

Link Explorer 6.0

... a fresh look, Microsoft integration, in-depth analytics, improved visualisations

A new perspective on your data

Link Explorer 6.0 New Features

A Fresh Look

- A New User Interface
- The Workfile Browser
- The Mini-Chart Viewer
- Chart Toolbars
- The Chart Analysis Panel

Microsoft Integration

- Xanalys Link Explorer Analytical Environment
- Microsoft Excel Ribbon
- Microsoft Bing Mapping

In-Depth Analytics

- Analytical Workflow
- New Chart Layout Algorithms
- Search
- Network Analysis
- Filtering
- Constraint Capture
- New Chart "From Selected Objects"

New Presentation Features

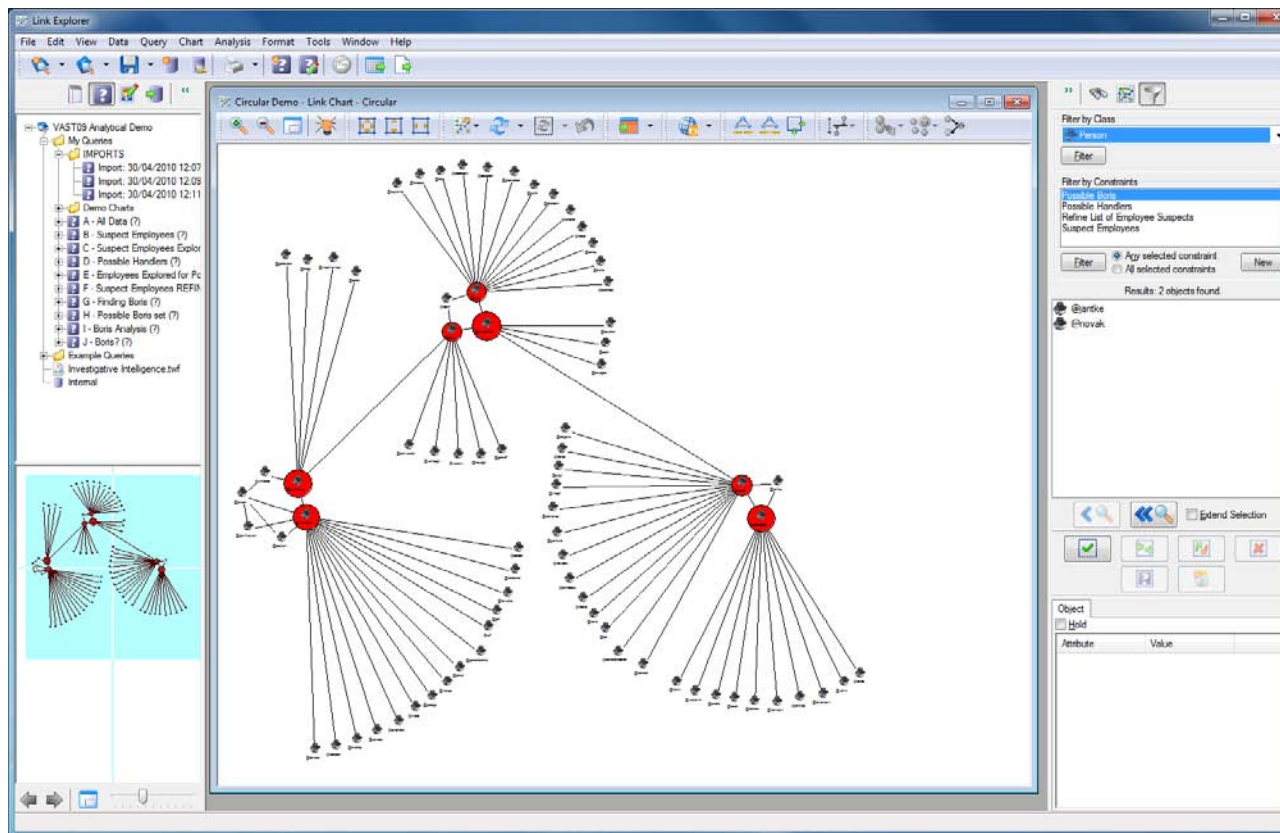
- New Icon Sets
- Align and Distribute Chart Objects
- Expand and Shrink
- Partial Layouts
- Style Definitions
- Auto-Generated Key

What Else is New?

- Chart Drawing Panel
- Query Management
- Integration Support

A Fresh Look

A New User Interface



What's this?

A new user interface (UI) design that has been designed to group together common functions and support Link Explorers *query > visualise > analyse* workflow.

How does it work?

The new UI is made up of 4 distinct areas, each holding a related set of views and functions:

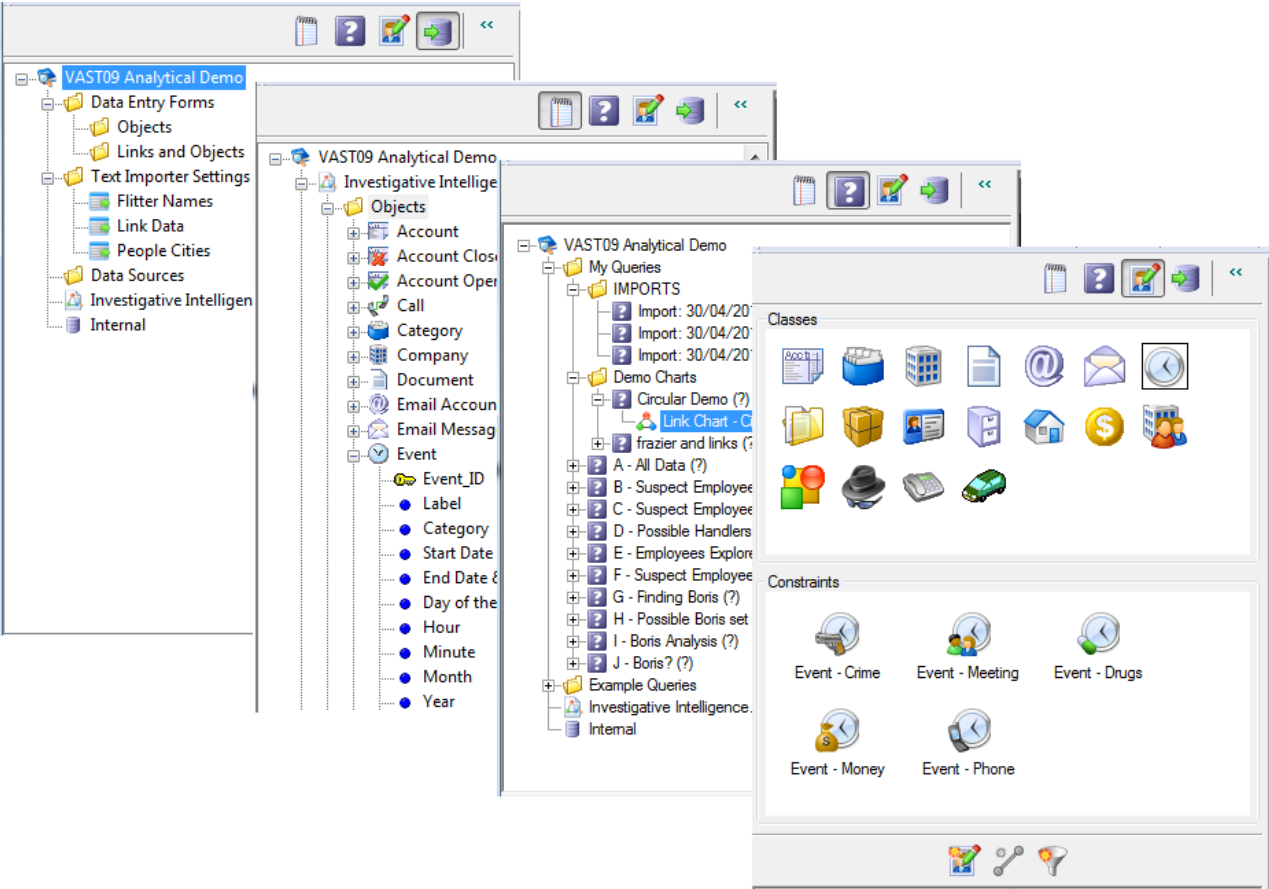
- Menu/Tool bars
- Workfile Panel
- Charting/Reporting
- Chart Analytics Panel

Why is it important?

The new UI will help you organise and view your charts, build new charts and apply different forms of analysis, and quickly move data from one chart to another to support your analytical train of thought.



The Workfile Panel



What's this?

Workfile management and core intelligence analysis tasks are now held across 4 different tabs in this retractable panel. Each panel also displays the Mini-Chart preview window.

How does it work?

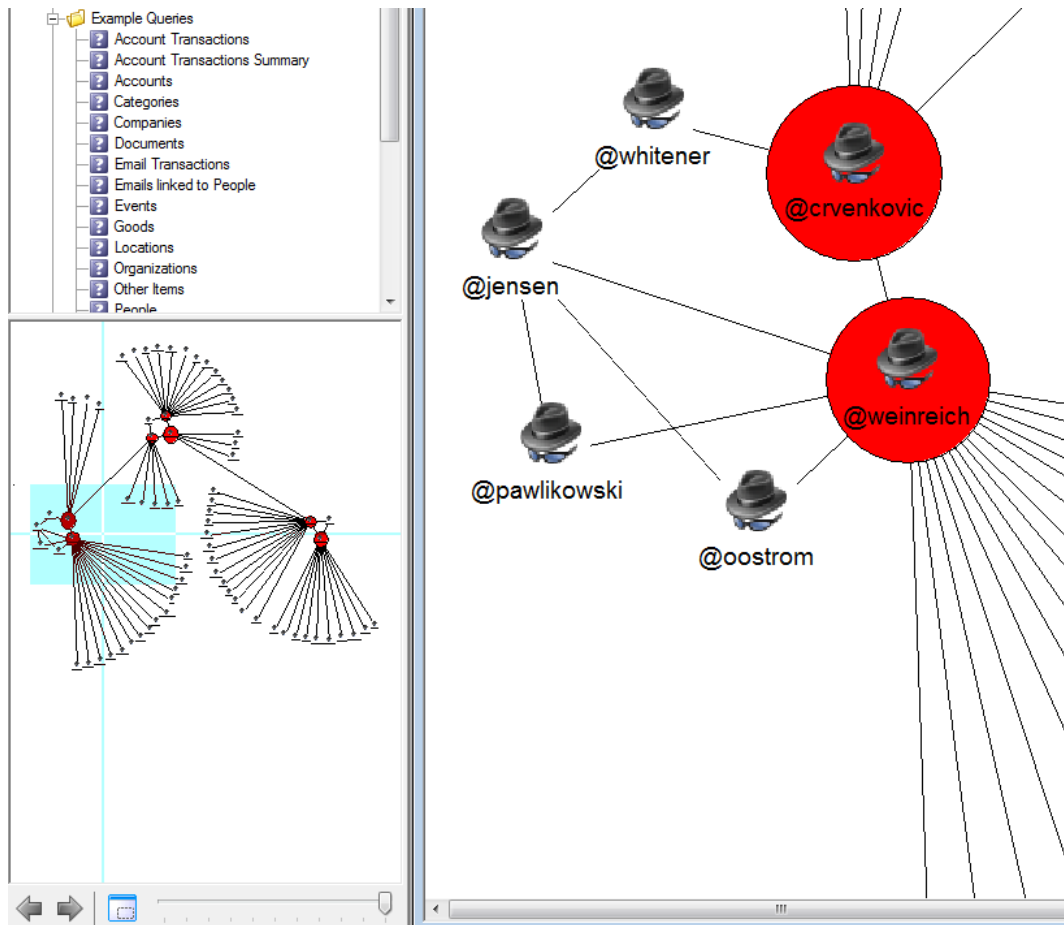
Click on one of the icons at the top of the panel to reveal the associated tab. These include the Workfile Properties Panel, Query Panel, Drawing Panel, and Data Entry Panel. Click on the double arrow at the top of the panel to retract it into the side of the application window.

Why is it important?

With a range of new features added to support Workfile management in 6.0, the tabbed interface provides an uncluttered, easy to understand view of these features. In addition, the ability to retract the entire panel facilitates the analysis of large charts when space is a premium.



The Mini-Chart Viewer



What's this?

Mini-Chart provides you with a preview of the entire chart, plus displays your current view as a blue rectangle.

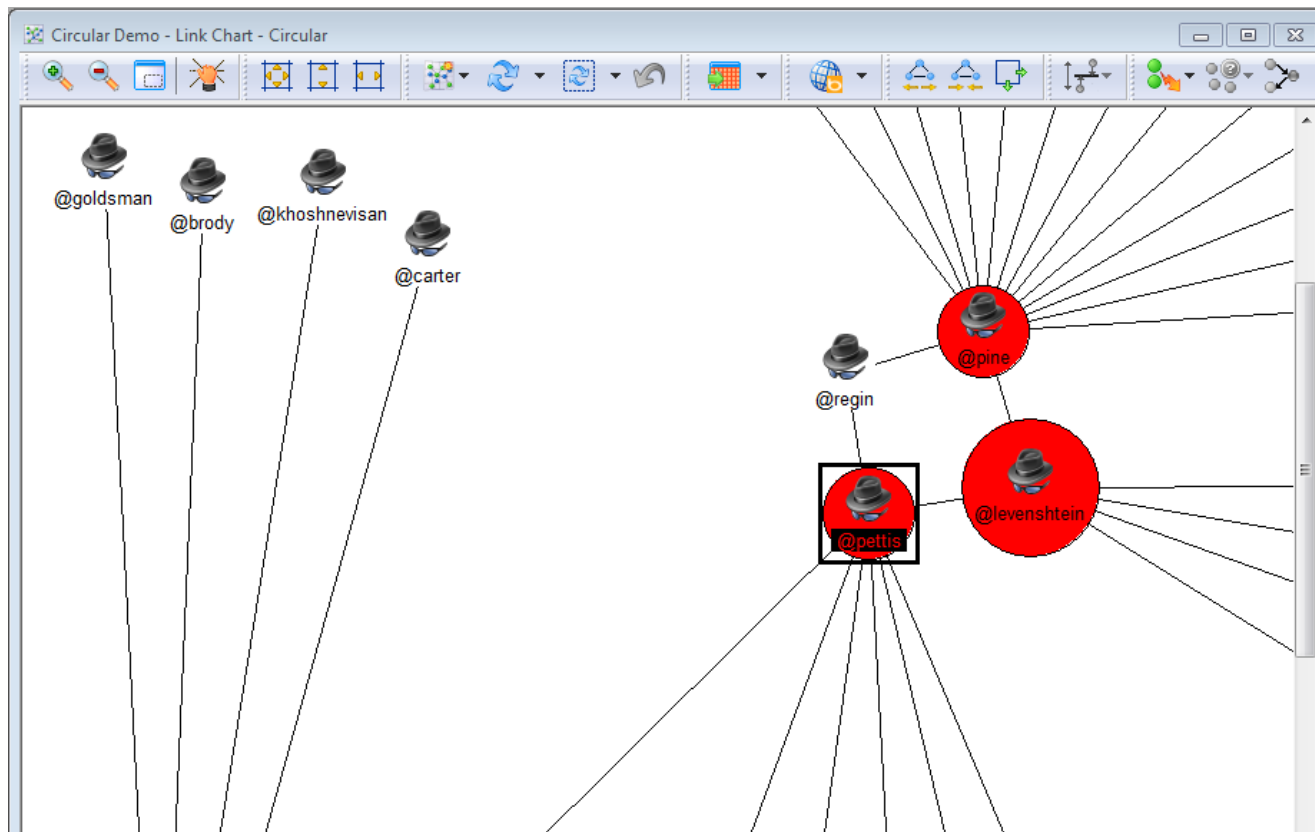
How does it work?

You are reviewing a cluster within a large chart and you wish to scan over to a connected cluster. Either click on the other cluster to navigate instantly to that position on the main chart, or click on your current position and drag and drop to where you want to be. You can also move between selected objects on a chart by using the two navigation arrows.

Why is it important?

The mini-chart provides you with the context of your current position within the chart as a whole and speeds up navigation across large charts. Also allows you to quickly view selected objects across a chart.

The Chart Toolbar



What's this?

Each chart now has its own toolbar holding a range of navigation, layout, Excel, Mapping and analysis functions.

How does it work?

Each chart type (e.g. Link, Event, Clock) has a specific toolbar that contains only functions relevant to that chart type. Use these functions on the active chart to make the changes/manipulations you require.

Why is it important?

All the functions you need to navigate and adjust the layout of your chart are available via its own toolbar. While this has clear usability benefits, by pooling these functions on the chart, we have been able to expose more options on the toolbar (which were previously hidden in menu dropdowns) and reduce the number of items on the main application toolbar.



The Chart Analysis Panel

The screenshot displays the Chart Analysis Panel with three main sections:

- Search Panel (Left):** Shows a search for 'mann' with 2 objects found: '@hehmann' and '@leinemann'. It includes options for search criteria like 'Labels', 'Beginning', 'Case Ser', 'Values', 'Containing', and 'Whole W'. Below the search results is a table for '@leinemann':

Attribute	Value
Person ID	275
Label	@leinemann
Place of Birth	Prounov
- Select by degree Panel (Middle):** Includes a 'Search Class' dropdown set to 'Person', checkboxes for 'From current selection' and 'Count selected links', and a 'Link Count Colors' section with 'Show' and 'Edit...' buttons.
- Filter by Class Panel (Right):** Shows a dropdown for 'Person' and a list of constraints: 'Possible Boris', 'Possible Handlers', 'Refine List of Employee Suspects', and 'Suspect Employees'. The 'Possible Handlers' constraint is selected. Below the list, there are radio buttons for 'Any selected constraint' (selected) and 'All selected constraints', along with a 'New' button. The results show 3 objects found: '@nerbonne', '@corbett', and '@nohmi'. Below this is a table for '@lebenshtein':

Attribute	Value
Person ID	4262
Label	@lebenshtein
Place of Birth	Koul

What's this?

A retractable panel containing 3 different tabs, each providing a range of analytical tools that can be applied to the current chart.

How does it work?

You are analysing a chart: Search, Network Analysis and Filtering functions available through the panel help you find and select the exact information you require. Each tab also contains a set of common functions that allow you to amend your selection or send the selected data into a new chart. A capture feature automatically creates a named constraint that defines a set of data of interest, so that you can find or explore for them at a later time.

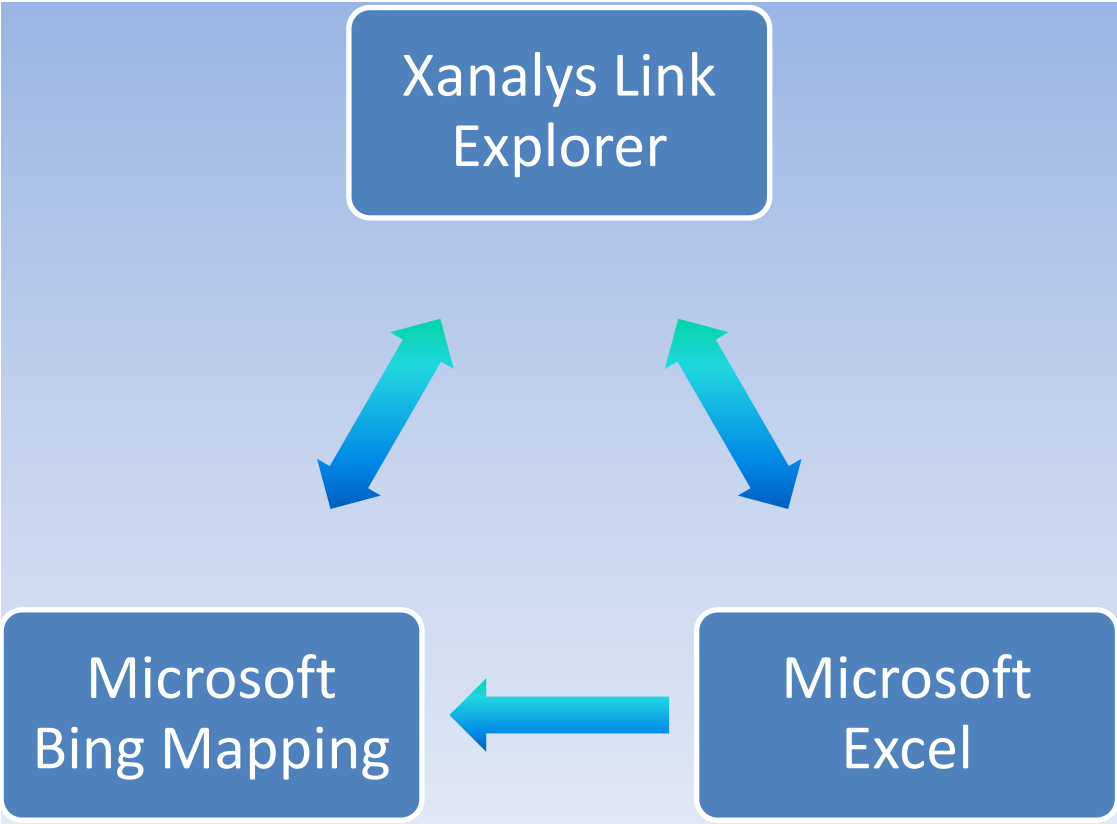
Why is it important?

Link Explorer provides a number of distinct analytical layers – one of these is chart analysis which relates to analysing only that data on a particular chart. The tools available in this panel are dedicated to that task.

Microsoft Integration



Xanalys Analytical Environment



What's this?

Microsoft Excel and Bing Mapping are widely used by most Analysts and Investigators. That's why we've made the movement of data between the applications as simple as a mouse click in Link Explorer 6.0.

How does it work?

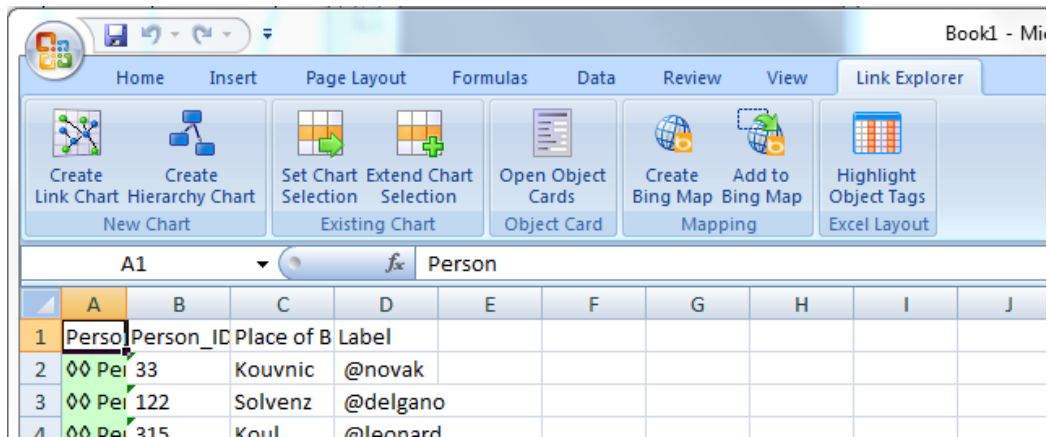
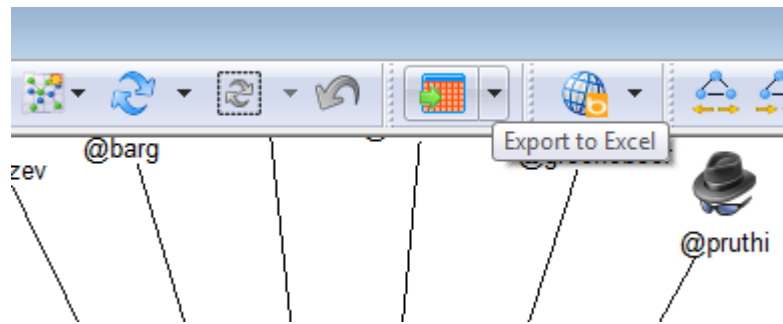
Use the appropriate buttons on the chart toolbars inside Link Explorer to export your data to either application. In addition, Link Explorer provides plugins to both Excel and Bing Mapping which give you the option to reflect subsets of data back inside of a Link Explorer chart.

Why is it important?

Link Explorer expands the analytical tools available to the analyst by providing integration with these commonly available applications. This keeps software license and training costs to a minimum. It also extends the options within the LE analytical workflow.



MS Excel / Link Explorer Ribbon



What's this?

Send data from your chart to MS Excel where you can perform statistical and other forms of analysis. If you identify something of interest, send that subset back to Link Explorer, or to Bing Mapping for an alternative view of the data.

How does it work?

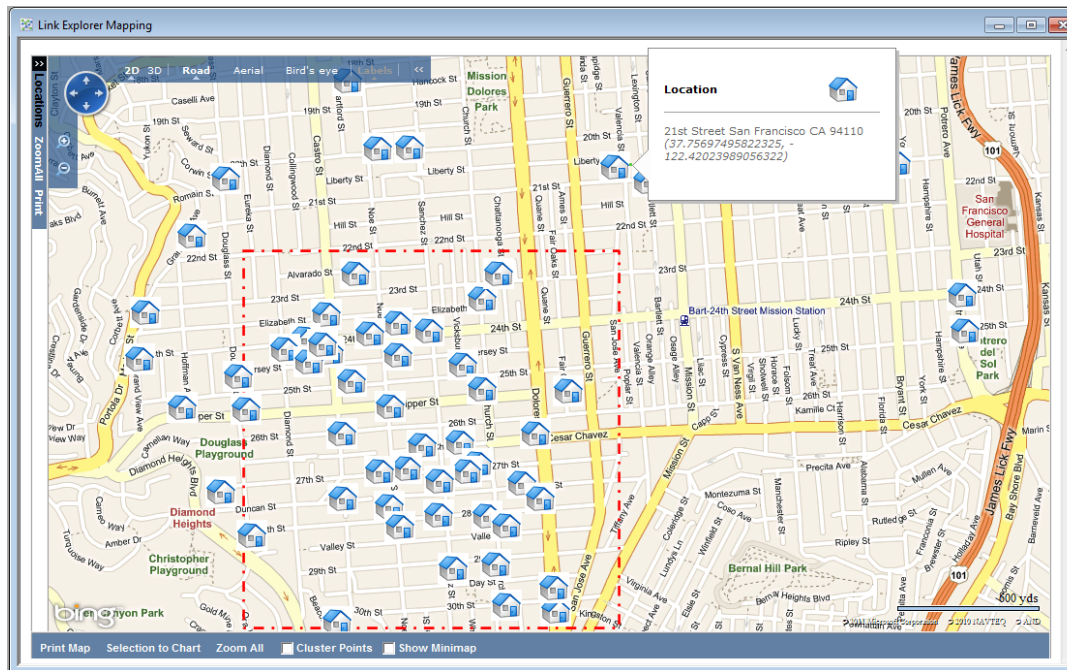
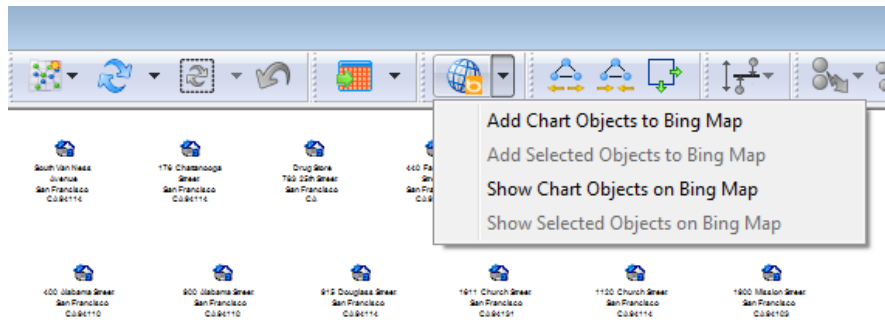
Link Explorer 6.0 comes with an Excel plugin which can be used with either Excel 2003 or 2007. This plugin provides a range of functions to select and move data back to Link Explorer or over to Bing Mapping. Link Explorer's export facility also provides the option to use Excel templates, allowing customer Excel analytics to be embedded in your Xanalis analytical environment.

Why is it important?

Close integration with Excel brings another dimension to the analysis you can perform on your data. When Link Explorer is connected to a 3rd party database, it can be used to query and export data directly to Excel / Mapping.



Microsoft Bing Mapping



What's this?

Click on the Bing Mapping button displayed on each chart toolbar to send objects containing address or geocode information to be pin-plotted on a map.

How does it work?

You are investigating a set of incidents that are occurring across the city. To see whether there are any patterns in the location of these incidents, send the data from your link chart to a Bing Map. If you do find a cluster of activity on the map, select it by drawing a rectangle around it and dispatch back to Link Explorer for further analysis.

Why is it important?

Mapping provides just another facet of analysis available through Link Explorer. Gain new insights by exploring the different properties of you data – associational, temporal, spatial, grid, etc.

In-Depth Analytics

Analytical Workflow



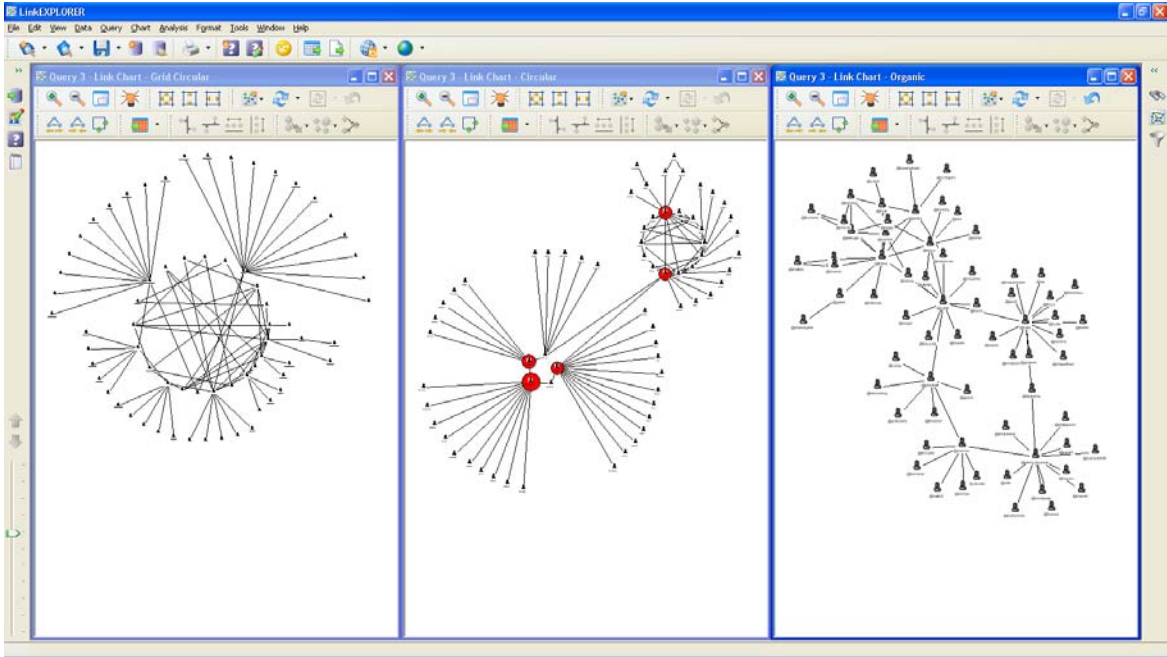
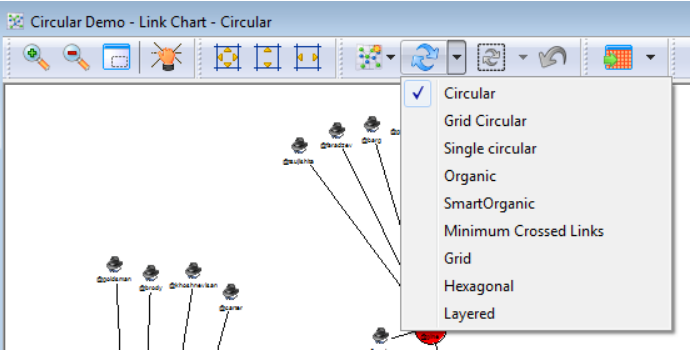
Link Explorer has always supported an analytical workflow whereby users can create queries, test hypotheses, etc. Such a process involves steps such as creating charts, displaying the data in different formats (associational, reports, temporal), selecting things of interest, moving these subsets of data into new charts, etc. A key goal in designing Link Explorer 6.0 was to reduce the number of mouse clicks that users had to perform to move through these steps. This has been achieved via a number of innovations, primarily through creating an Analysis Panel, which brings together in the one place a set of key tools and features:

- Multiple forms of analysis can be progressively applied to a chart from any of the three tabs using the Extend Selection function
- Selections can be modified or expanded using the Selection Toolbar found in the middle of each panel
- Selections can be captured using the “Capture Constraint” button, then reused either in the Filter panel, query creation or Explore
- The “Create new chart from Selected” button allows users to quickly refine their analysis through a series of charts, identifying and extracting the data of interest at each step.

Used together, these tools give the user maximum control over the display and analysis of their data.



New Link Chart Layouts



What's this?

Four new link chart layouts provide clearer, more concise charts.

How does it work?

When displaying a link chart, from the Redo Layout button, select from the different layout options. Link Explorer 6.0 provides 4 new layouts: Organic, Smart Organic, Layered and the new default Circular layout.

Why is it important?

Chart layout algorithms determine where objects are plotted on a chart in relation to each other. The diagram on the left shows the same data plotted in 3 different layouts, each providing their own insights on how objects are clustered together.

Chart Search



Search

Stevens

Labels Values Beginning Containing Case Sensitive Whole Words

Search Class

Person

Results

- Joseph Stevens
- William Stevens
- Raquel Stevens

Extend Selection

Joseph Stevens

Hold

Attribute	Value
Person ID	000003
Label	J Stevens
Category	relative : brother
Last Name	Stevens
First Names	Joseph
Sex	M
Date of Birth	2152915200
Nationality	British

What's this?

An expanded search facility which allows you to quickly identify and select items on your active chart, based on the values of any of their attributes.

How does it work?

Accessible via the Analysis Panel, type in a search string, set the parameters for the search (including whether to restrict it to data displayed only on the chart, or to extend this to all data held in the database about the chart objects) and click Search. Hits will be displayed in the results list – from there you can review the data associated with a hit, or select it on the chart.

Why is it important?

When working with large result sets, having a comprehensive search facility that can be applied either across the chart or limited to specific classes, will help you identify and view items of interest quickly.



Network Analysis

Select by degree

Search Class

Person

From current selection

Count selected links

Any Direction

At Least 5 Select

Extend Selection

Hide by degree

Enable slider

0 ?

Link Count Colors

Show

Edit...

@levenshtein

Hold

Attribute	Value
Person ID	4262
Label	@levenshtein
Place of Birth	Koul

What's this?

Network analysis covers a range of techniques that determine how objects are related to each other. These techniques help answer questions such as “who is the most active or influential person in my network?”

How does it work?

Open the Network Analysis tab on the Chart Analysis panel. There you will find a range of network analysis tools that can be used to select items based on the number of links they have, reduce the clutter in large charts by progressively removing leaf nodes (those with only a single link), or highlight bundled links that indicate a high number of connections between two objects

Why is it important?

Network Analysis is a key technique in identifying entities of interest in large networks. More importantly, Link Explorer allows you to focus in on these entities, extract them, and then reveal more information about them using the other tools available.

Filtering



Filter by Class
Person

Filter

Filter by Constraints
Females
Males
Sex Unknown

Filter Any selected constraint All selected constraints New

Results: 5 objects found.

- Ian Davidson
- Brian Inkson
- David Jones
- Nigel Robertson
- William Stevens

Extend Selection

Attribute	Value
Event ID	000004
Label	drugs sale 1
Start_Date_and_Time	3304965600
End_Date_and_Time	3304968300
Duration	2700
Day	5
Witness	unknown person
Details	drugs sale 1

What's this?

Apply filters to a chart to highlight objects that possess certain qualities, or that you have identified as important in an earlier stage of your analysis.

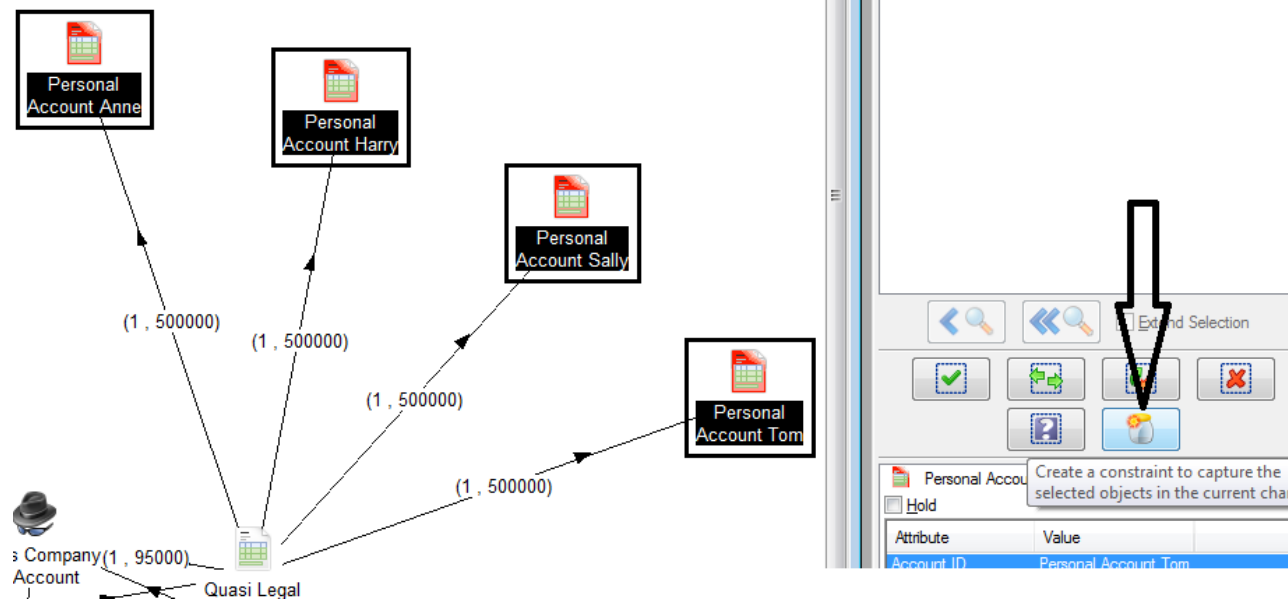
How does it work?

From the Filtering tab in the Chart Analysis panel, apply filters to particular Object or Link classes to select these items on your chart. Filters can be restricted to selections on the chart or the entire data set.

Why is it important?

You can think of a filter as an additional question you apply to a chart to determine whether any particular objects meet the requirements or hypothesis you have in mind.

Constraint Capture



New Constraint

Name:

OK

Cancel

What's this?

Instantly capture a set of objects so they can be easily identified on future charts, or used to refine future queries and Explores.

How does it work?

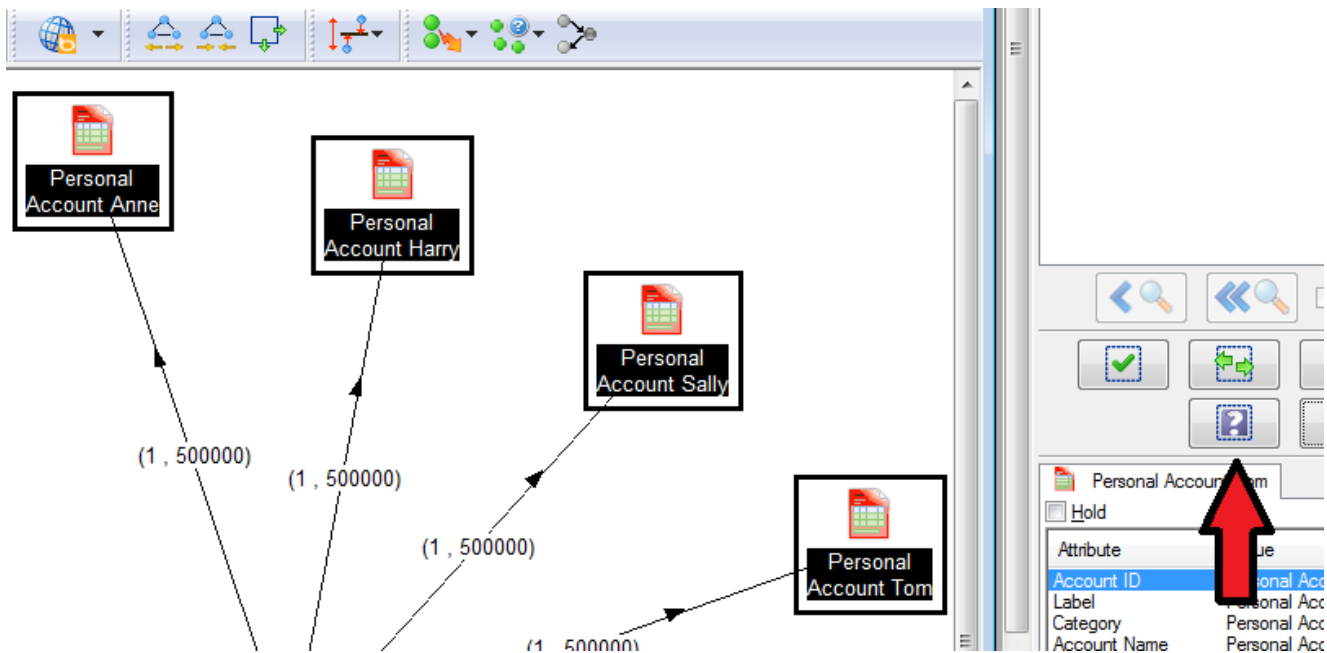
Select objects of interest (e.g. potential suspects) on the chart and click on the Capture Constraint button found on each of the tabs in the Analysis Panel. You can then provide a name for this constraint so that it can be reused in future analytical operations.

Why is it important?

Analysis can involve refining your search to locate objects of interest. You will often need to find or refer to these objects again on a new chart, or restrict the addition of new data to a chart (via Query, Explore, etc) to only these objects.



New Chart “From Selected Objects”



What's this?

Instantly create a new chart from a selection of objects in your current working chart.

How does it work?

Having selected items in a chart, click on the **New Query from Selected** button which is available in each of the Analysis Panel tabs. You will be prompted to provide a query name and chart type.

Why is it important?

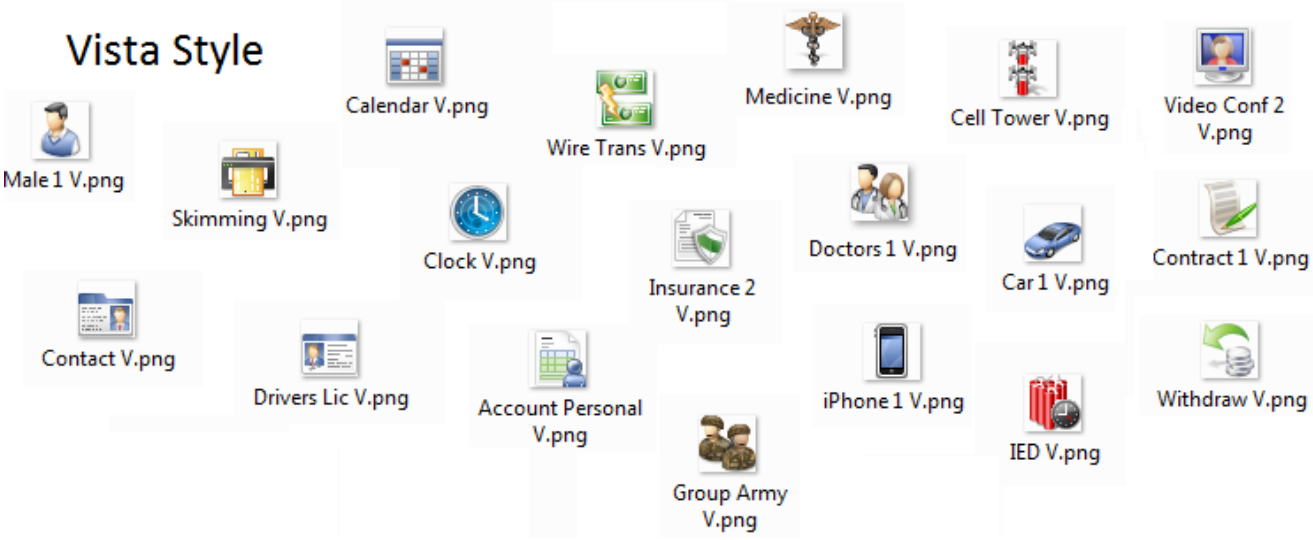
Link Explorer supports a workflow where you can recursively refine or expand your search. Selecting items in an existing chart and pushing them into a new chart for further analysis (while leaving the first chart in its original state) is a core component of this workflow.

New Presentation Features



New Icon Sets

Vista Style



XP Style



What's this?

For a chart to be effective, it must accurately convey as much information as possible. One way of doing this is to use icons closely matched to the objects they represent. Link Explorer 6.0 includes 100's of new icons including expanded medical, financial, transport, person, and event sets.

How does it work?

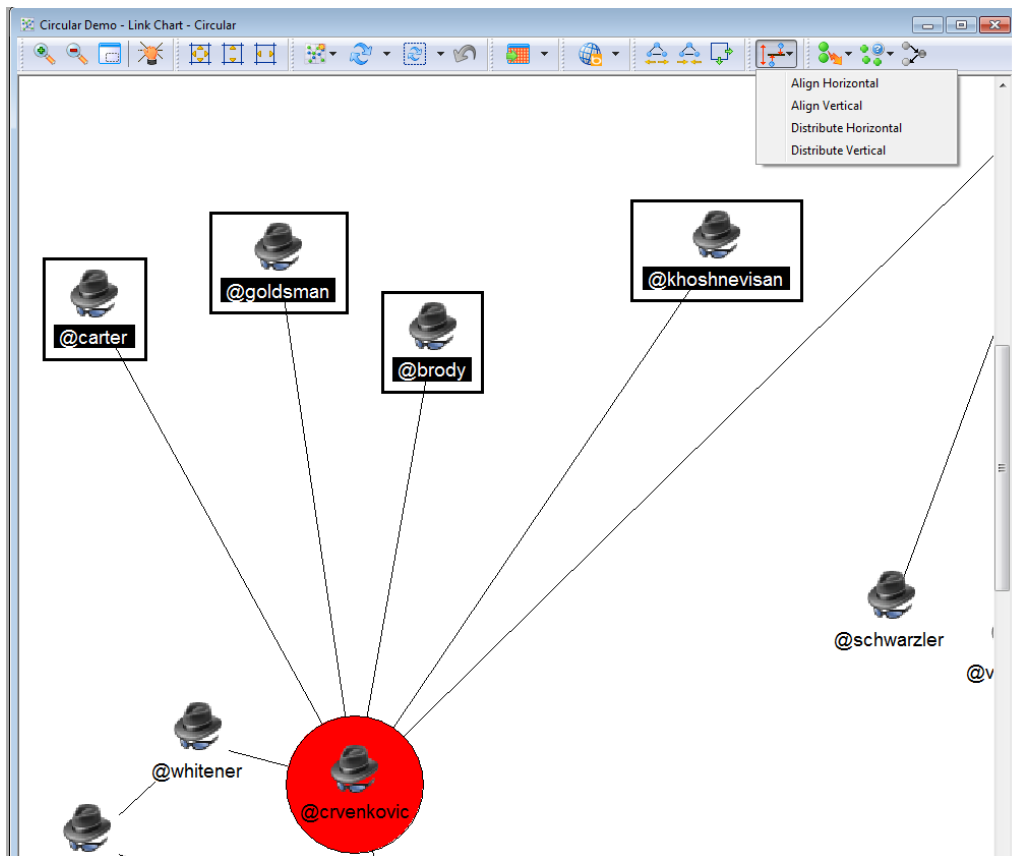
Each Link Explorer Workfile contains a set of default icons representing object classes. You can change these on an individual or group basis, create rules to automatically display unique icons based on object properties, or customise the default icons.

Why is it important?

Icons perform an important analytical function in that they can alert you to the occurrence of particular entities in your chart, especially when tied to certain properties of an object (e.g. "has criminal history"). Establishing a standard icon set within a business function ensures a consistent interpretation of charts is achieved



Align and Distribute Chart Objects



What's this?

Arrange icons on your charts quickly and neatly, just with a couple of mouse clicks.

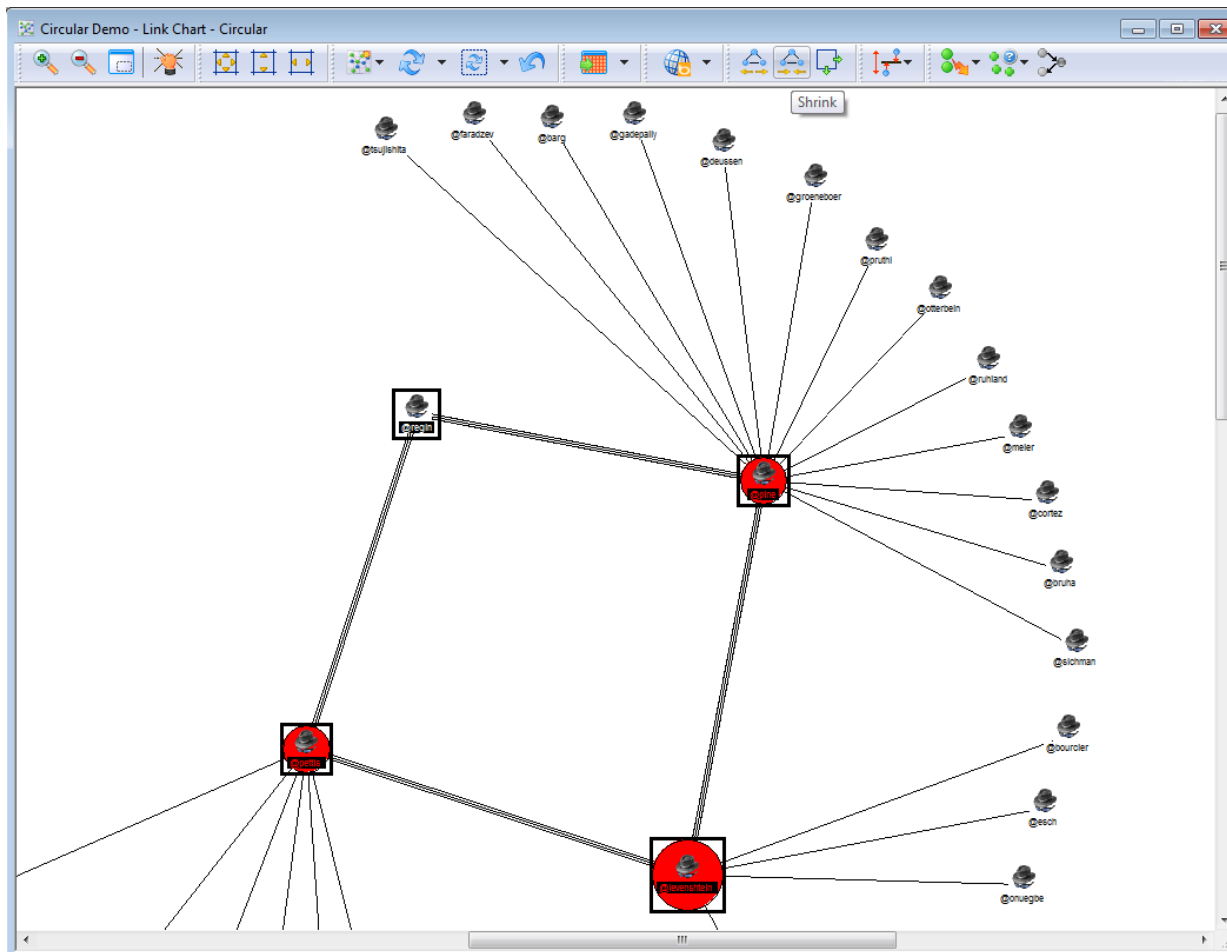
How does it work?

Select two or more entities on your chart and click on the **Align/Distribute** button found on the chart toolbar. Then select the option you want to apply. As with any operation in Link Explorer, if it doesn't provide the layout you require, just click **Undo** on the main toolbar.

Why is it important?

When presenting your charts at briefings or in court, they need to be well organised, with icons neatly arranged. Lining objects up and distributing them evenly is an important part of chart presentation.

Expand / Shrink Selected Objects



What's this?

The ability to increase or decrease the space between objects can now be restricted to a subset of objects on a chart.

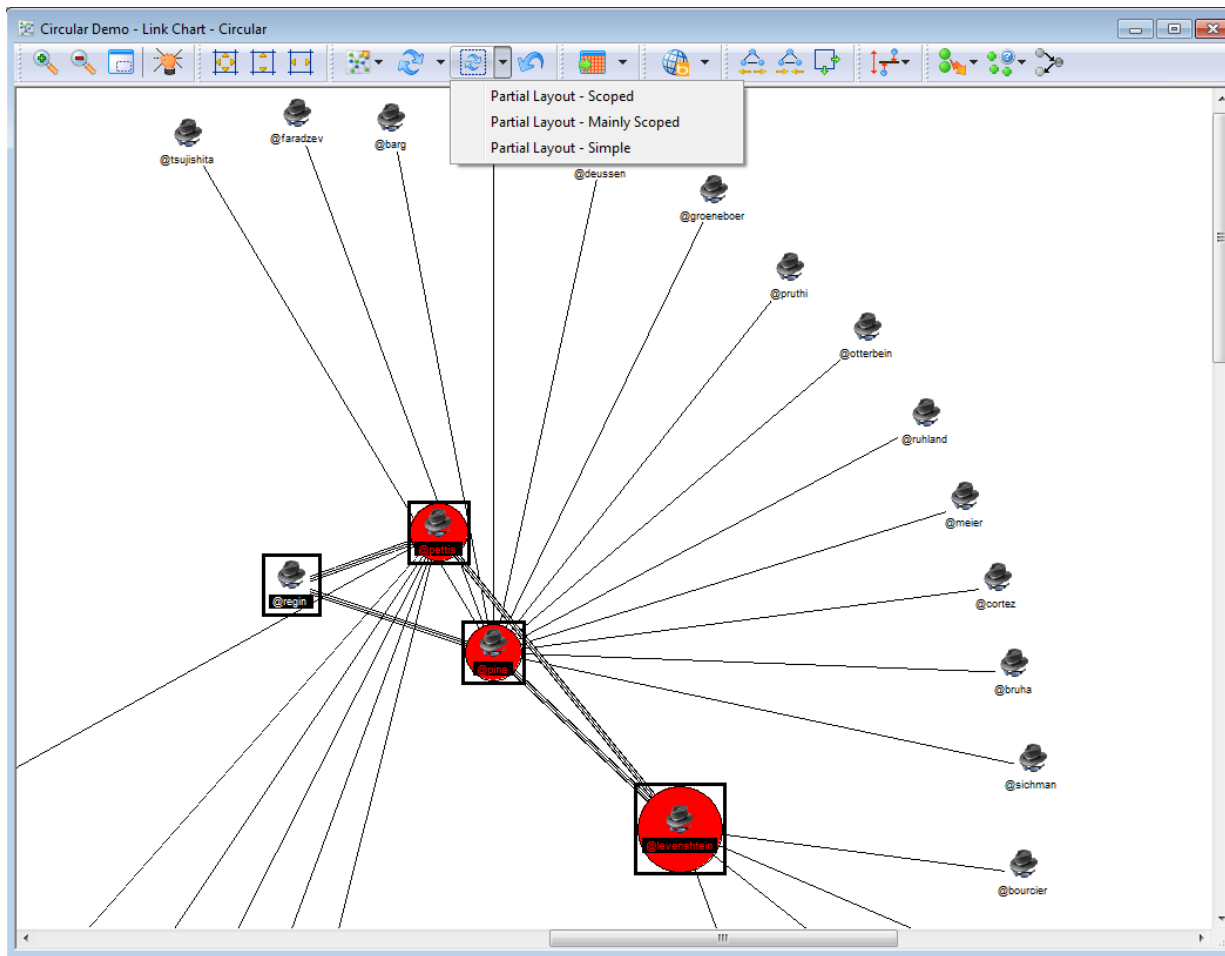
How does it work?

If you are happy with the layout of a majority of your chart, but find a certain section bunched up too much (or alternatively, too spread out), select those objects then click on the Expand (or Shrink) button on the chart toolbar.

Why is it important?

Getting the right chart layout makes it much easier to analyse or communicate the detail of a chart. The partial Expand / Shrink function can be of great assistance in fine tuning the appearance of a link chart.

Partial Layouts



What's this?

If you are unhappy with the layout of part of your chart, you can now get Link Explorer to apply a new layout, restricted to just that section of the chart.

How does it work?

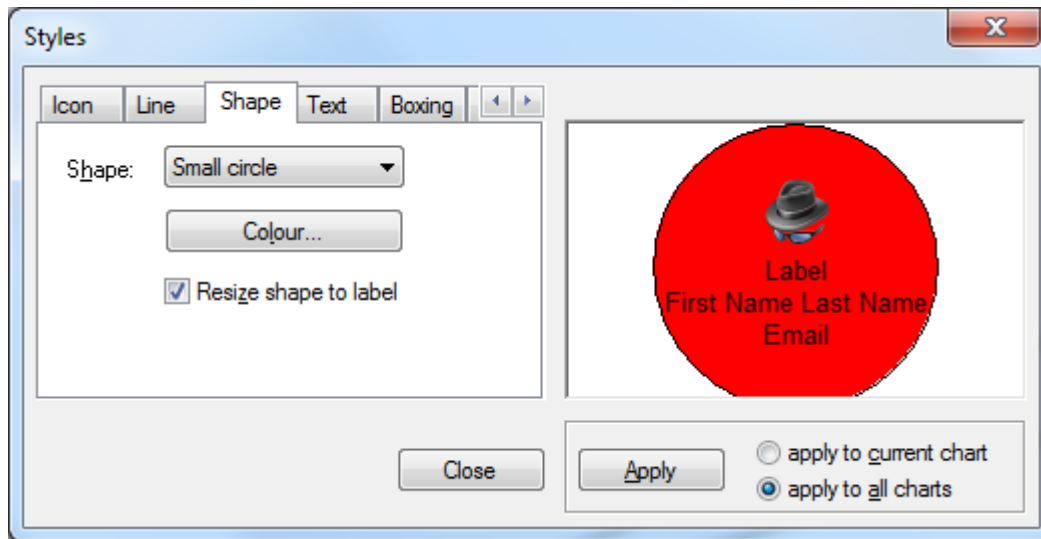
Select the objects you wish the new layout to be applied to and select from the options available via the Partial Layout button on the chart toolbar. The selected objects will be placed into new positions in relationship with each other – all other objects will remain in their existing positions

Why is it important?

Following an Explore, or during manual chart manipulation, sets of objects may be displayed in "messy" positions. This feature offers a quick-fix in producing positioning that may be easier to view.



Style Definitions



What's this?

Individual changes to styles can be automatically propagated to all charts

How does it work?

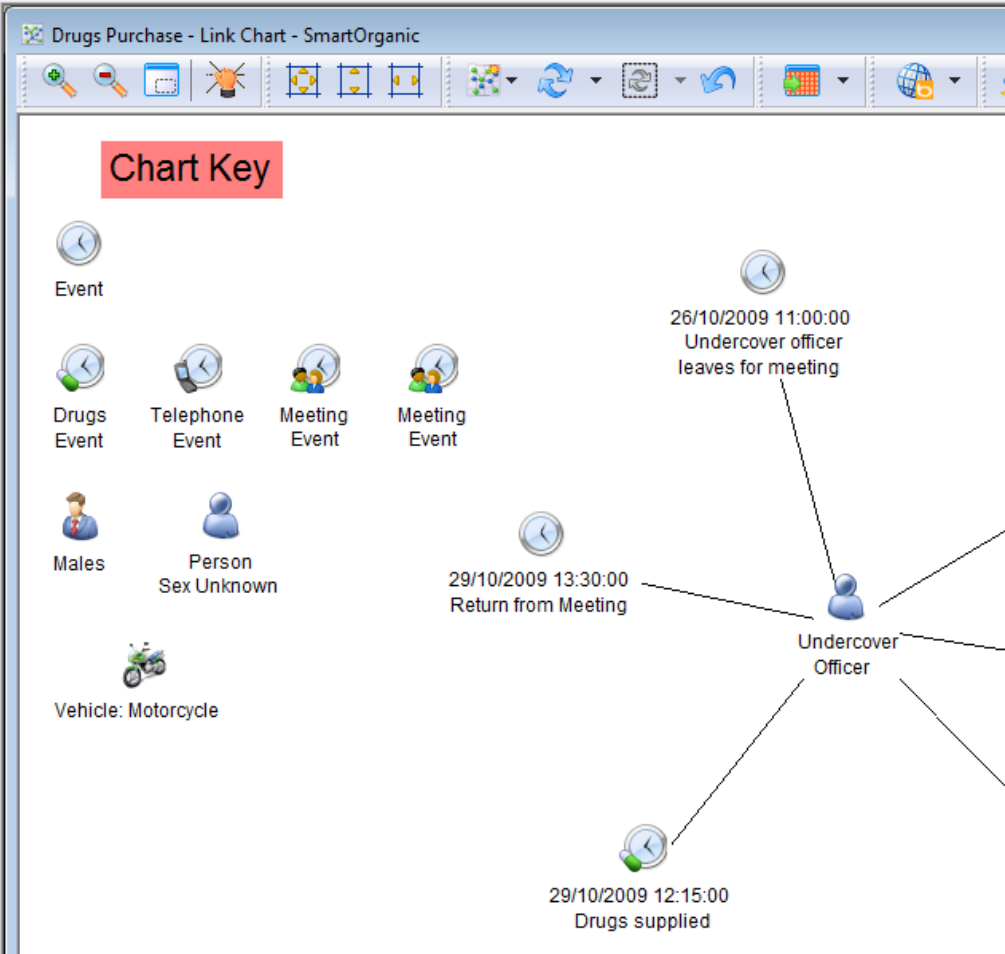
Right click on an object and define your new style – click on the option to **apply to all charts** to ensure your changes appear throughout your Workfile.

Why is it important?

It's important that you are aware when objects tagged as "of interest" earlier in your analysis reappear on new charts. Using styles is just one way that Link Explorer supports this important function.



Auto-Generated Keys



What's this?

Create a chart key to clearly convey to your audience the meaning behind each icon type.

How does it work?

From the Chart menu, select the option **Add Chart Key**. This will create a title for the chart key along with entries for each icon used on your chart. Edit or delete each item as required.

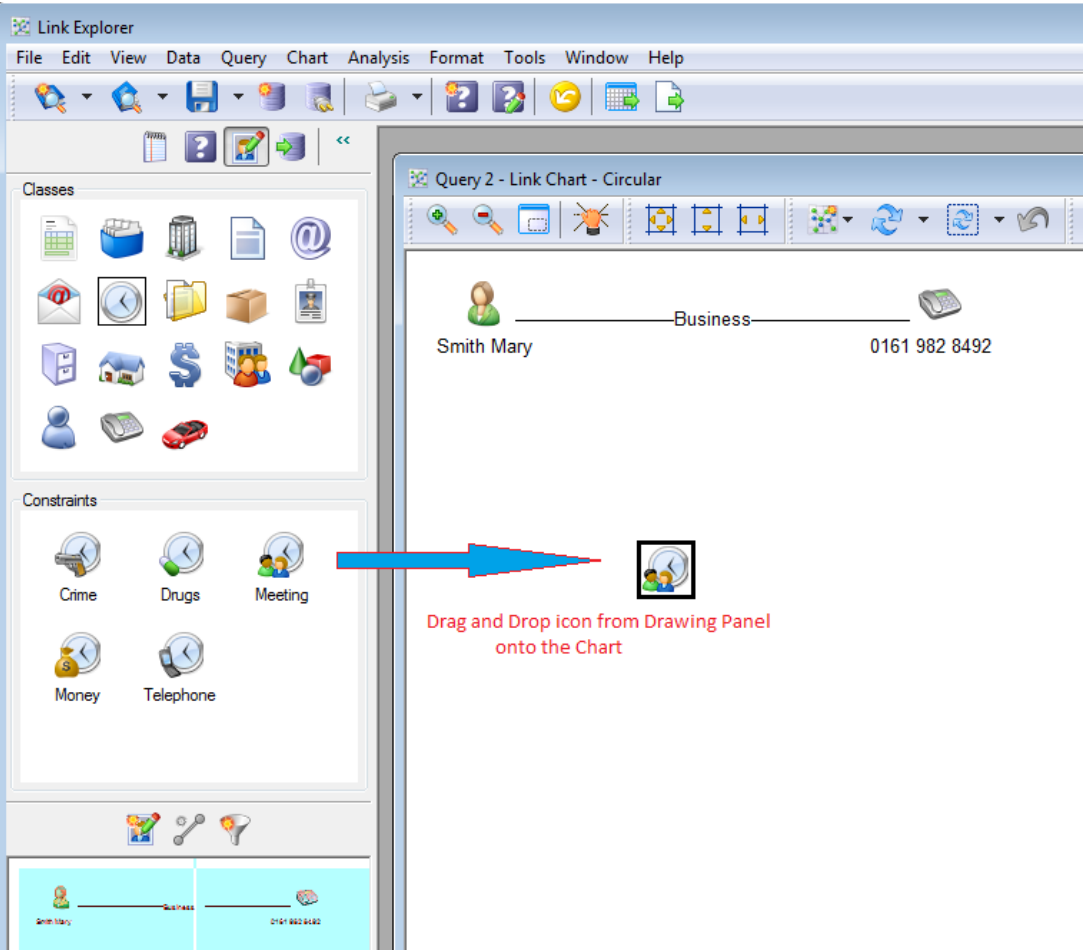
Why is it important?

Your audience may not understand the meaning of the objects/icons on your chart. One way to get your message across is to use a key made up of icon/text pairs.

What Else is New in LE6.0?



Chart Drawing Panel



What's this?

Quickly add new objects and links to your charts (and database).

How does it work?

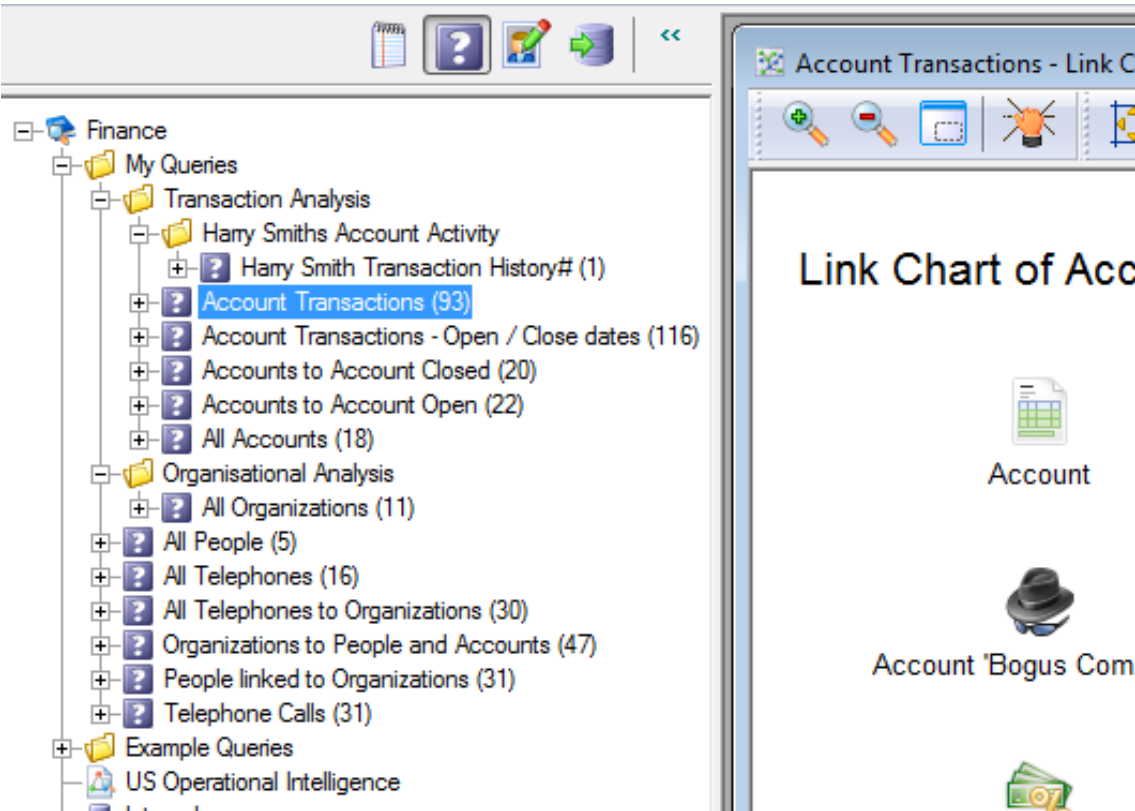
Open the Drawing Panel to reveal the set of object classes available in your Workfile. Select an icon and drag onto a chart – an Object Card will open automatically in which you can type the objects properties. A new feature in 6.0 is the Constraints option which enables the creation of sub-categories of objects, e.g. Person.Male, Person.Female. These objects not only have their own icon, but also have some pre-defined values in their Object Card. You can create and manage these constraints/style pairs in the Constraint Manager and Default Style Manager

Why is it important?

The Drawing Panel allows you to quickly assemble charts on the fly or update existing charts when new information is received. It is also a handy data entry tool for small data sets.



Query Management



What's this?

Create a Folder hierarchy to store and manage your Queries and Charts. Select multiple queries so that you can move or delete them in a single operation.

How does it work?

Right click on any folder in My Queries or Example Queries and select the option **New Folder**. To move one or more query to a new folder, select them in the tree, right click and use the option **Move Query**.

Why is it important?

Rapid query/chart creation can result in a long list of queries in your browser. By creating folders to store your queries, you organise your Link Explorer work making it easier for you and others to find relevant charts at a later time.



Integration Support

Link Explorer 6.0 is not just a desktop application but a suite of technologies that provide Systems Integrators with the tools they require to build Intelligence solutions specific to the requirements of their clients.

- **Link Designer** provides advanced data modelling capabilities to build mappings from database table structures to the *Object/Link* model at the heart of Link Explorers flexible schema model.
- The **Xanalys Flexible Data Importer 6.0 (FDI)** provides data integration capabilities for you intelligence solution, with ETL capabilities for the collection and combining of data from a variety of sources including text, csv, Excel, XML, and ODBC compliant databases.
- The Link Explorer **COM API** enables other systems to interoperate with Link Explorer, allowing systems integrators to build an integrated analytical workflow across several applications.

For more details on how Link Explorer can fulfil a key component of your Intelligence infrastructure, please contact us at info@xanalys.com

www.xanalys.com