Use of Data Analytics for Business Competition and Survival

REASONS FOR BI | Upgrading your toolset

Prepared by Dr. Maurice Dawson

Agenda

Fulbright
Speaker Background
University of Missouri System
University of Missouri-St. Louis
Business Intelligence
Data Analytics
Tool Exploration
Additional Resources

Fulbright

The Fulbright Specialist Program (FSP) promotes linkages between U.S. scholars and professionals and their counterparts at host institutions overseas. Grant Duration: Two- to six-weeks. Rolling Roster Application Deadline. - See more at: http://www.cies.org/program/fulbright-specialist-program#sthash.I7atqRzB.dpuf

The program awards grants to U.S. faculty and professionals approved to join the Specialist Roster in select disciplines to engage in short-term collaborative projects at eligible institutions in over 140 countries worldwide. Shorter grant lengths give Specialists greater flexibility to pursue projects that work best with their current academic or professional commitments. International travel costs and a per day grant payment are funded by the U.S. Department of State Bureau of Educational and Cultural Affairs. Participating host institutions cover grantee in-country costs - See more at: http://www.cies.org/program/fulbright-specialist-program#sthash.I7atqRzB.dpuf

Speaker Background

Degrees Held:

- Doctor of Computer Science and Enterprise Information Systems, Colorado Technical University
- M.S., Management Information Systems Security, Colorado Technical University
- B.S., Applied Technology and Information Systems, Athens State University

Professional Certifications

- Certified Secure Software Lifecycle Professional (CSSLP), International Information Systems Security Certification Consortium (ISC)2, 08 - Present
- Certified Chief Information Security Officer (C|CISO), EC-Council, 14 - Present
- Certification In the Governance of Enterprise IT (CGEIT), ISACA, 08 - Present

Interests Teaching/Research:

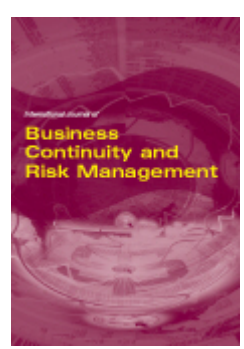
- Cyber Security
- Software Assurance
- Open Source Software
- Technology Management

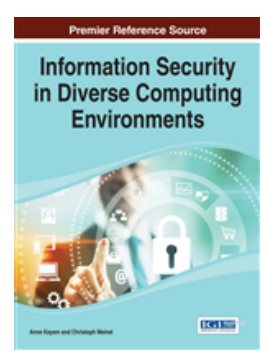
Edited Books

- Dawson, M., & Marwan, O. (2015) Handbook of Research on New Threats and Countermeasures in Digital Crime and Cyber Terrorism. (Advances in Information Security, Privacy and Ethics Book Series) IGI Publishing. – in process

Book Chapters

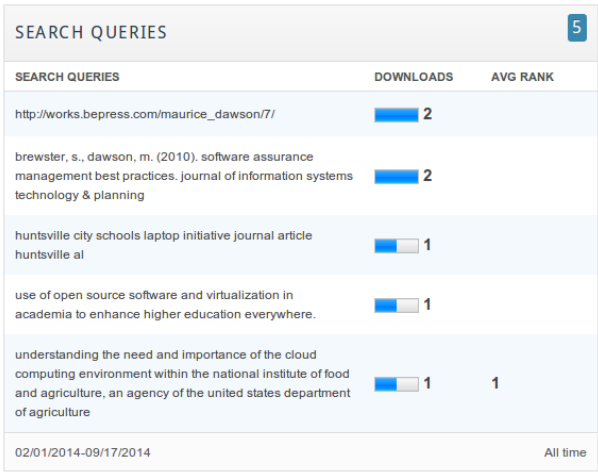
- Dawson, M. (2015) Software Assurance Maturity Model: The Need for Secure Design Process Management. Managing Software Process Evolution, How to handle process change?. – proposal accepted, in process
- Dawson, M., & Leonard, B. (2015) Software and Supply Chain: Ensuring the Delivery of Secure Systems. Encyclopedia of Global Supply Chain Management. – proposal accepted, in process
- Dawson, M., Wright, J., & Truesdale, J. (2015) Cyber Security: Designing Solutions for Mobile Security & Health Information Technology. Encyclopedia of E-Health and Telemedicine. – proposal accepted, in process
- Dawson, M., Wright, J., & Omar, M. (2015) Mobile Devices: The Case for Security Hardened Systems. Handbook of Research on New Threats and Countermeasures in Digital Crime and Cyber Terrorism. – accepted for publication and forthcoming.
- Leonard, B. & Dawson, M. (2015) Legal Issues: Security and Privacy with Mobile Devices. Handbook of Research on New Threats and Countermeasures in Digital Crime and Cyber Terrorism. – accepted for publication and forthcoming.
- Dawson, M., Leonard, B., & Rahim, E. (2014) Advances in Technology Project Management: Review of Open Source Software Integration. Technology, Innovation, and Enterprise Transformation. – accepted for publication and forthcoming.
- Dawson, M., Marwan, O., & Abramson, J. (2014) Understanding the Methods Behind Cyber Terrorism. Encyclopedia of Information Science& Technology 3rd Edition. – accepted for publication and forthcoming
- Dawson, M., Al Saeed, I., Wright, J., & Onyegbula, F. (2014) Open Source Software to Enhance the STEM Learning Environment. Encyclopedia of Education and Technology. – accepted for publication and forthcoming
- Dawson, M., Omar, M., Abramson, J., & Bessette, D. (2014). The Future of National and International Security on the Internet. Information Security in Diverse Computing Environments. – accepted for publication and forthcoming
- Dawson, M. E., & Al Saeed, I. (2012). Use of Open Source Software and Virtualization in Academia to Enhance Higher Education Everywhere. Cutting-edge Technologies in Higher Education, 6, 283-313. [**download**]

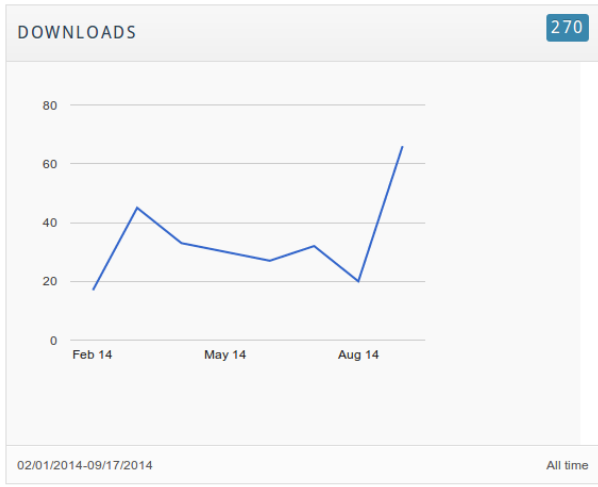




UMSL | Business

Ranked Research





24,226
Total publication views

3,323
Total full-text downloads

269
Total dataset downloads

top 0.1%
by 30-day views

19,055
total views

500
followers

8.05
RG Score

A new way to measure scientific reputation.

The RG Score takes **all** your research and turns it into a source of reputation.

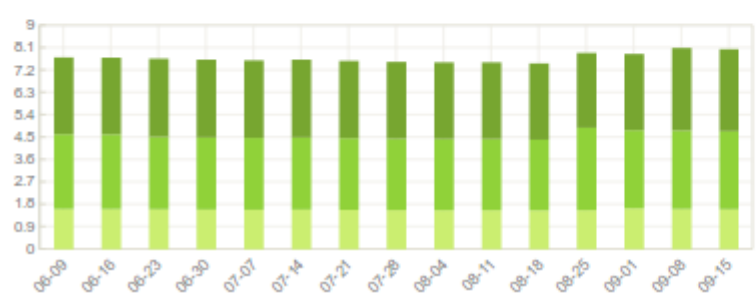
- PUBLICATIONS
- QUESTIONS
- ANSWERS
- FOLLOWERS

PERCENTILE

Your score is higher than 35% of ResearchGate members'.

0% 50% 100%

RG SCORE OVER TIME



How does the RG Score work?

Your RG Score is calculated based on how other researchers interact with your content, how often, and who they are. The higher their score, the more yours will increase.

Learn more

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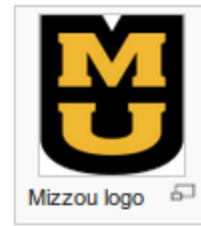
University of Missouri System

University of Missouri System
COLUMBIA || KANSAS CITY | ROLLA | ST. LOUIS

Universities [edit]

All four campuses are comprehensive, separately accredited, land-grant/research-intensive institutions offering undergraduate, graduate, and professional degree programs.[6][7][8][9][10]


Mizzou logo

- University of Missouri (**Mizzou** or **MU**)[11] is the oldest campus, founded in Columbia in 1839. It is the largest university in the state with 34,748 students (2012).[12][13] MU is considered the flagship of the system and offers over 270 degree programs through 20 schools and colleges, and is the only public university in Missouri that is a member of the Association of American Universities. Its Tigers athletic programs compete in the NCAA Division I Southeastern Conference.


Missouri S&T logo

- Missouri University of Science and Technology (**Missouri S&T** or **Rolla**) was founded in 1870 in Rolla. Currently enrolling 7,647 students (2012),[14] it is the smallest campus in the system. 75 degrees and emphases are offered across a comprehensive range of programs in sciences, mathematics, liberal arts, humanities, and business, but most are focused on engineering.[15] Its Miners athletic programs compete in the NCAA Division II Great Lakes Valley Conference (GLVC).


UMKC logo

- University of Missouri–Kansas City (**UMKC**), founded in 1933, is the largest school in the Kansas City area with 16,019 students (2012).[16] It offers over 150 degree programs through 12 schools and colleges, but is best known for its programs in health sciences (including Missouri's only School of Dentistry), entrepreneurship programs, and its Conservatory of Music and Dance.[17][18] Its Kangaroos athletic programs compete in the NCAA Division I Western Athletic Conference.


UMSL logo

- University of Missouri–St. Louis (**UMSL**) was founded in 1963 in suburban St. Louis County. With 16,719 students (2012),[19] [20] it is the largest school in the St. Louis area and third largest in the state. Over 80 degree programs are offered through nine schools and colleges, including Missouri's only College of Optometry.[21] Its Tritons athletic programs compete alongside the Missouri S&T Miners in the GLVC.

University of Missouri System

Established	1839 / 1963
Type	Public
Endowment	US $1.12 billion[1]
President	Timothy M. Wolfe (on Feb. 15, 2012) [2]
Academic staff	8,079 (Fall 2012; 5,332 full-time, 2,747 part-time) [3]
Admin. staff	16,202 (Fall 2012; 12,476 full-time, 3,726 part-time) [3]
Students	75,044 (Fall 2012 [3]
Location	Columbia Kansas City St. Louis Rolla, Missouri, USA
Campus	20,019 acres (8,101 ha) [3]
Website	www.umsystem.edu

University of Missouri-St. Louis

Quick Facts

16,791
STUDENTS

7,210 FULL TIME
9,581 PART TIME
3,021 MEN FULL TIME
4,189 WOMEN FULL TIME

SEE YOUR FIT ›

69%
ADMITTED

1,770 APPLIED
1,223 ADMITTED
504 ENROLLED

SEE YOUR CHANCES ›

9,072
UNDERGRADUATES

3,620 GRADUATES
4,099 NON-DEGREE

CAMPUS LIFE ›

$7,968
TUITION/YEAR

$7,968 IN STATE
$1,346 FEES
$9,520 ROOM & BOARD
$1,000 BOOKS
(BASED ON STATS FROM 2012/2013)

GET YOUR ESTIMATE ›

UMSL | Business

UMSL College of Business Administration

EARNED EXCELLENCE

AACSB ACCREDITED

THE BEST BUSINESS SCHOOLS IN THE WORLD
THE BEST ACCOUNTING PROGRAMS IN THE WORLD

The Chronicle of Higher Education ranked our UMSL IS Area Faculty third among 375 universities in Faculty Scholarly Productivity in 2007.

Academic Analytics ranked our UMSL IS Area Faculty sixth among 387 universities in Faculty Scholarly Productivity in 2010. Our International Business has ranked in the top 20 nationally for 11 years, and our Accounting program graduates more accountants than any other program in the state. Additionally, our faculty consistently generates highly acclaimed research.

UMSL | Business

BI Definitions

Business Intelligence (BI) refers to skills, processes, technologies, applications and practices used to support decision making.

Systems that provide directed background data and reporting tools to support and improve the decision-making process.

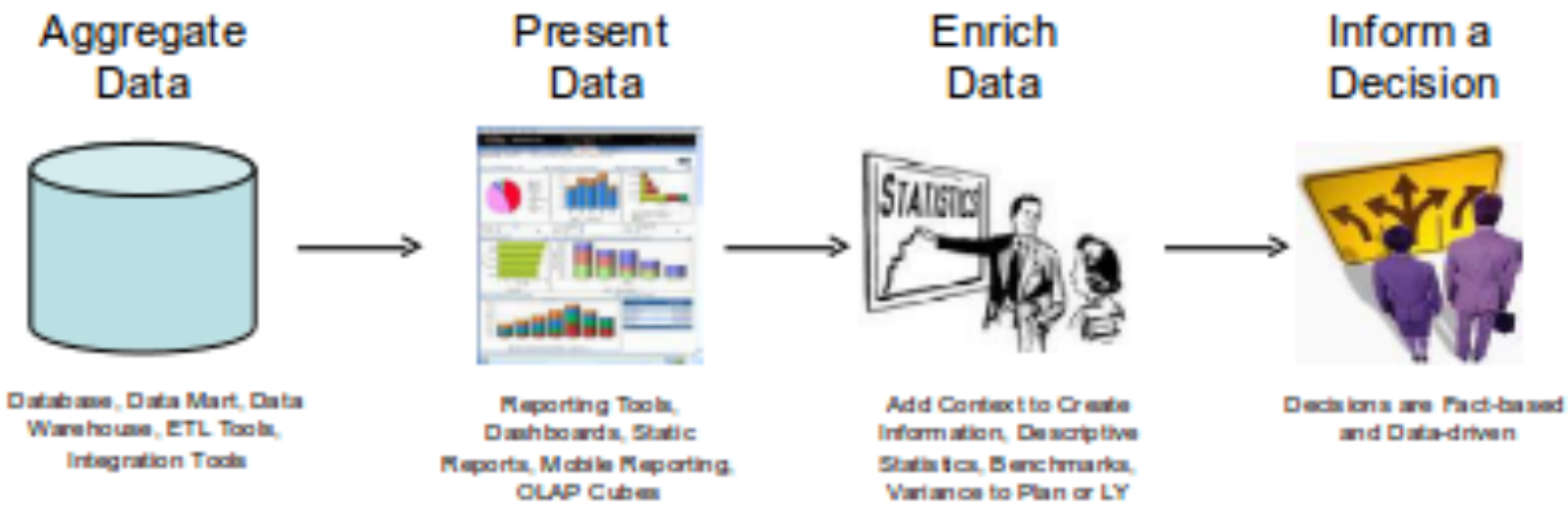
A popularized, umbrella term used to describe a set of concepts and methods to improve business decision making by using fact-based support systems. The term is sometimes used interchangeably with briefing books and executive information systems.

Business Intelligence is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help clients make better business decisions.

A system that collects, integrates, analyses and presents business information to support better business decision making.

Business Intelligence is an environment in which business users receive information that is reliable, secure, consistent, understandable, easily manipulated and timely...facilitating more informed decision making

What is BI?


Aggregate Data
Present Data
Enrich Data
Inform a Decision
STATISTICS
Database, Data Mart, Data Warehouse, ETL Tools, Integration Tools
Reporting Tools, Dashboards, Static Reports, Mobile Reporting, OLAP Cubes
Add Context to Create Information, Descriptive Statistics, Benchmarks, Variance to Plan or LY
Decisions are Fact-based and Data-driven

CPU – Content, Performance, Usability

Content

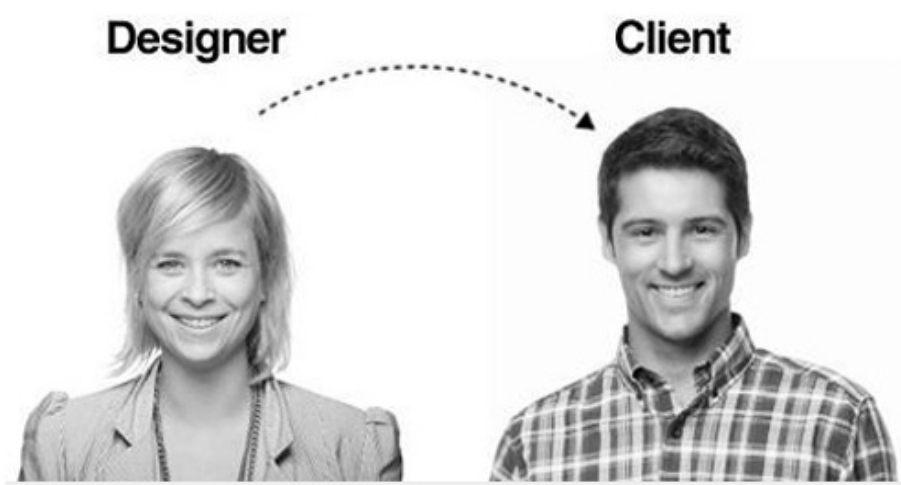
- The business determines the “what”, BI enables the “how”

Performance

- Minimize report creation and collection times (near zero)

Usability

- Delivery Method -> Push vs Pull
-
- Medium -> Excel, PDF, Dashboard, Cube, Mobile Device
-
- Enhance Digestion -> “A-ha” is readily apparent, fewer clicks
-
- Tell a Story-> Trend, Context, Related Metrics, Multiple Views



Top 10 Business & Technology Priorities 2011

1. Cloud computing
2. Virtualization
3. Mobile technologies
4. IT Management
5. **Business Intelligence**
6. Networking, voice and data communications
7. Enterprise applications
8. Collaboration technologies
9. Infrastructure
10. Web 2.0

Major BI Trends

Mobile
Cloud
Social Media
Advanced Analytics
Tools

TDWI Executive Summit – August 2010

1. Predictive Analytics
2. Visualization/Dashboards
3. Master Data Management
4. The Cloud
5. Analytic Databases
6. Mobile BI
7. Open Source
8. Text Analytics

What BI technologies will be the most important to your organization in the next 3 years?

Retail Analytics

Market Basket Analytics
Text Analytics
Customer Segmentation/Clustering
Tailored Product Assortments
Inventory Forecasting

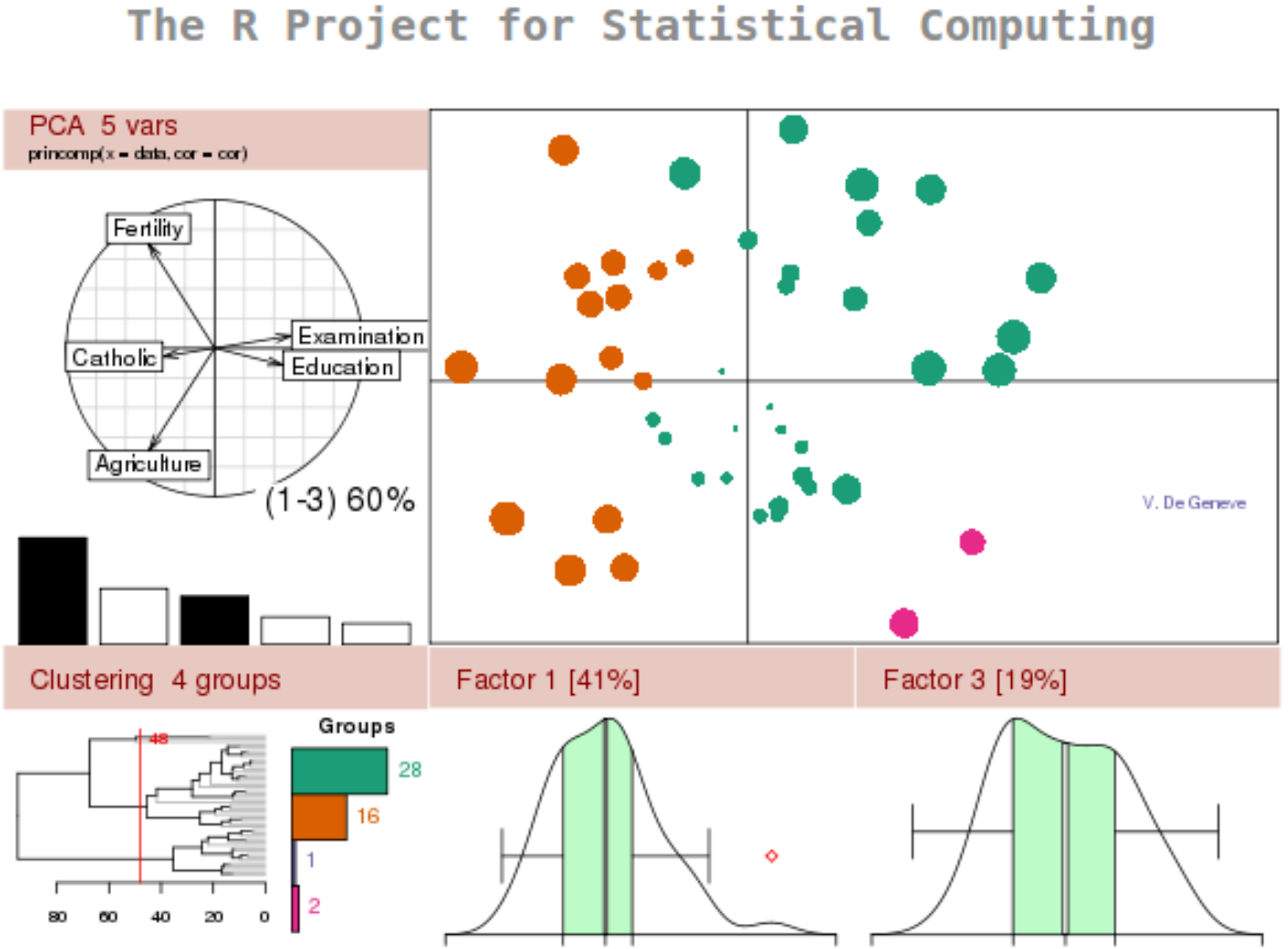
SOFA Statistics

SOFA is a user-friendly statistics, analysis, & reporting program. It is free, with an emphasis on ease of use, learn as you go, and beautiful output.

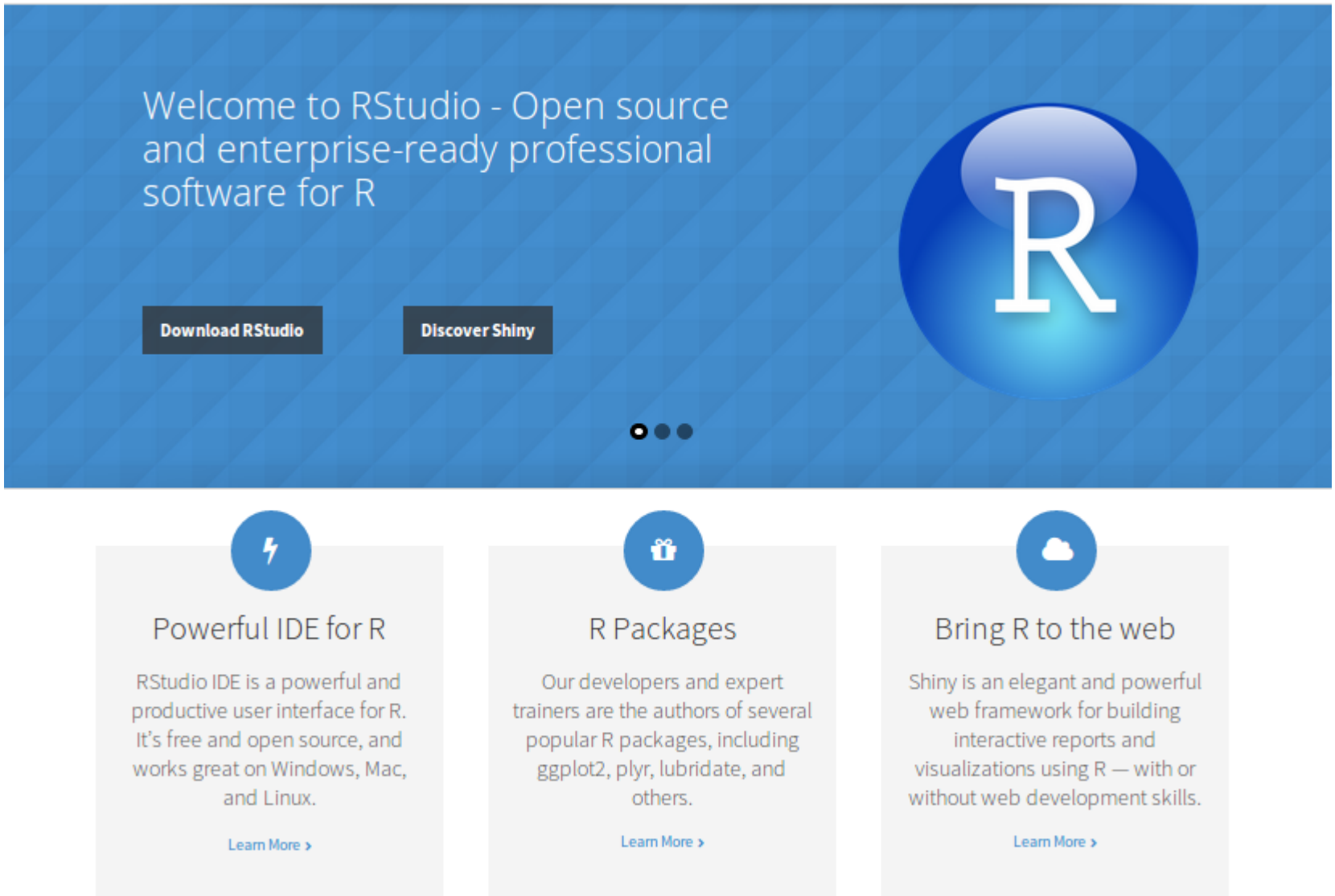
SOFA lets you display results in an attractive format ready to share.

And SOFA will help you learn as you go. http://sourceforge.net/projects/sofastatistics/

R Language


The R Project for Statistical Computing
PCA 5 vars
princomp(x = data, cor = cor)
Fertility
Examination
Catholic
Education
Agriculture
(1-3) 60%
V. De Geneve
Clustering 4 groups
Factor 1 [41%]
Factor 3 [19%]
Groups
28
16
1
2
80
60
40
20
0

RStudio


Welcome to RStudio - Open source and enterprise-ready professional software for R
Download RStudio
Discover Shiny
R
Powerful IDE for R
RStudio IDE is a powerful and productive user interface for R. It's free and open source, and works great on Windows, Mac, and Linux.
Learn More ›
R Packages
Our developers and expert trainers are the authors of several popular R packages, including ggplot2, plyr, lubridate, and others.
Learn More ›
Bring R to the web
Shiny is an elegant and powerful web framework for building interactive reports and visualizations using R — with or without web development skills.
Learn More ›

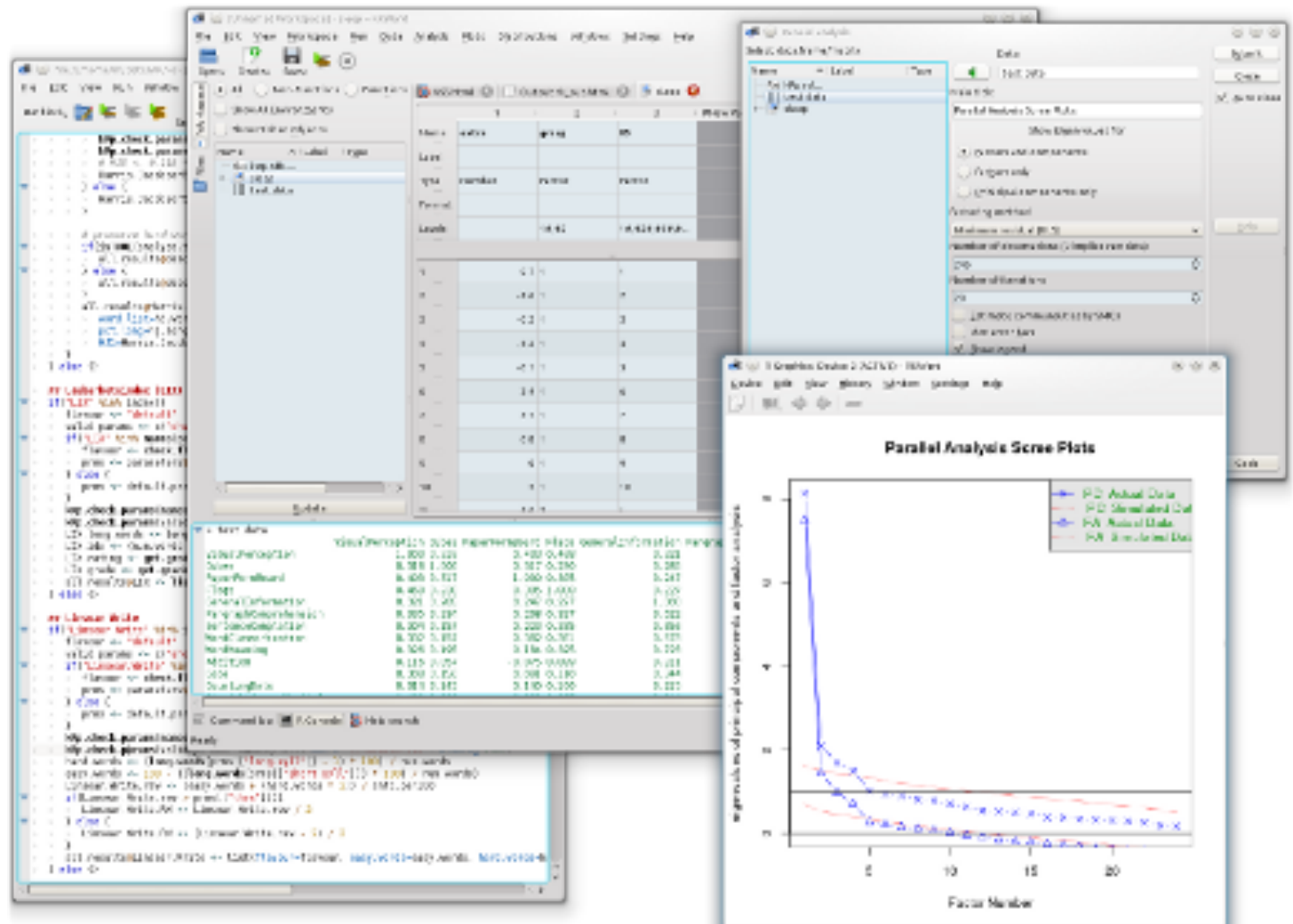
RKWard

RKWard is an easy to use and easily extensible IDE/GUI for R. It aims to combine the power of the R-language with the ease of use of commercial statistics tools.

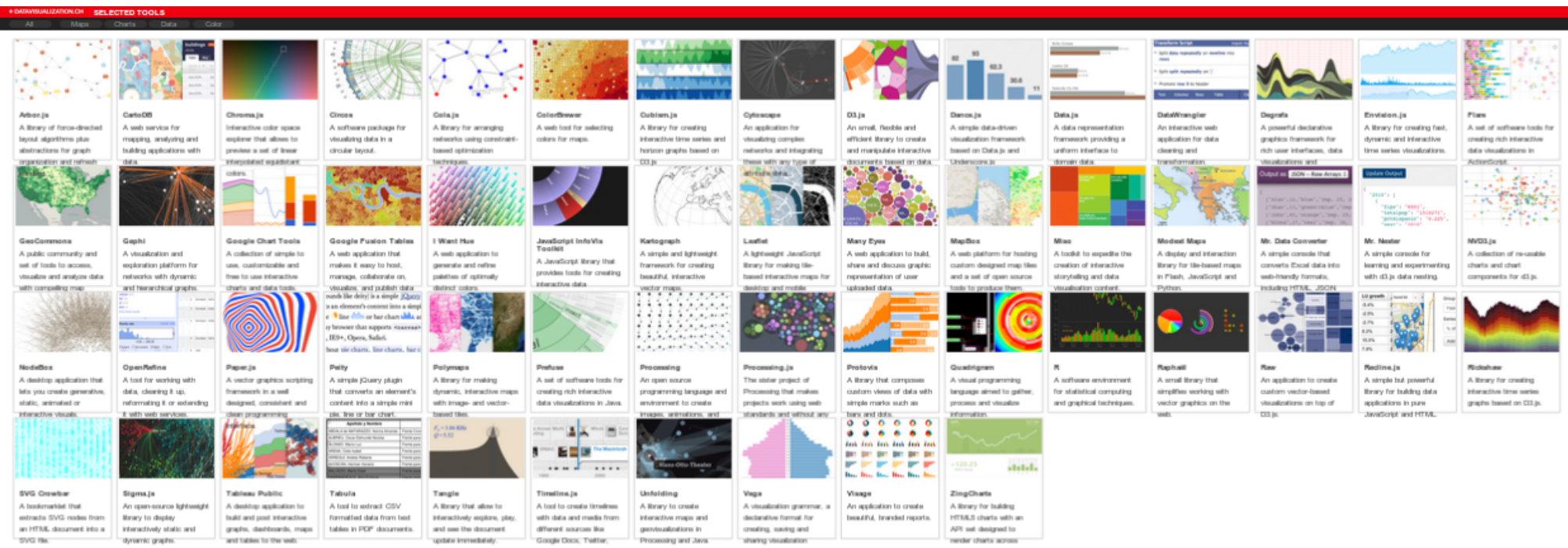
RKWard's features include:

- Spreadsheet-like data editor
- Syntax highlighting, code folding and code completion
- Data import (e.g. SPSS, Stata and CSV)
- Plot preview and browsable history
- R package management
- Workspace browser
- GUI dialogs for all kinds of statistics and plots

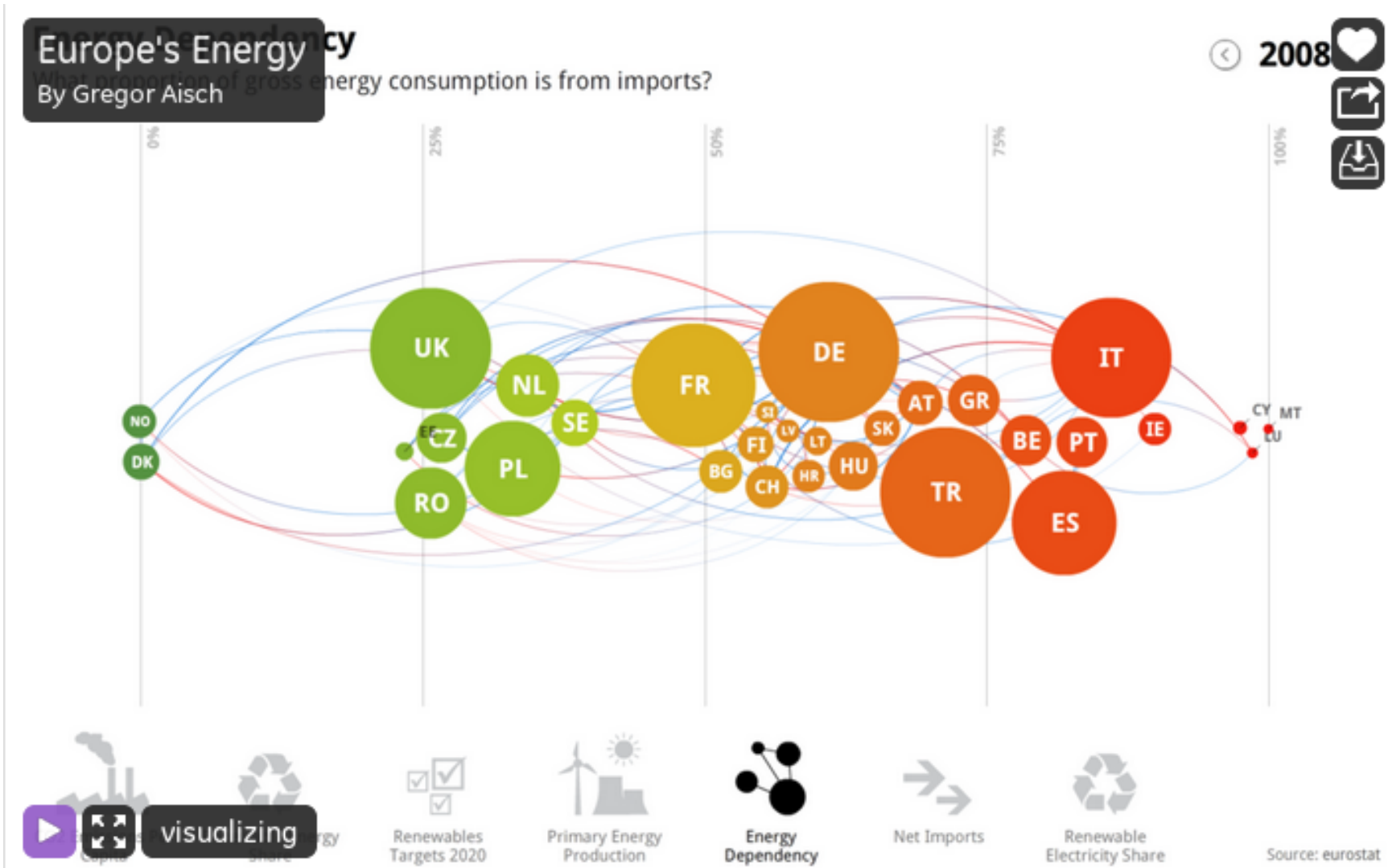
Its features can be extended by plugins, and it's all free software.



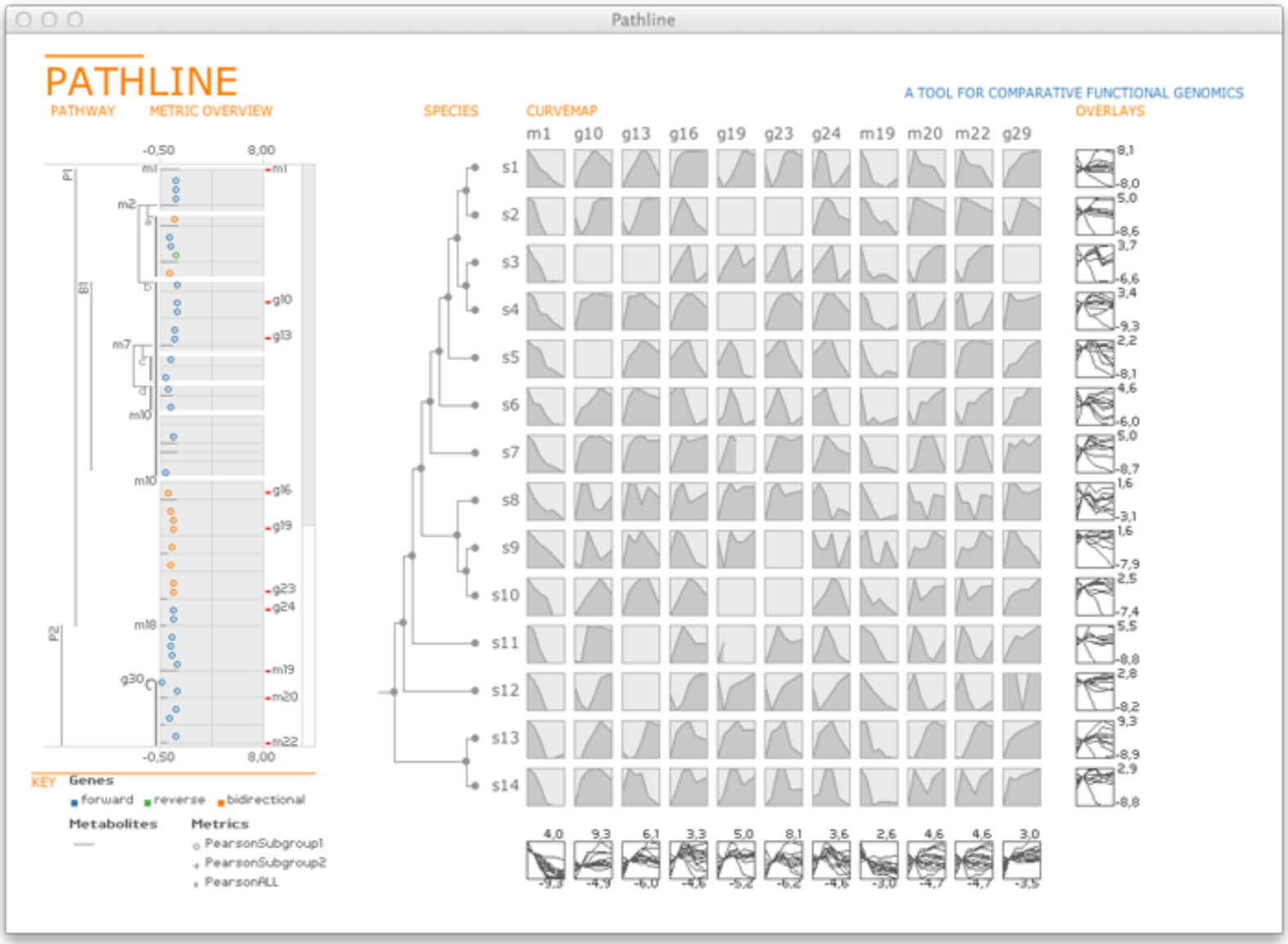
Data Visualization



The Visualizing Player



Pathline


Pathline
PATHLINE
A TOOL FOR COMPARATIVE FUNCTIONAL GENOMICS
PATHWAY
METRIC OVERVIEW
SPECIES
CURVEMAP
OVERLAYS
m1 g10 g13 g16 g19 g23 g24 m19 m20 m22 g29
s1 s2 s3 s4 s5 s6 s7 s8 s9 s10 s11 s12 s13 s14
-0,50 8,00
KEY Genes
forward reverse bidirectional
Metabolites
Metrics
PearsonSubgroup1
PearsonSubgroup2
PearsonALL

Additional Visualization Tools

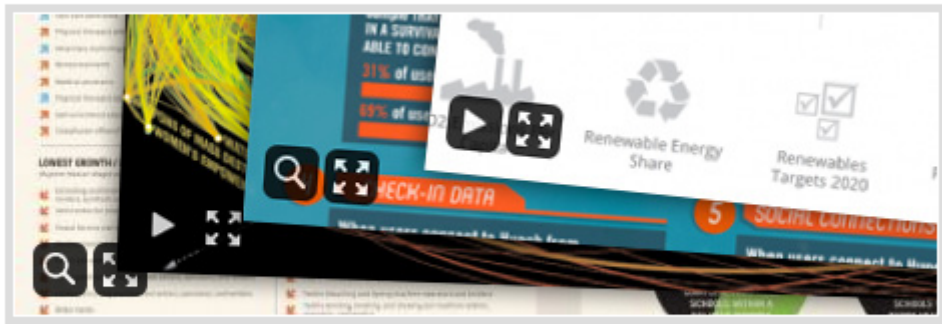
Google Public Data Explorer

09 MAR 2010 TOOLS ECONOMICS, FINANCIAL, POLITICS

On its trail to organize the world's information, Google has just added a new experimental product to their Lab. The Public Data Explorer makes "large datasets easy to explore, visualize and communicate". It is designed to help people comprehend data and statistics through rich visualizations. **Read more**

The Visualizing Player

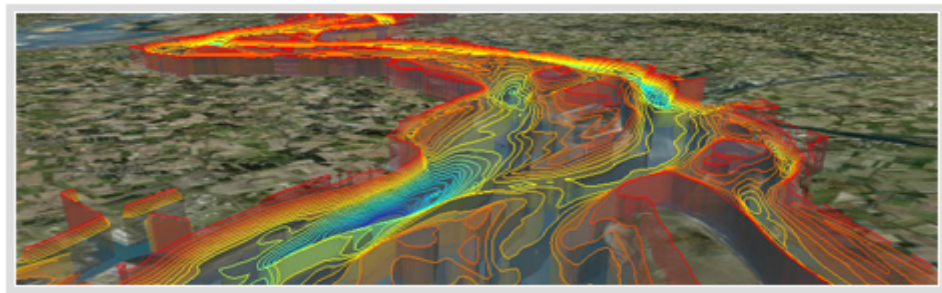
19 JUL 2011 SHOWCASES, TOOLS



Visualizing.org launched their brand new Visualizing Player, a terrific tool for embedding interactive and static data visualizations. **Read more**

Stunning Examples of Data Visualization in Google Earth

19 JAN 2010 TOOLS 3D, GOOGLEEARTH, HEATMAP, MAPPING



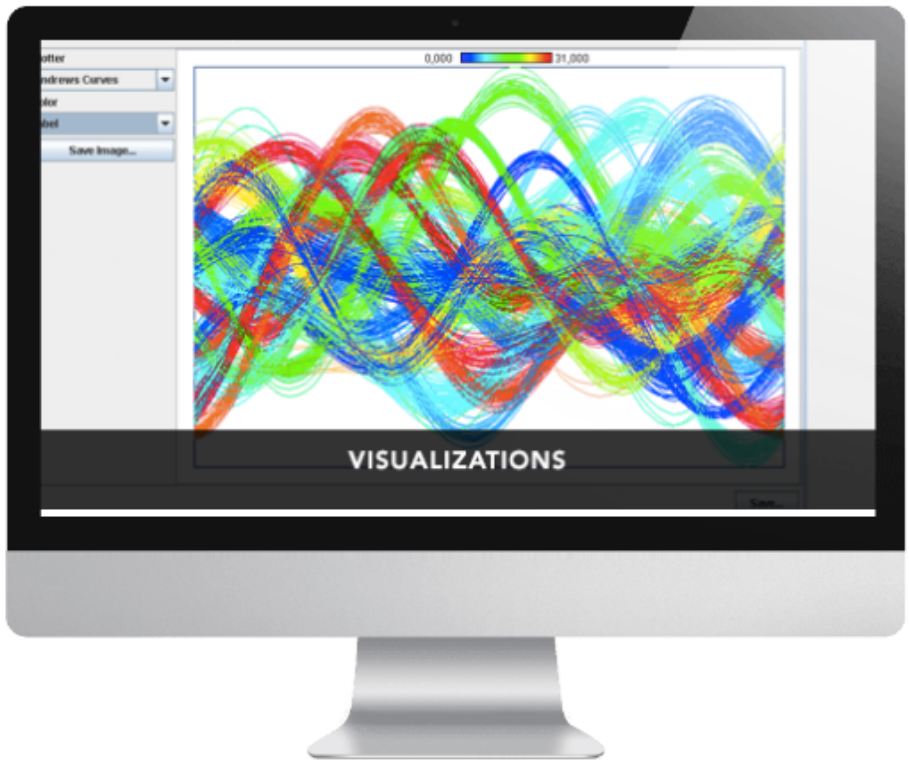
The Google Earth blog recently posted some examples of how well Google Earth can be used as a scientific visualization platform. The examples are posted by Thijs Damsma from the OpenEarth Initiative. **Read more**

RapidMiner

Easy-to-use visual environment for predictive analytics. No programming required.

Forget sifting through code! RapidMiner is easily the most powerful and intuitive graphical user interface for the design of analysis processes. You can also choose to run in batch mode. Whatever you prefer, RapidMiner has it all.

Request a Demo | Compare Editions



RapidMiner

RapidMiner spans industries to solve the challenges facing today's data-enabled businesses. Predict future outcomes and determine what will happen next to pro-actively optimize your businesses performance.

Industries

- Automotive
- Banking
- Insurance
- Life Sciences
- Manufacturing
- Oil & Gas
- Retail & Consumer Goods
- Telecommunications
- Utilities

Use Cases

- Churn Prevention
- Customer Lifetime Value
- Customer Segmentation
- Next Best Action
- Predictive Maintenance
- Product Propensity
- Quality Assurance
- Risk Modeling
- Sentiment Analysis
- Up- and Cross-Selling

Pentaho

VENTANA RESEARCH REPORT

Top Data Integration Trends

Get the Report →

A Comprehensive Platform for Data Integration & Business Analytics

Data Integration

Easily access, manage and blend any data from any source

Business Analytics

Turn data into insights and make information-driven decisions

Big Data

Accelerate the time to big data value with an open, integrated solution

Pentaho

Any Analytics, Any Data, Simplified

A platform architected for the future of your business

Pentaho addresses the barriers that block your organization's ability to get value from all your data. Our platform simplifies preparing and blending any data and includes a spectrum of tools to easily analyze, visualize, explore, report and predict. Open, embeddable and extensible, Pentaho is architected to ensure that each member of your team -- from developers to business users -- can easily translate data into value.

Steps

Are You a Data Ninja?

Do you have what it takes to be a data ninja? It's no easy task - new data sources need to be prepared, modeled, and blended for analysis, and you need to find a way to make everything integrate into your existing databases, applications, and business processes.

Four steps to mastering the art of integration:

Step 1 - Envision the journey

You can't get started until you know where you're going. Get started with these basic data integration use cases: reference architectures that map out how you can use data integration platforms to solve your biggest business challenges. Learn More.

Step 2 - Choose your weapons

Success depends on choosing the right tools. This means embracing not only traditional tools, but also modern technologies that make data integration simple, graceful, and as easy as drag-and-drop. We'll show you the tools that make it just that simple. Learn More.

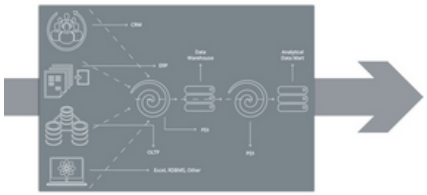
Step 3 - Master the data

Bend the data to your will. Learn about the emerging technologies that can help you design data in the exact way your business needs – from mashing up social media analytics with customer data, to refining diverse data at massive scale. Learn More.

Step 4 - Learn from the masters

A wise ninja learns from those who have gone before. Luckily, their stories are documented so you can see how others are succeeding with everything from high level architectural decisions to nitty-gritty data transformations and seamless real-time analytics. Learn More.

Step 1 - Data Integration Blueprints



Create a Data Integration Pipeline

BOOST ETL PRODUCTIVITY AND DRIVE ACTIONABLE INSIGHT

Streamline the delivery of information and establish a future-proofed data supply chain by creating a data integration pipeline that easily blends diverse data sources for complete business insight.

Optimize the Data Warehouse

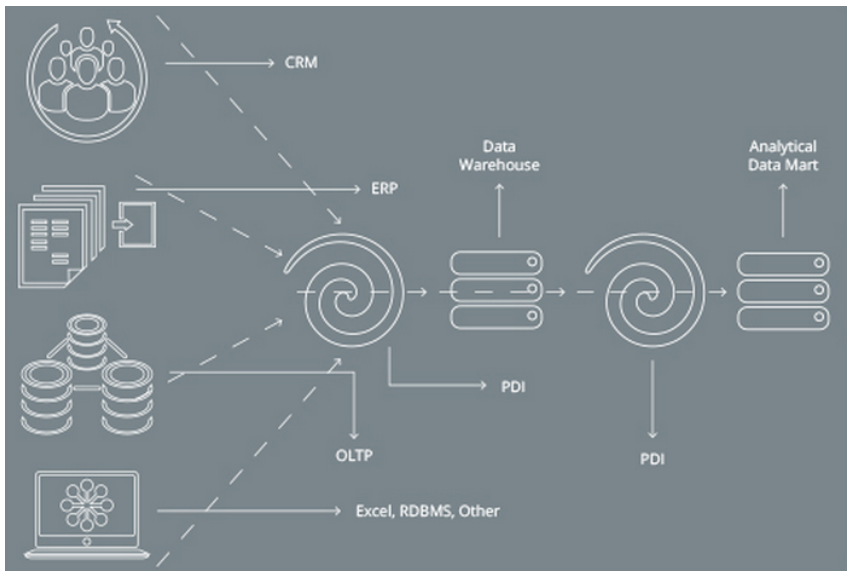
REDUCE COSTS AND IMPROVE OPERATIONAL PERFORMANCE

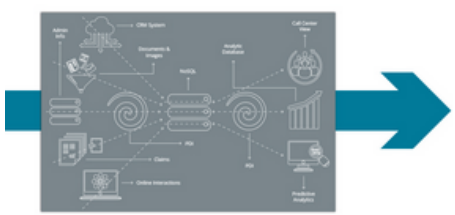
Reduce strain on the data warehouse by offloading less frequently used data and corresponding transformation workloads to Hadoop without coding or relying on legacy scripts and ETL product limitations.

Streamlined Data Refinery

DRIVE A SUSTAINABLE BIG DATA ANALYTICS STRATEGY

Create a single 'refinery' by streamlining structured transaction, customer, and other data through a scalable big data processing hub, using Hadoop for transformation.

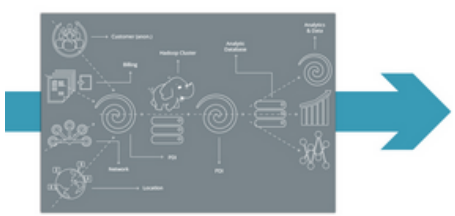




Customer 360-Degree View

REDUCE CUSTOMER CHURN AND IDENTIFY NEW REVENUE OPPORTUNITIES

Blend operational data sources together with big data sources to create an on-demand analytical view across key customer touch points. Gain powerful insights into buyers, brand, products and services.



Monetize My Data

CREATE NEW STRATEGIC REVENUE STREAMS BY DELIVERING HIGH-VALUE DATA SETS

Capitalize on the value of big data by easily accessing, enriching and processing data to be packaged and delivered as a new data service offering to external customers.

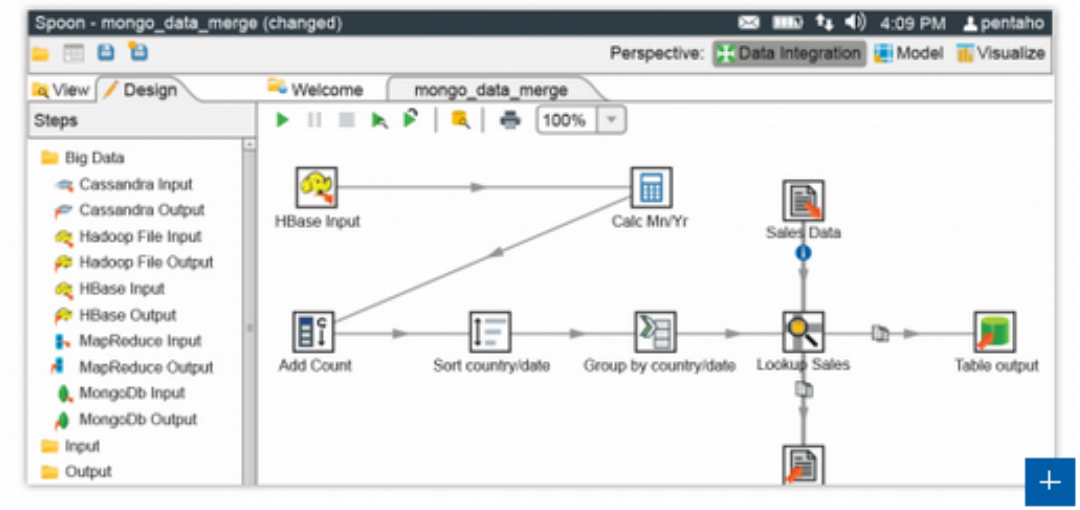
Step 2 - Choose Your Weapons

Simple Visual Designer for Drag and Drop Development

Return to Top

Empower developers with visual tools to minimize coding and achieve greater productivity.

- Graphical extract-transform-load (ETL) tool to load and process big data sources in familiar ways.
- Rich library of pre-built components to access and transform data from a full spectrum of sources.
- Visual interface to call custom code, analyze images and video files to create meaningful metadata.
- Dynamic transformations, using variables to determine field mappings, validation and enrichment rules.
- Integrated debugger for testing and tuning job execution.



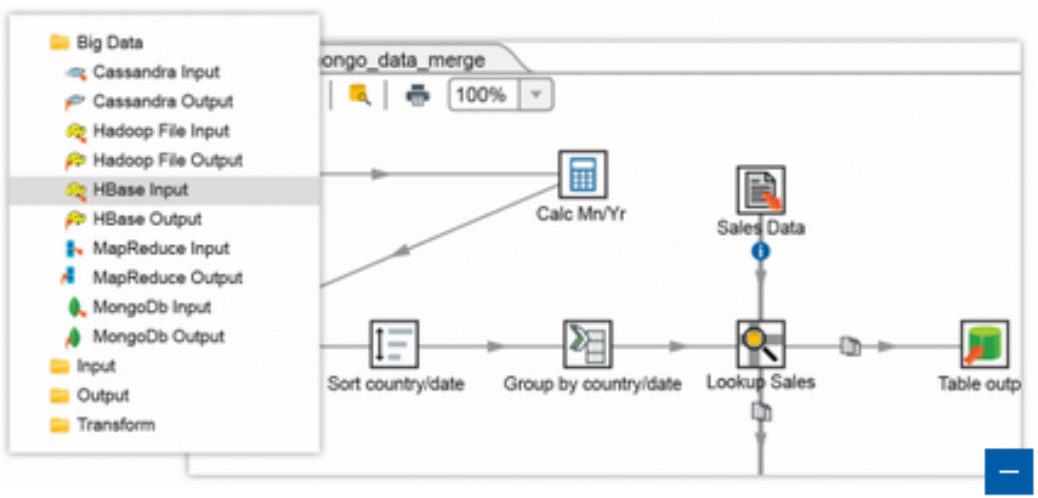
DRAG AND DROP VISUAL DESIGN APPROACH

Step 2 - Choose Your Weapons

Big Data Integration with Zero-Coding Required

Return to Top

Pentaho's intuitive tools accelerate the time it takes to design, develop and deploy big data analytics by as much as 15x.



BIG DATA INTEGRATION MADE EASY

- Complete visual big data integration tools eliminate coding in SQL or writing MapReduce Java functions.
- Broad connectivity to any type or source of data with native support for Hadoop, NoSQL and analytic databases.
- Parallel processing engine to ensure high performance and enterprise scalability.
- Extract and blend existing and diverse data to produce consistent high quality ready-to-analyze data.

Watch an educational video series about big data integration

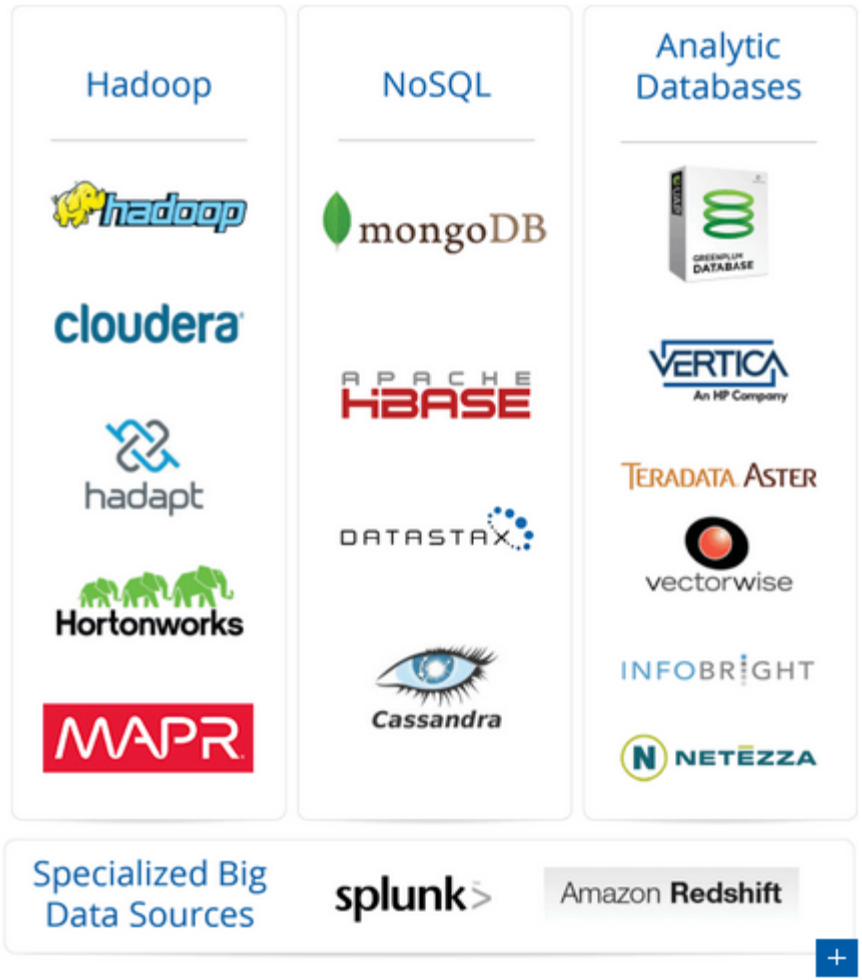
Step 2 - Choose Your Weapons

Native and Flexible Support for all Big Data Sources

Return to Top

A combination of deep native connections and an adaptive big data data layer ensures accelerated access to the leading Hadoop distributions, NoSQL databases, and other big data stores.

- Support for latest Hadoop distributions from Cloudera, Hortonworks, MapR and Intel.
- Simple plugins to NoSQL databases such as Cassandra and MongoDB, as well as connections to specialized data stores like Amazon Redshift and Splunk.
- Adaptive big data layer saves enterprises considerable development time as they leverage new versions and capabilities.
- Greater flexibility, reduced risk, and insulation from changes in the big data ecosystem.
- Reporting and analysis on growing amounts of user and machine generated data, including web content, documents, social media and log files.
- Integration of Hadoop data tasks into overall IT/ETL/BI solutions with scalable distribution across the cluster.
- Support for parallel bulk data loader utilities for loading data with maximum performance.



BROADEST AND DEEPEST BIG DATA SUPPORT

Step 2 - Choose Your Weapons

Powerful Administration and Management

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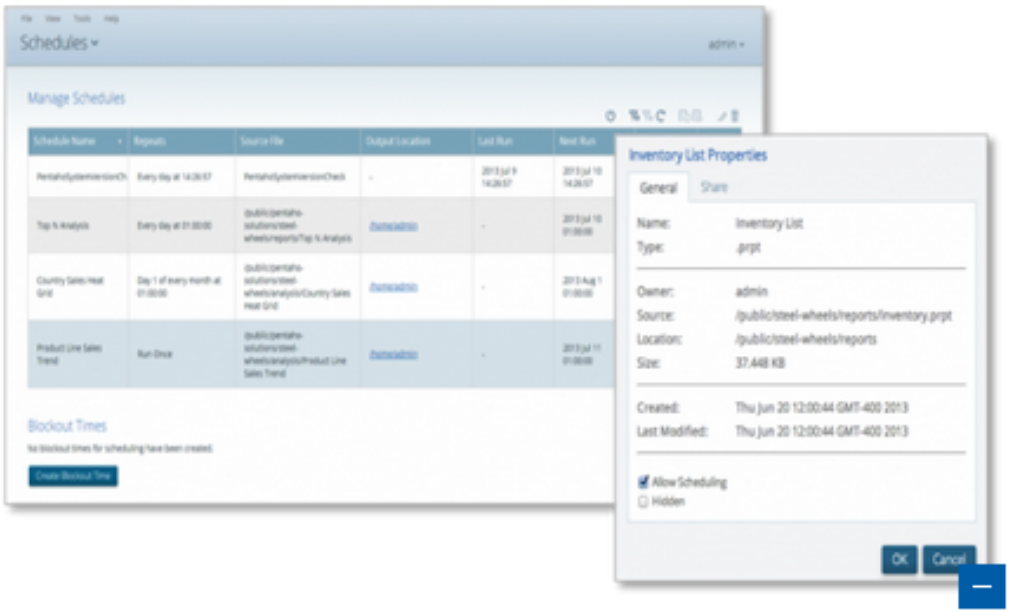
Simplified out-of-the-box capabilities to manage the operations in a data integration project.



EASY TO USE SCHEDULE MANAGEMENT

- Manage security privileges for users and roles.
- Restart jobs from last successful checkpoint and roll back job execution on failure.
- Integrate with existing security definitions in LDAP and Active Directory.
- Set permissions to control user actions: read, execute or create.
- Schedule data integration flows for organized process management.
- Monitor and analyze the performance of data integration processes.

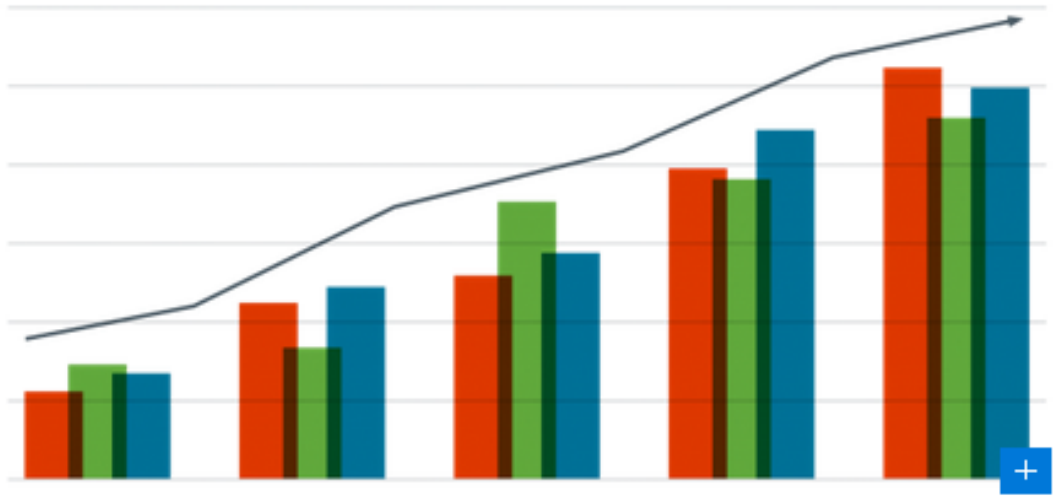
Step 2 - Choose Your Weapons

Data Profiling and Data Quality

Return to Top

Profile data and ensure data quality with comprehensive capabilities for data managers.

- Identify data that fails to comply with business rules and standards.
- Standardize, validate, de-duplicate and cleanse inconsistent or redundant data.
- Manage data quality with partners such as Human Inference and Melissa Data.



DATA QUALITY MANAGEMENT

Step 3 - Master the Data

Unleashing the Power of Your Data

True mastery of your data doesn't take a single form. It means being able to approach it from several different angles, channel its power, and deliver business results as needed. See how Pentaho can help.

Code-Free Data Ingestion, Transformation and Analysis

Trying to take advantage of the enormous value of big data without relying on highly specialized skillsets and tedious data preparation tasks? Here's how we can help you get more out of these emerging technologies and simplify your integration.

- With Cloudera – Optimize Hadoop data integration without having to rely on specialized scripts
- With YARN - Leverage the rich parallel processing power of Hadoop for ETL without using MapReduce
- With HP Vertica - Ingest and transform your data to set the stage for scalable high-performance analytics
- With MongoDB – Analyze your MongoDB data collections at the source without needing special skills or staging areas

On-Demand Blending from Different Sources

The business value of data integration becomes evident once you start blending different data sources in different ways, on demand. See examples of how easily you can do this with Pentaho in our Blend of the Week video series:

- Blend production data from a corporate data warehouse with Hadoop-based machine data for better operational decision-making
- Blend MongoDB data with customer data for improved and real-time targeting
- Blend CRM data with historical financial data for insight into revenue trends
- Blend web analytics with support data for deeper customer insights

Automate Predictive Analytics and Data Science

Now that your data is optimally prepared and blended, start using it to generate better business outcomes through predictive intelligence. You can operationalize your predictive modeling, machine learning, and data mining efforts by dropping R scripts and Weka steps directly into data integration workflow. This simplifies and controls the application of data science, letting you scale analytical intelligence across your business processes.

- Learn more about the R Script Executor, Weka Scoring, and Weka forecasting available in the Data Science Pack
- See how ESRG, a maritime data analysis company, uses Pentaho's Weka plug-ins to predict machine failure

Step 4 - Learn from the Masters

Bywaters
recycling made easy
Bywaters Reporting Analytics Dashboards

"PDI is probably one of the most powerful tools within modern computing I've seen in my career."

Sasha Korniak, Strategic IT Decision Maker & Head of ISO 9001

Bywaters provides waste and recycling services to its business customers. It wanted to provide customer data to help them optimize their use of these services.

To accomplish this, they used PDI to integrate their HR, CRM, financial, and ERP data, along with waste incineration data and data from its materials recovery facility.

Using Pentaho, they were able to create an application comprised of fixed reports, flexible analytics, and dashboards that help customers make data-driven decisions to not only meet compliance regulations, surpass them for greater economic and environmental benefits.

See how Bywaters uses Pentaho.

edo

"What impressed me is how the ETL world and big data world integrated quite well using Pentaho."

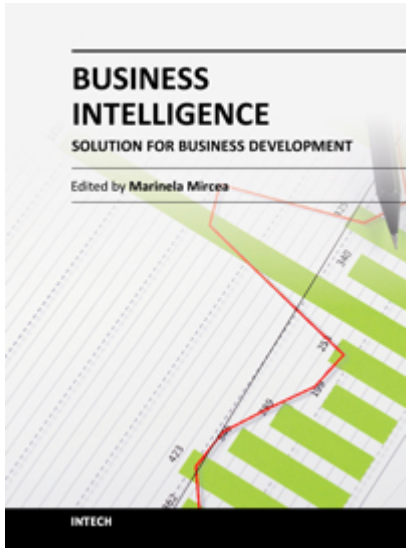
Jeff Sippel, CTO, edo Interactive

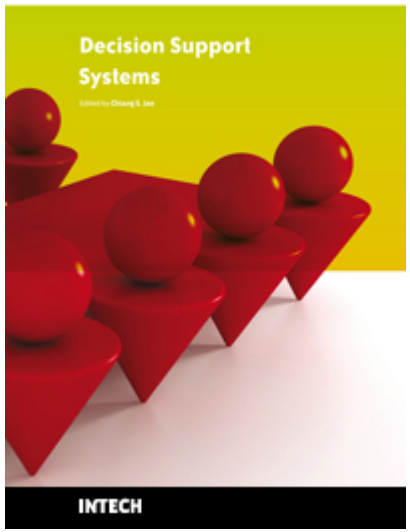
edo Interactive wanted to deliver real-time analysis of 5 billion consumer transactions per day to help clients improve targeted advertising.

To accomplish this, they used PDI with Hadoop, Hive, and HBase to integrate, extract, and analyze over 5 TB of customer data in a flexible way that could accommodate each new data element added.

Using Pentaho, edo reduced ETL by 70%, reduced IT cost by eliminating the need for Java programming, increased data integrity by locking file permissions through Hadoop, and was able to make loaded data immediately available for analysis to meet SLAs and better serve customers.

Resources - Research





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International Journal of Engineering Business Management

Information Management and Valuation

Regular Paper

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DOI: 10.5772/52800

Abstract The aim of information lifecycle management is to develop a cost-effective strategy for maintaining information assets, balancing the cost of maintaining information against business value. This paper contributes to development of theoretical information value based on a classification scheme that does not consider operational factors (e.g., storage, access). It concentrates on valuing information in terms of its type, organizational level and the extent of its effects. An information flow model provides the foundation for such categorisation.

Keywords Information Lifecycle Management, Valuing Information, Information Flow

1. Introduction

Many enterprises maintain huge amounts of information, often stored in various applications. In 2006, 161 million gigabytes of digital information was created, captured, and replicated [1]. It is predicted that "while nearly 70% of the digital universe will be created by individuals, organizations (businesses of all sizes, agencies, governments, associations, etc.) will be responsible for the security, privacy, reliability and compliance of at least 85% of that same digital universe" [1].

Growing even faster than the digital universe as a whole is the subset created and replicated by organizations. In 2006, about 25% of the bits in the digital universe were created or replicated in the workplace; by 2010 that proportion will rise closer to 30%. (The rest of the universe will be mostly music, videos, digital TV signals and pictures.) [1]

This growth of information in organizations is caused by increased computerisation, regulation of archiving and privacy standards and an increase in industry applications, for example imaging and e-commerce, sensor networks and customer support applications [1].

The implications for organizations of this growth in information include the need for more sophisticated techniques for information management to meet the increased demand for privacy, security and intellectual property protection. A comprehensive approach to managing information based on its value is one means to reducing the costs associated with the information explosion [1]. Information lifecycle management aims to find a cost-effective strategy for maintaining information assets in terms of balancing the cost of maintaining information against its business value. "Valuing" information refers to determining which information is worth more than other information. This problem is difficult in practice. Many techniques have been used, including hardware and software tools and solutions such as content management, storage resource

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International Journal of Engineering Business Management

A strategic Analysis of the European Companies in the ICT Sales Channel

Regular Paper

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DOI: 10.5772/51640

Abstract The strategic role of Information and Communication Technologies (ICT) is growing in various companies. Small and Medium Enterprises (SMEs) adopt ICT solutions to support their processes and to improve their products and services. Because of SMEs' scarce resources and inadequate ICT competencies, they need support from ICT suppliers in the ICT adoption process. Little attention has been paid to the business models and strategies of ICT suppliers in the academic and professional literature, and SMEs find it difficult to determine the characteristics of available ICT suppliers and to choose the supplier that best responds to their needs and aims.

The goal of this paper is to provide a detailed picture of the ICT sales channel and its players in the European market. A classification framework is proposed and eleven different business models are identified. The paper is based on a case study methodology that included 53 semi-standardized interviews with CEOs (Chief Executive Officers) and marketing and communications managers at leading European ICT suppliers coupled with the literature review.

Keywords ICT, distribution channel, digital economy.

1. Introduction

Today, Small and Medium Enterprises (SMEs) recognize the important role that Information and Communication Technologies (ICT) may have in supporting business processes and in the development of products and services.

ICT suppliers can play an important role for SMEs as enablers of ICT adoption and generators of business innovation, but this potentially important role for ICT suppliers is not yet fully exploited in practice.

ICT suppliers, which operate in the ICT sales and distribution channel (e.g., hardware resellers, software houses, system integrators) are facing a period of significant change in their strategies and business models. In the academic and professional literature, three main kinds of ICT suppliers can be identified, depending on their commercial offerings: hardware resellers, software houses and system integrators. However, the authors believe that this classification should be re-considered for several reasons: the growing strategic role of ICTs in supporting business in companies of different sizes and in different industries, the evolution of companies' needs

UMSL | Business

Resources - Conferences

useR! - International R User Conference

This is the main meeting of the R user and developer community, its program consisting of both invited and user-contributed presentations:

- The invited keynote lectures cover a broad spectrum of topics ranging from technical and R-related computing issues to general statistical topics of current interest.
- The user-contributed presentations are submitted as abstracts prior to the conference and may be related to (virtually) any R-related topic. The presentations are typically organized in sessions of either broad or special interest, which also comprise a "free" discussion format. Such a discussion format not only provides a forum for software demonstrations and detailed discussions but also supports the self-organization of the respective communities.

Usually, no proceedings are published for useR! conferences.

useR! 2004, Vienna, Austria:	homepage, local copy
useR! 2006, Vienna, Austria:	homepage, local copy
useR! 2007, Ames, IA, USA:	homepage, local copy
useR! 2008, Dortmund, Germany:	homepage, local copy
useR! 2009, Rennes, France:	homepage, local copy
useR! 2010, Gaithersburg, MD, USA:	copy of homepage
useR! 2011, Coventry, UK:	homepage, local copy
useR! 2012, Nashville, TN, USA:	homepage, local copy
useR! 2013, Albacete, Spain:	homepage
useR! 2014, Los Angeles, CA, USA:	homepage
useR! 2015, Aalborg, Denmark:	homepage

Resources - Conferences

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useR!

CONFERENCE

- Invited Talks
- Programme committee
- Maillist
- Social Program
- About the Conference
- Acommodation

Resources - Datasets

Data repositories

This list is part of the Open Access Directory.

- This is a list of repositories and databases for open data.
- Please annotate the entries to indicate the hosting organization, scope, licensing, and usage restrictions (if any). If a repository is open in some respects but not others, please include it with an annotation rather than exclude it.
- If you're not sure whether a given dataset or data collection is open, post your query to Is It Open Data?
- Related lists in OAD: Disciplinary repositories (primarily for texts, not data).
- For news about data repositories, including some newly launched repositories not yet listed here, follow the oa.repositories.data tag of the OA Tracking Project.
- See also: re3data.org. The re3data.org project intends to create a global registry of research data repositories.
- See also: Databib. Databib is a tool for helping people identify and locate online repositories of research data.

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2 Astronomy
3 Biology
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6 Energy
7 Environmental sciences
8 Geology
9 Geosciences and geospatial data
10 Linguistics
11 Marine sciences
12 Medicine
13 Multidisciplinary repositories
14 Physics
15 Social sciences

Archaeology

- *Also see* Social sciences.
- Archaeology Data Service.
- Open Context. From the Alexandria Archive Institute.
- the Digital Archaeological Record. From Digital Antiquity.

Astronomy

- *Also see* Physics.
- Astronomical Data Archives Center. From the National Astronomical Observatory of Japan.
- Astrophysics Data System. From the Smithsonian Astrophysical Observatory (SAO) and National Aeronautics and Space Administration (NASA).
- The Canadian Astronomy Data Centre. From the National Research Council Canada.
- National Space Science Data Center. From the US National Aeronautics and Space Administration (NASA).

Finding data sets

Scientists are beginning to open up their data online, and you may find that in your research field there are researchers who have made their data available, either attached to published journal articles or through alternative online services. Not all data can be made publicly available and in various cases restrictions on re-use are likely to be in place, but more and more projects are being established to open up data wherever possible.

For advice and guidelines on data management, the Digital Curation Centre provides support to the higher education community.

Data repositories

The following are initiatives set up by scientists and researchers to make data more available and accessible.

- CKAN (Comprehensive Knowledge Archive Network): the Data Hub
  Nearly 2000 dataset collections spanning a wide range of scientific disciplines from medicine to earth sciences. It is an Open Knowledge Foundation project.
- The Council of European Social Science Data Archives
  Social science data archives across Europe.
- Dryad
  'An international repository of data underlying peer-reviewed articles in the basic and applied biosciences'. It is supported by a consortium of journals and publishers such as Oxford University Press, Ecology Letters and BioMed Central.
- FigShare
  Allows researchers to post their all their data, with the aim of reducing replicating research data unnecessarily.
- Galaxy Zoo
  A different type of dataset and the project aims to enlist as many people as possible across the world to help classify galaxies using data from the Hubble Space Telescope. It is a Zooniverse "citizen science" project.
- Open access directory: Data repositories
  Provides links to 'repositories and databases for open data'. Subjects listed (as of June 2011) include astronomy, biology, chemistry, computer science, energy, environmental sciences, geosciences, marine sciences, medicine and physics, as well as social sciences and multidisciplinary repositories.
- Open data search
  A search engine for open government data from European countries and the US. It is a project from the Open Knowledge Foundation.
- re3data.org
  A German Research Foundation project to create a 'global registry of research data repositories'. The project aims to collect and provide information on data repositories across all disciplines, with the intention of making data repositories more accessible.
- Research Data Australia
  An online directory that aims to provide information about data collections, researchers and data projects in Australian research organisations and institutions. Datasets may be linked to, rather than directly deposited. It is managed by Australia National Data Service (ANDS), an

Resources - Conferences

R/Finance 2014: Applied Finance with R

May 16 & 17, Chicago, IL, USA

UIC BUSINESS

Master of Science in Finance

REVOLUTION ANALYTICS

APPLIED MATHEMATICS
UNIVERSITY of WASHINGTON
Computational Finance & Risk Management

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> home(2014)

The sixth annual R/Finance conference for applied finance using R, the premier free software system for statistical computation and graphics, will be held on May 16 and 17, 2014 in Chicago, IL, USA at the University of Illinois at Chicago. The two-day conference will cover topics including portfolio management, time series analysis, advanced risk tools, high-performance computing, market microstructure, and econometrics. All will be discussed within the context of using R as a primary tool for financial risk management, portfolio construction, and trading. Over the past six years, R/Finance has included attendees from around the world. It featured presentations from prominent academics and practitioners, and we expect another exciting line-up for 2014.

For 2014, we invite you to submit complete papers in pdf format for consideration. We will also consider one-page abstracts (in txt or pdf format) although more complete papers are preferred. We welcome submissions for both full talks and abbreviated "lightning talks". Both academic and practitioner proposals related to R are encouraged. Presenters are strongly encouraged to provide working R code to accompany the presentation/paper. Data sets should also be made public for the purposes of reproducibility (though we realize this may be limited due to contracts with data vendors). Preference may be given to presenters who have released R packages.

The conference will award two (or more) $1000 prizes for best papers. A submission must be a full paper to be eligible for a best paper award. Extended abstracts, even if a full paper is provided by conference time, are not eligible for a best paper award. Financial assistance for travel and accommodation may be available to presenters at the discretion of the conference committee. Requests for assistance should be made at the time of submission.

The submission deadline was January 31, 2014. Submitters have been notified of acceptance, whether a presentation will be a long presentation or a lightning talk, and decision on any requested funding were made via email in early March 2014.

We are very excited about the keynote speakers for 2014:

- Bill Cleveland,
- Alexios Ghalanos,
- Bob McDonald,
- Luke Tierney.

The inaugural 2009 conference featured keynotes by Patrick Burns, Robert Grossman, David Kane, Roger Koenker, David Ruppert, Diethelm Wuertz, and Eric Zivot, as well as a number of excellent presentations.

The 2010 conference contained keynotes by Bernhard Pfaff, Ralph Vince, Marc Wildi, and Achim Zeileis.

This was followed in 2011 with keynotes by Meb Faber, Stefano Iacus, John Bollinger and Louis Kates.

The 2012 conference had keynotes from Blair Hull, Paul Gilbert, Rob McCulloch, and Simon Urbanek.

And the keynotes from the 2013 conference were Sanjiv Das, Attilio Meucci, Ryan Sheffel, and Ruey Tsay.

Complete programs of the previous conferences, along with downloadable presentation slides, are available via the links above.

The R/Finance 2014 conference is again organized by a local group of R package authors and academics, and hosted by the International Center for Futures and Derivatives [ICFD] at the University of Illinois at Chicago.

Sponsorship opportunities are available.

Resources - Conferences

R Day

See Pricing & Packages

Hadley Wickham (Rice University / RStudio), Winston Chang (RStudio), Garrett Grolemund (RStudio), JJ Allaire (Rstudio, Inc.), Yihui Xie (RStudio, Inc.)
9:00am Wednesday, 10/15/2014
Data Science
Location: 1 E16/ 1 E17

Join Attendee Network
Add to Your Schedule
Add Comment or Question

From advanced visualization, collaboration, reproducibility to data manipulation, R Day at Strata covers a raft of current topics that analysts and R users need to pay attention to. The R Day tutorials come from leading luminaries and R committers, the folks keeping the R ecosystem apace of the challenges facing analysts and others who work with data.

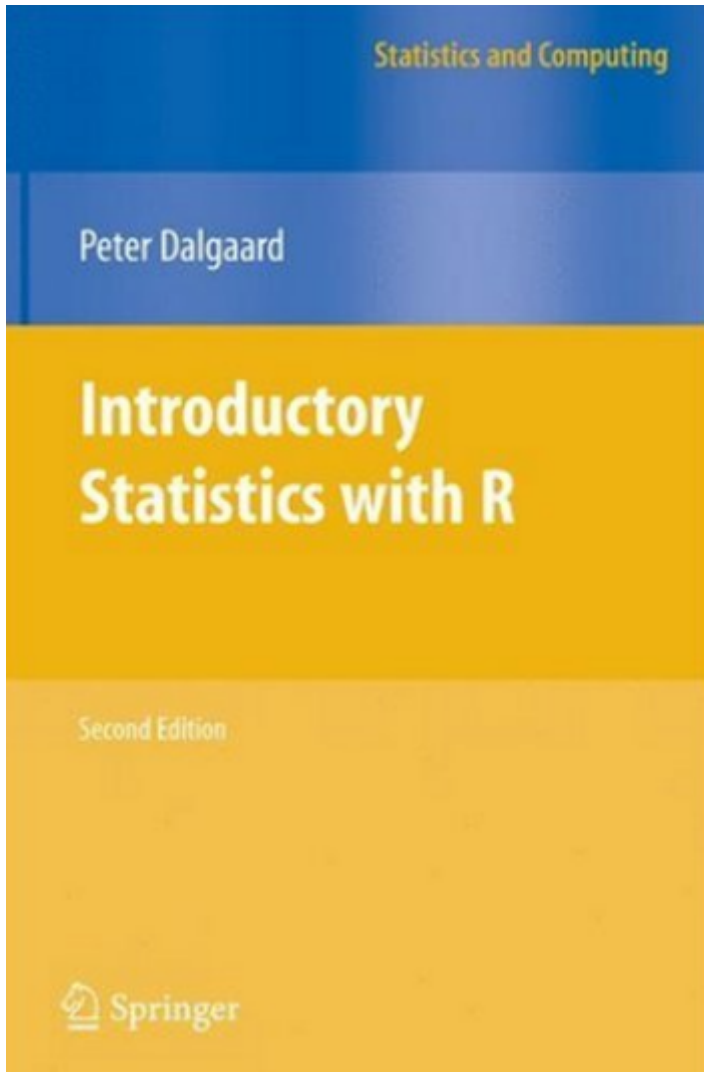
9:00am – 10:30am

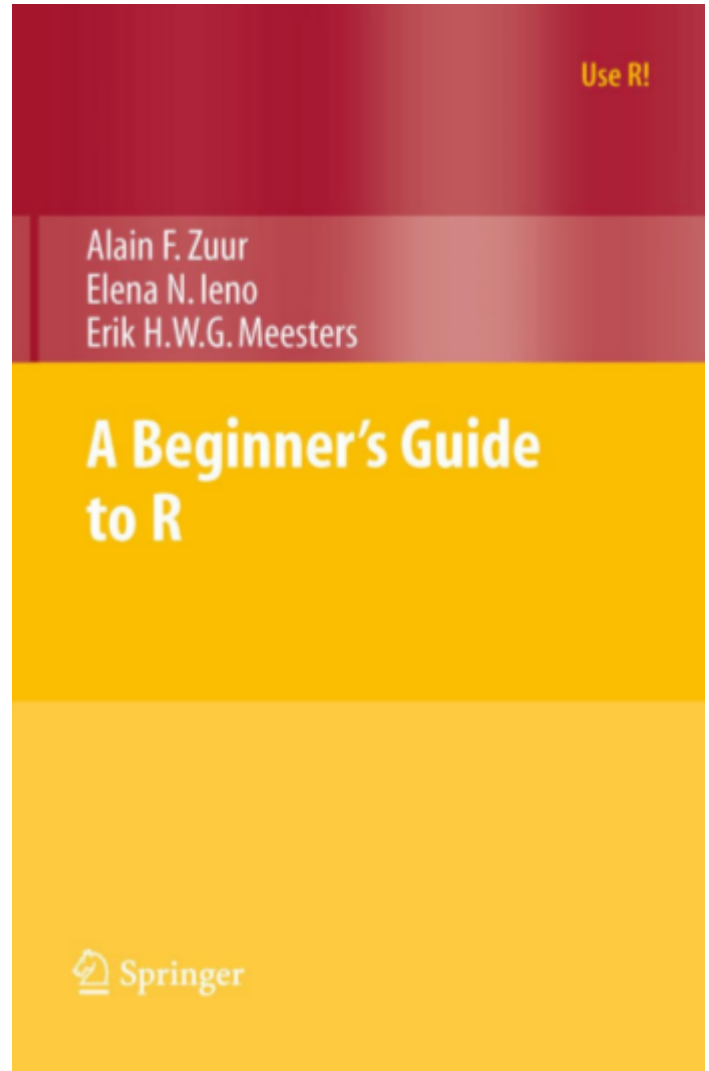
A Grammar of Data Manipulation with dplyr

Speaker: Hadley Wickham

Learn how to manipulate your data, large or small, with dplyr. Dplyr provides a concise syntax that makes it easy to express common data manipulation operations. It also works with multiple backends so that you can work with your data wherever it lives, in memory (data frames and data tables), in a RDBMS (postgresql, mysql,...) or in a columnar data store (redshift, bigquery, MonetDB)

Additional Reading





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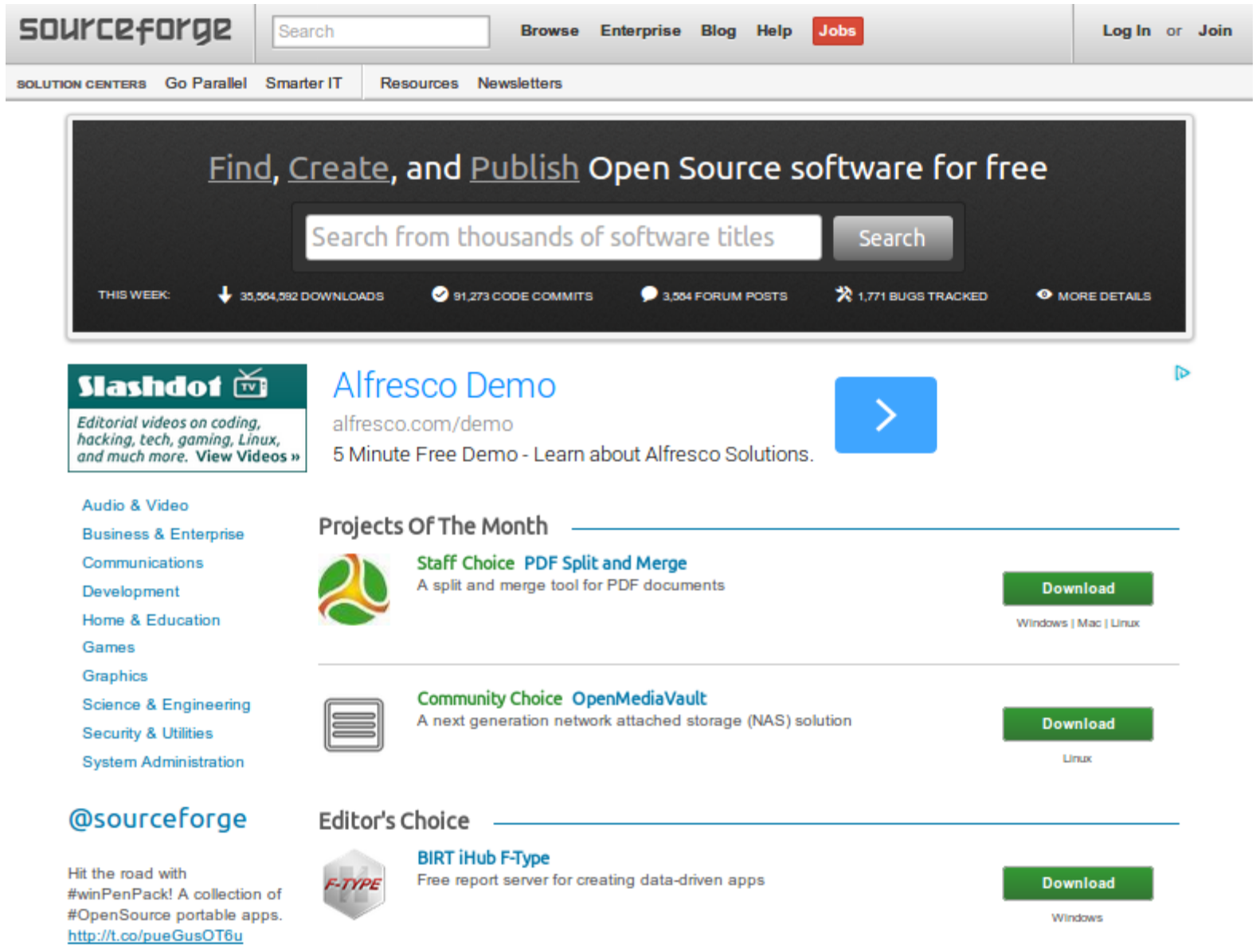

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