



A Qualex Roadmap to Analyze Data in Financial Markets

Is your current approach of finding financial opportunities efficient?

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Executive summary

Globalization has changed the way financial markets react to a certain event or news. The reactions can be seen in just one session of financial trading. The most clear and recent example was the way world financial markets dropped in the 9/11 terrorist attacks.

Having your financial information organized, accessible and up to date will definitely facilitate the process of deciding what to do with your assets in a more informed and rapid way.

The process on how to do it is not written in stone and there might be different ways to do it. This paper explains some of the elements you need to take into consideration in order to improve the way you find financial opportunities.

The Financial Analysis

The most frustrating feeling for a Financial Executive is to get numeric or financial analysis after it is no longer needed. In other words having a numeric indicator, graph or forecast in time will tremendously help you take your organization in the correct direction when making a decision.

An example of this is having a report that tells you the volume of stocks that your competitors are holding for a certain stock in the past few days, weeks or months. This can be accomplished if you are storing the different transactions that occur daily between buyers and sellers. If you detect patterns where most of your competitors are selling or buying a stock, this might be an indication of a problem or an opportunity. Are you storing that information yet? Are you benefiting from this information?

Getting your financial analysis might take some time if you don't have the right tools in place. Your organization should be prepared with reporting tools and data organized in such a way that they are ready to be used when you need them. Also having software tools that reflect in real time the present value of your portfolios is another example of the indicators you can trust in. Does your PC have a tool like this? Can your customers see the present value of their portfolios in real time by using a web browser or cell phone?

Getting the Analysis

When I refer to Analysis, I'm referring to all of those tangible elements that have a financial meaning to you. It can be a simple graph with historic prices from a stock, the latest news from a certain topic or perhaps a company's financial statements for a certain quarter.

In order to obtain your analysis, your organization will mostly have to integrate and utilize the following elements:

1. People
2. Data
3. Hardware
4. Software
5. Financial Models
6. Information Technology Methodologies

The 6 Elements

You will find that most of the 6 elements already exist in your organization and that others are new things you need to learn or acquire.

1. People

This is your principal and more valuable asset. There are different profiles you need to identify. The 4 basic profiles are:

- a) **Financial Executives:** This person is who understands and defines the strategies an organization needs to follow in order to be a step ahead of their competition. Financial Executives have a clear idea of the things they need to create in order to boost the way their organization and customers benefit from the financial analysis they provide to the public. They are responsible for defining the modules they would like to see accomplished in an application system.
- b) **Financial Analysts:** These individuals help Financial Executives accomplish financial analysis, determine financial risk and are also the ones who recommend which financial assets you should buy, sell or hold. Financial Analysts spend most of their time accessing, organizing and analyzing data. The goal here is to provide them with certain types of software tools, so they can spend more time creating financial models or doing analysis rather than wasting time doing other activities that can be automated to access or organize data.
- c) **Systems Analysts:** These are the people who know how to create the software tools or application systems your organization needs to finalize the analysis. They have to understand what Financial Executives and Financial Analysts need. They will create tools based on business specifications created by Financial Executives and Financial Analysts. They are responsible of defining the databases your organization needs. Additionally, they are responsible for providing the mechanisms that will help Financial Analysts to perform their analysis or to access data.
- d) **Brokers, Financial Advisers and Shareholders:** These are the ones who benefit from the analysis. Most of the time they will take decisions based on the recommendations your organization gives them. The best way to inform them regarding the things you are doing is to publish your analysis via the Internet and/or in a more personalized or direct way (e-mail).

2. Data

Your data can come from different places and may vary in volume, shape and frequency. The first thing Systems Analysts need to do is identify all sources of information that can be used to create the software tools you need. Also, they can identify other sources of information that you might not be using already and may be beneficial in the short term. These sources of information might come from automated systems or from your Financial Analysts as Microsoft Excel spreadsheets. An example of this is the estimations or predictions your analysts create based on their prediction models. Which are the tools your Financial Analysts are using to predict the future? Are these tools reliable?

Here you have a few examples of sources of data you might encounter within your organization:

- Historic prices
- Daily operations
- Real time prices
- News
- Currency values
- Sector indicators
- Quarterly financial company statements

- Financial senior analysts recommendations, comments and estimations
- Bond prices
- Financial rates
- Economic indicators

3. Hardware

In order to organize and store all the information your organization is receiving and generating, your organization needs to have the necessary computer equipment that can store and process your data effectively. Top-of-the-line hardware will facilitate the process of mass distributing the analysis your organization is creating via the Internet. Additionally, most of the software you will be using requires a robust hardware platform in order to process the information at speeds that meet your expectations. This is a key factor you need to take into consideration before commencing the creation of your exploitation tools and databases. It is possible that your organization already has the equipment you need.

4. Software

Software is divided in three types:

1. Data and Information Sources: This is the software that provides the data described in item number 2, "Data," above. Basically, your organization uses this set of products as data information feeds. Most of them provide information in real time. These types of products create files in a specific format or append/update information in a database. Your development tools must be capable of extracting the information from these sources, so you can create a historic database of the information that you are receiving daily. Examples of these tools include Reuters and Bloomberg Packages.

2. Analyst's Tools: This is the software that your Financial Analysts use to produce their analysis, reports or presentations. Some Analysts might have specific tools depending on the type of analysis they perform. The most basic and common tool used by Financial Analysts is Microsoft Excel. Your new exploitation tools, must be able to generate snapshots of data in the format your Financial Analysts require. Some might ask you to generate an Excel file with financial statements from a company in the last couple of years with additional computations on it, while others might just ask for historic prices of different companies over a certain period, so they can utilize this information as input for their models to determine risk.

3. Development Tools: This is the software you use to integrate and create your organization's databases and applications. The software tool that we recommend for this is SAS Software. The functionality of this type of software must not only be limited to database creation. SAS Software has a set of analytical tools your analysts will benefit from to perform their analysis. SAS Software can read/write data to different types of file formats and has ways to publish your information via the web, so your customers will be able to access your analysis interactively. To get more information about SAS visit www.sas.com.

5. Financial Models

The Financial Models are those pieces of software designed to represent in mathematical terms the relationships among the variables of a financial problem, so that it can be used to answer "what if" questions or make projections. You will find that your Financial Analysts possess their own Financial Models to answer the same questions. Usually, Financial Analysts are very jealous of others borrowing their Financial Models, so one of your goals should be to standardize, share and improve them within your organization.

6. Information Technology Methodologies

The Information Technologies Methodologies are those steps, techniques and documented approaches that can help your organization integrate in an orderly manner the above elements. Following a methodology can reduce the risk of failing to integrate all elements. Having a consulting firm help you implement an IT Methodology will facilitate reaching your goals and be cost effective as well.

The Final Picture

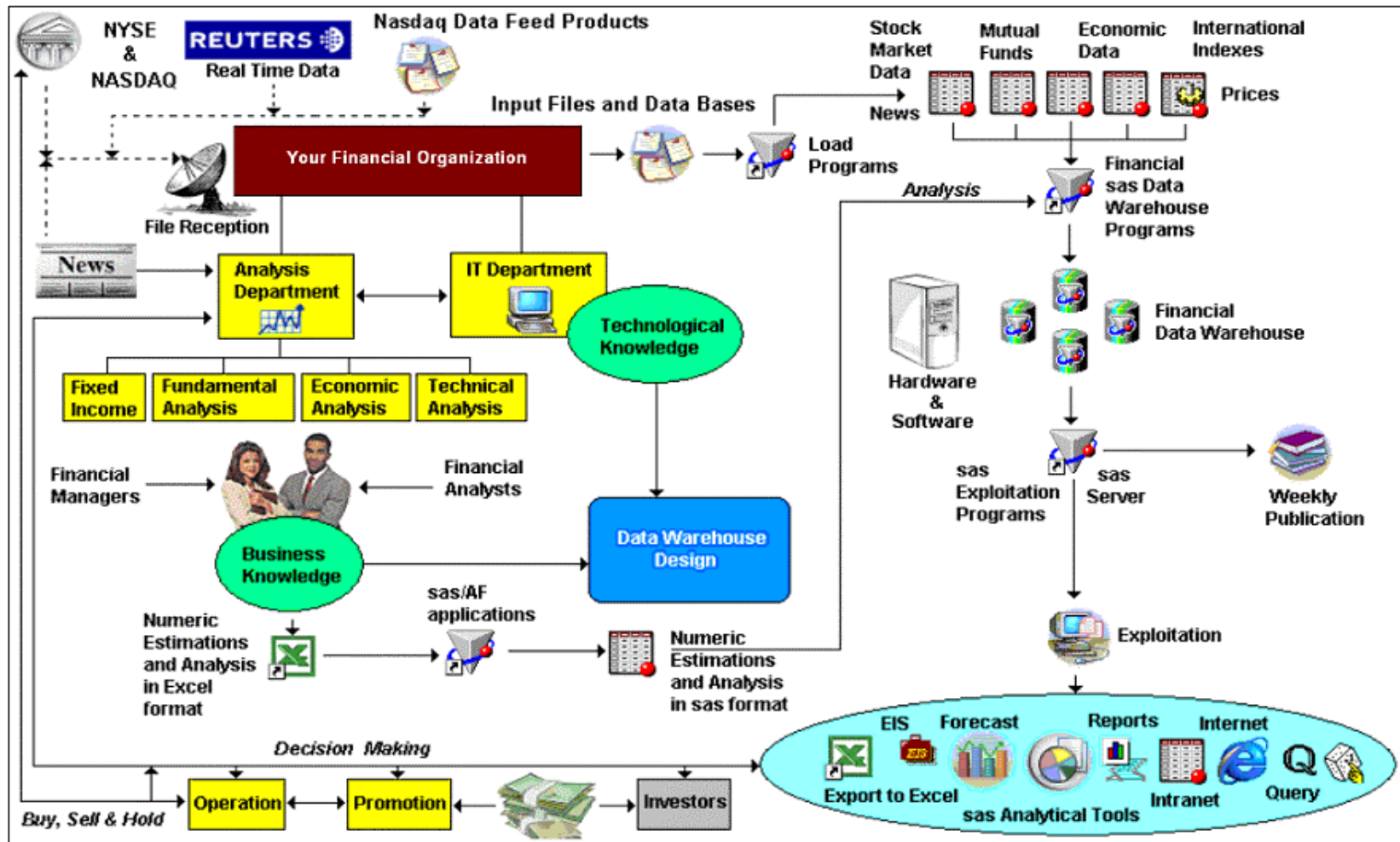


FIGURE 1: THE FINAL PICTURE

Figure 1 shows how the 6 elements have been integrated as one piece. The arrows reflect the flow of data and information.

Stages to integrate the 6 Elements

Below is a general description of the steps your organization needs to follow in order to improve the way you find financial opportunities.

1. Identify Sources of Information

This is the first stage where Financial Executives, Financial Analysts and Systems Analysts meet to identify a list of all the probable sources of information available.

2. Define Financial Applications and Products Outcomes

In this stage Financial Executives and Analysts determine the financial products they desire to accomplish. This can be as simple as describing to the Systems Analysts how the financial reports should look based on the sources of information available.

3. Design and Construct a Financial Data Base

Once Systems Analysts know the sources of information available, they will start designing a master database and then build a series of programs that will access all sources of information to populate the master database on a daily basis. This will be a normalized database. This database stores trading operations, news, values of financial assets, international indexes, currency values, good values, financial statements of companies, etc. The information itself doesn't tell you much. It is just a picture of what went on during a specific day of trading. By accumulating this information you will create a historic database.

4. Design and Construct a Data Warehouse based on the desired Outcomes

Based on the desired outcomes defined in Stage 2 and in the master database created in Stage 3, Systems Analysts will design and define a new database topic oriented with the goal of satisfying the needs of Financial Executives and Analysts. Basically, they will find that in order to create a desired outcome it's necessary to accumulate, compare, calculate, predict or organize the information in such a way that it will have an added value for Financial Analysts.

5. Create Applications and Products Outcomes for Exploitation

In this stage Systems Analysts create a series of tools that will help Financial Executives and Analysts exploit both databases: the master and data warehouse databases. The goal here is to create a series of tools that report the information contained in both databases and that can give answers of certain question defined in advance. The reason for building these types of tools is that Financial Analysts will not have to spend time updating their historic information. With a press of a button they can obtain the information they need. Alternatively you can prepare certain files for them in a format to provide them up-to-date information the next day. The numbers of tools you can build are unlimited and are basically the ones that meet your expectations defined in Stage 2.

Closing thoughts

The way the stages work is that they can be repeated over and over again. You might have new ideas once you completed the five stages or perhaps you will find better ways to improve a specific product or tool. The final goal is to create an information technology infrastructure that supports your Financial Analysts in finding financial opportunities effectively.

About Qualex

Qualex Consulting Services, Inc. consults exclusively in the use of SAS, with experience in virtually every SAS technology and module.

Our consultants have worked on a wide variety of projects representing nearly every industry within the international SAS user community. We can give you the benefit of our experience in solving business problems and providing solutions with SAS. Quality is our top priority. All work, including on-site work, is supervised by senior consultants with at least ten years of SAS experience.

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