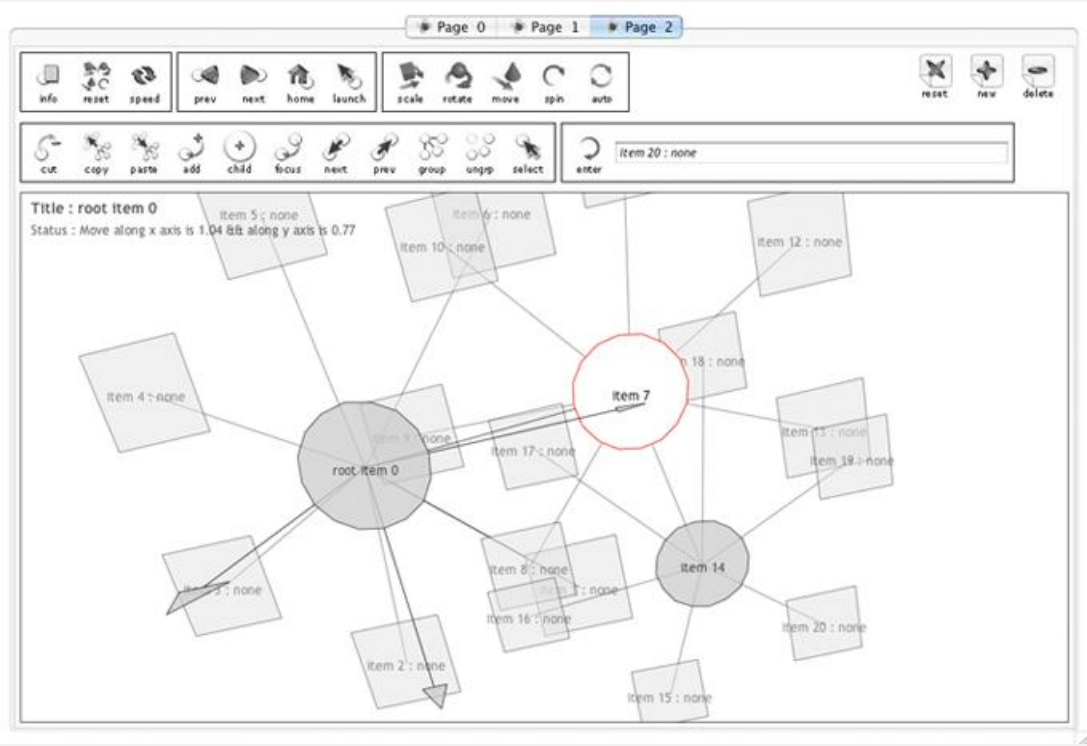


Cluster (2010)

The Visual Data-Warehousing,  
Mining and Analysis System

Cluster is a real-time, visually rich and intuitive software solution.



Cluster has been developed to:

- Utilise visual intelligence to speed up the exploration of data sets,
- Present a rich visual representation of data,
- Power data-driven applications,
- Enable smarter decision making and,
- Provide intuitive real-time touchscreen interaction.

## What is its key advantage?

- It combines Data-Warehousing, Data-Mining and Data-Analysis in an interactive, seamless and intuitive manner, such that a user can visually:
  - Search,
  - Explore,
  - Discover,
  - Modify, and
  - Evaluate complex relationships within data.

## Where can it be used?

Wherever:

- A better understanding of latent relationships and connections within data is required.
- A rich visual representation of data is useful to search for or retrieve information.
- Choice or decision making needs to be smarter, and more quickly and accurately focused.

The London Underground is an example of interconnected complex relationships that could be easily “clustered”.



Cluster has 3 integrated interactive key technical characteristics:

1. **Data-Warehousing:** Extract multi-table data in a single pass and store it as transactional data specifically structured for visual query and analysis.
2. **Data-Mining:** Sort through such warehoused data picking out relevant information and create, and display, new relationships.
3. **Data-Analysis:** Provide better understanding and decision making by transforming, extracting and then displaying data-mined information using a real-time, time-based, visually rich and intuitive user interface.

## Why Data-Warehousing?

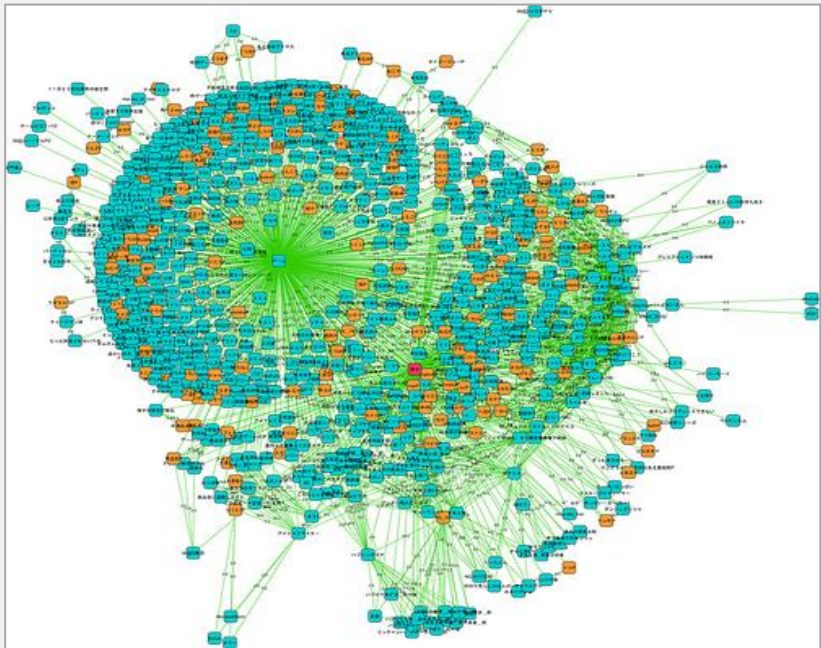
- So that a user can perform complex queries and analysis, such as data mining, on information without slowing down operational systems.
- To achieve this, Cluster can extract multi-table data in a single pass and store it as transactional data specifically structured for visual query and analysis

## Why Data-Mining?

To create and explore relationships within legacy information?

- The Cluster database enables a new and powerful visual experience of data, one that enable users to search for and discover fresh insights, and hitherto unappreciated information, in existing data-sets.
- The resulting graphical Cluster experience re-invents the visual data-mining paradigm.

Cluster can be used to visualise complex, multi-dimensional inter-associated, relationships and structures.



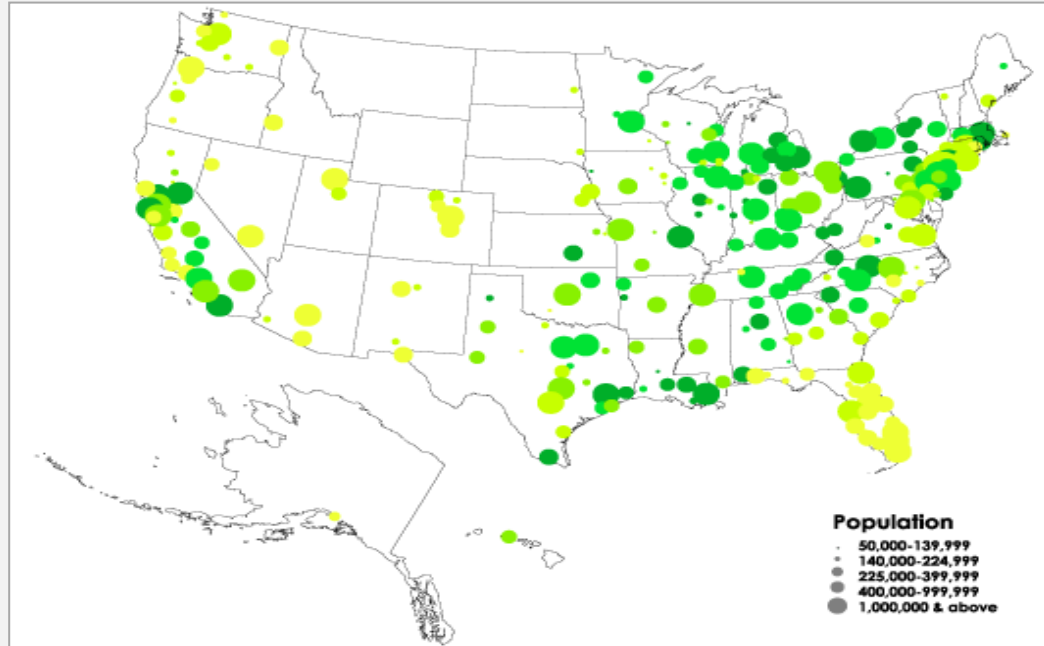
## What other advantages are there?

- Each atomic unit of information or node can also be an “intelligent” object, possessing one or more Agents (a software object that can manipulate or act on its behalf).
- It can simultaneously mimic Relational, Associative, Network and Hierarchical data models.
- Provide simultaneously for both multiple parents AND multiple child relationships.
- It can also be used to design Fuzzy Logic and Neural networks.

## Why Data-Analysis?

- It can seamlessly combine Data-Warehousing, Data-Mining and Data-Analysis such that a non-technical person or an expert can discover and explore, hidden or unforeseen relationships within information.

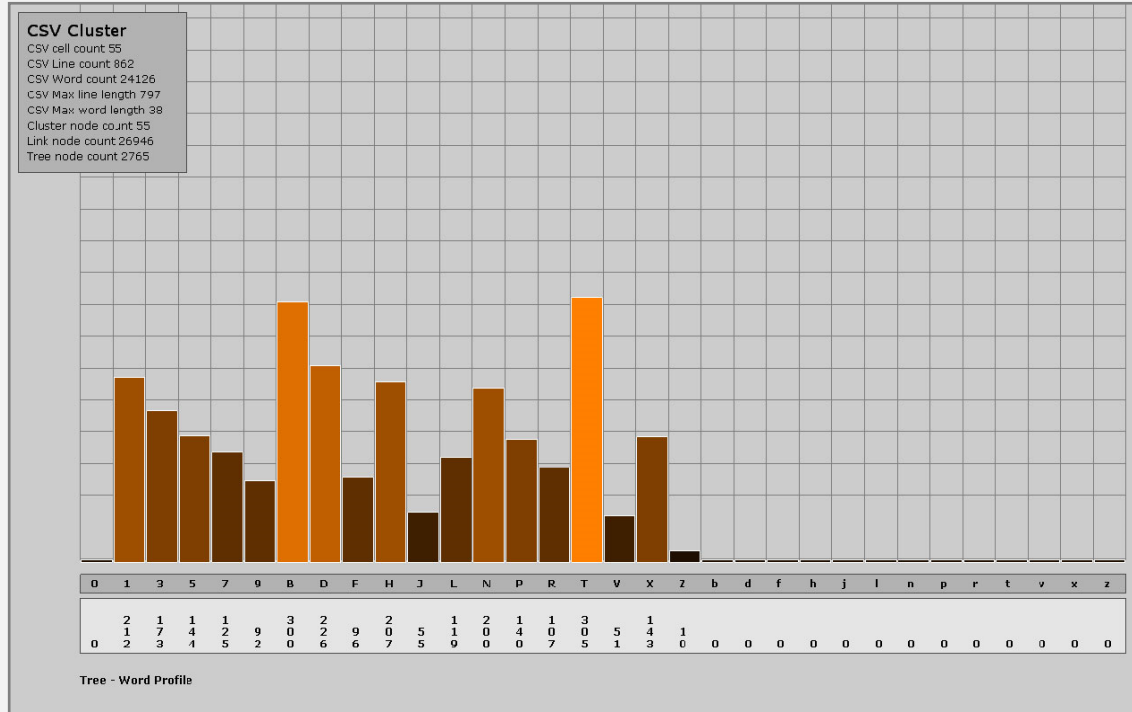
An example of Cluster based visual data-analysis showing ethnic USA population distribution.



## The Cluster toolkit provides:

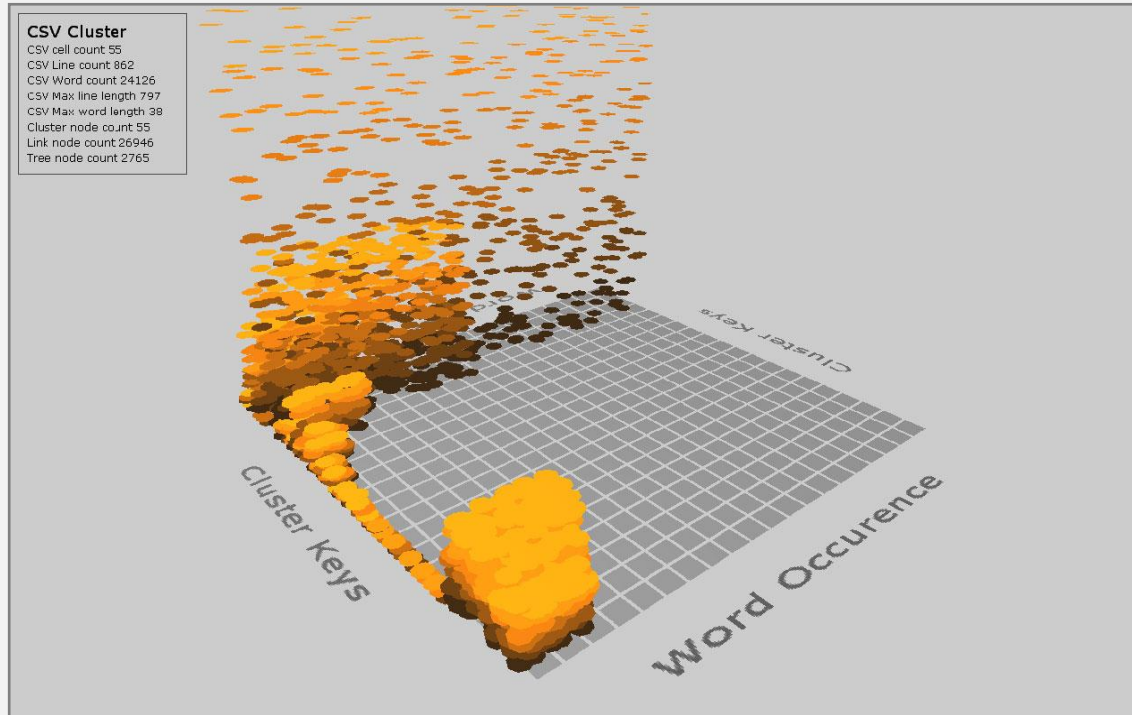
- Various software tools that allow developers to control the Cluster process.
- These tools include:
  - Alphanumeric distribution profiling,
  - Key (entity, attribute and value) distribution profiling and
  - Multi-tier filtering, and...

# Hierarchical Cluster profiling,....





... and Cluster keys & word occurrence profiling.



Cluster has been used to power web-based DHTML applications for many Clients, including tiscali and the box office 365....

The screenshot shows the tiscali.film & tv website. At the top, there is a navigation bar with links for HOME, MEMBERS, COMMUNICATIONS, NEWS & INFO, ENTERTAINMENT, and HELP. Below this is a search bar with a Google logo and a search button. A promotional banner for "WIN Laser Eye Surgery" is visible. The main content area features a "box office 365" section with a sidebar menu for "New Releases", "Comedy", and "Music". A featured item is "Pavarotti / The Event - from the New Releases Genre" with a price of £ 7.99. The footer contains copyright information for British Internet Broadcasting Company plc.

The screenshot shows the box office 365 website. The top banner features a large image of Robbie Williams and the text "Robbie Williams Sin Sin Sin Video Download Out Now!". Below the banner is a navigation bar with links for Home, Listings, About Us, FAQ, Register Now, News, and Contact Us. The main content area is titled "Genre" and shows search results for "PHOENIX Long Distance Call" and "PAIN Bye/Die". A sidebar menu lists "Genre" categories: Catalogue, Music, Comedy, Film, and Search Results. Below the sidebar is a "Search by text" field and an "Or search by letter" section with a grid of letters A-Z. The search results are displayed in a grid format, each with a cover image and the title of the item.

It has also been used to power web-based Java applications for clients such as the BBC, BT, and....

The image displays a screenshot of a web application interface. On the left, a hierarchical diagram titled "STOCK VISIONS SELECT" is shown. The central node is "STOCK VISIONS SELECT", which branches into "Key Action", "Shot Time", "Location", "Key Word", "Key Time", "Movie ID", "Shot Type", and "VOLUME ONE". A legend in the top right corner of this diagram area includes icons for Rotate, Zoom, Move, and Spin.

On the right, a screenshot of the "BT Wholesale" website is shown. The page features a navigation menu with sections like "Quick Links", "Online Directory", "REACHservices", and "Contact Us". A central diagram titled "BIBC PROGRAMMES" is displayed, with nodes for "Location", "Name", "Archive", "Keyword", "Channel", and "1st November 2001". A "Controls" panel on the right side of this diagram includes options for "Spin", "Hmmm", "Speed 1.00", and "Reset".

The bottom of the screenshot shows the "BBC Worldwide" logo and a search bar. The footer of the website includes the text "bt terms & conditions", "your time is 10:23 am & bt time is 10:23 am", "+(44) 000 000 0000", and "info@btwholesale.co.uk".

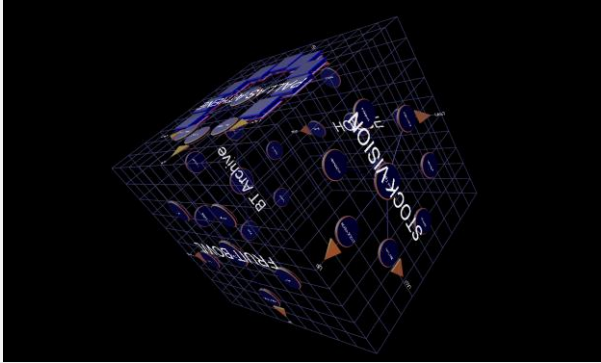
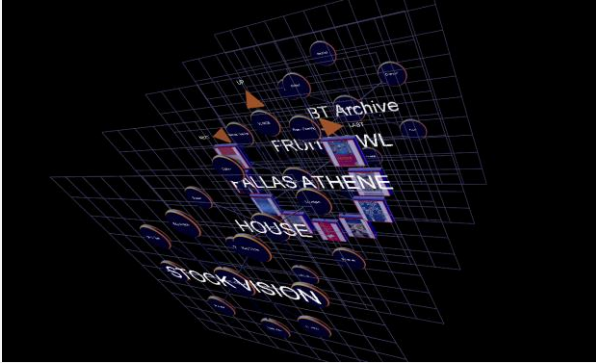
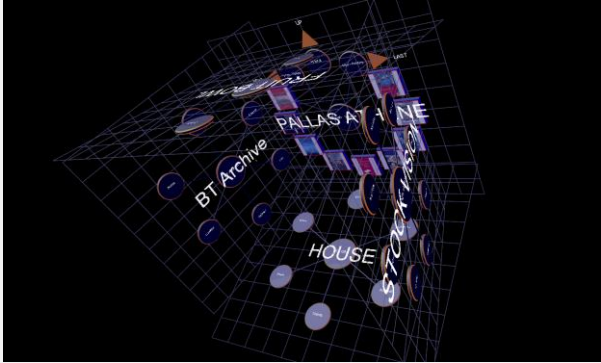
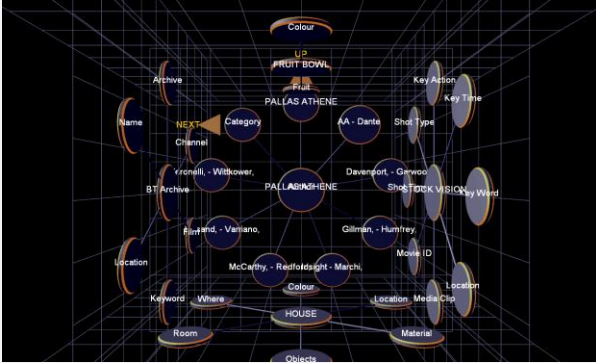
... the Almanack of World Football, & the West Bromwich Football Archive.

The image displays two screenshots of the 'ALMANACK OF WORLD FOOTBALL' website. The left screenshot shows a world map with a red circular highlight over England. Below the map, a text box reads: "Now click on your chosen country in the centre of the locator - to confirm." The right screenshot shows a detailed match page for "West-Germany W 4 - 2" on "30/7/1966 WCT" at "Wembley, London, 96324". The page features a central match diagram with nodes for "1970", "West-Germany 23/2/1966 W 1-0 London", "COMpetition : 1966 WCT", "YEAR : 1966", "VENUE", "SCORER", "PLAYER", and "West-Germany 18/1/1966 L 0-1 Hannover". A sidebar on the right includes sections for "MOVIE", "REPORT", and "GALLERY", and a match diagram with player names: BARMS, COHEN, WILSON, STILES, CHARLTON, MOORE, HURST, HERT, BALL, CHARLTON, PETERS. The website footer includes "Copyright & Legal information" and "Powered by alIaze Technology Ltd".

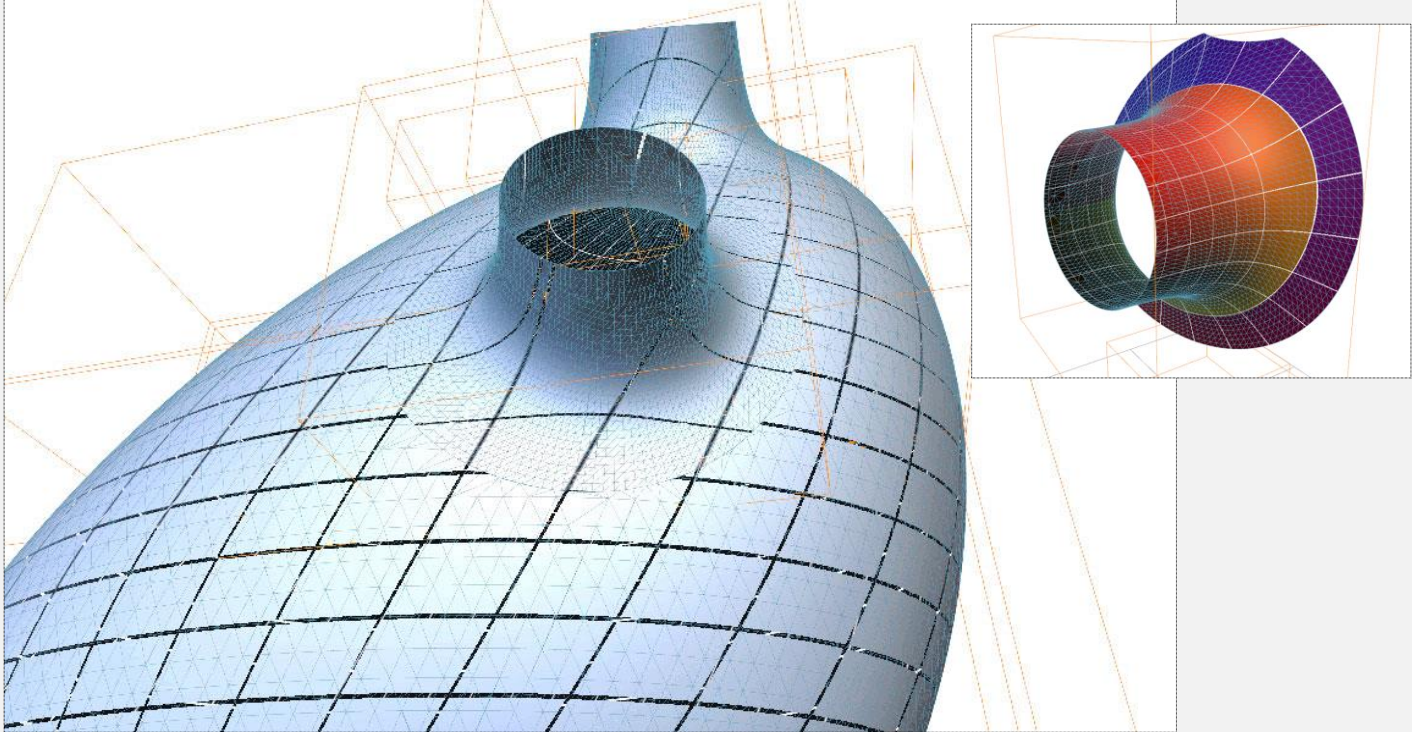
As a PC 3D visual data search explorer engine for Rolls Royce.



As a PC 3D visual data search explorer engine for Pallas Athene.



As a PC 3D spatial analysis architectural engine for Zaha Hadid.



It has been used to model data driven interactive set-top clients....



It as been used to model 3D effects...



# Cluster

The Visual Data-Warehousing,  
Mining and Analysis System

End