the market value of the assets owned in the account is:

- Equities – \$150350
- Fixed Income Securities – \$215987

Thus based on the fee schedule the fees charged would be $150350 * 1.25\% + 215987 * 1.10\% = 4255.2 / 4 = \mathbf{\$1063.8}$

Note: The treatment of the fee schedules may vary from sponsor to sponsor. In the above example the approach was to apply the fee percentage based on the bucket in the AUM value could be categorized. An alternate approach would be to apply the fee schedule on incremental values

An example of this would be:

Assume that the account contains only Equities and AUM is \$150350.

Taking the same fee schedule as above, in this case the fees for Equities would be $100000 * 1.50\% + 50350 * 1.25\% = 2129.4 / 4 = \mathbf{\$532.3}$

Allocation of Fees to other Participants

- Whereas the investor pays a single wrap fee to the sponsor, the sponsor in turn may allocate part of the fee to the investment manager who is managing the account as well the financial advisor.
- Usually the wrap fee charged by the Sponsor to the investor could be anything between 1 – 2.5% (100 – 250 basis points). Out of this the sponsor may offer between 30 – 60 basis points to the investment manager depending the manager's style, the assets that are being managed and the services being offered by the manager.
- The investor is not aware of the agreement between the sponsor and the manager.



Fees in case of OCW - Open Architecture Programs

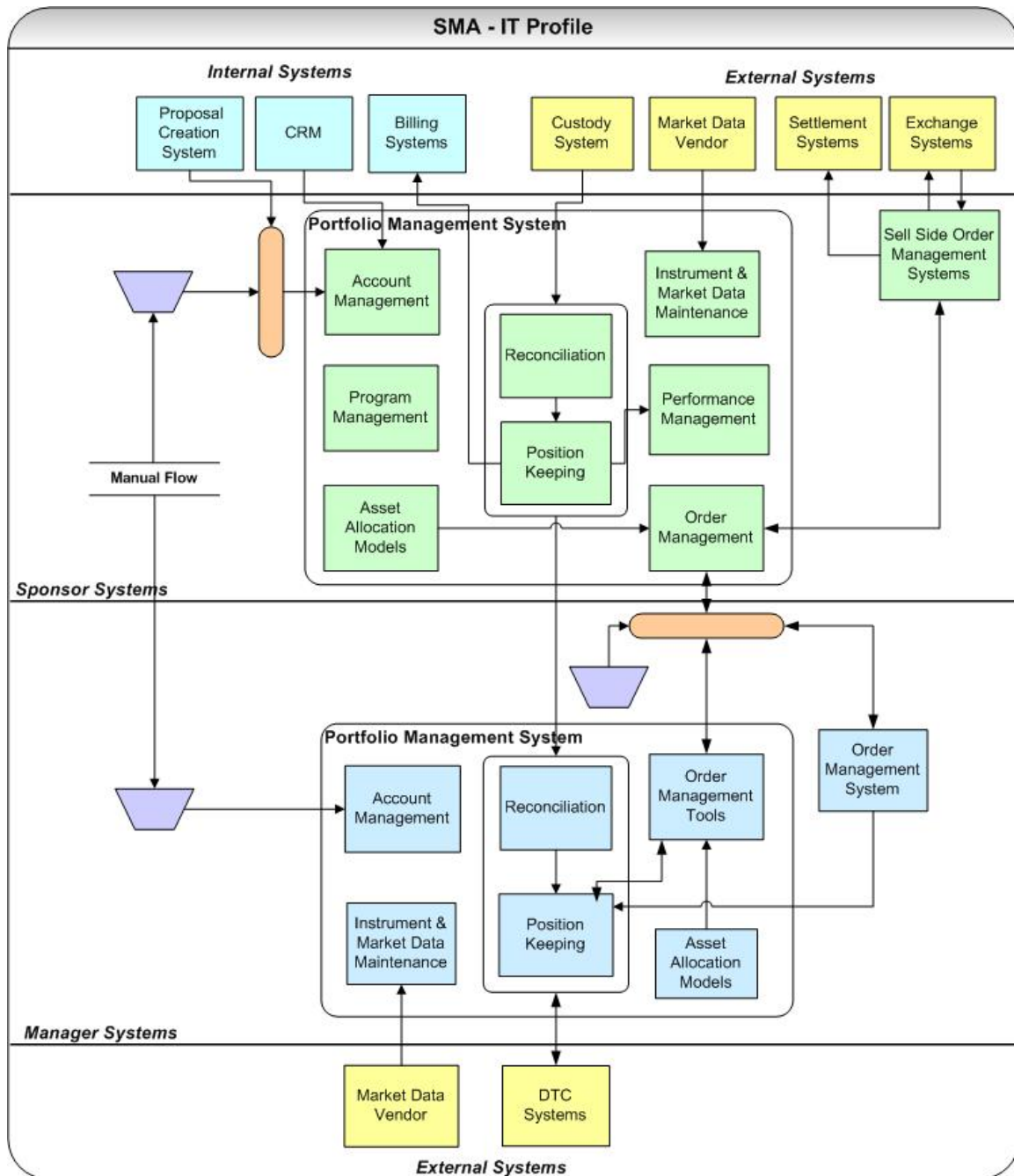
- In the event the investor has signed up for an SMA program which falls under the OCW – Open Architecture business segment, the investor has separate contracts with the sponsor and manager. In this case the sponsor and manager may separately charge the investor for the services rendered by them.

Fees in as of Fee Based Brokerage Programs

- If the SMA program that an investor has signed up for is a Fee Based Brokerage program, the terms and conditions might be slightly different.
- Although the sponsor would still charge a single asset based wrap fee, they may specify a maximum number of trades that the investor could do. If the trades done by the investor during the specified period (usually yearly) exceeds the maximum trades allowed, the sponsor would then charge the investors on a per trade basis for all additional trades done.



4.5 IT Profile



4.5.1 Sponsor Systems

Portfolio Management System

The most important system for the sponsor is a Portfolio Management System that allows them to maintain the investor accounts. The sponsor's system however must



support several functions vital to the SMA business.

- **Account Management** - The sponsor is the owner of the investor accounts and is responsible for most of the account related activities. Although the current account opening process is highly manual intensive the account details have to be captured in the system. Hence the sponsor's system has an Account Management module that allows them to maintain investor accounts, account options, restrictions etc. The account opening process involves interaction with the manager as well because unless the manager has validated the account it cannot be traded upon. The need is for a workflow based account opening system that allows interaction with managers and financial advisors. However, most systems are not as mature and account opening continues to remain a manual process.
- **Investment Accounting** - The sponsor's system also has a comprehensive position keeping module to maintain the book of records for the investor accounts. The system should support tax-lot accounting since investor positions have to be maintained at individual tax-lot level for tax efficient investing. Also important is the reconciliation module since the sponsor's book of records has to be ultimately reconciled with the custodian.
- **Performance** - Another important function that the sponsor's system addresses is performance measurement. The system must be able to calculate the performance of the accounts periodically and generate performance reports. Sometimes the sponsor may use an external performance management system for this purpose.
- **Interfaces** – Given the nature of the SMA business one of the most important function that sponsor systems should cater to are ability to interface with external systems:
 - Interface with custodian systems – The sponsor system must interface with custodian systems since sponsor systems only maintain shadow book of records and must reconcile with the custodial books. In the SMA industry the larger sponsors at times also act as the custodians. In this case the custodial system would be an internal system with the sponsor organization.
 - Interface with manager systems – A single sponsor program could have as many as 40 – 50 investment managers offering their investment style. The sponsor's portfolio management system must provide account details to the managers managing the respective accounts. Also, managers send the portfolio orders to the sponsor for the purpose of execution and receive back notice of execution.
 - Interface with broker systems – In most cases, sponsors are also the broker / dealers responsible for executing the account orders from managers. However, the trading is done by a separate division (trading desk) in the sponsor organization. Hence sponsor system that receive the orders from the managers much interface with the sell side order management systems (trading systems) for routing orders.



- Interface with market data vendors – The sponsor's portfolio management system interface with market data vendors for information on instruments, market prices, corporate actions, exchange rates, ratings etc.

Internal Systems

Besides the systems mentioned above, the sponsor depends on other internal systems (that may be shared by other line of businesses). This includes:

- Proposal System that the RIAs use for investor profiling and proposal creation
- Billing System for investor billing
- CRM system for customer relationship management

4.5.2 Investment Manager Systems

Most Investment Managers are not merely wrap managers and managing investment styles for SMA programs is just one amongst their various service offerings. However, nature of the SMA business is such that it requires specific system support.

Portfolio Management System

The manager's portfolio management system is very similar to the sponsor's investment management system and should support most of the functions supported by the sponsor system probably in varying level of detail.

- **Account Management** – Although the manager does not own the account, they do have to maintain the account details such as the associated investment style, account options and restrictions that are required while managing the account. Before the manager starts trading on the account there might be certain suitability checks that they perform on the accounts.
- **Asset Allocation** – In the SMA business the investment decisions are driven by the investment style and the associated asset allocation model. Thus manager systems should support creation and maintenance of models and build in rules such as tolerances, replacement securities etc.
- **Investment Accounting** – Although, managers are not owners of the account they do need to maintain the book of records for the accounts they manage. Manager systems may ultimately need to reconcile their books with the sponsor's books or in some cases directly with the custodian.

Order Management System

Investment managers need specialized buy side order management systems that help them manage the investor accounts by helping them make buy/sell decisions.



Hence the one of the main features of order management system is to provide tools the help the manager make these decisions. Some the tools that the system should support are:

- Account re-balancer – This tool helps the manager periodically rebalance the accounts by determining the drift in the account's asset allocation from that of the associated model and appropriately generating buy and sell orders.
- What-if tools - This tool allows the manager to simulate what-if scenarios by adjusting certain input trading parameters and see the effect of the same on the account.
- Cash / Security Adjuster – This tool allows the manager to generate orders for accounts by adjusting either the cash level or the individual positions or tax lots.

The manager's order management system should provide additional features such as checking for restrictions, creation of block orders based on sponsors, order rotation etc. Besides, the system should also support functions such as allocation of trades to accounts as well ability to affirm trade confirmations received from DTC.

The order management system should be closely integrated with the portfolio management system. In fact at times the order management function might one of the extended modules of the portfolio management system.

Interfaces

Just like sponsor systems, manager systems also have to support a large number of interfaces.

- Interface with sponsor systems - Since SMA managers offer their investment styles to several sponsor programs by agreement managers have to route the orders for the accounts to the sponsors owning the accounts. This requires that manager systems, specifically the systems supporting order management to interface with multiple sponsor systems. Also manager systems depend on sponsors for account information and also receive information on account positions and holdings from sponsor systems.
- Interface with DTC – Since managers are responsible for trade affirmation, their systems must interface with systems of organizations like DTC or with industry utilities such as Omgeo Tradesuite to receive trade confirmations and send back affirmations.
- Interface with market data vendors – The manager's portfolio management system interface with market data vendors for information on instruments, market prices, corporate actions, exchange rates, ratings etc.

Finally, since investment managers might offer business lines other than SMA, there might be internal system that the systems supporting the SMA must integrate with for the purpose of enterprise wide consolidation.

Predominant IT Model



ASP or Service Bureau model is predominant in the SMA world, particularly with the Investment Managers, due to many reasons, including but not restricted to, the size of their operations, size of their SMA business, weak integration or compatibility between available SMA systems and other parts of their business (such as institutional) despite holding similar data and having many common processes.

All SMA systems, whether in ASP mode or otherwise, have been traditionally operating as stand-alone systems, which meant high licensing, operating and maintenance costs for the sponsors and IMs. While the size of SMA business was small with high investment minimums, this model worked, but given the business trends and pressure on margins, this will not be acceptable in future. Any system used for SMA should also be able to support other businesses – institutional, high net worth, and so on.



5.0 SMA Sponsors and Managers - Business Strategy

5.1 Sponsor Firms

Note: This section focuses on the business strategy for a typical sponsor organization.

5.1.1 Business Goals

For a sponsor organization the high level Business Goals would include:

- Increase market share in terms of assets under management by increasing the number of accounts being managed by associated managers.
- Increase revenues by a wider business segment coverage in terms offering products across all business segments.
- Improve profitability by reducing the cost of operations, given the downward pressures on the fees.

5.1.2 Business Objectives

Business objectives are seen as short to medium term action points the will help the sponsor achieve the overall Business Goals.

Increase Market Share

- Higher penetration by having a dedicated rep (RIA) team, both affiliated and unaffiliated.
- Acquiring smaller and independent mom & pop units and the gaining access to the investor base.
- Broadening geographical coverage in terms of offering SMA programs to investors beyond the shores of USA.

Increase Revenues

- Offer a wide range of products catering to specific needs of investors. For e.g. offer a Fee Based Brokerage program to retain brokerage clients.
- Use of innovative products like UMA to provide investors with a single stop for all the investment accounts, offer consolidated views and reporting and tax efficient investing.



Improve Profitability

- Reduce the cost of operations by improving efficiencies in manual intensive processes such as account management and reconciliation. This can be achieved by having a higher level of automation and better integration with external entities like custodian and manager.
- Outsourcing business processes like Performance management, reconciliation etc. to Third Party Vendors (known as Turnkey Asset Management Providers).

5.1.3 Critical Success Factors

Critical Success factors are the factors that determine the success of the organization by helping it achieve the business objectives and goals. For a sponsor organization the critical success factors have been generalized and they may vary from organization to organization.

Product Effectiveness

- Ability to deliver innovative products to match the investors needs
- Provide a higher return of AUM for the investor through effective portfolio selection and tax efficient portfolio management

Marketing Effectiveness

- Ability to penetrate the market through an efficient rep force
- Effective cross selling across SMA business segments as well as other business lines within the organization.

Operational Effectiveness

- Ability to reduce the processing time for new account opening.
- Ability to reduce costs incurred on processes such as reconciliation.
- Ability to integrate closely with associated entities like custodian, investor manager, financial advisor to reduce data redundancy, data inconsistency and process inefficiencies.
- Ability to optimize the use of technology to achieve competitive advantage.
- Stricter compliance checks at all stages and conformance to guidelines relating to Anti Money Laundering, Sarbanes Oxley, SEC and AIMR Compliance etc.

5.1.4 Constraints and Challenges

Competition with Mutual Funds Industry and other Investment Management products



The SMA industry has for several years now acted as a parallel to the mutual funds and also managed to gain significant traction in terms of actually being able to gain market share from the mutual fund industry. Also despite the fact that the SMA industry has grown at a much faster rate than the mutual industry the fact remains that in terms of Assets under Management, the mutual fund industry is much larger than the SMA industry.

Besides SMA is just one of the several investment vehicles that larger sponsor institutions, which are typically the wire-houses, bank brokerages and also independent broker dealers offer to investors. In many cases SMA continues to account for a small percentage of the total assets managed by the organization

Lack of standards

Being an industry that has gained popularity in terms of a wider investor base only recently, the industry still operates in an unorganized manner. The lack of industry standards and industry utilities means that the business participants such as sponsors, managers, custodians depend of antiquated systems with multiple interfaces and immense amount of manual intervention. For example, the account opening process continues to remain very manual as there is a lack of any industry wide standards that would streamline the flow of account information from custodian or financial advisor to sponsor and sponsor to manager.

Dependence on IT Service Providers

Given the fact that industry level standards have not evolved most sponsors, barring the wire-houses are dependent of IT vendors for providing IT solutions. However, most of these systems have not evolved to the complex requirements of the industry. Reliance on some vendors gives rise to the danger of lock-in where the sponsor is dependent of the vendor to provide a solution that would meet the constantly evolving requirements of a dynamic industry.

Ability to provide a 360 degree view of customers

While sponsors hope to support new products such as Unified Managed Accounts that give them and their customers a 360 degree view of all customer accounts, such initiatives are taking a long time to be put into practice as today's systems are not at all geared to support this type of functionality.

Stringent compliance needs

As regulations such as Anti Money Laundering, Sarbanes Oxley etc. are becoming a mandatory process, the onus of supporting these compliance requirements through appropriate systems lies solely on the sponsor as the own client accounts.

Ability to support flexible workflow

On the one hand, as more and more investment managers get associated with sponsor programs, sponsor system have to be geared to provided seamless integration between the business processes that span across their systems and manager systems. This means standardizing business workflows. For example a



workflow based account opening system that allows account information to flow from sponsor system to manager systems or a closely integrated order management system. However, on the other hand sponsors will increasingly find that these systems have to be flexible enough to accommodate exceptional changes in the workflow. For e.g. if large investment managers are part of the program the sponsor must be flexible to accept changes in the order workflow.

5.1.5 IT Goals and Strategy

Given the challenges, constraints, business goals and trends discussed above, following are some of the prime goals for Sponsors' IT setup:

- Increase flexibility of IT systems to be able to use the best products for each functionality in a "plug and play" fashion with minimal effort for integration, and where infrastructure services could be shared across all systems – Utopia for a Sponsor's IT manager
- Enhance functionality of current systems and processes to support unified accounts UMA
- Increase automation of exception handling – internal as well as with custodians et al.
- Enhance compliance systems to increase flexibility and automation, reduce paperwork and manual attention required
- Enhance sales and marketing systems for better analysis of data that will help improve marketing effectiveness
- Enhance functionality to support multi-currency functionality
- Achieve scalability in terms of adding interfaces, new business channels and products

IT Strategies for fulfilling these IT goals would include:

- Reduce dependence on specific technology vendors
- Invest in technologies that provide ease of integration and services view to evolve a highly flexible IT infrastructure
- Explore tools and products for exception handling, interface management, data management, compliance and reporting
- Support industry standards and protocols such as FIX
- Interface with and support industry-standard platforms and utilities such as DTCC SMAS, Central Trade and OASYS
- Improve data infrastructure for better controls and reporting to support new



regulations and reduce data redundancy and operational costs incurred due to erroneous or unreliable data

- Invest in flexible infrastructure services and configurable workflow architecture
- Outsource IT support and development to matured vendors to reduce cost, achieve resource flexibility

5.1.6 Trends in Sponsors IT

It is difficult to predict which IT model will emerge as the industry matures, due to various factors, including the baggage of existing investment in systems and skills that majority of the players carry. But certain trends or thinking among the IT sponsors is becoming evident. These trends or patterns can be classified by the size of assets in their SMA accounts – big (USD > 1 billion), medium (USD 500 million to 1 billion) and small (< 500 million).

- Large sponsors will prefer in-house systems over products, at least for the core and front-end modules, due to ownership and data concerns. The mid-sized and smaller sponsors are more likely to prefer ASP vendor solutions or utilities.
- Thus, the current scenario is that most systems supporting SMA are stand alone systems and not really integrated with other systems. This is true for both sponsors with in-house system as well the ones using vendor services.
- However, for the back-end processes, such as allocations, reconciliation, performance calculation etc., sponsors would like to have their SMA systems integrated with other internal systems used for various businesses. This is an increasing requirement as sponsors look to consolidate their investors investment accounts to provide a single 360 degree view.

5.2 Investment Manager Firms

Note: This section focuses on the business strategy for a typical Investment Manager firm.

5.2.1 Business Goals

For an IM firm the high level Business Goals would include:

- Increase market share in terms of assets under management for the product or business segments and geographies serviced by the firm through higher penetration
- Increase revenues from each customer by offering more choices and capturing higher share of the investor's portfolio
- Improve profitability by increasing efficiency and reducing the cost of operations



- Become a preferred investment manager for both Sponsors and Investors in the chosen product segments / portfolios

5.2.2 Business Objectives

Increase Market Share

- Build a bigger bouquet of portfolios or investment styles/models to reach more investors as well as sponsors
- Acquire smaller and independent mom & pop units and gain access to their investor base as well as niche portfolios

Increase Revenues from Each Customer/Account

- Offer more investment alternatives (products) to increase the firm's share of the total pie (investor's investment portfolio), managed accounts being one of them
- Manage more High Net Worth accounts – traditional as well as on SMA programs

Improve Profitability

- Reduce the cost of operations by improving efficiencies in manual intensive processes such as account management and reconciliation. This can be achieved by having a higher level of automation and better integration with external entities like custodian and manager.
- Outsource business processes like reconciliation etc. to Third Party Vendors (known as Turnkey Asset Management Providers).

Become Investment Manager of Choice

- Improve ranking by consistently beating the market, benchmark and peer group performance for the chosen product segments / portfolios

5.2.3 Critical Success Factors

Product Effectiveness

- Ability to deliver innovative portfolios to match the investors and SMA programs needs
- Consistently beat the benchmark and peer group performance with efficient portfolios

Operational Effectiveness

- Ability to maintain portfolio deviations within specified tolerance levels with minimal transactions



- Ability to reduce the processing time for new account opening
- Ability to reduce costs incurred on processes such as reconciliation
- Ability to integrate closely with associated entities like sponsor, custodian, broker, financial advisor to reduce data redundancy, data inconsistency and process inefficiencies
- Ability to optimize the use of technology not only to reduce costs but to achieve competitive advantage
- Stricter compliance checks at all stages and conformance to guidelines relating to Anti Money Laundering, Sarbanes Oxley, SEC and AIMR Compliance etc.

5.2.4 Constraints and Challenges

Commoditization of Standard Portfolio Models

Portfolio models are easy to replicate. There are several investment managers offering some standard model portfolios such as Large Cap Value, Core Industries Equity, and Balanced Portfolio with little variation in names, objectives, benchmark or security selection. Therefore, both to differentiate, as well as to beat the competition consistently in terms of performance, investment managers have to rely upon superior research to improve security selection and to create niche portfolios, and on customer service, faster business processes, and operational efficiency and reliability to achieve customer loyalty and achieve business goals. None of these can be achieved without IT systems designed to provide such competitive advantage.

Competition from Brokerages and Banks

Many big and small brokers offer investment advice, research and money management services to their clients, thus directly competing with investment managers. They may even do so at lower fees since they have direct exchange connectivity and higher trading volumes that they achieve from these additional services bring in economies of scale. Banks too offer investment services through in-house advisors and brokers, particularly to high net worth customers. Investment managers can offer better reporting, superior customer service, diversification through more investment options and better performance through modeling and analytical tools to achieve competitive advantage. To penetrate the client base of the money management services of the brokers, the investment managers will need more flexible systems and products and better cost control to combat the downward pressure on margins. Despite the seeming competitive advantage that investment managers have over brokerages and banks, the latter continue to have a significant market share in terms of no. of customers, accounts and assets under management in US.

Geographic Spread

With global integration of markets gathering pace, increase in the cross-border transactions and the hype surrounding emerging markets and hedge funds,



investors with higher appetite for risk are looking to diversify their portfolios across geographies. Sponsors are also looking to market the SMA programs beyond US shores, particularly in Europe, but also Japan, Australia and the far-eastern countries with developed markets. To remain competitive and indeed benefit from this trend, Investment Management firms need to gear up their systems, processes, and infrastructure and acquire knowledge of the hitherto unknown markets, to develop global portfolio models.

Firm-wide View across All Products

Because an Investment Manager services SMA programs as well as other traditional and high net worth businesses using the same set of investment / portfolio models, the core systems as well as the decision support systems need to provide a firm-wide view for efficient functioning and management. This impacts accounting, performance and composites management, risk management, trading and back-office functions. What this means is that the systems need to be able to seamlessly integrate and support other products, including the business processes, rules and data specific to each to provide consistent and complete information to the manager.

Central Order Management

Investment managers need to be able to use a single order management system or deck to manage all orders, irrespective whether they were generated for SMA program or other businesses. If a SMA program allows orders to be sent to brokers other than the sponsor, the investment manager may even like to combine orders across products for efficiency. A central order management deck allows IM to manage all orders as a single order flow.

Lack of standards

Being an industry that has gained popularity in terms of a wider investor base only recently, the industry still operates in an unorganized manner. The lack of industry standards and industry utilities means that the business participants such as sponsors, managers, custodians depend of antiquated systems with multiple interfaces and immense amount of manual intervention. For example, the account opening process continues to remain very manual as there is a lack of any industry wide standards that would streamline the flow of account information from custodian or financial advisor to sponsor and sponsor to manager.

Scale Limitations

Traditionally, investment managers are used to handling a relatively small number of accounts with high functionality and fees. Growth of SMA business has disrupted this business model around which the systems were developed. So IT infrastructure of many investment managers is not scalable to handle high account volume of SMA. Investment managers need scalable solutions – including industry standard platforms – without prohibitive initial and operating costs.



5.2.5 IT Goals and Strategy

Given the challenges, constraints, business goals and trends discussed above, following are some of the prime goals for an Investment Manager's IT setup:

- Enhance core systems to support multiple products and obtain firm-wide view for business functions
- Improve decision support capability of the systems such as research systems
- Enhance order management systems to achieve a single order flow across product/business segments
- Build sophisticated performance measurement and attribution capability
- Increase automation of exception handling – internal as well as with sponsors, custodians et al.
- Increase scalability of IT infrastructure

Managers' IT Strategies for fulfilling these IT goals would include:

- Invest in analytical tools to better analyze performance across product/business segments
- Invest in investment research and reporting systems that support all product types and asset classes
- Invest in tools or applications to allow more flexibility to SMA accounts, to be able to execute the customized restrictions and instructions
- Explore tools and products for exception handling, interface management, data management, compliance and reporting
- Outsource IT infrastructure support to mature vendors to focus on core business functions

5.2.6 Trends in Managers IT

Investment managers can be classified based on the kind of Investment Management Services they have to offer. It is very difficult to find a pure play SMA managers.

- ✓ The larger investment management firms support a variety of business including Advisory, Institutional, Hedge Funds and SMA. Some of them could also sponsor their own SMA programs.
- ✓ The mid sized investment managers would probably have institutional accounts, SMA accounts as well as high net-worth business



- ✓ Finally the smaller players might have SMA and high net-worth business.
- Large managers, by virtue of their scattered and diversified business profile, are likely to have separate systems for SMA as opposed to their other lines of business. However, for most of their back-end processing such as performance and composites, investment accounting, risk etc. they would require utilities or processes to integrate or collate data from multiple systems serving different businesses. This will require robust systems integration capability with high amount of flexibility and scalability.
- SMA providers are highly unlikely to provide equally robust systems supporting the multiple business segments the managers operate it. For e.g. vendors are looking to integrate functionality that might cater to managers catering to both institutional and SMA segments. However, it is unlikely at least in the foreseeable future that these vendor systems can provide an end-to-end integration and allow managers to have a bird's eye view of their businesses.
- The smaller players, who have predominant SMA business with small presence in institutional or high net worth segments, might prefer integrated vendor systems, but even these will face limitations as the scale of business increases.
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6.0 SMA Sponsors and Managers – To Be Business-IT Model

6.1 Customers

Traditionally, separately managed accounts have been designed to cater to the investment needs of high net-worth individuals. This was evident from the account minimums which used to be at least \$ 1 million. But the popularity of SMA increased given its investor friendly features such as tax-efficient investment, professional investment management, customer's discretion over the investments and a single wrap fee. As investment minimums have progressively reduced, SMA as an investment vehicle is more accessible to other customers as well.

Some of the steps that sponsors are taking to make SMA an attractive investment option for customers are:

- Lower investment minimums – some programs are being offered with investment minimum of as low as \$20000 – 50000, a far cry from the minimum in millions.
- Diversification – Products such as Mutual Fund Wraps and Multiple Style Portfolio have given customers the opportunity to have the benefits of SMA while at the same time diversify their investments in different investment styles.
- Unified Account – A unified account means a consolidated view, consistent reporting and increased ability to manage asset allocation for the investors. While it increases the complexity of their systems, Sponsors are using UMA as a tool to attract customers and expect business benefits to flow eventually.
- Sponsors are packing more services at the same cost to investors. For e.g. detailed performance reporting

6.2 Products

- As discussed in earlier sections, Multiple Style Portfolio (MSP) and Unified Managed Account (UMA) are two new products that are fast gaining popularity. Business processes and systems of Sponsors have to improve to be able to support these complex products.
- Products are also becoming more global, which means they need to support multiple currencies and cross-border transactions.
- The trend is towards providing more options, flexibility and integration with the investor's complete investment portfolio driving the asset allocation



within SMA account which part of a unified account (UMA)

6.3 Services

- Services are becoming more discrete in nature, i.e. if account opening was viewed as one service before, now it needs to be broken into multiple discrete steps which may be executed in parallel, using niche applications or tools, across departments or across organization boundaries
- There is evermore demand for better reporting

6.4 Revenue Model

The revenue model will remain more or less same for SMA sponsors and investment managers in the time to come. However the composition of the revenue stream will be driven by the new products and services. One or more of the following trends are visible when we look at their revenue models:

- For Sponsors, share of revenue from services such as providing unified account view, enhanced reporting etc. will increase
- Pressure on margins will continue to increase for both sponsors and managers as investment minimums continue to decline and account volumes grow at a fast clip
- Investment managers will derive higher revenue from SMA due to much higher growth rate as compared to the traditional business
- As SMA programs go global, more and more revenue will accrue in different foreign currencies exposing the revenue model to exchange rate risks, but its share and impact will not be significant in the near future
- Sponsors will need to understand and analyze cost structure and components at account level, customer level, program level and service level.

6.5 IT Profile

As discussed in Section 4.5 sponsor and manager systems have a lot in common in terms of features offered but at the same time there are distinct needs that each system has to cater to.

6.5.1 Sponsor System

Comprehensive Program Coverage

Sponsor systems should support coverage of all types of program segments



including MSP programs providing functionality such as setup of multiple business partner relationship, rules at various levels, multiple investment style and models, overlay management etc.

Sponsor system should also be designed to support for advanced product offerings like **UMA**. Core business systems such as accounting systems will have to support the data structure, relationships, and processes associated with unified accounts (UMA). It might also involve providing an account aggregation kind of service wherein investors might be able to access account information for the accounts not owned by the sponsor especially for processes such as performance reporting.

Workflow based system

Sponsors business processes involve workflow at various levels. For example, the account opening process requires a comprehensive workflow using which sponsors can perform a variety of suitability checks including communicating with managers and financial advisors before making the account trade ready. Sponsor system such support workflow and notification through alerts and escalations.

Service oriented architecture

Sponsor systems should be flexible enough to support integration with different types of investment managers. While some managers may have their independent systems, it is likely that sometimes managers may use sponsors systems directly. The ability to integrate with multiple manager systems can be service oriented architecture wherein sponsors can expose a variety of functions through web services.

Integration with other internal systems

In order to obtain operational efficiencies sponsor system must integrate with several other systems used to achieve certain business processes. For e.g.:

- Integration with investor profiling and proposal managements system to enhance the account opening workflow.
- Integration with anti-money laundering systems for compliance
- Integration with external performance management system for detailed performance reporting.
- Integration with billing systems for investor billing.

Rules Integration

The system should support the fact that several business processes are driven by rules. This includes program level and account level options and restrictions as well as different rules based on managers.



6.5.2 Investment Manager System

Advanced analytical and decision support systems

Investment managers will need higher analytical capability to improve effectiveness of research, better decision making, performance measurement and attribution, and trading systems.

Seamless integration with other internal systems

In order to obtain firm-wide view of accounts, products and performance, manager systems must integrate with other internal systems to provide integrated services. For e.g.:

- A centralized order management system across lines of business
- Integration at the back-end processing such performance calculation, composites, reconciliation, investment accounting, risk management etc. not only across different product segments but also across different business segments.

Rules Integration

The system should support the fact that several business processes are driven by rules. For managers, this includes execution of program level options, restrictions and instructions, and business processes from account opening, through portfolio rebalancing, trading tools, allocations to account termination.

6.5.3 Other Industry Requirements

Common protocol for sponsor-manager-custodian communication

One of the most important needs for the SMA industry and one that has been eluding the industry so far is an industry wide standard for sponsor-manager communication. This implies communication with entities like brokers and custodians as well. The fact that each sponsor imposes their proprietary protocols makes it difficult for managers as they have to maintain separate interfaces with each sponsor system that imposes a proprietary protocol. The need is a standard based communication protocol for interaction between the various entities. This could mean using MMI standards for account flow and protocols such as FIX for orders and trades exchanges and SWIFT for custodian interfaces.

6.5.4 Alternate IT Models

Outsourcing Model

Historically, the IT Model for SMA industry has been dominated by IT vendors such as Checkfree, DST, Advent etc. Amongst these Checkfree has been the most dominant and operates under a service bureau model. One of the main reasons for outsourcing IT to players such as Checkfree has been that SMA volumes for most



players, both sponsors and managers, as a percentage of their overall assets managed had not been sufficient to warrant independent systems built in-house.

As mentioned earlier, this has led to dependence for sponsors and managers on legacy applications with little scope for keeping up to the changing requirements of the industry. Checkfree is currently in process of re-building their application and is expected to come up with an end-to-end rule based portfolio management system with comprehensive workflow and streamlined communication between various business entities.

An alternate outsourcing model that has evolved is the emergence of Turnkey Asset Management Providers (also known as Third Party Vendors). Sponsors and managers can outsource specific business processes such as account management, reconciliation, performance reporting, clearing and custody to such vendors. These vendors may in turn use IT systems provided by ASP vendors or use various products available in the market.

Insourcing Model

Competing with ASP vendors are product vendors like DST, Advent etc. (refer to Section 3.5.4) that provide a range of products addressing various needs of SMA industry. Again, being a product model it is fraught to limitations as sponsors and managers using these products are limited by the level of customization that can be achieved besides the fact that there are additional complexities involved in integration with various internal and external systems.

Industry Platform

The Money Management Institute has propositioned the need for an “ideal system”, an industry platform that would address the needs of the SMA industry.

- Some of the required features of such a system are:
- Standardized and seamless communication between all interested parties
- Real time transaction fulfillment
- Scalability
- Open architecture based non proprietary technology
- High level of security
- No dependence on a single commercial enterprise, but managed and owned by industry participants

Such a platform will act as a “conduit” for communication between industry participants and facilitate distributed processing to operate in a real time environment. User applications provided by outsourcing and insourcing vendors would continue to thrive in this environment offering value added utilities and services while at the same time conforming to the standards imposed by such a



utility.

MMI's take is that the creation of a standard electronic communications and standardized workflow for mission critical communication between industry participants will result in increased efficiency, reduce cost of operation and improve profitability.

6.5.5 End Note

Today most shops, both sponsor and managers have constraints with respect to their SMA business. Added to this is the fact that the SMA industry is not only growing exponentially in terms of assets under management and number of accounts but also constantly changing in terms innovative products and evolving business processes. In such a dynamic environment it is quite normal for multiple IT models such as in-house systems, outsourcing and insourcing to co-exist. While, an industry wide utility that addresses the pressing needs of an industry remains an utopian vision and probably will be achieved as the industry matures, industry participants such as sponsors and managers will continue to invest in IT solutions as suits their organizational needs.



7.0 Appendix

7.1 Sponsor Organization - Roles and Responsibilities

The table lists the roles within a sponsor organization as well as the processes used by each of these roles:

Roles	Processes
Reconciliation Associate	Portfolio Administration Corporate Actions
Performance Reporting Analyst	Performance Reporting
Billing Associate	Accounting [without balance sheets]
Account Administrator	Account Management
Sr./Junior. Equity Trader	Portfolio Management
Sr./Jr. Fixed Income Trader	Portfolio Management
Jr./Sr. Portfolio Administrator	Portfolio Administration Corporate Actions Settlements
Managed Account Liaisons/FA Liaison	Sales & Marketing SMA Program Management Compliance Tracking and Reporting
Marketing associate	Sales & Marketing SMA Program Management
Ops Manager/Director of Operations	Account Management Portfolio Management Position maintenance Portfolio Admin Corporate Action Settlements Accounting Performance Reporting Compliance Tracking and Reporting Sales and Marketing [for Director of



Roles	Processes
	Ops]
Client service Associate	Account Management Accounting Performance Reporting Compliance Tracking and Reporting
Sales Support	Sales and Marketing Performance Reporting Compliance Tracking and Reporting
Compliance Manager	Sales and Marketing SMA Program Management Performance Reporting Compliance Tracking and Reporting
Product Development/Manager	Sales and Marketing SMA Program Management Accounting Performance Reporting Research Due diligence (on managers and products)
Middle Office	Sales and Marketing Portfolio Management Compliance Tracking and Reporting
Research Analyst	Performance Reporting Research
Associate Portfolio Manager	Portfolio Management (except Trading) Performance Reporting Research Compliance Tracking and Reporting



Roles	Processes
Portfolio Manager	SMA Program Management Portfolio Management Performance Reporting Research Compliance Tracking and Reporting
Rep/RIA/FA	Sales and Marketing Account Management Portfolio Management Performance reporting Research



8.0 References

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