



Gravity Control

**The simplest system
for complex data search and
management**

Gravity Financial Analytics™

Gravity Financial Analytics™ - What It Does?

1. Gathers all your data from all your sources

Data from existing databases – financial and other
Online resources - crawling of content, links, media, files and structured data
RSS sources - news, stock exchange quotes, financial blogs, etc.
Data from databases and SQL-based APIs - open, professional and custom databases
Data from structured files - tables and lists, financial spreadsheets
Works with data and files in all formats - office documents, emails (including standardized protocols), contacts, media files, etc.
Data from local, network and online drives - Microsoft Active Directory, OneDrive, Dropbox, Google Drive, etc.
Data from standardized APIs - web search engines like Bing and Google, social networks like Facebook and LinkedIn, e-trade sites, etc.

2. Searches, sorts and groups all your data in a natural way

Different search strategies - by keywords, by example, by classification
Simultaneous sorting by several criteria
Simultaneous handling of all data types from all sources

3. Manages your data and files in a natural way

Internal viewing and editing
Open in another program
Send by email as attachment or report
Tag internally and by changing system attributes
Mathematical calculations
Best interface for tactile devices of any size

4. Analyses and processes data

Advanced data analysis for big data
Term frequency analysis
Search term propositions based on similarities and differences
Statistical calculations
Cross table analysis

5. Generates data reports and presentations

Timeline presentations
CSV, XLS, PDF, HTML reports
Export and import capabilities

6. Provides collaboration in a natural way

Sharing results and workspaces with importable spreadsheet files
Simultaneous access of several contributors to the same work-plane
Data access secured by certified systems

Gravity Financial Analytics™

In this document we present in brief a concept for an application based on the Gravity Control™ interface for handling data that can be useful for financial analysis with an emphasis on **correlation analysis**. The Gravity Control™ interface can be used to assist in:

- Analysis of financial data
 - Correlation analysis
 - Filling missing data in data series
- Management of investments
- Risk assessment
- Creating investment strategies

The interface and principles behind it are described in more detail in the additional documents. You can find videos of the software demo in action and additional information at www.gravitycontrol.net.

Application concept

General information

Gravity Control™ integrates data from multiple sources and in different formats on one screen and allows the user to handle such data simultaneously and in the same way. The new graphic organization provides advanced searching and sorting capabilities, e.g. simultaneous sorting by multiple criteria, again on the same screen, and thus creates the basis for complex data analysis and comprehensive visualization of the process and research results. The software gives the user complete control over the data – expanding or limiting its amount at any time, changing the searching and sorting criteria, mapping data, saving current results and/or baseline, etc.

Gravity Financial Analytics™ can be used as a tool to integrate data from different public or private data sources and perform complex analytical tasks including:

- Assistance in the process of investment evaluation
- Risk assessment aid
- Estimation and calculation of numerous major financial ratios
- Detection and calculation of correlation
- Retroactive testing of strategies
- Creating projections and testing the possible performance of a portfolio under different scenarios
- Training of financial analysts

This is made possible by the advanced analytical tools like the Timeline™, Event Horizon™ and calculative functions that allow converting series of data into functions, extracting and comparing the correlations of series and replicating correlations of combined factors for a period of time either in the future or in the past.

The innovative Gravity Control™ interface is also a valuable tool for the analysis of complex data by non-expert users. It largely facilitates the job of expert analysts and increases its efficiency. The Gravity Control™ interface can also be used to create additional subscription based online services for clients.

The visualization and reporting tools of the software can as well facilitate the creation of impressive presentation of the research and analysis results.

Data Sources

Gravity Financial Analytics™ can be used as a tool to integrate data from different databases and unstructured online sources including but not limited to:

- Public records – official demographic and economic statistics from statistical institutes, financial and public institutions.
- Private databases – professional and institutional records of deals as well as additional information of any type.
- Personal resources – related emails, files and documents, contacts, etc.
- Live online resources – RSS feeds of market data, internet search results for news and publications by company or search word, social and professional networks, unstructured data from websites.

In addition, it allows importing data from structured spreadsheet and data files, office documents, email platforms and many more.

The Gravity Financial Analytics™ added value

Thanks to its innovative interface, Gravity Financial Analytics™ can:

- Work with data from different sources and in different formats on the same screen
- Provide simultaneous sorting by multiple criteria
- Provide advanced analytical tools:
 - Timeline™ analysis – side by side comparison of data sets sorted according to the same or differing user criteria
 - Event Horizon™ analysis – of processes, events and correlations over a period of time and in development, comparison of factors and/or assets over time, replication of tendencies for prognostic scenarios
 - Mathematical and statistical calculations – correlation of asset development, correlation between asset development and other factors, conversion of values to coefficients for calculation of prognostic developments, etc.
- Provide advanced visualization tools for research and presentation:
 - Timeline™ presentations combined with other analysis tools
 - Result spreadsheets and tables
 - Statistical visualization

Application Template Design development example

This is the current development of the application design. Please note that some of the numbers used in the example are figurative and are simply there to demonstrate functionality.

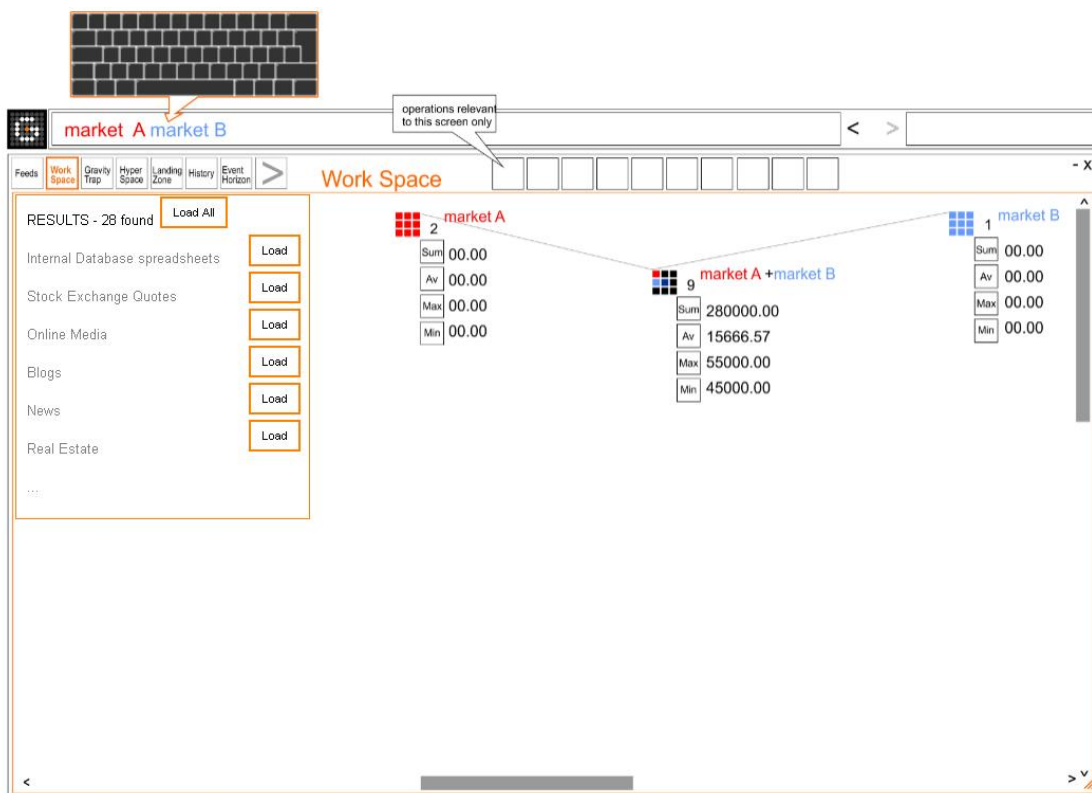
For the purpose of a more comprehensive description, we created a scenario with a simplified example in the area of Retail – or “How to successfully analyze financial data in 7 steps”. With that example we outline the main features of the Gravity Financial Analytics™ interface and show how they would function and what they would look like in practice.

Data Sources:

- an internal database containing information about retailers operating in several markets;
- any sort of external information the non-expert or the expert user finds relevant to the currently analyzed financial data

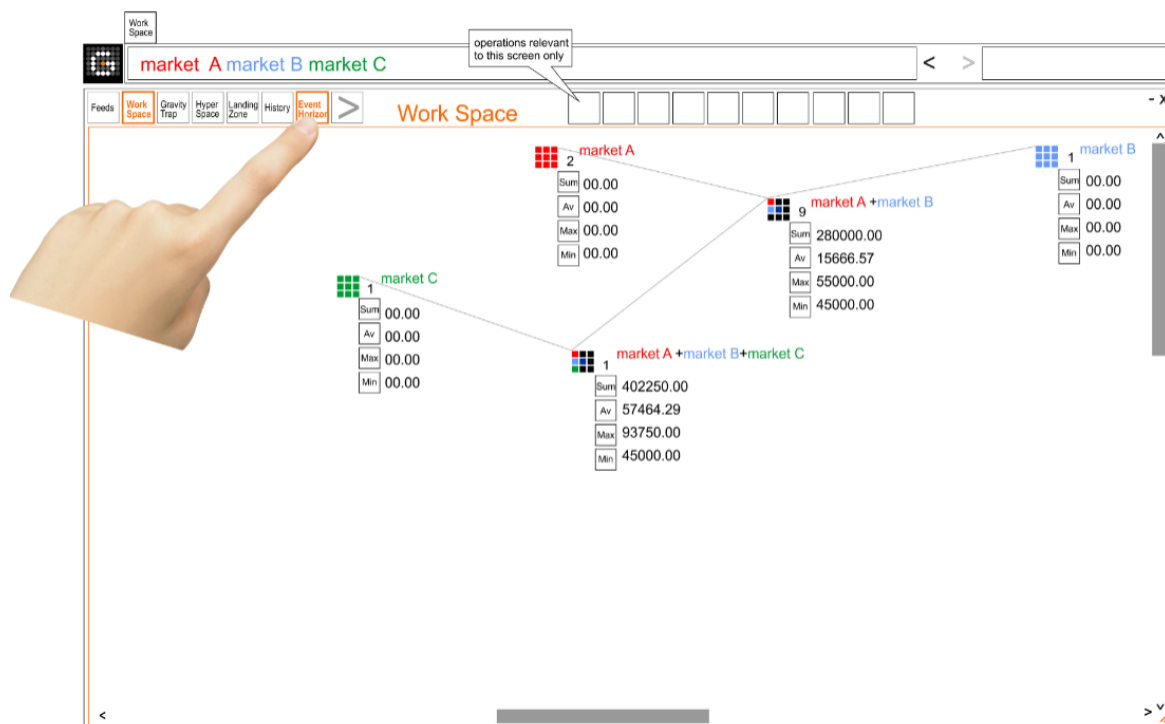
SCREEN 1

With the first step the user inputs in the search bar *market A* (China) and *market B* (USA) as search terms. The results obtained (from the loaded internal database) are instantly visualized on the work plane (via the G (Gravity) button). There are three grouping points available: *market A*, *market B* and *market A + market B*. The files contained in *market A* are the retail companies which operate only on the Chinese market (*market A*), whereas the files contained in *market B* are the retail companies which operate only on the USA market (*market B*). The retail companies which operate on **both** markets are directed to the third grouping point (*market A + market B*).



SCREEN 2

The user refines his search by browsing through the attributes of *market A + market B* point and notes that there is a company that operates on a third market as well – *market C* (Brazil). He drags it out and thus two new grouping points are formed. One of the companies from grouping point *market A + market B* goes to the new grouping point *market A + market B + market C* and another file is loaded from the database – a company which operates only on *market C*. The present objects (companies) are reorganized and some additional ones come in as well and are directed to their respective grouping point. It becomes apparent that there is one company that operates only on the Brazilian market (*market C*) and one that operates on all three markets.

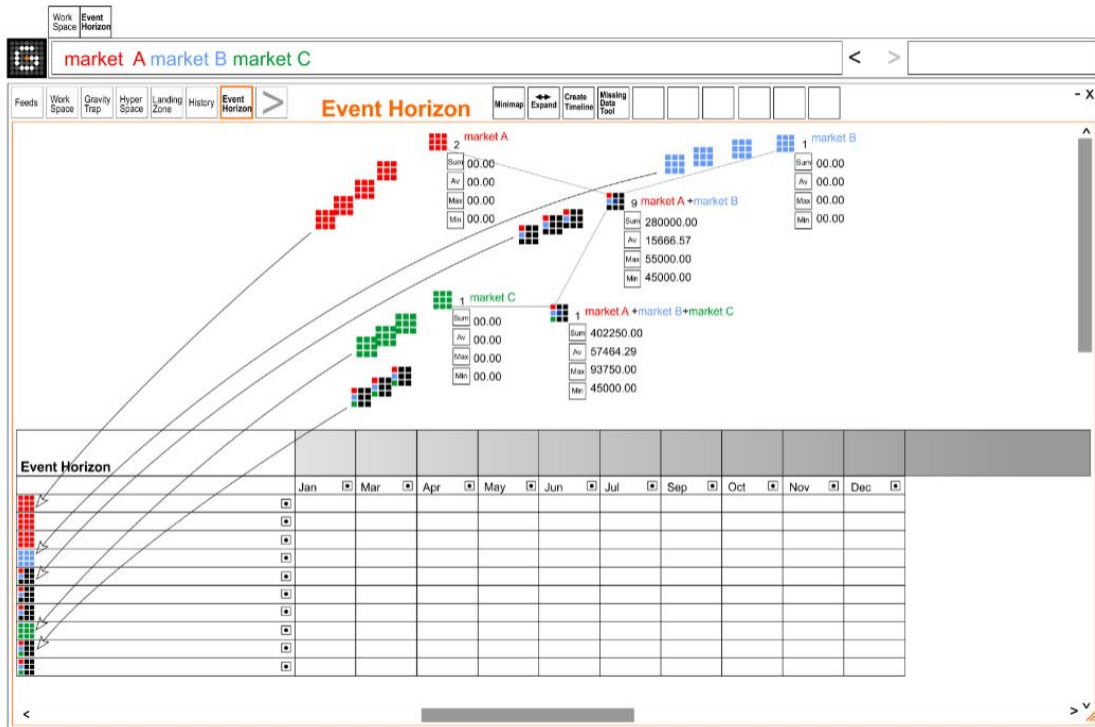


Features demonstrated (SCREEN 1, SCREEN 2):

- Swift searching and sorting by multiple criteria
- Refinement of the initial search terms and of results obtained by browsing through all available attributes
- Color coding for better presentation and faster orientation
- Rearrangement capability – points can be moved around the work plain as Preferred
- Display of primary (adjustable) numerical data (i.e. sum of sales revenue) below every grouping point (numbers shown on the picture above are figurative)

SCREEN 3

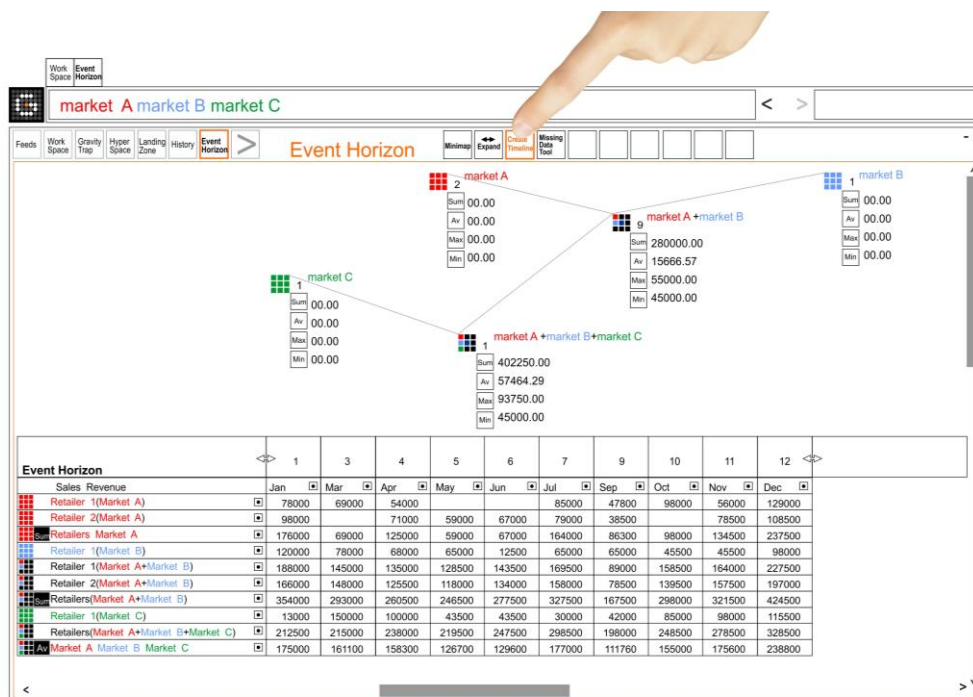
The user activates the **Event Horizon™** and the present grouping points are mapped out with their respective content (as shown by the arrows in the figure below) in a spreadsheet type panel where the user can choose which rows and/or columns will be used.



SCREEN 4

In the **Event Horizon™** grid, all the numerical data available is visible and can be operated with by using more than 50 different mathematical, statistical and financial functions and other helpful tools and application specific operations. This spreadsheet can be edited both manually and automatically. Different coefficients or outside data feeds (for example weather forecast, count of media mentions, etc.) can be added or removed at any point in order to see its impact on the data currently being revised and the correlations between different sets of data. There also are preset performance indicators and ratios to choose from.

Missing data in some of the series is also observable here – some cells are empty and some months are entirely missing. If needed, the user can activate the **Timeline™** tool to fill in the missing data and continue with the analysis.

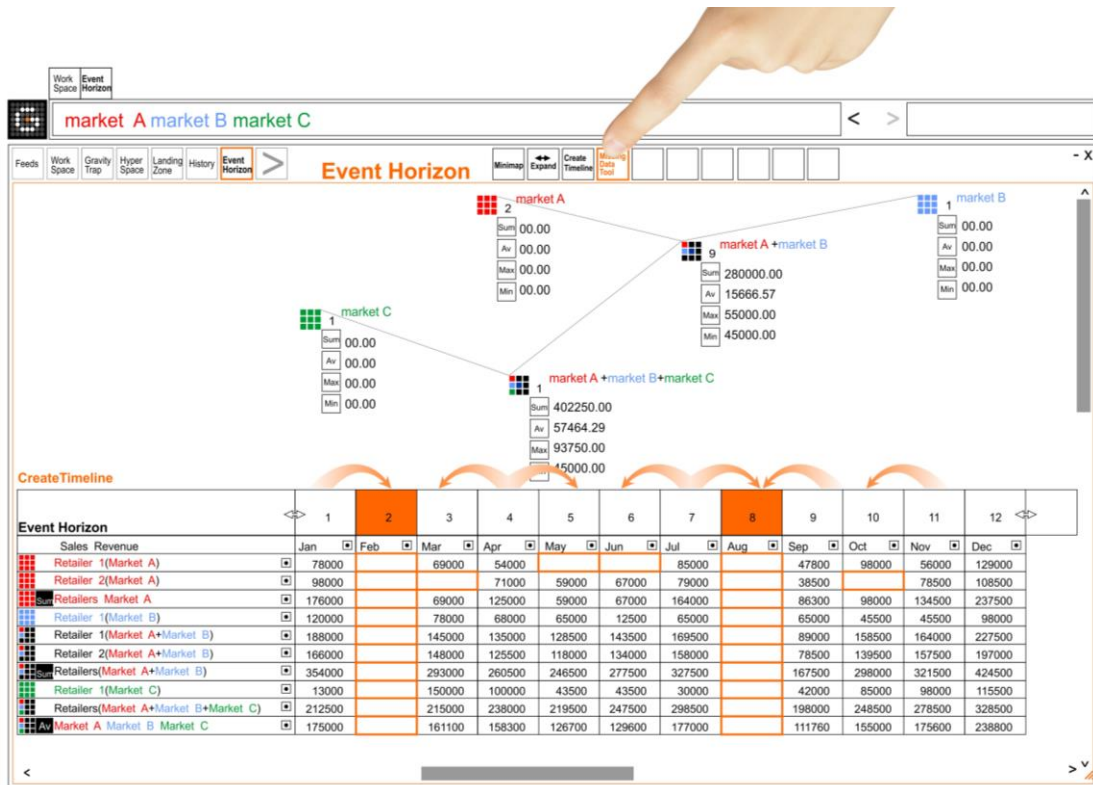


Features demonstrated (SCREEN 3, SCREEN 4):

- **Event Horizon™ grid** – denotes periods in time when a certain event happened (e.g. gathered information for sales revenue over a month); can reorganize objects in the work-plane according to a chosen event.
 - o Mapping of current grouping points in the work-plane with possible selection of particular rows and columns for operation
 - o Zoom in and zoom-out functionality to get into more detail – in particular, years can be zoomed into months, weeks, days – as detailed as the data source(s) allow(s) it
 - o Vertical and horizontal scroll functionality - in order to go through wider range of information
 - o Selection of additional data to be calculated and visualized – e.g. profitability ratios, liquidity ratios, asset utilization ratios, market value ratios, correlation coefficients, etc.

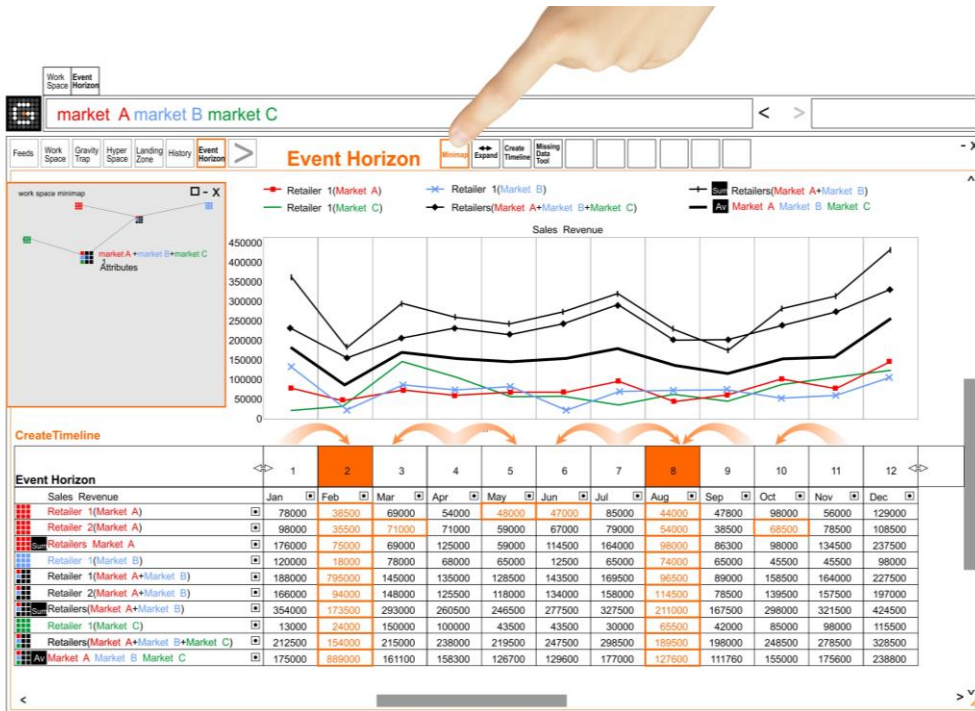
SCREEN 5

The **Timeline™** divides the existing event periods (from the **Event Horizon™ grid**) into equal time intervals (by user preference). The missing cells are differentiated by color.



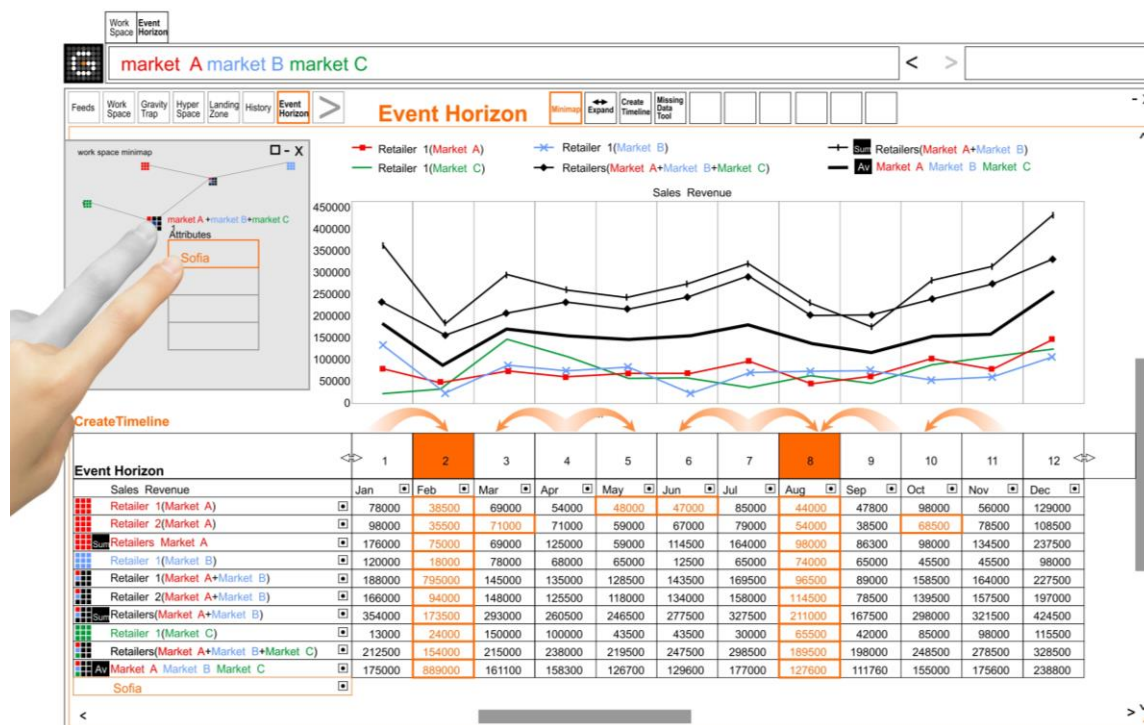
SCREEN 6

With the help of extrapolation or other retrospective approaches (**the Filling missing data series tools™**) the calculated data is filled into the empty cells. The user can also activate the graphing capabilities of the interface to see different trends and correlation effects. They can also activate an **interactive mini-map** of the present grouping points which is placed on the left for an optimal use of the space. Outside data sources can be added at any time so as to show their effect on the currently analyzed data.



SCREEN 7

The user can continue to refine their search via the mini-map as shown below or go back to the standard work-plane by deactivating the **Timeline™** or the **Event Horizon™** and the graphing capabilities.



Features demonstrated (SCREEN 5, SCREEN 6, SCREEN 7):

- **The Timeline™** – divides the periods from the Event Horizon™ grid into equal time intervals.
- **The Filling missing data series tools™** – set of predefined functions to assist in calculating missing data based on different approaches
- **The Mini-map** – interactive tool to minimize the currently present grouping points to allow for more efficient use of the space for the purpose of correlation analysis. Can still be used to refine data.
- **The graphing capabilities** – visualization of graphs for the selected data from the spreadsheet.
- **Future projections capability** – by sliding to the left of the spreadsheet

Additional implemented tools to aid the analysis of the visualized data, which are currently still in design and development:

- **Input of external data source to show correlation significance**
- **The vertical selection tool** – vertical line tool that can be moved across the spreadsheet to select a particular column, which can be re-calculated for all the information in the selected rows and visualized in the respective points in the upper part of the work plane.
- **Baseline save**– both vertically and horizontally
- **Direct export and import of data to Excel**
- **An array of operations applicable on files currently selected by the user**
 - Standard – open, send, translate, etc.
 - Application specific – publish online, send to producers, synchronize, etc.

Social Network Based Multi-Level Incentive Programs

The Gravity Control Analytics™ tool can be used to facilitate the creation of the so-called Social network based multi-level incentive programs working with Big Data. These programs are designed to further develop the functions of a big data platform and make it more versatile.

Data platform usable by both data integrators and data providers:

- as a source for building marketing strategies and campaigns
- for targeted advertising, including via social networks
- for promotional activities
- for attracting new customers
- for communication and cross-communication between consumers and retailers
- for customer communities' establishment

A few of the new features are:

- multi-level card distribution system
- bonus points system based on:
 - after-purchase orders
 - “likes”/”shares”/”retweets”
- purchase codes' system
 - distribution
 - tracking
 - discounts