FIRM ANALYST™
project description paper

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New York, NY 10022
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Contents

Summary

This Project Description Document (PDD) is the result of the Workshop that was held during the week of July 3, 2000. Development, QA, Product and Senior Management attended this workshop, which formed the basis for identifying the product requirement changes to Analyst in versions 1.0 and 2.0. These product changes constitute the foundation on which this PDD is built.

Document purpose

Explained in this PDD are the Analyst project scope, stages, terminology, resources, risk, business case, documentation and QA for the changes to Analyst functionality that are being implemented.

Project scope

This section describes the scope and purpose of the Analyst project in relation to version 1.0 and 2.0 functionality.

Having scoped out our product requirement changes, this project has been clearly defined and is on target to meet the timelines specified in the Quarter 2/3 Project Plan.

Version 1.0

Changes to the requirements for the Analyst product are primarily due to the removal of FDD (MSCI analytics) from the initial product requirements.

Our original requirements included incorporating FDD into the Analyst product. After integrating FDD and performing extensive reviews and testing, however, we concluded that the FDD analytics did not meet our standards. We encountered multiple errors and bugs, which would have taken a disproportionate amount of development time to resolve. We decided that the better solution would be to redesign and rebuild these analytics on the Analyst architecture.

In response to the removal of FDD, we also decided to adjust our product development schedule to include several enhancements to the Central Model. The Version 1.0 architecture diagram on page 4 reflects this model.

Version 1.0 architecture

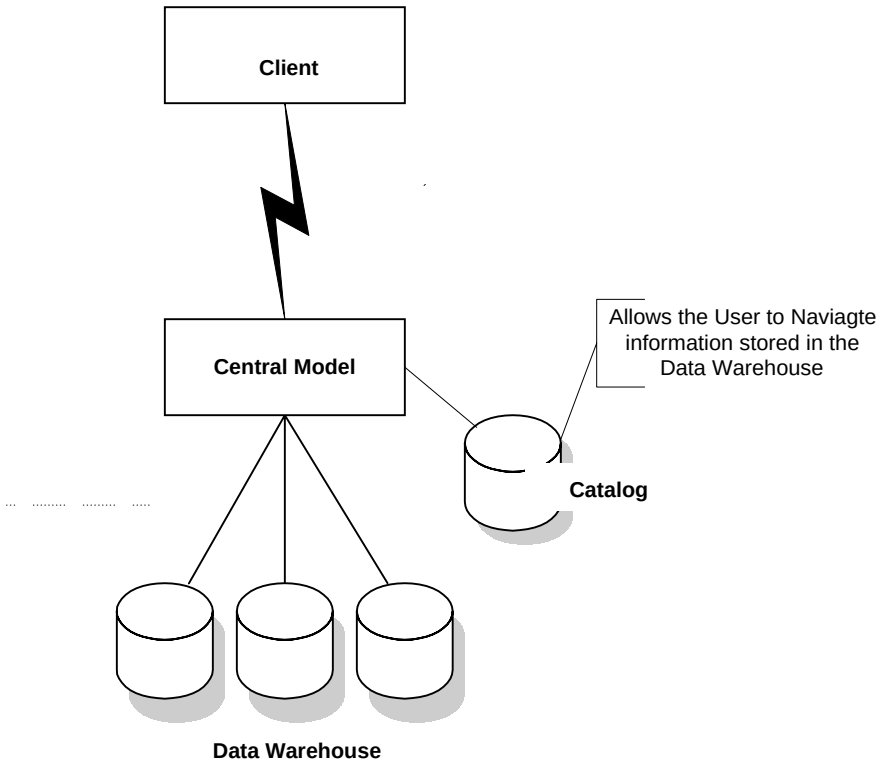

Figure 1. Version 1.0 Architecture—Central Server Model.

Version 1.0 functionality

The following table describes the functionality for the version 1.0 Portfolio Analysis/Central Server Model.

Module	Description
About FIRM Analyst	Beta 1 Enhancements 1. Merge About Atlas and About Databases into one About interface. 2. Cosmetic clean up of overall interface per requirements.
User Preferences	Beta 1 Enhancements 1. Cosmetic changes per requirements. 2. More/Less advanced filtering per security/index.

Module	Description
Item Selector	Beta 1 Enhancements 1. Cosmetic clean up of overall interface per requirements. 2. More/Less advanced filtering per security/index.
User Preferences	Beta 1 Enhancements 1. Cosmetic changes per requirements. 2. More/Less advanced filtering per security/index.
Index Selector	Beta 1 Enhancements 1. Cosmetic changes per requirements. 2. Navigation Tree to expand/collapse intelligently through all indices.
Security Selector	Beta 1 Enhancements 1. Cosmetic changes per requirements.
Portfolio Selector	New Feature **Additional Requirements** 1. User and System portfolios will be selectable. 2. Navigation Tree to expand/collapse intelligently through all portfolios.
Query Builder – Equity	Beta 1 Enhancements 1. Cosmetic changes per requirements. Portfolio Functionality. 1. Extraction of User Portfolios. 2. Extraction of MSCI Index Constituents. Advanced Optional Settings 1. Extracting Security Names. 2. Extracting Item Descriptions. 3. Extracting Dates. 4. Building =XXX() functions or just extracting the data.
Item Charting	Functionality **Additional Requirements** 1. Ability to chart any item within the database using a simple line chart. This is NOT meant to be a full charting package!
Refresh	Enhancements for Refreshing sheets 1. Performance tuning of refresh algorithms. New Functionality **Additional Requirements** 1. Active Range vs. Active Cell Refresh. 2. Ability to refresh portfolio constituent lists. 3. Overwriting data vs. Warning Users.

Module	Description
Query Builder – Reengineering	Functionality **Additional Requirements** 1. Comment of Upper Left Cell. 2. Reading/parsing of Comment to build a GR. 3. Sending to Query Builder via GR. 4. Displaying in Query Builder.
CII Reports	Functionality **Additional Requirements** 1. Add the following three reports to the Report Library for the MS CII databases. (Based on the Web Investor). 2. Allocation. 3. Performance. 4. Data Analysis.
Data Analysis	Functionality **Additional Requirements** 1. A Generic Data Analysis module that will execute the basic analysis on the Portfolios accessible from within Analyst.
Atlas Server	Enhancements Required 1. Performance enhancement to speed up large spreadsheet extractions of data. 2. Development and incorporation of the ItemCache package. 3. Incorporation of Excalibur Permission Service. 4. Incorporation of Product Version Service.
Catalog Databases	• MSCI Developed • MSCI Emerging • MSCI Enhanced Indices • IBES

Version 2.0

In support of our longer-term objectives, we evaluated the market for opportunities to be more competitive. In the Local Central Model, shown on the next page, current and new FIRM customers will be installing and managing Analyst Web Servers in conjunction with FIRM Servers.

In version 2.0, the same FIRM Analyst client used in version 1.0 can be configured to connect to a local Analyst Server. This server can also be configured to allow navigation of FIRM's proprietary databases and connect to the Central Server.

Having this functionality opens up a newer market, allowing us to increase revenue.

Version 2.0 architecture

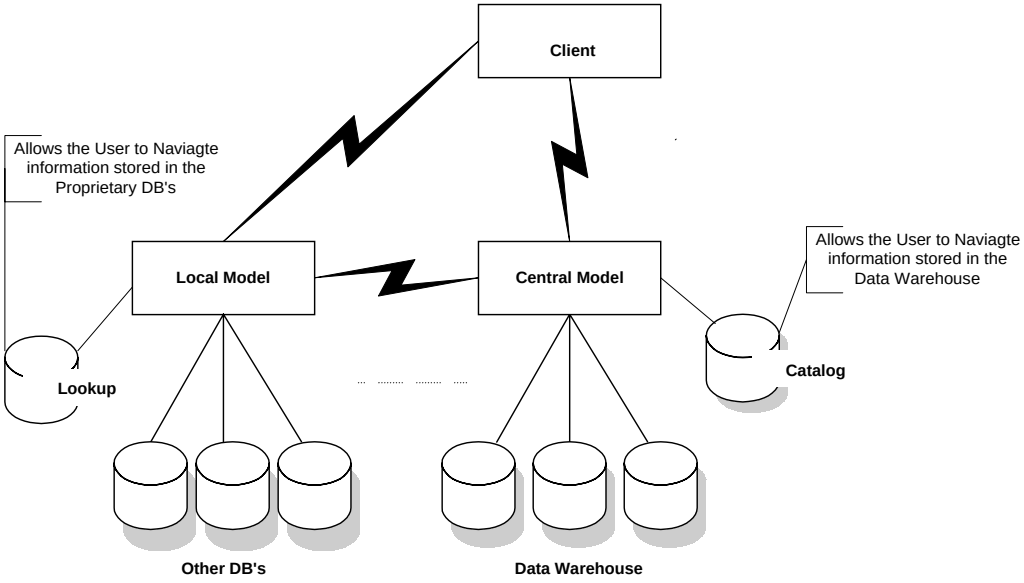

Figure 2. Version 2.0 Architecture—Local Central Model.

Version 2.0 functionality

The following table identifies the tasks that are being undertaken in support of version 2.0 deliverables.

Module	Description
Atlas Server	Enhancements required: 1. Double Hop from site Server to Central Server 2. Installation scripts and configurations need to be developed
Catalog Databases	• I/B/E/S Global • World Scope • Global Pricing
Local and Central Servers required	This release will offer an Atlas Server on both site and central.

Project stages

Stage 1 (version 1.0)

The first stage of development is focused on completing and implementing version 1.0 and is well underway. The following table identifies the tasks that are being undertaken in support of version 1.0 deliverables.

Version 1.0 task list

Following are the tasks involved in the successful completion of version 1.0 objectives.

Project documentation

Task description
Project Initiation (PID)
Project Description Document (PDD)
Project Plan
Requirements Definition Update
Functional Specifications
Policies and Procedures 1. Versioning, Build Process & Checklist 2. Requirement Change Request 3. Functional Change Request
Everything Analyst intranet

Design, redesign considerations

Task description
Analyst Server – Error Message Redesign
Analyst Client (Datatone) Redesign
Analyst Server – Generic Logger Redesign

Server

Task description
Incorporate Energy Permission Service hooks into Atlas.java
Incorporate Product Versioning Service into Atlas.java
Removal of old/outdated Email Service
Incorporate Error Message System

Data extraction methodology change

Task description
Catalog - Remove FID as displayable identifier
Catalog - Schema Change required
Atlas Server - Incorporate latest ItemCache into server
Atlas Server - Portfolio Service needs to return MST identifiers

About Analyst

Task description
Add the System command.

Reports

Task description
Re-animate Screens from Old Web product
Implement a Catalog Request for Navigation
Admin Applet needs to allow selection of CII report per User
Admin Applet needs to write out user.xml files per authentication rules

Portfolio Builder

Task description
Import option
Full menu
Prompt user deleting Portfolio from tree
Sorting on Column Headers
Show Weight of each security against portfolio total
Currency flexibility – Using the MCSI Vendor Free available Exchange Rates
Weighting Options Total Market Value = Price * Total Shares —Or— Portfolio Share = Price * Portfolio Holdings

Selectors – Item

Task description
1. More/Less Advanced filter. 2. GUI change to selector.

Item Charting

Task description
Finish legend of graph.
Disable button when on non-Time Series.
Missing data causes issues with graph.

Selectors – Portfolios

Task Description
Tree Navigation needs to be improved. Only portfolios that can be expanded should be visible in the tree.

Online User help

Task description
Incorporate Help & Context Sensitive links.
Incorporate Help Files into Installation.

Stage 2 (Version 2.0)

The development for the functionality in version 2.0 has been outlined.

Version 2.0 task list

Following are the tasks involved in the successful completion of version 2.0 objectives.

Query Builder – (client)

Task description
Java Work
Item Searching
Entity Searching
Pagination rules locked down
Creation of a GenericRequest to send to VBA

Query Builder – (server)

Task description
Lookup Service configurable to service both a client and a central.
Validation of data coming out of either of the Lookup databases.

Server installation

Task description
Install scripts
JWS or Apache
Web Delivery of Client
Customer Support

Note More details regarding version 2.0 functionality are being compiled. Once this version is removed from hold, these details will be included in Project Plan documentation.

Portfolio terms

Product portfolios

There are several approaches to the way in which a portfolio in Analyst is constructed. The following terms identify and explain these different types of portfolios.

System Portfolios/Index Constituents

Index constituents are stored within the databases. In some cases, only the current constituents are available; in other cases, the history is available as well.

The storage method is different for each data product. Currently, the client needs to know how each data product implements Index Constituents to be able to use it. The application presents the Indexes in a consistent user interface, independent of the storage method.

Customer Desktop Portfolio

Within the application, the user has the ability of storing a list of securities with an associated number of shares per security. These portfolios are stored on the user's desktop and do not have a time dimension.

Customer Portfolio Accounting System

The customer has a Portfolio accounting system to store the Portfolio constituents over time. A portfolio interface is defined to make the application work with this system. The Portfolio accounting system can be any technology; the customer simply needs to create some Java classes according the Portfolio Interface specification. The software development group uses the same portfolio interface specification to implement the Index Constituents.

Here is the approach for the customer portfolio accounting systems beyond the second and third quarters:

- We document the Portfolio Interface.
- The Portfolio Interface is used to implement Index Constituents in Analyst.
- The Portfolio Interface is used to implement a Customer Portfolio Accounting System at a Beta client site.
- The Portfolio Interface is published as part of the Analyst product.
- Product Management contacts the Portfolio Accounting Systems companies to create and inter into strategic alliances.

Project resources

The following table identifies our project resources. This table is the one that is found in the latest FIRM Atlas Quarter 2/3 Project Plan.

Function	Name	Allocation and authority
Project Manager	-----	100%
Product Manager	-----	100%
Java Development	-----	100%
VBA Development	-----	100%
Document Development	-----	100%
Database Development	-----	100%
Data Integrity	-----	100%
Quality Assurance	-----	100%
Production	-----	100%
Quality Assurance	-----	100%
Production	-----	100%

Risk assessment

This section describes the overall risks and concerns associated with the project, and deliverables required for its successful implementation.

Quality assurance

Currently, we have 1.5 people working on the quality assurance aspects of this project. Shirley and Jane are spending 50% of their time on QA activities. Another dedicated resource has joined this effort, and we seek to fill one full-time QA position.

Catalog development
Carol is leading this effort but is resource restricted. Cathy has been assigned to work on the DI of Catalog, but can only assist for two days a week.

Catalog maintenance
The same resources that are assigned to the maintenance and daily matching of entities are also assigned to development of additional databases within Catalog.

Redundancy
We are looking to identify the effort involved to achieve complete system redundancy.

Infrastructure
Delivery of the Analyst Server and its infrastructure to client sites remains a concern at the present time. Having this Server and infrastructure are required to achieve the navigation of proprietary databases, as well as connectivity to local/proprietary portfolio accounting systems.

Quality assurance
Testing this version of the Analyst Server is projected to require some additional time. The Central Server model is being expanded to include a local server with communication links to the central servers.

Project documentation

This section identifies the documentation pertaining to versions 1.0 and 2.0 of the Analyst requirement changes, and project plan for completing these milestones.

This PDD organizes our material into two categories: managerial, and technical. The management documents provide the control, clarity and structure that we have established for ourselves as we complete versions 1.0 and 2.0 of the product. The technical documents are critical tools that help ensure the continued quality of the product as we aggressively pursue version 1.0 and 2.0 objectives.

Management documents

Following are the management documents:

- Project Initiation Meeting
  Recaps the Analyst Workshop held the week of July 3; identifies the product requirement changes to Analyst versions 1.0 and 2.0.

- Project Description (this document)
  Explains the scope, project stages, resources, business case[1], documentation and QA for the product requirement changes being made in versions 1.0 and 2.0.
- Quarter 2/3 Project Plan
  Provides details regarding the scope, approach, resources and scheduling for the 2nd and 3rd quarter project enhancements.

Technical documents

Following are the Technical Documents:

- FIRM Analyst Interface Design and Specifications
  Provides high-level information that describes what the end user wants in the product. This "look and feel" must be achieved in order to successfully meet the stated requirements of the customer.
- FIRM Analyst Functional Specifications
  Provides the details of how the business requirements specifications will be achieved. This document contains the high-level software architecture that will best satisfy the system requirements and specifications.

Note The above items and other documentation are now posted on our Everything Analyst intranet.

Quality assurance

As outlined in the Analyst Workshop, Quality Assurance will help us track outstanding issues related to the development and implementation of versions 1.0 and 2.0 of FIRM Analyst.

In support of this activity, Shirley Chiu, QA Lead, has initiated the following activities, items and requests:

- **Weekly meetings**
  Scheduled for Monday mornings, these meetings will be conducted to discuss outstanding bugs and related issues.
- **Weekly meeting minutes**
  Shirley will be distributing minutes for these meetings, which will include information regarding task priorities, task assignments, completion dates and other important items discussed. The goal of these meetings is to keep the lines of communication open and enhance the synergy between the Development and QA Teams.

[1] The status of our business case information is pending.

- **Remedy reports for open tickets**
  QA has asked Development to generate Remedy reports to repair open tickets.
- **Product name change**
  As Development moves forward, QA will be monitoring the name changes from Atlas to Analyst and will inform Documentation as these changes occur.
- **Weekly bug spreadsheets**
  QA is generating an Excel worksheet, which is being distributed weekly and available on the Everything Analyst Web site. This spreadsheet is divided into two areas: one for all of the new bugs for the prior week, and one for all bugs that remain open. These bugs must be investigated by the Development Team and resolved. Depending on the input received from Development, a bug will be closed out or marked “Open” until it is resolved.

- **Communications**
  In addition to the items listed above, Shirley will be communicating the impact that these changes have on the company’s quality assurance activities.