tdwi

TDWI is your source for in-depth education and research on all things data.

Orlando 2015
December 6–11

Foundations, Trends, and Futures in Business Intelligence and Analytics

Foundations   **Trends**   **Futures**

Kenote Presentations

Extending Your Data Warehouse Environment: How New Technologies Enhance (Not Replace) Existing Analytical Environments
Claudia Imhoff, Ph.D.
President and Founder of the Boulder BI Brain Trust and Intelligent Solutions, Inc

Supercharge Analytics with Innovation and Design Thinking
John Santaferraro
CEO and Founder, Ferraro Consulting

tdwi.org/OR2015

Foundations, Trends, and Futures
in Business Intelligence and Analytics

Successful and sustainable business intelligence and analytics programs are built on a solid foundation, responsive to trends in the industry, and aware of emerging and future technologies and practices. Join us in Orlando for comprehensive training on the skills that are essential to business intelligence and analytics success—today and tomorrow.

Together we're advancing all things data. See you in Orlando!

What You'll Find at TDWI Orlando

FOUNDATIONS	TRENDS	FUTURES
Dive deep into the fundamentals critical for every BI and analytics program—architecture, integration, data modeling, and more.	Explore the hottest topics and trends including predictive analytics, advanced analytics, data visualization, and big data.	Gain insight into emerging topics including cognitive computing, mobile BI, open data sources, big search, and data ethics.

Learn How to Lead in the Age of Advanced Analytics and Big Data

Gain "must-have" knowledge on strategies, people, culture, and capabilities for successful leadership in a data-driven organization. This unique five-course series within the BI & Analytics Leadership track focuses on bringing business and IT together:

S4   Building an Agile Business Culture

M6   Practical Techniques for Aligning Business and IT: Navigating Politics and Culture

T2P   BI and Analytics Organizations That Work: Resolving the Conflicts of Centralization and Self-Service

W2   Bringing Business and IT Together: Practical Steps to Improved Working Relationships

TH2   Power, Politics, and Partnership: Building an Analytics Culture

Core Learning Tracks

TDWI offers training in eight core tracks:

// BI & Analytics Essentials

// BI & Analytics Leadership

// BI & Analytics Directions

// Data Warehousing Directions

// Data Analytics & Visualization

// Big Data

// Data Modeling & Management

// Tools & Technologies

> "The TDWI conference was of tremendous value to our organization. We were able to get a deeper understanding of the changes in the analytics landscape and how using big data can differentiate our company in this extremely competitive landscape. We plan to attend multiple TDWI events throughout the year.
>
> —B. Docili
> Technicolor

> "It was both validating and forward-looking. The classes validated the value of our early BI analytics efforts. Peer interactions, an integral aspect of the classes, provided possible paths for future BI development within our own company.
>
> —G. Erickson
> RDO Equipment Co.

Keynote Presentations

Monday, December 7, 8:00–8:45 a.m.

Extending Your Data Warehouse Environment: How New Technologies Enhance (Not Replace) Existing Analytical Environments

Claudia Imhoff, Ph.D.
President and Founder of the Boulder BI Brain Trust and Intelligent Solutions, Inc.

Data, data everywhere... Today's BI implementation experts face potentially disruptive technology decisions as they strive to support their business users' BI needs. Increasing volumes and sources of data (on premises and off), innovative technologies, more complex data integration and quality issues, lower data latencies, and difficulties in maintaining and enhancing diverse BI needs are just a few of these. While they do shake up the status quo, they do not mean traditional data warehouse and BI components are no longer needed.

Dr. Imhoff has spent her career creating and implementing data warehouse architectures. In this keynote, she will present her latest one—a modern approach that embraces the new with the old: the Extended Data Warehouse Architecture. She will discuss how to bridge these two capabilities into a world-class analytical environment.

Thursday, December 10, 8:00–8:45 a.m.

Supercharge Analytics with Innovation and Design Thinking

John Santaferraro
CEO and Founder, Ferraro Consulting

Imagine analytics taking flight to reveal correlations and predictions that you didn't even know existed. Consider what it would be like to discover new insight regarding questions you didn't even know you should ask. Ultimately, think about what it would mean to your business and your career to continually increase the accuracy of your predictions or to fine-tune your learning algorithms to boost profits. It's not just all about the data. It starts with creative innovation and design thinking.

The biggest mistake you can make with your analytics program is to treat it like business intelligence. It is a different animal that requires thinking outside the box. Recognizing the 10 faces of innovation will unlock all of the potential of prediction to move your organization beyond ordinary data-driven decision making. Design thinking will free you from the constraints of old agile and waterfall methodologies and guide you toward breakthrough. Together, these two revolutionary concepts give your analytics program the right context and the right approach to ensure success.

NEW AND UPDATED COURSES

S3	Faster, Must Go Faster: Analytics in a Real-Time World
S4	Building an Agile Business Culture
M5	What's Next? Competing with Data
T2P	BI and Analytics Organizations That Work: Resolving the Conflicts of Centralization and Self-Service
T3A	Creating an Analytically Driven Enterprise: Implementing an Analytics Program
T3P	Modernizing Your Data Warehouse Environment
T4A	Innovation Awareness: Getting Ready for Technology Shifts
T4P	Workshop: Developing the Business Intelligence and Analytics Road Map
T5P	Mobile Business Intelligence: Innovation and Advantage with a Mobile Workforce
T7A	Exploring Cognitive Computing Approaches and Architectures
T7P	Big Data Search and Machine Learning: Now and Future
W7A	The Logical Data Warehouse: Architecture, Design, and Technology
W7P	New Data Storage Technologies: From Hadoop to MongoDB, and from SQL to NoSQL
TH4	Choosing the Right Analytic and Data Science Techniques
TH7P	Enriching Your Analytics with Open Data Sources
F4A	XaaS: As a Service
F5A	Big Data Ethics: The Power of Knowing

Attend and Learn:

// How to embrace big data, advanced analytics, self-service, and other trends without disrupting your existing BI and analytics architecture.

// How to shape your BI and analytics organization for a future of blurred or nonexistent lines between business and IT, and between data and information.

// What are the hottest trends in BI and analytics today and how will they affect your BI program?

// What does advanced analytics really mean? Who needs it, and what does it take to succeed?

// What are data scientists and why do you need them?

// What are the opportunities, challenges, and realities of big data implementations?

// When, how, and why should your BI and analytics road map address cognitive computing, complex event processing, and mobile BI?

// What are the implications for governance, privacy, security, and ethics in the new world of big data and advanced analytics?

// What are the emerging technologies that advance the practices of big data analytics?

Who Should Attend

// **Business and IT leaders** working to build a data-driven organization

// **Business and data analysts** who turn data into knowledge and insight

// **Everyone** who is interested in big data, from those seeking business opportunities to those faced with the technical challenges

// **BI, data warehousing, and analytics architects, designers, and developers**

// **Data architects, modelers, designers, and developers** working across the data continuum from structured data to non-traditional data sources

// **Data stewards, custodians, and stakeholders** who are challenged by the expanding scope of data and the growing complexity of regulations governing data privacy, security, and use

// **Anyone** who wants to get hands-on with state-of-the-art technologies for data mining, big data, and data visualization

TDWI EDUCATION and PHILOSOPHY

TDWI provides individuals and teams with a comprehensive portfolio of business and technical education and research to acquire the knowledge and skills they need, when and where they need them. The in-depth, best-practices-based information TDWI offers can be quickly applied to develop world-class talent across your organization's business and IT functions to enhance analytical, data-driven decision making and performance.

TDWI advances the art and science of realizing business value from data by providing an objective forum where industry experts, solution providers, and practitioners can explore and enhance data competencies, practices, and technologies.

TDWI never endorses any specific products, services, or tools and goes to great lengths to keep course offerings free of bias. To sustain the high standard of quality and product neutrality, we kindly ask your assistance by responding thoughtfully to the objectivity category when completing training evaluation forms.

Why TDWI?

We know you have a choice when it comes to training. For more than 20 years, TDWI's community of practitioners, analysts, educators, and solution providers has helped data professionals get smarter, so the companies they work for can manage and monetize data more effectively. What sets TDWI's training apart?

// **All things data.** TDWI offers the most comprehensive coverage of data-related topics, including business intelligence, data warehousing, big data, visualization and advanced analytics, and more.

// **In-depth, vendor-neutral education.** Classes of different lengths, taught by seasoned professionals, trusted vendor representatives, and industry thought leaders for new and experienced practitioners.

// **Trusted in the space.** For more than 20 years, our full-time, on-staff research analysts and education directors have tracked technologies and trends to bring you the most comprehensive, timely education available.

// **Immediate impact.** The things you learn in the classroom today can be applied at work tomorrow. The focus is on practical education that you can use.

// **Networking opportunities** at evening receptions and luncheons.

// **Exhibit hall.** See the latest solutions from leading providers of hardware, software, and services for analytics, business intelligence, and related technologies.

Meet Our Faculty

TDWI faculty are thoroughly vetted for depth of expertise as well as presentation style to deliver curriculum-based, full-day training. Many are authors and well-known authorities in the space.

Chris Adamson, CBIP
Founder and BI Specialist
Oakton Software LLC
COURSES **M1, T1A, T1P**

Claudia Imhoff, Ph.D.
President and Founder
Intelligent Solutions, Inc.
MONDAY KEYNOTE; COURSES **S3, T3A, T3P**

Stephen Brobst
Managing Partner
Sampo Technologies & Systems
COURSES **S2, M4**

Ankur Jain
Chief Technology Officer
Archipelago IS, LLC
COURSE **F4A**

Maureen Clarry
President
Clarry Consulting Inc.
COURSE **TH2**

Krish Krishnan
CEO
Sixth Sense Advisors, Inc.
COURSES **W4, TH3**

Ted Cuzzillo
Data Intelligence Journalist
Datadoodle
COURSES **F2A, F2P**

Mike Lampa
Managing Partner
Archipelago IS, LLC
COURSES **F3A, F3P**

Wayne Eckerson
Principal Consultant
Eckerson Group, LLC
COURSES **S6A, S6P**

Deanne Larson, DM, CBIP
President
Larson & Associates
COURSES **S1, M3**

Aaron Fuller, CBIP
Principal
Superior Data Strategies, LLC
COURSES **M7A, M7P, T2A, T2P**

Evan Levy, CBIP
Vice President of Business Consulting
SAS
COURSES **T6A, T6P**

Jonathan Geiger, CBIP
Executive Vice President
Intelligent Solutions, Inc.
COURSES **TH1, F1**

David Loshin
President
Knowledge Integrity, Inc.
COURSES **T4A, T4P**

Sandra Hendren
Senior Consultant
The Modeling Agency, LLC
COURSE **W3**

Mark Madsen
President
Third Nature, Inc.
COURSE **TH5**

Richard Hines
Analytics Consultant and Educator
COURSES **S5A, S5P**

Eileen McDaniel, Ph.D.
Director of Analytics User Experience
Freakalytics, LLC
COURSE **W1**

Meet Our Faculty

TDWI faculty are thoroughly vetted for depth of expertise as well as presentation style to deliver curriculum-based, full-day training. Many are authors and well-known authorities in the space.

Stephen McDaniel
Chief Data Scientist
Freakalytics, LLC
COURSE **W1**

William McKnight
President
McKnight Consulting Group
COURSES **W6A, W6P**

John Myers
Managing Research Director
Enterprise Management Associates
COURSES **W5A, W5P**

John O'Brien, CBIP
President
Radiant Advisors
COURSE **T7A**

Mark Peco, CBIP
BI Consultant and Instructor
InQvis Inc.
COURSES **TH7A, TH7P**

Thomas Redman
The Data Doc
Navesink Consulting Group, LLC
COURSE **M5**

Laura Reeves
Principal
StarSoft Solutions, Inc.
COURSE **M2**

Lorna Rickard
Principal Consultant
Shared Success Strategies, LLC
COURSE **TH2**

Shawn Rogers
President
Analytic Response
COURSES **T5A, T5P**

Lindy Ryan
Research Director
Radiant Advisors
COURSE **F5A**

John Santaferraro
CEO and Founder
Ferraro Consulting
THURSDAY KEYNOTE; COURSE **TH4**

Len Silverston
President
Universal Data Models, LLC
COURSE **M6**

Joe Vallone
Agile Coach, Trainer, and Thought Leader
Agile Business Connect, LLC
COURSE **S4**

Rick van der Lans
Managing Director
R20/Consultancy
COURSES **W7A, W7P**

Dave Wells, CBIP
BI Consultant, Mentor, and Teacher
COURSES **S3, W2, TH6A, TH6P, F2A, F2P**

David Winters
Chief Architect and Director, EIA
Cognizant
COURSE **T7P**

Explore Courses by Role

Use this guides to create a program that meets your unique needs. Courses are listed chronologically and show the topics you will explore in each session.

			Business Management	Business Function/LoB	IT Management	BI/Analytics Architects	Data Architects & Modelers	BI/Analytics Developers	Business Analysts	Data Analysts	Data Scientists	Data Governance/Stewards
S1	TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis	Deanne Larson		○		○	○	○				●
S2	The Future of Data Warehousing	Stephen A. Brobst			●	●	●	●				
S3	Faster, Must Go Faster: Analytics in a Real-Time World	Claudia Imhoff, Dave Wells		○	○	○	○			●	●	
S4	Building an Agile Business Culture	Joe Vallone	○	○	●							
S5A	TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success	Richard Hines	○	○	○	○	○	○	●			●
S5P	TDWI Business Intelligence Architecture: Principles of BI Design	Richard Hines	○	○	○	○	○	○				●
S6A	The New Analytical Ecosystem: Bridging the Worlds of BI and Big Data	Wayne Eckerson			○	○	○	○				
S6P	Secrets of Analytical Leaders: Insights from Information Insiders	Wayne Eckerson	○	○	○				●	●		
M1	TDWI Data Visualization Fundamentals	Chris Adamson				●			●	●	●	●
M2	Dimensional Modeling from a Business Perspective: A Model the Business Can Understand	Laura L. Reeves	○	○	○	○	○					●
M3	Hands on: Data Mining with R	Deanne Larson							●	●	●	●
M4	Designing a Data Warehouse for High Performance	Stephen A. Brobst			●	●	●					
M5	What's Next? Competing with Data	Thomas C. Redman	○	○	○							●
M6	Practical Techniques for Aligning Business and IT: Navigating Politics and Culture	Len Silverston	○	○	○							●
M7A	CBIP Preparation for the Information Systems Core Exam	Aaron Fuller	○	○	○	○	○	○	●	●	●	●
M7P	CBIP Preparation for the Data Warehousing Exam	Aaron Fuller	○	○	○	○	○	○	●	●	●	●
T1A	TDWI Business Analytics: Exploration, Experimentation, and Discovery	Chris Adamson	○	○	○				●	●	●	
T1P	TDWI Predictive Analytics Fundamentals	Chris Adamson	○	○	○				●	●	●	
T2A	TDWI Big Data Fundamentals: Creating Value from Non-Traditional Data Sets	Aaron Fuller	○	○	○	○	○	○	●	●	●	●
T2P	BI and Analytics Organizations That Work: Resolving the Conflicts of Centralization and Self-Service	Aaron Fuller	○	○	○							●
T3A	Creating an Analytically Driven Enterprise: Implementing an Analytics Program	Claudia Imhoff	○	○	○							
T3P	Modernizing Your Data Warehouse Environment	Claudia Imhoff				●	●	●				
T4A	Innovation Awareness: Getting Ready for Technology Shifts	David Loshin				○	○		○	●	●	●
T4P	Workshop: Developing the Business Intelligence and Analytics Road Map	David Loshin	○	○	○	○			●	●		
T5A	Social Analytics in the Enterprise	Shawn Rogers		○	○	○			●	●	●	
T5P	Mobile Business Intelligence: Innovation and Advantage with a Mobile Workforce	Shawn Rogers		○	○	○		○				●
T6A	Tipping the Sacred Cows of Data Warehousing	Evan Levy			○	○	○					
T6P	Tipping the Sacred Cows of Emerging Technologies	Evan Levy			○	○	○		●	●	●	
T7A	Exploring Cognitive Computing Approaches and Architectures	John O'Brien		○		○			●	●	●	

Code	Title	Presenter	BUSINESS		IT				BOTH			
			Business Management	Business Function/LoB	IT Management	BI/Analytics Architects	Data Architects & Modelers	BI/Analytics Developers	Business Analysts	Data Analysts	Data Scientists	Data Governance/Stewards
T7P	Big Data Search and Machine Learning: Now and Future	*David Winters*			○		○	○	●	●	●	
W1	Hands-on Data Visualization with R	*Eileen McDaniel, Stephen McDaniel*				○		○	●	●	●	
W2	Bringing Business and IT Together: Practical Steps to Improved Working Relationships	*Dave Wells*	○		○	○			●	●		
W3	Serious Play for Advanced Analytics: What Works, What Doesn't, and Why	*Sandra Hendren*				○			●	●	●	
W4	Understanding Hadoop	*Krish Krishnan*			○	○	○	○	●	●	●	
W5A	TDWI Data Warehouse Automation: Better, Faster, Cheaper … You Can Have It All	*John L Myers*			○	○	○	○				
W5P	TDWI Data Virtualization: Solving Complex Data Integration Challenges	*John L Myers*			○	○	○	○				
W6A	Introduction to Graph Databases	*William McKnight*				○	○	○	●	●	●	
W6P	Introduction to NoSQL for Those Used to SQL: Storing and Managing Operational Big Data	*William McKnight*				○	○	○	●	●	●	
W7A	The Logical Data Warehouse: Design, Architecture, and Technology	*Rick van der Lans*			○	○	○	○				
W7P	New Data Storage Technologies: From Hadoop to MongoDB, and from SQL to NoSQL	*Rick van der Lans*			○	○	○					
TH1	TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement	*Jonathan G. Geiger*	○	○	○		○	○				●
TH2	Power, Politics, and Partnership: Building an Analytics Culture	*Maureen Clarry, Lorna Rickard*	○	○	○							●
TH3	Hands-on Hadoop	*Krish Krishnan*				○	○	○			●	
TH4	Choosing the Right Analytic and Data Science Techniques	*John Santaferraro*							○	●	●	●
TH5	Demystifying Big Data: Designing an Architecture for Data and Analytics	*Mark Madsen*			○	○	○	○	●	●	●	○
TH6A	Data Modeling in the Age of Big Data	*Dave Wells*				○	○	○	●	●	●	○
TH6P	TDWI Data Governance Innovations: Adapting for Agile, Big Data, and Cloud	*Dave Wells*	○	○		○						●
TH7A	Harness the Power of "What-If" Analytics: Shaping Your Future with Simulation	*Mark Peco*			○	○			●	●	●	
TH7P	Enriching Your Analytics with Open Data Sources	*Mark Peco*	○	○	○	○	○	○	●	●	●	○
F1	TDWI Data Integration Principles and Practices: Creating Information Unity from Data Disparity	*Jonathan G. Geiger*			○	○	○	○				
F2A	Data Storytelling: The New Horizon in Business Analytics	*Ted Cuzzillo, Dave Wells*	○	○	○				●	●	●	
F2P	Data Storytelling Workshop	*Ted Cuzzillo, Dave Wells*	○	○	○				●	●	●	
F3A	Emerging Technology for Advanced Analytics	*Michael Lampa*				○	○	○	●	●	●	
F3P	Innovative Techniques for Advanced Analytics	*Michael Lampa*				○	○	○	●	●	●	
F4A	XaaS: As a Service	*Ankur Jain*				○	○	○			●	
F5A	Big Data Ethics: The Power of Knowing	*Lindy Ryan*	○	○	○							●

Vendor Exhibition

EXHIBIT HALL HOURS

Tuesday	
Exhibit Hall Open and Lunch 11:15 a.m.–2:15 p.m.	Exhibit Hall Open and Reception 5:00–7:00 p.m.
Wednesday	
Exhibit Hall Open and Lunch 12:00–2:00 p.m.	

The TDWI Exhibit Hall features leading providers of hardware, software, and services for analytics, business intelligence, and related technologies demonstrating their latest solutions. Time is set aside for visiting with these solution providers without missing any courses.

Visit tdwi.org/OR2015 for more information about exhibitors at TDWI Orlando.

View all past exhibitors at tdwi.org/OR2015/exhibitors.

TDWI PARTNERS

For 2015, the following companies have joined the TDWI Partner program. These solution providers share the TDWI commitment to quality education, research, and knowledge transfer for business intelligence, analytics, and data warehousing.

PLATINUM PARTNERS

PARTNERS

RECENT TDWI EXHIBITORS:

Actian Corporation	Chartcube	EXASOL	L&T Infotech	Pitney Bowes & Ironside	ThoughtSpot
Actuate	CirrusPoint	GoodData	Liaison	Pyramid Analytics	TIBCO Spotfire
Adaptive Planning	Cisco	Halo BI	Logi Analytics	Rapid Insight	TimeXtender
Alteryx	Cloudera	Hortonworks	Looker	RedPoint Global	Treasure Data
Altosoft, A Kofax Company	Collibra	HP	MapR	Rocket Software	USEReady
Amazon Web Services	Composite Software, Inc.	HP Vertica	MarkLogic	SAP	WebAction
Analytix Data Services LLC	Corporate Technologies	IBM	MemSQL	SAS Institute Inc.	WhereScape
Attivio	Datasource Consulting	iceDQ	Microsoft	Sisense	YarcData
Beyond Core	Datawatch	Infogix, Inc.	MicroStrategy	SnapLogic, Inc.	Yellowfin
Birst	Dell Software	Information Builders	Neudesic	Splunk	
Blue Star Infotech	Denodo Technologies	Inquidia	Neutrino Concepts Ltd.	Tableau Software	
CA ERwin Modeling® and Myriad Software	Domo Technologies	iOLAP, Inc.	Oracle	Talend	
	Esri	Kalido by Magnitude Software	ParAccel, Inc.	Tamr	
CA Technologies	Exaptive		Pentaho	Teradata Corporation	

Agenda

COURSE TOPICS KEY

Some classes cover more than one topic. Primary focus is listed first.

- **BE** BI & Analytics Essentials
- **BL** BI & Analytics Leadership
- **BA** BI & Analytics Directions
- **DW** Data Warehousing Directions
- **DA** Data Analytics & Visualization
- **BD** Big Data
- **DM** Data Modeling & Management
- **TT** Tools & Technologies

cbip Recommended courses to help with CBIP certification exam prep.

SUNDAY — December 6

COURSES
Full Day	9:00 a.m.–5:00 p.m.
Half Day A (a.m.)	9:00 a.m.–12:15 p.m.
Half Day P (p.m.)	1:45–5:00 p.m.

EVENTS
Breakfast	8:00–9:00 a.m.
Lunch Break	12:15–1:45 p.m.

COURSE OFFERINGS

○ S1 — DM BE cbip
TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis
D. Larson

○ S2 — DW
The Future of Data Warehousing
S. Brobst

○ S3 NEW! — BA
Faster, Must Go Faster: Analytics in a Real-Time World
C. Imhoff, D. Wells

○ S4 NEW! — DA
Building an Agile Business Culture
J. Vallone

○ S5A — BE cbip
TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success
R. Hines

○ S5P — BE cbip
TDWI Business Intelligence Architecture: Principles of BI Design
R. Hines

○ S6A — DA
The New Analytical Ecosystem: Bridging the Worlds of BI and Big Data
W. Eckerson

○ S6P — BL
Secrets of Analytical Leaders: Insights from Information Insiders
W. Eckerson

MONDAY — December 7

COURSES
Full Day	9:00 a.m.–5:00 p.m.
Half Day A (a.m.)	9:00 a.m.–12:15 p.m.
Half Day P (p.m.)	1:45–5:00 p.m.

EVENTS
Breakfast	7:30–8:00 a.m.
Keynote Presentation (see p. 2)	8:00–8:45 a.m.
Lunch Break	12:15–1:45 p.m.
CBIP Exam Lab	5:30–7:00 p.m.
Welcome Reception	5:00–6:30 p.m.

COURSE OFFERINGS

○ M1 — DA
TDWI Data Visualization Fundamentals
C. Adamson

○ M2 — DM cbip
Dimensional Modeling from a Business Perspective: A Model the Business Can Understand
L. Reeves

○ M3 — TT
Hands on: Data Mining with R
D. Larson

○ M4 — DW
Designing a Data Warehouse for High Performance
S. Brobst

○ M5 NEW! — DA
What's Next? Competing with Data
T. Redman

○ M6 — BL
Practical Techniques for Aligning Business and IT: Navigating Politics and Culture
L. Silverston

○ M7A — cbip
CBIP Preparation for the Information Systems Core Exam
A. Fuller

○ M7P — cbip
CBIP Preparation for the Data Warehousing Exam
A. Fuller

COURSES

Full Day	8:00 a.m.–5:30 p.m.
Half Day A (a.m.)	8:00–11:15 a.m.
Half Day P (p.m.)	2:15–5:30 p.m.

EVENTS

Breakfast	7:30–8:00 a.m.
Exhibit Hall Open and Lunch	11:15 a.m.–2:15 p.m.
Premium Membership Briefing	1:40–2:00 p.m.
Exhibit Hall Open and Reception	5:00–7:00 p.m.

COURSE OFFERINGS

T1A `BE` `DA` `cbip` p. 21
TDWI Business Analytics: Exploration, Experimentation, and Discovery
C. Adamson

T1P `DA` `cbip` p. 21
TDWI Predictive Analytics Fundamentals
C. Adamson

T2A `BD` `cbip` p. 22
TDWI Big Data Fundamentals: Creating Value from Non-Traditional Data Sets
A. Fuller

T2P NEW! `BL` p. 22
BI and Analytics Organizations That Work: Resolving the Conflicts of Centralization and Self-Service
A. Fuller

T3A NEW! `BL` p. 22
Creating an Analytically Driven Enterprise: Implementing an Analytics Program
C. Imhoff

T3P NEW! `DW` p. 23
Modernizing Your Data Warehouse Environment
C. Imhoff

T4A NEW! `BA` p. 23
Innovation Awareness: Getting Ready for Technology Shifts
D. Loshin

T4P NEW! `BL` p. 23
Workshop: Developing the Business Intelligence and Analytics Road Map
D. Loshin

T5A `DA` p. 24
Social Analytics in the Enterprise
S. Rogers

T5P NEW! `BA` p. 24
Mobile Business Intelligence: Innovation and Advantage with a Mobile Workforce
S. Rogers

T6A `DW` p. 24
Tipping the Sacred Cows of Data Warehousing
E. Levy

T6P `TT` p. 25
Tipping the Sacred Cows of Emerging Technologies
E. Levy

T7A NEW! `BA` `DA` p. 25
Exploring Cognitive Computing Approaches and Architectures
J. O'Brien

T7P NEW! `BA` p. 25
Big Data Search and Machine Learning: Now and Future
D. Winters

COURSES

Full Day	9:00 a.m.–5:00 p.m.
Half Day A (a.m.)	9:00 a.m.–12:00 p.m.
Half Day P (p.m.)	2:00–5:00 p.m.

EVENTS

Breakfast	8:30–9:00 a.m.
Exhibit Hall Open and Lunch	12:00–2:00 p.m.
CBIP Exam Lab	5:30–7:00 p.m.

COURSE OFFERINGS

W1 `DA` p. 26
Hands-on Data Visualization with R
E. McDaniel, S. McDaniel

W2 `BL` p. 26
Bringing Business and IT Together: Practical Steps to Improved Working Relationships
D. Wells

W3 `DA` p. 26
Serious Play for Advanced Analytics: What Works, What Doesn't, and Why
S. Hendren

W4 `BD` p. 27
Understanding Hadoop
K. Krishnan

W5A `DW` p. 27
TDWI Data Warehouse Automation: Better, Faster, Cheaper … You Can Have It All
J. Myers

W5P `DW` `cbip` p. 27
TDWI Data Virtualization: Solving Complex Data Integration Challenges
J. Myers

W6A `TT` p. 28
Introduction to Graph Databases
W. McKnight

W6P `TT` p. 28
Introduction to NoSQL for Those Used to SQL: Storing and Managing Operational Big Data
W. McKnight

W7A NEW! `DW` p. 28
The Logical Data Warehouse: Architecture, Design, and Technology
R. van der Lans

W7P NEW! `DW` `BD` p. 29
New Data Storage Technologies: From Hadoop to MongoDB, and from SQL to NoSQL
R. van der Lans

COURSES

Full Day	9:00 a.m.–5:00 p.m.
Half Day A (a.m.)	9:00 a.m.–12:15 p.m.
Half Day P (p.m.)	1:45–5:00 p.m.

EVENTS

Breakfast	7:30–8:00 a.m.
Keynote Presentation (see p. 2)	8:00–8:45 a.m.
Lunch Break	12:15–1:45 p.m.
CBIP Exam Lab	5:30–7:00 p.m.

COURSE OFFERINGS

○ **TH1**   BE DM ✓cbip p. 29

TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement
J. Geiger

○ **TH2**   BL p. 29

Power, Politics, and Partnership: Building an Analytics Culture
M. Clarry, L. Rickard

○ **TH3**   BD TT p. 30

Hands-on Hadoop
K. Krishnan

○ **TH4** UPDATED   DA p. 30

Choosing the Right Analytic and Data Science Techniques
J. Santaferraro

○ **TH5**   BD p. 30

Demystifying Big Data: Designing an Architecture for Data and Analytics
M. Madsen

○ **TH6A**   BD DM p. 31

Data Modeling in the Age of Big Data
D. Wells

○ **TH6P**   BL DM p. 31

TDWI Data Governance Innovations: Adapting for Agile, Big Data, and Cloud
D. Wells

○ **TH7A**   DA p. 31

Harness the Power of "What-If" Analytics: Shaping Your Future with Simulation
M. Peco

○ **TH7P** NEW!   DW BD p. 32

Enriching Your Analytics with Open Data Sources
M. Peco

COURSES

Full Day	8:00 a.m.–3:30 p.m.
Half Day A (a.m.)	8:00–11:15 a.m.
Half Day P (p.m.)	12:15–3:30 p.m.

EVENTS

Breakfast	7:30–8:00 a.m.
Lunch Break	11:15 a.m.–12:15 p.m.
CBIP Exam Lab	8:00 a.m.–2:00 p.m.

TDWI has arranged the Friday schedule to finish earlier than the other days of the week yet still provide a full day of instruction.

COURSE OFFERINGS

○ **F1**   BE ✓cbip p. 32

TDWI Data Integration Principles and Practices: Creating Information Unity from Data Disparity
J. Geiger

○ **F2A**   DA p. 32

Data Storytelling: The New Horizon in Business Analytics
T. Cuzzillo, D. Wells

○ **F2P**   DA p. 33

Data Storytelling Workshop
T. Cuzzillo, D. Wells

○ **F3A**   BA TT p. 33

Emerging Technology for Advanced Analytics
M. Lampa

○ **F3P**   DA p. 33

Innovative Techniques for Advanced Analytics
M. Lampa

○ **F4A** NEW!   BA p. 34

Xaas: As a Service
A. Jain

○ **F5A** NEW!   BL p. 34

Big Data Ethics: The Power of Knowing
L. Ryan

COURSE TOPICS KEY

Some classes cover more than one topic. Primary focus is listed first.

- **BE** BI & Analytics Essentials
- **BL** BI & Analytics Leadership
- **BA** BI & Analytics Directions
- **DW** Data Warehousing Directions
- **DA** Data Analytics & Visualization
- **BD** Big Data
- **DM** Data Modeling & Management
- **TT** Tools & Technologies

✓cbip Recommended courses to help with CBIP certification exam prep.

Featured Training & Core Topics

Six action-packed days filled with classes, case studies, hands-on training, and networking offer an accelerated learning experience for business and technical leaders and implementers.

BE BI AND ANALYTICS ESSENTIALS

Data integration and sound information management practices are prerequisites to successful analytics. Today's hot topics—big data and advanced analytics— only amplify the importance of data warehousing and business intelligence. The best foundation for successful and sustainable analytics programs is a good fit with the architectural concepts of business intelligence and a strong connection with existing data integration processes and practices. This set of courses concentrates on core skills that are essential to every business intelligence and analytics program.

S1 — p. 16
TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis

S5A — p. 17
TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success

S5P — p. 17
TDWI Business Intelligence Architecture: Principles of BI Design

T1A — p. 21
TDWI Business Analytics: Exploration, Experimentation, and Discovery

TH1 — p. 29
TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement

F1 — p. 32
TDWI Data Integration Principles and Practices: Creating Information Unity from Data Disparity

BL BI AND ANALYTICS LEADERSHIP

Leadership gains importance and complexity in data-driven organizations, as the range of data sources and the variety of data uses expands. In the age of advanced analytics and big data, leadership encompasses strategies, people, culture, capabilities, governance, data protection, regulatory compliance, and much more. These courses are designed to cover the "must have" knowledge for those in leadership roles. Changing roles and relationships between business and IT organizations are among the most pressing of leadership challenges. This track includes courses specifically designed to help you step up to those challenges.

S6P — p. 18
Secrets of Analytical Leaders: Insights from Information Insiders

M6 — p. 20
Practical Techniques for Aligning Business and IT: Navigating Politics and Culture

T2P — p. 22
BI and Analytics Organizations That Work: Resolving the Conflicts of Centralization and Self-Service

T3A — p. 22
Creating an Analytically Driven Enterprise: Implementing an Analytics Program

T4P — p. 23
Workshop: Developing the Business Intelligence and Analytics Road Map

W2 — p. 26
Bringing Business and IT Together: Practical Steps to Improved Working Relationships

TH2 — p. 29
Power, Politics, and Partnership: Building an Analytics Culture

TH6P — p. 31
TDWI Data Governance Innovations: Adapting for Agile, Big Data, and Cloud

F5A — p. 34
Big Data Ethics: The Power of Knowing

DM DATA MODELING AND MANAGEMENT

Data is the fuel that powers business intelligence and analytics. Well-managed data provides the foundation for delivering BI applications. Data that is meaningful and easily understood— supported with models and metadata—is essential to analytics success. Courses in this track help you learn critical skills including modeling for relational, dimensional, and big data stores as well as capabilities for data governance and managed quality.

S1 — p. 16
TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis

M2 — p. 19
Dimensional Modeling from a Business Perspective: A Model the Business Can Understand

TH1 — p. 29
TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement

TH6A — p. 31
Data Modeling in the Age of Big Data

TH6P — p. 31
TDWI Data Governance Innovations: Adapting for Agile, Big Data, and Cloud

DW DATA WAREHOUSING DIRECTIONS

The once-stable world of data warehousing is experiencing fundamental shifts driven by trends in big data, advanced analytics, and real-time analytics. Organizations with mature data warehouses recognize a need to modernize the data warehouse. Courses in this track help you understand the changes taking place and how to respond to them. You'll learn how to apply logical data warehousing principles, how to enrich the data warehouse with free and open data sources, how new data storage technologies affect data warehousing, and how technologies such as data virtualization and data warehouse automation help you keep pace in this rapidly changing field.

DA DATA ANALYTICS AND VISUALIZATION

Data analytics focuses on using data and information effectively to drive positive business actions. Data visualization is the language—a language of images—that is widely accepted as the most effective way to communicate the findings of analytics, visual design techniques and best practices, concise presentation of massive data volumes, and the art of data storytelling. Courses in this category will help you turn data into insights and communicate those insights to drive discussions, decisions, and business impact.

BD BIG DATA

Big data brings new opportunities for analytics—but it also brings new challenges: fitting new and non-traditional data sources into your data strategy and data architecture, choosing the right use cases for big data, embracing big data technologies, executing big data projects, and much more. From big data basics to lessons learned "in the trenches," you'll learn concepts and techniques to make the most of your big data analytics endeavors.
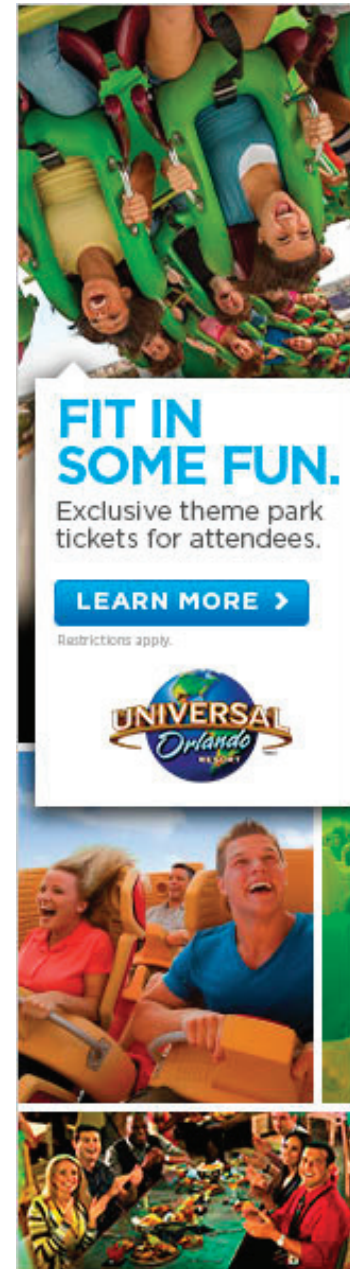
BA — BI AND ANALYTICS DIRECTIONS

The world of business intelligence and analytics is continuously evolving as vendors, technologists, and data scientists innovate new tools and techniques. Everyone involved in architecture, planning, and road-mapping for business intelligence and analytics programs must be aware of future directions. The courses in this track discuss current and upcoming innovations, addressing topics such as cognitive computing, big search, advanced analytics, mobile BI, and the emergence of resource-oriented architecture.

TT — TOOLS AND TECHNOLOGY

The world of big data analytics brings an onslaught of new technologies that are continuously changing. Hadoop, NoSQL, data visualization, data mining, and other analytics capabilities are technology-dependent, with open source driving much of the evolution. The courses in this track help you understand the variety of tools and technologies, learn what to expect as the technologies evolve, make informed technology decisions, and gain hands-on experience with big data and analytics technologies.

Course Descriptions

TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis

Deanne Larson

Dimensional data is a core component of modern business intelligence and data warehouse implementations. Dimensionally organized data offers a more effective and adaptable solution to business analytics needs than can be achieved with relational data structures. Virtually anyone involved in business intelligence and data warehousing projects needs to have fundamental knowledge of the pathway from business questions to business analytics. This course traces that pathway.

The course begins with a comparison of relational and dimensional data organization and provides an example of business questions not readily answered using the more traditional data structures of relational modeling. It then illustrates the steps to design analytics solutions, starting from business questions and concluding by demonstrating an OLAP solution. These steps encompass techniques to capture business questions, represent them as a business solution, translate them into a technology solution, and deliver them to those who need information.

YOU WILL LEARN
- Concepts of dimensional data modeling
- The relationship between business metrics and dimensional data
- Similarities and differences between relational and dimensional data models
- Requirements-gathering techniques for business metrics and dimensional data
- How to build a logical dimensional model
- How to translate a logical dimensional model to a star schema design
- How dimensional data is used to deliver business analytics and OLAP capabilities

GEARED TO
Data architects; data mart developers; business analysts; business intelligence and data warehouse program and project managers

---

The Future of Data Warehousing

This course assumes knowledge of DW fundamentals.

Stephen Brobst

This full-day course examines the trends in data warehouse deployment and developments in advanced technology. The implications of these technology developments for data warehouse implementations will be discussed, with examples in future architecture and deployment.

We will cover best practices for deployment of a next-generation data warehouse implementation as the realization of business intelligence for a real-time enterprise. A true enterprise data warehouse must export decision-making capabilities throughout an organization.

In addition, this course presents the use of service-oriented architecture (SOA) to deploy decisioning services both within an organization and to users outside of traditional organizational boundaries. We will explore emerging trends related to extended analysis using content from Web 3.0 applications and other non-traditional data sources.

YOU WILL LEARN
- Storage and processing technologies
- Cloud computing and virtualization
- Agile data warehousing methodologies
- Data acquisition and delivery
- The real-time enterprise
- New programming paradigms such as MapReduce/Hadoop
- Social network analysis
- Analysis using non-traditional data types
- Analytic applications architecture
- eXtreme Data Warehousing (XDW)

GEARED TO
Data warehouse architects, designers, developers, and administrators

---

Faster, Must Go Faster: Analytics in a Real-Time World

Claudia Imhoff, Dave Wells

Companies today are using analytics and business intelligence to optimize daily operations, demanding fresher data and faster analytics. So far this operational intelligence approach has been accomplished primarily by simply reducing the latency of data integration and data analysis tasks in a traditional enterprise data warehouse environment.

While this reduction in latencies gets business users closer to real-time analyses, it is a far cry from real-time (RT) decisions made using RT data. Today, organizations are recognizing that RT need must be fulfilled. Fortunately we have seen the introduction of big data technologies, streaming analytical engines, and embedded BI capabilities that support the requested RT environment.

This class explores the benefits from these new technologies, the requirements to support and sustain such an environment, and the use cases for RT operational intelligence. We will also discuss how the traditional enterprise data warehouse environment can be extended to support RT processing.

YOU WILL LEARN
- Understanding the business benefits of RT operational intelligence
- The extended data warehouse architecture supporting all analytics
- The technology requirements for RT projects
- The use cases and case studies for RT operational intelligence
- Techniques, practices, and challenges when working with data streams
- Considerations for getting started with RT analytics

GEARED TO
Business and IT managers interested in real-time and operational analytics; analytics architects, designers, and developers interested in real-time and operational analytics; data scientists, data analysts, and analytic developers who need to work with data streams

---

Building an Agile Business Culture

Joe Vallone

Agile software development is defined by the Agile Alliance as "a group of software development methods based on iterative and incremental development, where requirements and solutions evolve through collaboration between self-organizing, cross-functional teams." Scrum, kanban, extreme programming, and lean are some of the more popular agile frameworks. Each approach varies, but the primary agile principles are the same across all agile frameworks.

Agile Alliance Principle #4 states: Business people and developers must work together daily throughout the project. This collaboration empowers agile teams to satisfy their customers through early and continuous delivery of software, which is the first Agile Principle.

In this interactive workshop attendees will be introduced to agile frameworks and understand how these frameworks enable us to deliver greater value to our customers. In this session we will discuss the role of the business, stakeholders, and managers in an agile environment. In addition, we will discuss the specific roles of business analysts, product owners, and product managers. We will also investigate ways to make better business decisions using an economic framework, agile planning, and how responding to change is more valuable than following a plan.

YOU WILL LEARN
- Introduction to agile
- Why is agile important to the business?
- The role of business in agile software development
- Product owner in a nutshell
- User stories and requirements
- The five layers of planning
- Project portfolio planning using an economic framework
- Agile at scale
- Measuring success

GEARED TO
Business managers and subject matter experts with roles in agile projects; IT managers who need to build agile teams and implement agile processes; analysts, designers, and developers with roles in agile projects

TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success

Richard Hines

The BI life cycle spans a continuum that begins with large amounts of disparate data and stretches to encompass people, technology, information, analysis, and decision making. The benefits of BI are substantial: new business capabilities for insight, forecasting, planning, agility, and strategy execution.

Realizing benefits is challenging. With many moving parts—infrastructure, technology, data, integration, analytics, applications, metrics, reports, dashboards, scorecards—putting the pieces together in the most effective way is difficult. Learn the basics of BI from end to end, with special attention on two of the most important factors for BI success: planning and collaboration. You are most able to chart a course for BI success when teams and stakeholders share common concepts, use consistent terminology, and contribute collectively to the BI vision.

YOU WILL LEARN
- Meaningful and actionable definitions of BI
- Effective ways to deliver BI: Web, mobile, desktop, etc.
- Common kinds of BI reporting: ad hoc, published, enterprise, operational
- Performance management principles: dashboards, scorecards, KPIs
- Business analyst principles: OLAP, analytic modeling, data visualization
- Advanced analytics concepts for data mining, predictive analytics, and text analytics
- Data management practices: profiling, cleansing, quality management
- Data integration practices: consolidation, virtualization, data warehousing

GEARED TO
Anyone with a role in BI/DW programs who needs to understand the concepts and the full life cycle of BI; BI/DW managers and leaders seeking to increase the value and business impact of a BI program; business and technical people who need to work together to implement BI; teams that need to develop a common base of concepts and terminology for BI

TDWI Business Intelligence Architecture: Principles of BI Design

Richard Hines

Business intelligence architecture is a set of frameworks to organize the data, management, and technical components used to build BI systems. Architecture plays an important role in BI programs and projects, ensuring that the development efforts of multiple projects fit neatly together as a cohesive whole. Comprehensive architecture addresses data, technology, integration, business rules, processes, projects, and more. Multifaceted, multidimensional, and complex—BI architecture is clearly a team job that involves data architects, integration architects, technology architects, and more. With the right knowledge and skills, your BI architects become an effective team able to handle the many complexities of BI systems.

YOU WILL LEARN
- The full scope of architectural objectives—structural integrity, standardization, reusability, environmental fit, aesthetics, and sustainability
- A framework to ensure architectural completeness—business, organization, data, integration, and process views
- A framework to organize BI components—access, analysis, presentation, storage, integration, and data source tiers
- A framework to organize the information management stack—data, integration, rules, tools, teams, reports, analysis, and application
- A framework to organize architectural requirements—functional, data, operations, environment, and structural requirements
- A framework to organize technology requirements—data access, data manipulation, data analysis, reporting, visualization, security, portability, and accessibility
- Technology trends and BI architecture—cloud, SaaS, open source, appliances, advanced visualization
- Organizational options for best fit of BI into your culture—conglomerate, cooperative, and centralized
- Data integration options in BI architecture—bus, hub and spoke, hybrid, federation, and virtualization

GEARED TO
Anyone who has a role in defining, documenting, or applying architecture in BI and data warehousing programs, including business architects, data architects, integration architects, and technology architects

The New Analytical Ecosystem: Bridging the Worlds of BI and Big Data

Wayne Eckerson

For too long, organizations have tried to shoehorn all analytical users and activities into a single, monolithic architecture. Forward-thinking organizations are now augmenting their classic report-centric data warehouses with real-time, analytical, and content-based engines to support multiple types of users, data, and applications. This presentation describes the fundamental business forces at work that make it difficult to deliver successful BI programs. It then describes a new organizational architecture, data architecture, and analytical architecture that enable organizations to optimize business dynamics and reap value from their data analytics assessments. In short, the presentation shows how to create a new analytical ecosystem for the 21st century.

YOU WILL LEARN
- The business dynamics that rip most BI programs apart
- The elements of a federated organizational architecture
- How to evolve your current architecture into an analytical ecosystem leveraging big data
- How to create an analytical architecture that supports the complete range of users and information requirements

GEARED TO
CxOs who want to create data-driven organizations with a strong analytical culture; business unit heads and data analysts who want better data and tools to drive insights and more business-savvy IT people; CIOs and VPs of IT who want to design business-centric data and analytical architectures and form robust BI or analytical centers of excellence; directors of BI, advanced analytics, and data warehousing who want to align more closely with business unit leaders, managers, and analysts; data architects, requirements analysts, and BI/ETL tools developers who want to maximize their effectiveness and improve their career opportunities

Secrets of Analytical Leaders: Insights from Information Insiders

Wayne Eckerson

How do you bridge the worlds of business and technology? How do you harness big data for business gain? How do you deliver value from analytical initiatives? Based on Wayne's book, *Secrets of Analytical Leaders: Insights from Information Insiders*, this session will unveil the success secrets of top information leaders from companies such as Zynga, Netflix, US Xpress, Nokia, Capital One, Kelley Blue Book, and Blue KC, among others. The session will cover both the "soft stuff" of people, processes, and projects and the "hard stuff" of architecture, tools, and data required to create and sustain a successful analytics program.

YOU WILL LEARN
- How to organize a BI and analytics team for optimal performance
- How to deliver value quickly and earn credibility among business sponsors
- Translating insights into business impact
- Creating and deploying analytical models
- Creating an agile data warehouse

GEARED TO
CxOs who want to create data-driven organizations with a strong analytical culture; business unit heads and data analysts who want better data and tools to drive insights and more business-savvy IT people; CIOs and VPs of IT who want to design business-centric data and analytical architectures and form robust BI or analytical centers of excellence; directors of BI, advanced analytics, and data warehousing who want to align more closely with business unit leaders, managers, and analysts; data architects, requirements analysts, and BI/ETL tools developers who want to maximize their effectiveness and improve their career opportunities

TDWI Data Visualization Fundamentals

Chris Adamson

Data visualization has rapidly become a critical part of business analytics and business communications. Without visualization, the numbers and statistics of analytics are difficult to interpret and incomprehensible to many who need to turn data into knowledge. The advent of big data, with increasing volume and velocity of data, emphasizes visualization as a technique to compress large volumes of data into digestible presentations and observe streaming data in motion.

Elegant and well-designed data visuals often appear to be easy because skilled visual developers are able to hide the complexities and hard work behind the scenes. Business intelligence and business analytics professionals need to communicate as effectively in visual forms as they do with their verbal and written communications skills. Get started by learning the fundamentals of data visualization.

YOU WILL LEARN
- Visualization as a communication medium
- Preparing data for visualization
- Components of visualization
- Choosing and using charts and graphs
- Visual exploration and analysis
- Visual design techniques
- Extending visualization with infographics
- Visual storytelling
- Data visualization tools

GEARED TO
Business analysts and data analysts; data scientists and analytics modelers; business analytics leaders and managers; BI leaders and managers; anyone who develops charts and graphs to communicate about data

M2 cbip · Monday, December 7, 9:00 a.m.–5:00 p.m.
Data Modeling and Management

M3 · Monday, December 7, 9:00 a.m.–5:00 p.m.
Tools and Technologies

M4 · Monday, December 7, 9:00 a.m.–5:00 p.m.
Data Warehousing Directions

Dimensional Modeling from a Business Perspective: A Model the Business Can Understand

Exposure to some IT projects is helpful.

Laura Reeves

Today's businesses are under increasing pressure to deliver more with less. Meeting this challenge requires leveraging all resources—especially data. The time-proven method is through dimensional data structures. Organizations often struggle to develop dimensional models that consistently meet business needs. Using business dimensional modeling techniques, the business and systems communities can effectively partner to create a model that will support the business today and in the future.

This course is designed to teach attendees the fundamentals of business dimensional modeling. The basic principles are shared using real-world scenarios. This course is not intended to provide the complete skills necessary to develop dimensional models from scratch, but does provide a solid foundation of what dimensional models are and how they work. This practical background can be used by members of the business community to improve communication of their requirements and increase their understanding and participation throughout the project.

The course ends by putting the modeling effort into the proper context. Techniques for successfully gathering business requirements are shared. A quick overview of what is needed to build the database and deliver the data to the business is also provided. Several design exercises are included to reinforce the concepts presented in class. These team exercises prepare the students to apply these concepts to their own projects.

YOU WILL LEARN
- How to identify facts and dimensions
- How to design comprehensive and flexible dimensions
- About different types of facts and how to model them
- Techniques to facilitate involvement of the business community in the modeling process

GEARED TO
Anyone who is involved with the data warehouse; members of the business community who are interested in understanding basic dimensional modeling concepts; all other project team members, including business intelligence application developers, project managers, database administrators, data modelers, and data staging developers

Hands on: Data Mining with R

Attendees should have some coding experience, basic statistics, and will need to bring a laptop computer with RStudio installed prior to the session. When you register for the class, you will receive detailed instructions for download and installation of RStudio.

Deanne Larson

With the advent of big data, there is an increased focus on data mining and the value that can be derived from large data sets. Data mining is the process of selecting, exploring, and modeling large amounts of data to uncover previously unknown information for business benefit.

R is an open source software environment for statistical computing and graphics and is very popular with data scientists. R is being used for data analysis, extracting and transforming data, fitting models, drawing inferences, making predictions, plotting, and reporting results. Learn how to use R basics, working with data frames, data reshaping, basic statistics, graphing, linear models, non-linear models, clustering, and model diagnostics.

YOU WILL LEARN
- How to configure the RStudio environment and load R packages
- How to use R basics such as basic math, data types, vectors, and calling functions
- How to use advanced data structures such as data frames, lists, and matrices
- How to use R base graphics
- How to use R basic statistics, correlation, and covariance
- How to use linear models such as simple linear regression and logistic regression
- How to use non-linear models such as decision trees and Random Forests
- How to apply clustering using K-means
- How to complete model diagnostics

GEARED TO
Anyone interested in learning to use data mining techniques to find insights in data and who has at least some statistical and programming experience

Enrollment is limited to 30 attendees.

Designing a Data Warehouse for High Performance

This course assumes database and systems knowledge.

Stephen Brobst

A remarkable number of new features and functions have been introduced in the high-end database products specifically aimed at decision support workloads. This course will look at the latest developments in optimizer technology, index structures, OLAP database engines, and data mining techniques for delivering high performance in large-scale decision support environments. These innovations in high-end database functionality lead to new approaches for designing decision support system (DSS) database structures and sizing machines for supporting DSS workloads.

Stephen will share his benchmarking experiences and impart design techniques for designing DW environments for scalability and high performance. The content of this course is based on experience with some of the largest commercial and government databases in the world. The course will also discuss advanced topics such as issues in object-relational performance management and the architectural frameworks for deployment of data marts and operational data stores.

YOU WILL LEARN
- Advanced optimization techniques and how they impact DSS database performance
- Database design techniques such as star schemas, selective denormalization, and partitioning, in terms of trade-offs related to performance, usability, and flexibility
- New indexing strategies and how they impact workload balance and capacity planning
- OLAP design and the trade-offs between MOLAP, ROLAP, and HOLAP
- The role of data marts and operational data stores

GEARED TO
Technical architects; database administrators; data warehouse administrators

What's Next? Competing with Data

Thomas Redman

Data is exerting itself more and more with the promise of fundamental new discoveries from big data, better products and service, and more informed, confident decisions. In response, companies are learning to take advantage of analytics, employing data scientists, and bringing new technologies to bear. However, these steps are only part of the work required. To take full advantage, companies must set strategies for "competing with data" and build their organizational capabilities to do so. It's a tall order—few have given much thought to how they'll actually compete with data, and today's organizations are remarkably unfit for it. In this workshop, we'll summarize the opportunity and the risk, lay out strategic options, describe key ideas to build organizational capabilities, and propose steps leaders can take to start truly competing with data.

YOU WILL LEARN
- Four basic strategies for creating competitive advantage using data: It's not all big data!
- The essential role quality plays: You can't do anything if people don't trust the data.
- Better organizations for data: What kind of people you need and where they report.

GEARED TO
All lovers of data, but especially executives and managers with broad perspectives and those concerned with how we'll make money from all this data stuff; where to put the data scientists; what it takes to become data-driven

Practical Techniques for Aligning Business and IT: Navigating Politics and Culture

Len Silverston

When many organizations are asked why a BI or analytics effort failed, the most common answer is "politics." And when these same organizations are asked why efforts were successful, human factors are most often mentioned.

This course provides case studies from a variety of BI efforts and shares critical aspects of why some organizations are successful while others are not. The course shares practical and powerful techniques that focus on human dynamics and personal relationships, two of the most important factors in BI and analytics success. Based on decades of experience and research from a variety of sources, Len shares principles and specific techniques in BI and analytics environments regarding how to develop trust, how to understand and "model" motivations, how to develop sponsorship, how to move the vision ahead, and how to effectively resolve conflict.

Interactive exercises will allow participants to practice handling difficult issues that commonly arise in BI and analytics efforts, and we will apply the principles and techniques that leading organizations have used to create world-class solutions.

YOU WILL LEARN
- Key factors in developing strong personal relationships, effecting culture change, and attaining critical BI and analytics success
- Tools and principles to enable BI and analytics, such as keys to move the program forward, developing trust, understanding motivation, developing sponsorship, and managing conflict
- Case studies demonstrating how these principles and techniques lead to BI and analytics success and examples where these techniques were missing
- Exercises allowing participants to practice overcoming challenges that BI and analytics professionals inevitably face

GEARED TO
Anyone involved in BI and analytics efforts in any capacity, including program and project managers; business sponsors and stakeholders; CIOs and chief data officers; management/executives involved in BI and analytics; and all project team members such as architects, designers, and developers

CBIP Preparation for the Information Systems Core Exam

This course assumes a working knowledge of information systems.

Aaron Fuller

This course is designed for those who already have knowledge and experience in the field of information systems but would benefit from an interactive and informative review prior to testing. You'll get ready to test through discussion, review of concepts and terminology, and sample exam questions. A CBIP-certified instructor who has experienced the examination process and can share tips and techniques to improve your performance on the exam will lead this class.

YOU WILL LEARN
- Concepts and terms used in the exam: technology and business, application system, data management, and systems development
- What constitutes the complete body of knowledge for the exam
- How to assess your knowledge and skill related to the body of knowledge
- What to expect during the examination process
- Techniques to improve your performance when taking the exam

GEARED TO
Everyone seeking CBIP certification (the information systems core exam is required for all CBIP specialties)

Enrollment is limited to 60 attendees.

CBIP Preparation for the Data Warehousing Exam

This course assumes a working knowledge of data warehousing.

Aaron Fuller

This course is designed for those who already have data warehousing knowledge and experience but would benefit from an interactive and informative review prior to testing. You'll get ready to test through discussion, review of concepts and terminology, and sample exam questions. A CBIP-certified instructor who has experienced the examination process and can share tips and techniques to improve your performance on the exam will lead this class.

YOU WILL LEARN
- Concepts and terms used in the exam: organization and methodology, architecture and technology, data modeling concepts, data integration, and implementation and operation
- What constitutes the complete body of knowledge for the exam
- How to assess your knowledge and skill related to the body of knowledge
- What to expect during the examination process
- Techniques to improve your performance when taking the exam

GEARED TO
Everyone seeking CBIP certification (the data warehousing exam is required for all CBIP specialties)

Enrollment is limited to 60 attendees.

TDWI Business Analytics: Exploration, Experimentation, and Discovery

Chris Adamson

Analytics is at the forefront of business intelligence. The promise of BI is found in data analysis that provides insight and drives innovation. Data-driven investigation, exploration, and experimentation lead to the kinds of discoveries that uncover opportunities and help to answer future-looking questions. Analytics is a hot topic in business management, and quantitative analysis has rapidly become the in-demand skill for data management. What was once a specialty field exclusive to statisticians and mathematicians has become mainstream. Today's business analysts combine understanding of business, data, statistics, math, visualization, and problem solving to meet business-critical needs for information, understanding, and insight.

YOU WILL LEARN
- How models are used to define and frame analytic needs
- Model development techniques including influence diagramming, spreadsheet engineering, and parameterization
- Model refinement techniques including sensitivity analysis, strategy analysis, and iteration
- Discovery-oriented techniques including heuristic analysis, subjective probability, and hypotheses and experimentation
- Statistical foundations of data analysis including histograms, standard deviation, and regression
- The data side of analytics: data preparation, data cleansing, data visualization
- The human side of analytics: communication, conversation, collaboration
- A bit about analytics tools from free and open source to advanced analytics technology

GEARED TO
Practicing business analysts and those who aspire to become business analysts; business functional managers responsible for analyzing performance and risk; BI program managers, architects, and project managers; BI and IT professionals seeking to know more about business analytics

---

TDWI Predictive Analytics Fundamentals

Chris Adamson

Predictive analytics is a set of techniques used to gain new knowledge from large amounts of raw data by combining data mining, statistics, and modeling. Predictive analytics goes beyond insight (knowing why things happen) to foresight (knowing what is likely to happen in the future). Predictive models use patterns in historical data to identify and quantify probabilities of future opportunities and risks. Virtually every industry—insurance, telecommunications, financial services, retail, healthcare, pharmaceuticals, and many more—uses predictive analytics for applications such as marketing, customer relationship management, fraud detection, collections, cross-sell and up-sell, and risk management.

This course introduces predictive analytics skills, which encompass a variety of statistical modeling techniques, including linear and logistic regression, time-series analysis, classification and decision trees, and machine-learning techniques. Beyond statistics skills, predictive analytics requires knowledge of problem framing, data profiling, data preparation, and model evaluation.

YOU WILL LEARN
- Definitions, concepts, and terminology of predictive analytics
- Common applications of predictive analytics
- How and where predictive analytics fits into a BI program and the relationships with business metrics, performance management, and data mining
- To distinguish among various predictive model types and understand the purpose and statistical foundations of each
- Organizational considerations for predictive analytics, including roles, responsibilities, and the need for business, technical, and management skills

GEARED TO
BI program managers, architects, and project managers; business analysts who want to extend from gaining insight to providing foresight; business managers who need new tools to help them shape the future of the business; anyone interested in the basics of predictive analytics

---

TDWI Big Data Fundamentals: Creating Value from Non-Traditional Data Sets

Aaron Fuller

Big data is a hot topic in BI and analytics. Yet it is a complex topic that is still in the early stages of evolution. Successful big data projects that deliver real business value are challenged by multiple definitions and rapidly shifting technologies. Achieving good return on your big data investment requires strategy that focuses on purpose, people, and process before exploring data and technologies. Strategy drives planning and architecture to ensure that big data complements and does not disrupt the existing BI and analytics environment. To prepare for success with big data, start by understanding all of the pieces and how they fit together.

YOU WILL LEARN
- Common definitions of big data and the implications of each
- Key characteristics of big data and why size is not among the top five
- The structures that can be found in "unstructured" data
- Types of big data sources—streaming data, social data, sensor data, etc.
- Value opportunities and common applications for big data
- Considerations when adapting architectures, organizations, and cultures to incorporate big data
- The scope of big data processes, tools, and technologies

GEARED TO
Business and data analysts; BI and analytics program and project managers; BI and data warehouse architects, designers, and developers; data governance and data quality professionals getting started with big data; anyone seeking to cut through the hype to understand the opportunities, challenges, and realities of the big data phenomenon

BI and Analytics Organizations That Work: Resolving the Conflicts of Centralization and Self-Service

Aaron Fuller

Do your BI and analytics stakeholders experience territorial disputes? Do you work in the business and wonder why IT controls seem like roadblocks to data access and barriers to business analysis? Do you work in IT and have concerns about ungoverned data, non-repeatable processes, and untraceable reporting? What about the vendors who bypass IT and sell their products directly into lines of business—is that a good thing or a bad thing? Questions of this kind challenge virtually every modern BI and analytics organization. There is no one size fits all right answer. But there is a best answer for you and your organization—or maybe even a few great options. We'll explore the variables that help to determine the right mix of central services, shared services, and self-service to achieve the best fit for your organization's culture, needs, and data management practices.

YOU WILL LEARN
- Definitions of key terms that are commonly used in discussions of BI and analytics organizational structure
- Common challenges for BI/analytics organizations and approaches for overcoming them
- Goals related to having the right team structure and strategies for achieving them
- Alternatives for BI/analytics organization structures and their advantages and disadvantages
- Key capabilities for making your BI/analytics organization successful—data governance, metadata management, coordinated staff, shared tools and vendors, and enterprise architecture

GEARED TO
Anyone struggling to sort out the apparent conflicts of self-service and centralized BI; data management professionals concerned about governance and quality risks of self-service; business managers and data analysts concerned that IT and governance processes limit speed and agility of data analysis; business executives and senior management; IT managers, architects, and analysts; anyone else with leadership responsibilities in an analytics-driven organization

Creating an Analytically Driven Enterprise: Implementing an Analytics Program

Claudia Imhoff

Analytics has become the darling of vendors, consultants, and the press. In addition, data scientists are now highly sought after. Yet, the adoption rate for analytics and BI is still hovering between 20 and 30 percent in most enterprises. What is the problem? How can we improve the adoption of these critical decision support functions? What is needed to implement a successful analytics program?

These are some of the questions to be answered in this timely presentation by Dr. Claudia Imhoff. Getting an analytics program up and running requires several considerations.

YOU WILL LEARN
- The need for analytics and enterprise strategy for acceptance
- Education—not just training
- The new way we work
- The data scientist, data priest, data interpreter, data engineer—who wins?
- Ultimate goal—comprehension by the executives on how analytics can impact them and the company

GEARED TO
Business executives and senior management; IT managers, architects, analysts; anyone else with leadership responsibilities in an analytics-driven organization

Modernizing Your Data Warehouse Environment

Claudia Imhoff

Throw the baby out with the bathwater!

We hear that a lot from new, disruptive hardware and software platform vendors. But your "old" data warehouse environment still serves an important role in BI and analytics. This doesn't mean we can't bring in these new technologies, but they do not (yet) replace your existing environment.

Each of these new components has its role and purpose. Implementers must extend the current data warehouse architecture beyond its established "walls" to embrace these novel technologies in a consistent and seamless manner. The key is to understand when, where, and how to incorporate them appropriately. This presentation focuses on this new extended data warehouse architecture and the need to support robust and easy-to-maintain access to all data for effective decision making. We discuss the challenges involved in changing your architecture and the best practices to ensure easy access to, and deployment of, these new technologies.

YOU WILL LEARN
- Disruptive technological trends for BI and their benefits/challenges
- An overview of the extended architecture for a modern BI environment
- The critical architectural pieces that ensure successful access to and deployment of BI data assets
- Use cases for the extended architecture
- Best practices for extending your data warehouse architecture

GEARED TO
IT managers, analytics architects, data architects, technology architects, BI and analytics developers, and anyone else who needs to understand how emerging and disruptive technologies can fit gracefully with your existing data management practices and processes

Innovation Awareness: Getting Ready for Technology Shifts

David Loshin

Innovation is happening continuously, potentially improving the way applications for business intelligence (BI), analytics, and delivery of actionable insight are developed, implemented, and integrated within an enterprise. Some of these innovations are evolutionary in that they incrementally influence change within the organization, while others are disruptive and inspire fear, uncertainty, and doubt about their potential impacts. In many cases, the innovations appear from beyond the world of data warehousing and business intelligence, but are rapidly adapted to meet the needs of the BI community. Some examples include NoSQL, Hadoop, columnar and in-memory processing, and the Internet of Things (IoT).

This class's intent is twofold. First, we provide an overview of emerging technologies and tools and describe what those technologies do, how they work, their level of relative maturity in the market, how they improve or augment the typical enterprise, who in the organization will benefit and how, and what you need to know to integrate those technologies into the enterprise. Second, we present a high-level framework for investigating new and emerging technologies in way that sheds light on new technologies, reduces or eliminates fear and uncertainty about their capabilities and value justifications, and helps to rapidly evaluate validity for inclusion within your enterprise.

YOU WILL LEARN
- Practical details about maturing and emerging tools such as NoSQL, Hadoop, IoT, data warehouse automation, and other timely innovations
- Types of tools and techniques that are being readied for "primetime"
- How to ask the right questions to determine benefits and practicality
- How to differentiate value from hype

GEARED TO
Business managers who need new tools to shape the future of the business; BI program managers, architects, and project managers; BI and analytics leaders and managers; business analysts who want awareness of evolving BI/analytics technologies

Workshop: Developing the Business Intelligence and Analytics Road Map

David Loshin

As technology innovation in business intelligence and analytics continues to accelerate, so does the anxiety associated with thoughtfully selecting technologies and planning their integration and deployment within the enterprise. With new computing platforms, data management schemes, and analytic algorithms appearing daily, there is a need for articulating what the key value drivers are for the business and then understanding how these technologies can address existing and emerging business challenges.

In this workshop, we will provide a structured framework for articulating business objectives for reporting, business intelligence, and analytics; evaluate whether the existing system remains suitable for the future; and work together to identify which technologies are ripe for evaluation. We will establish a medium- and long-term road map for adoption and integration. In addition, we will explore the change management challenges and opportunities for system renovation and new technology adoption.

Attendees will draft a high-level, 5- to 10-year road map for business intelligence/analytics technology.

YOU WILL LEARN
- By working through exercises to precisely articulate business value objectives
- By reflecting on the suitability of the current state of enterprise BI/analytics architecture
- Through considering the benefits and drawbacks of maturing and emerging technologies
- To specify key technology objectives for the next 2, 5, and 10 years
- To outline a business intelligence and analytics road map.

GEARED TO
Business managers who need new tools for shaping the future of the business; BI program managers, architects, and project managers; BI and analytics leaders and managers; business analysts

Social Analytics in the Enterprise

Shawn Rogers

Big data comes in all shapes and sizes. Social data is at the forefront of big data innovation for companies who need to power deeper and richer analytics. Social data analytics enables better understanding of customer sentiment, brand awareness, purchasing habits, and more. Integrating, sharing, and leveraging this data across your analytic environment opens the door to a new world of business insight. This class explores the various social data sources, data structures, integration strategies, and benefits of social analytics in your enterprise.

YOU WILL LEARN
- Why you can't afford to ignore this growing trend and innovative data source
- How leading companies achieve a competitive edge using social analytics
- To understand the five social media data types and how to leverage them
- Mistakes to avoid in your social analytics strategy
- Essential tools for social analytics
- How to integrate and utilize social data within your enterprise

GEARED TO
Those with experience on prior BI projects; those who are tasked with adding value to existing BI implementations with new data sources; anyone getting started with big data and/or social media strategy; anyone who is curious about social analytics opportunities and value

Mobile Business Intelligence: Innovation and Advantage with a Mobile Workforce

Shawn Rogers

Driving innovation with data is the mantra for today's smart enterprise. In the age of big data, the Internet of Things, and the cloud, IT is already working hard to enable innovation and stay current with new technologies. As our data environments become more complex and data more distributed and diverse, we are facing increasing needs to stay flexible and agile to accommodate change and innovation. Delivering data to a mobile work force is a critical strategy for most companies, but it goes beyond simple reporting and dashboards. Sophisticated strategies and coordinated best practices will take your company to the next level of BI and power your team with mobile data and insights.

YOU WILL LEARN
- How your peers are deploying mobile BI and analytics
- About innovative use cases and applications to drive value from mobile
- Tactics to ensure your mobile BI and analytics program succeeds
- About industry research on mobile and best practices

GEARED TO
IT and business professionals who need an overview and understanding of mobile BI opportunities and strategies.

Tipping the Sacred Cows of Data Warehousing

Evan Levy

Data warehouse technology has become an accepted tool for business decision making and a core component to support reporting and analytics within the IT organization's technology infrastructure. Most early data warehouses were focused on delivering integrated data to support desktop reporting. Today's systems have expanded into centralized data hubs that support data acceptance and provisioning to numerous platforms (internal operational applications, external cloud platforms, reporting systems, and data marts). As business requirements have evolved and technical capabilities advanced, many of the age-old and accepted design methods and architectural approaches are no longer appropriate. Today's multi-processor, parallel-enabled systems have been built to address limitations of the past. Unfortunately, very few environments have evolved to capitalize on current technology capabilities, and in many instances, people aren't aware that their basic design and architecture beliefs are out of date.

In this session, consultant and author Evan Levy takes on some of the sacred cows of data warehousing (DW). He provides facts and details to illustrate pros and cons of key DW technologies, architectural approaches, and implementation methods. This point/counterpoint view supplies you with the means of challenging or substantiating their adoption or deployment. Whether you need to learn more about these key technologies, defend your position, or justify additional budget, attend Evan's irreverent session and learn how to position some key solutions in your own organization.

YOU WILL LEARN
- Traditional DW architecture approaches—their strengths and weaknesses
- Technology hype, folklore, and reality
- Challenging age-old and modern-day development methods
- Data architecture alternatives (academic views, blue sky ideas, real-world reality)
- The distraction of technology components (storage, processing, myths, lies, and facts)
- The pros and cons of methodology and architecture change
- Using common sense and numbers (and not emotion) to drive DW direction

GEARED TO
Business innovators; enterprise architects; technology managers

Tipping the Sacred Cows of Emerging Technologies

Evan Levy

One of the biggest challenges in the world of technology is balancing the need to deliver against the desire to adopt the benefits of new technology. The world of business intelligence (BI) and data warehousing (DW) has undergone revolutionary change. While the concept of billion-row tables and terabyte storage seemed unmanageable just a few years ago, today's technologies support data volumes dramatically larger and more complex than we ever imagined. Our technology teams have evolved from loading data from a handful of in-house systems to supporting dozens of data sources originating from internal and cloud-based systems. Many of our end users have progressed from GUI-based report usage to advanced analysis tools (and integrating their data with third-party providers).

The introduction (or explosion) of new data sources, complex data types, unstructured data, and advanced analytics has challenged many of our traditional approaches to loading, managing, and delivering data to our business users. The industry has introduced new sophisticated analysis systems, better data management tools, advanced database technologies, and new methods for supporting all of this new stuff. While the industry is insisting that we can handle anything with these new technologies— experience suggests that not all claims can be completely accurate.

Following Evan Levy's course on the sacred cows of data warehousing, this course covers some of the new and emerging areas of BI and DW. Despite the enthusiasm about new methods, techniques, and technologies, many question whether these new technologies are ready to challenge the proven paradigms, or if they are they really just fancy vendor sales tools. Evan will approach each topic with a point/counterpoint view based on real-world facts and experiences.

YOU WILL LEARN
- BI/DW disruptive technologies (exaggeration, fact, and interpretation)
- DW alternatives (federation, MapReduce, NoSQL)
- New platform ideas and approaches (data lake, cloud, virtualization)
- Database architecture buzz and noise (in memory, columnar, relational)
- Big data alternatives and realities (Hadoop, relational, NoSQL)
- Data types and information arrogance (structured, unstructured, !@$##$)

GEARED TO
Business innovators; enterprise architects; technology managers

---

Exploring Cognitive Computing Approaches and Architectures

John O'Brien

Over the past several decades, theories of informatics have continued to evolve. Today, cognitive computing is an emerging paradigm of intelligent computing methodologies and systems that can learn and interact naturally with people to surpass what either humans or machines could do on their own. These technologies can help human experts make better data-driven decisions by penetrating the complexity of big data with cognitive services and architectures that augment today's IT architecture. Cognitive computing will soon play an important role in enterprise advanced analytics capabilities.

This half-day course looks at the ongoing realization and maturity of sciences in cognitive computing through businesses adoption and application. It provides a contextualized view of the three primary theoretical foundations for cognitive computing and how they can be applied to big data scenarios today.

YOU WILL LEARN
- An overview of cognitive computing from a business analytics perspective
- To understand the components of a cognitive platform and how to start building yours
- Review case studies, vendors, and approaches to cognitive computing

GEARED TO
Enterprise architects; analytics professionals; business executives and management

---

Big Data Search and Machine Learning: Now and Future

David Winters

This class provides a survey of different platforms available for big data search and machine learning (ML). The two technologies are linked in many use cases. We will touch on different software platforms available for big data search and ML, and we will explore the advantages and drawbacks of each platform based on use cases, language support, and domain coverage. A description of software frameworks used in each platform is discussed along with technical strengths and drawbacks. Some of the critical characteristics described here will help participants make informed decisions about the platforms that best meet their business needs. You'll see demonstrations of platforms and get links to online resources to gain more knowledge.

YOU WILL LEARN
- Common terms and definitions of big data search and ML
- The main characteristics of big data search and why it is important
- How ML and search tools extract value found in "unstructured" data
- To understand the search technology alternatives and determine the best fit for your needs
- The types of ML technologies and approaches, and how to choose the best fit for you
- The big data sources where search and ML are most needed
- Value opportunities and common applications for search and ML
- Considerations for architectures, security, and organization cultures

GEARED TO
Vice presidents and directors; business and data analysts; BI and analytics program managers; BI and data warehouse architects; professionals seeking to understand the opportunities, challenges, capabilities of search and ML for business value; chief analytic officers and data innovation officers; IT program managers; business sponsors and end users; BI program managers; and data management staff

Hands-on Data Visualization with R

Course assumes an interest in data visualization using open source point-and-click tools. You will need to bring a laptop with specific software installed. You will receive detailed instructions for software download and installation when you register.

Eileen McDaniel, Stephen McDaniel

Data visualization has created a lot of buzz in both the popular media and in the minds of business decision makers. Although there are many tools for charting, new open source tools purposely designed for building high-quality data visualizations are opening up new possibilities for developing and sharing highly stylized data visualization content. The underpinnings of these tools are advanced Web technologies powering many of the most compelling data visualizations for top newspapers and on leading websites. The tools in this session will enable you to create high-quality content that can be embedded in websites or shared in presentations.

This class offers a hands-on learning experience in data visualization with point-and-click interfaces in both Lyra (which is based on the now famous D3 JavaScript library) and R. In a series of case studies, you will experience the power of these tools firsthand for solving real-world data presentation problems.

YOU WILL LEARN
- Lyra, a point-and-click interface for detailed data visualization
- R packages that enable data visualization methods that complement Lyra
- How to share your results in dynamic Web content and business presentations
- Data visualization best practices to keep in mind as you create content for decision makers

GEARED TO
Anyone with an interest in finding better ways to communicate key data insights with new technology capable of creating high-end data graphics to impress and inform

Enrollment is limited to 50 attendees.

Bringing Business and IT Together: Practical Steps to Improved Working Relationships

Dave Wells

Business/IT working relationships have been troubled since the dawn of the information age. Poor working relationships have a high cost to the organization in many ways. As the interdependencies of business and technology grow, the cost of failed relationships also increases. It is essential that business/IT working relationships undergo fundamental and systemic change if the value of business intelligence is to be fully realized. Almost everyone is familiar with the symptoms, and many of us recognize the problem. Yet few know how to correct the problem. This course offers a systematic approach to address real problems and improve business/IT working relationships through continuous attention to organizational alignment.

YOU WILL LEARN
- Common symptoms of broken business/IT working relationships
- Why treating symptoms alone fails to fix the problems
- How continuous organizational alignment (COA) goes beyond symptoms to correct the root causes
- The critical elements of successful working relationships
- The process and activities of COA
- Tips and techniques to improve organizational alignment in your environment

GEARED TO
Business and IT executives and leaders; everyone in IT who works with business organizations; everyone in business who works with IT organizations

Serious Play for Advanced Analytics: What Works, What Doesn't, and Why

Sandra Hendren

This vendor-neutral session will prepare analytic practitioners and functional managers to make sense of predictive modeling and take control of the analytic process. We'll introduce the foundation for data-intensive analytic projects that deliver insight, clarity, confidence, and actionable decision support.

Live demonstrations will illustrate how organizational practitioners can effectively maneuver the natural messiness of advanced analytics. Attendees will realize that true impact with predictive analytics has far more to do with the overall management of a project team and strategic process than with the tactical skills of a data scientist.

If you are a business or public sector practitioner or leader seeking to propel your organization's analytic maturity and put predictive analytics to work for measurable gain, then this session is designed for you.

YOU WILL LEARN
- A business-aligned strategy for applying high-value data-driven decisions
- To identify, qualify, and prioritize viable and actionable analytic opportunities
- To convey a standardized process development model to implement across your team
- To acquire both tactical and strategic skills required to stand out in the analytics practice
- Why most analytics projects fail and the main pitfalls to avoid
- How to view a standardized process methodology for predictive analytics
- Resources, contacts, and plans to reduce your project preparation time, costs, and risks

GEARED TO
IT executives and big data directors; line-of-business directors and functional managers; data scientists; technology planners; consultants

Understanding Hadoop

Krish Krishnan

The advent of big data has changed the world of analytics forever. Big data challenges scalability, and big data platforms reshape BI and analytics infrastructure. Hadoop has taken center stage in the big data revolution, and we'll all need to understand the platform, its ecosystem, and how to work with it. The enterprise adoption of Hadoop is met with mixed responses. Join us to learn Hadoop basics, understand the realities, sort out the conflicts, and find out where and how Hadoop fits into your BI and analytics future. We will discuss the ecosystem and its intricacies, look at where it will help, and discuss how companies have embraced its usage.

YOU WILL LEARN
• The what and why of Hadoop
• Hadoop components
• Technical architecture
• Core components (MapReduce, HDFS, YARN)
• Hadoop tools (Hbase, Hive, Pig, Mahout, Impala)
• Hadoop setup and configuration
• Hadoop administration and management
• Using Hadoop (applications and examples)

GEARED TO
Architects, developers, anyone interested in Hadoop

TDWI Data Warehouse Automation: Better, Faster, Cheaper … You Can Have It All

John Myers

Building a data warehouse is among the most labor-intensive and time-consuming activities of BI development. There are many moving parts—requirements, source data analysis, source-target mapping, data acquisition, data transformation logic, ETL design, database loading, scheduling, error handling—and getting it right the first time isn't easy. When you finally do get it right, something changes. One of the most pervasive problems in BI today is the fact that data warehouses take too long to build and they are hard to change!

Data warehouse automation (DWA) is a relatively new class of technology that accelerates warehouse development and change cycles while simultaneously assuring quality and consistency. More than simply generating ETL scripts, DWA automates the entire life cycle from source system analysis to testing and documentation. Productivity gains, cost savings, and quality improvement are all possible with DWA.

YOU WILL LEARN
• Concepts, principles, and practices of DWA
• The current state of DWA technology
• Automation opportunities and benefits when building or managing a data warehouse
• How to get started with DWA
• Best practices and mistakes to avoid with DWA

GEARED TO
BI and data warehousing program and project managers; data integration architects, designers, and developers; data warehouse operations, maintenance, and support personnel; data and technology architects

TDWI Data Virtualization: Solving Complex Data Integration Challenges

John Myers

The data integration landscape has changed radically in the past few years. What was once a relatively manageable problem of blending and unifying data from enterprise transaction systems has grown to encompass external data, Web data, clickstream data, end-user data, big data, cloud data, and more. New expectations for information-driven business agility further compound the complexities of modern data integration. The ETL-based data warehouse is no longer enough. Data virtualization is a core component of next-generation data integration architectures, techniques, and technology.

Get ready to expand your data integration capabilities, deliver business-speed information, and make the most of recent advances in data integration technology. Through a combination of lecture, exercises, and case study review, you will learn how data virtualization works and how to position it in your data integration architecture and processes.

YOU WILL LEARN
• Data virtualization definitions and terminology
• Business case and technical rationale for data virtualization
• Key concepts and foundational principles of virtualization—views, services, etc.
• Data virtualization life cycle, capabilities, and processes
• How to extend the data warehouse with virtualization
• How virtualization enables federation and enterprise data integration
• How virtualization is applied to big data and cloud data challenges
• How companies use virtualization to solve business problems and drive business agility

GEARED TO
BI, MDM, and data warehousing program and project managers; data integration architects, designers, and developers; data and technology architects

Introduction to Graph Databases

William McKnight

Graph databases may be the unsung heroes of NoSQL. They are poised to expand dramatically in the next few years as relationships and networks become a central focus of analytics. We live and work today in a highly connected world where individuals and their relationships, brand perceptions, and consumer behaviors have become critical business success factors. Where patterns are involved in relationships, it is imperative to understand them. Graph databases are the technology that is best-suited to determining and understanding data relationships and the real-world relationships that they represent.

This code-lite class is an introduction to graph databases and the relationship data stored in them. It will help the student determine why, how, and where to apply graphs and how to get started.

YOU WILL LEARN
- The current state of graph databases
- Realizing value from relationship data
- Graph database modeling basics
- Graph databases in the enterprise: Data loading and architecture basics

GEARED TO
Data architects; business analysts; data developers; data administrators; data strategists; chief data officers

Introduction to NoSQL for Those Used to SQL: Storing and Managing Operational Big Data

William McKnight

In this informative session, learn about the emerging class of NoSQL technologies that can be used to manage operational big data. Understand the ideal workloads for NoSQL in managing enterprise data, and where NoSQL adds value to an enterprise information strategy.

Find out how to get projects started, and how to drop the "not in production" label to position NoSQL as part of your production toolbox for data management.

This code-lite session addresses the NoSQL community as well as the key user community, providing guidance on how NoSQL technologies work and how to position them in the enterprise. This practical session will help you add a significant class of technologies into consideration to ensure information remains an unparalleled corporate asset.

YOU WILL LEARN
- Big data basics
- Enablers for NoSQL
- NoSQL data models: key-value, document, graph
- NoSQL usage patterns
- NoSQL database architectures

GEARED TO
Anyone with a SQL background who is interested, curious, or even skeptical about the role and value of NoSQL technologies

The Logical Data Warehouse: Design, Architecture, and Technology

Rick van der Lans

The classic data warehouse architecture has had a long and successful run, but we're starting to stretch its abilities to the limit. The logical data warehouse may take its place. The architecture consists of fewer physical data stores and less redundant storage of data. It is more suitable for operational BI, and is much more flexible. Mature technology in the form of data virtualization servers exists to develop a logical data warehouse. Products from Cisco, Denodo, Informatica, RedHat, and StoneBond have proven that large BI systems can be developed using data virtualization. In addition, now that more and more data is produced in a distributed fashion, it may no longer be smart to move the data to a centralized store for integration. It's time to move the integration process to the data. Big data, especially, can be too big to move.

YOU WILL LEARN
- Practical benefits of the logical data warehouse architecture and differences from the classical architecture
- How organizations can successfully migrate to this flexible logical data warehouse architecture in a step-by-step fashion
- About the possibilities and limitations of the available products
- How data virtualization products work
- How big data can be added transparently to an existing BI environment
- How the logical data warehouse helps to integrate self-service BI with classical forms of BI
- How users can be granted access to 100% up-to-date data without disrupting the operational systems
- The real-life experiences of organizations that have already implemented a logical data warehouse

GEARED TO
Business intelligence specialists; data warehouse designers; business analysts; technology planners; technical architects; enterprise architects; IT consultants; IT Strategists; systems analysts; database developers; database administrators; solutions architects; data architects; IT managers

New Data Storage Technologies: From Hadoop to MongoDB, and from SQL to NoSQL

Rick van der Lans

Big data, Hadoop, in-memory analytics, Spark, analytical database servers, MapReduce, Hive, MongoDB, NewSQL, and NoSQL are just a few of the new data storage technologies and techniques that have become available for developing BI and big data systems. Most of them are very powerful and allow for development of highly flexible and scalable systems. But which ones do you choose? Due to this waterfall of new developments, it's becoming harder for organizations to select the right tools. Which technologies are relevant? Are they mature? What are their use cases? These are all valid questions that are all difficult to answer. This session gives an extensive overview of all the new data storage developments. We explain technologies and products, present market overviews, discuss strengths and weaknesses and the pros and cons of each solution, and describe guidelines and best practices. Attendees receive a full, critical update of all the new products and technologies.

YOU WILL LEARN
- How new and existing technologies, such as Hadoop, NoSQL, and NewSQL can help develop BI and big data systems
- How to embed Hadoop technologies in existing BI systems
- When to use which new storage technology
- The pros and cons of each data storage technology

GEARED TO
Business intelligence specialists; data warehouse designers; big data specialists; technology planners; technical architects; enterprise architects; IT consultants; IT strategists; systems analysts; database developers; database administrators; solutions architects; data architects

---

TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement

Jonathan Geiger

Data quality is one of the most difficult challenges for nearly every business, IT organization, and BI program. The most common approach to data quality problems is reactive—a process of fixing problems when they are discovered and reported. But reactive data quality methods are not quality management; they are simply quality maintenance—a never-ending cycle of continuously fixing defects but rarely removing the causes. The only proven path to sustainable data quality is through a comprehensive quality management program that includes data profiling, data quality assessment, root cause analysis, data cleansing, and process improvement.

YOU WILL LEARN
- Techniques for column, table, and cross-table data profiling
- How to analyze data profiles and find the stories within them
- Subjective and objective methods to assess and measure data quality
- How to apply OLAP and performance scorecards for data quality management
- How to get beyond symptoms and understand the real causes of data quality defects
- Data cleansing techniques to effectively remediate existing data quality deficiencies
- Process improvement methods to eliminate root causes and prevent future defects

GEARED TO
BI, MDM, and data governance program and project managers and practitioners; data stewards; data warehouse designers and developers; data quality professionals

---

Power, Politics, and Partnership: Building an Analytics Culture

Maureen Clarry, Lorna Rickard

Data management organizations are at the center of successful, business-value-driven projects. However, cultural issues such as poor communication, power struggles, and organizational silos are frequently cited as factors in project failure. Everyone wants change—but real change rarely happens because we are stuck in old patterns of interaction, and cultural change is difficult. Paying lip service to "improved communication," "partnership," and "teamwork" won't work. We need new ways for dealing with the complex reality of our organizational difficulties if we want to build a successful analytics culture.

This course will help you see your organization from a whole new perspective! It provides insight and strategies on how to create cross-functional collaboration between the executive sponsor, steering committee, business stakeholders, management, project team, and technical staff. If your organization is struggling with poor communication, misunderstandings between IT and the business, organizational silos, finger-pointing, apathy, or dissatisfied customers, you will see new possibilities and solutions in this class.

YOU WILL LEARN
- Key components of successful analytics cultures
- Predictable patterns of communication and how they impede our effectiveness
- Systemic patterns that contribute to failed projects and strategies for overcoming them
- How to better navigate the complexities of data management politics
- A new model for understanding organizational dynamics and building better partnerships
- Strategies for empowering yourself and others to achieve maximum results

GEARED TO
Business sponsors; business analytics stakeholders; project or program managers; technical staff struggling to make sense of organizational dynamics

Enrollment is limited to 60 attendees.

Hands-on Hadoop

Course assumes an Understanding Hadoop course or equivalent knowledge. You will need a laptop computer with specific software installed prior to the session. When you register for the class, you will receive detailed instructions for software download and installation.

Krish Krishnan

Hadoop has created a lot of buzz. From data warehousing to advanced analytics, our enterprise data and processing infrastructure is being reshaped by Hadoop technology. The question is no longer if you'll have Hadoop, but how best to approach it for both business and technical value.

This class offers a hands-on learning experience working with the Hadoop ecosystem. Using a series of examples and exercises for each topic, you'll experience the Hadoop tools firsthand and strengthen your learning with discussion about how to implement them.

YOU WILL LEARN
- Hadoop components and architecture
- Configuration of Hadoop
- Configuration of core components (MapReduce, HDFS, Yarn)
- Usage of Hadoop tools (HBase, Hive, Pig, Mahout, Impala)
- ZooKeeper setup and configuration
- Hadoop administration and management

GEARED TO
Anyone with an interest in Hadoop, ranging from "Hadoop curious" to those who are actively involved in implementation

Enrollment is limited to 35 attendees.

Choosing the Right Analytic and Data Science Techniques

John Santaferraro

New data and modern data platforms create new opportunities for businesses every day. The challenge is figuring out how to unlock the value hidden in massive data stores. Companies that gain expertise in data science and analytics will outpace their competitors with new insight. Individuals who acquire that same knowledge will find themselves in high demand.

This introductory course in analytics and data science will give you the framework you need to understand and immediately begin using your analytics skill set. You will understand the fundamental principles of data science and analytics and lay a foundation to take the right steps toward value. Determine when to use predictive, preventive, prescriptive, and descriptive analytics. Understand the business value and applications for clustering, classification, association, sequencing, graph, simulation, forecasting, optimization, and other algorithms.

YOU WILL LEARN
- The fundamental principles of data science and analytics
- How to apply the different classes of analytics
- An overview of types of algorithms and how they apply to business processes
- Examples of how different kinds of algorithms apply to customer analytics

GEARED TO
BI, DW, and IT directors; BI, DW, and IT executives; business analysts; business executives

---

Demystifying Big Data: Designing an Architecture for Data and Analytics

Course assumes a basic understanding of data warehousing

Mark Madsen

The problem we designers need to solve isn't "big data" or "small data"— it's all data. The data warehouse is sufficient for a portion of the data we manage, but not for all of it.

The requirements we have today are to accept any data, not just rigidly structured data in rows and columns; to accept that data at any speed, not just what the database can keep up with; to deliver via any means, not just SQL-based BI tools; and to support any process—not just queries but also algorithms and transformations.

The technology that we use is problematic because it constrains and sometimes prevents necessary activities. We don't need more technology and bigger machines. We need different technology that does different things. More product features from the same vendors won't solve the problem.

The big data market has set itself up as an alternative to the data warehouse, not realizing the new technologies solve different problems and aren't appropriate for some of the original problems. This is really a confusion of technology with architecture.

We are also in an emerging technology space when it comes to data. This requires exploratory design practices, something we've largely discarded over the last 10 years as data warehousing and BI matured.

YOU WILL LEARN
- Data architecture alternatives to those of the past that are able to adapt to today's data realities
- New technologies that can be applied to address new problems inherent to the scope and scale of data today
- Methods and techniques to migrate from old data architecture of the past to new data architectures that resolve today's problems and prepare for the future

GEARED TO
BI and analytics leaders and managers; data architects, modelers, and designers; big data architects, designers, and implementers; anyone with data management responsibilities who is challenged by recent and upcoming changes in the data landscape

---

Data Modeling in the Age of Big Data

Dave Wells

The big data phenomenon expands the purpose and changes the role of data modeling. The level of uncertainty about data modeling in today's data ecosystems is high. Most practitioners have more questions than answers. Has data modeling become obsolete? Does unstructured data make modeling impractical? Does NoSQL imply no data modeling? What are the implications of schema-on-read vs. schema-on-write for data modelers? Do entity-relationship and star-schema data models still matter?

Data modeling is still an important process—perhaps more important than ever before. But data modeling purpose and processes must change to keep pace with the rapidly evolving world of data. This course examines the principles, practices, and techniques that are needed for effective modeling in the age of big data.

YOU WILL LEARN
- To distinguish between data store modeling (schema-on-write) and data access modeling (schema-on-read) and when each is useful
- The elemental characteristics of data that provide a common denominator for data modeling for all types of data
- How the common denominator is used to map various kinds of databases including relational, dimensional, NoSQL, NewSQL, graph, and document
- When traditional logical-to-physical modeling works and when it makes sense to reverse the process as physical-to-logical
- Trade-offs between methodological rigor and discovery-driven exploration in data modeling

GEARED TO
Data architects; data modelers; database developers; data integrators; data analysts; report developers; anyone else challenged with the need to make structured enterprise data and non-traditional data sources work together

TDWI Data Governance Innovations: Adapting for Agile, Big Data, and Cloud

Dave Wells

Rapid increases in data variety and data management practices challenge the old model of policy- and enforcement-based data governance. Cloud services bring new issues that go well beyond the obvious concerns of security and privacy. Big data implementation brings substantial changes to the scope and complexity of governance. Many ask if governance and agile can coexist. The answer must be "yes," but making them work together is especially challenging.

Cloud services, big data, and agile BI are here to stay. Data governance programs must modernize and adapt to these realities. A fundamental culture change from control-oriented governance to collaboration is at the core of modern data governance—shifting from enforcement to prevention and intervention as the means to assure data security, privacy, compliance, quality, and value. Beyond cultural change, every data governance participant needs to understand the new issues and the new opportunities that arise from current trends in data management.

YOU WILL LEARN
- The data governance challenges and opportunities that arise from cloud services
- Risks, challenges, and opportunities of big data governance
- How to overcome apparent conflicts between data governance and agile
- Roles, relationships, and complexities of metadata management for data governance
- Data governance challenges that arise from mobile devices and social media
- The importance of ethics as a data governance imperative
- New models, practices, and processes for modern data governance

GEARED TO
Data quality and data governance professionals; CIOs, business leaders, and IT executives facing the realities of agile, big data, or cloud services; managers, architects, designers, and developers of BI, MDM, and data warehousing systems; data stewards, data architects, and data administrators; anyone with a role in data governance or data quality management; anyone needing to modernize a data governance program for agile BI, big data, or cloud services

Harness the Power of "What-If" Analytics: Shaping Your Future with Simulation

Mark Peco

It is feasible, practical, and prudent to explore new ideas, evaluate alternatives, and peek into the future using what-if analytics. Common analytics techniques focus on statistics, but business managers often need more decision-making guidance and fewer statistics. Simulation techniques help to identify, analyze, and compare various decision-making scenarios, and to evaluate a range of options by playing the what-if game.

A well-rounded analytics organization includes analysts who are skilled with simulation, and these people often become the most in-demand analysts.

Combining models, assumptions, and decision variables yields insights helpful when choosing the best path into the future. Simulation models enhance understanding of key behavior patterns, leading to increased confidence and ability to define and achieve key business objectives. Implementing simulation as a core part of your business analytics practice simply makes sense. Business questions starting with "why" and extending to "what if" can be answered with certainty and clarity.

This course provides an introduction to simulation analytics. Topics include definitions, general system concepts, modeling techniques, and application areas. Pragmatic examples are provided throughout the course. A framework to position simulation in the broader BI program is also provided.

YOU WILL LEARN
- Key capabilities of simulation
- Categories of simulation models
- Domains of applicability
- How to build and implement simulation models
- Data management requirements for simulation
- How business problems can be defined and solved
- The role of experimental design
- How insights can be generated
- How to explore and discover routes to successful outcomes
- How analytics, simulation, and BI are interconnected disciplines

GEARED TO
Business analytics leaders; BI program leaders; BI architects and project managers; business analytics team members; business managers and decision makers; functional analysts; operations managers; process improvement specialists

Enriching Your Analytics with Open Data Sources

Mark Peco

The shift to open government in many jurisdictions is designed to increase policy transparency. This movement initially began producing large sets of data describing a wide range of topics including population demographics, regional climates, environmental issues, regulatory compliance, economic performance, management of key infrastructure, local land use planning, and civic operations.

Following the lead of government agencies, private sector companies are also now contributing to this growing data resource. The open data landscape has become large, distributed, diverse, and sourced from a variety of organizations and sectors. It is rapidly expanding in terms of scope, content, and complexity. Open data now plays a significant role in the analytics strategies employed by companies for creating new business models, optimizing existing processes, and pursuing new business opportunities. Innovative companies are learning how to navigate the open data landscape, access its content, and combine that content with other data sources to create rich analytics and visualizations that are fueling new areas of competitive advantage.

This course provides an introduction to the open data landscape to help business and technology professionals understand the historical context of open data, where it comes from, the categories and sources of available content, and how it can be accessed and used.

YOU WILL LEARN
- Origins, context, and principles of open data
- Key definitions and concepts
- Major categories of content
- How to navigate the open data landscape
- Major providers and sources of open data
- Emerging standards that impact open data
- Methods for accessing open data
- Emerging and evolving business opportunities

GEARED TO
Business decision makers; business, technology, and analytics leaders; data scientists and analysts; BI and analytics practitioners; data warehousing and integration practitioners; anyone interested in the growing opportunities enabled by open data

TDWI Data Integration Principles and Practices: Creating Information Unity from Data Disparity

Jonathan Geiger

Today's business managers depend heavily on data analysis and decision-speed information, raising the stakes for data integration. At the same time, the work of integrating data has become increasingly complex. The simple processes of extract, transform, and load (ETL) integration for structured enterprise data no longer meet the need. Unstructured data, big data, departmental data, end-user data, and external data all challenge the old models for data integration. Meeting modern data integration challenges calls for data integration strategy and architecture.

Get ready to build reliable and adaptable data integration systems and make the most of recent advances in data integration technologies by following the path of strategy first, architecture next, and then integration systems and technology.

YOU WILL LEARN
- The role, purpose, and issues of data integration strategy
- Frameworks and patterns for data integration architecture
- How to fit unstructured data into integration strategy, architecture, and systems
- How to use integration architecture and patterns to handle large-volume data challenges
- How to apply architecture and patterns for enterprise, departmental, and local data
- How to select, mix and match, and apply several data integration methods, including ETL, federated, service-oriented, and virtualized
- Techniques to collect and manage data integration requirements
- Tips and techniques for success throughout the data integration life cycle—strategy, architecture, systems development, and operations

GEARED TO
BI, MDM, and data warehousing program and project managers; data integration architects, designers, and developers; data and technology architects

Data Storytelling: The New Horizon in Business Analytics

Ted Cuzzillo, Dave Wells

Stories are powerful. We've used them throughout history to capture attention, convey ideas, fire the imagination, and stir the soul. Data can be persuasive, but stories are much more. A well-told story is inspirational.

On the surface, storytelling appears to be the opposite of analytics: anecdotal instead of quantitative. But quantities aren't the only way, or even necessarily the ideal way, to convey information. We know that not everyone is a quant who thinks natively in numbers. Some think in pictures, thus the popularity of data visualization: "Show me the shape of things, not the quantities." Visualization is powerful, but even more powerful is the ability to connect visuals to tell a story with data.

Storytellers are the next generation of business and data analysts. They don't dismiss the value of the quants—quantification is the foundation. Neither do they devalue the importance of visualization; in fact, they amplify it by scripting a story through visuals to communicate the what, when, where, who, and why of business circumstances and business behaviors.

YOU WILL LEARN
- Four reasons to pursue the art of storytelling
- The differences between explanatory and exploratory stories
- How to find the stories in data
- How to choose visualizations for storytelling
- How to compose captivating and compelling stories

GEARED TO
BI and analytics designers and developers; anyone interested in learning new and highly effective ways to communicate and share information

Data Storytelling Workshop

To get the most from this workshop, we recommend that you also attend the morning session Data Storytelling: The New Horizon in Business Analytics.

Ted Cuzzillo, Dave Wells

Data storytelling is a recent and important contribution to analytics, going beyond data visualization to complement visuals with narrative. A well-told story that is interesting and convincing may appear quite easy on the surface, but crafting a good data story is challenging. In this interactive workshop setting you'll work with a team and gain experience blending the science of statistics, the art of data visualization, and the talent of verbal narrative to develop and deliver compelling data stories.

A laptop computer is recommended, but not required, for this course. You'll be provided with collections of data visualizations for story crafting. The visualizations are provided both in print and digital form. Those who work with the digital versions will get greatest value from the workshop.

YOU WILL LEARN
- To find the story line in a collection of data
- To craft a story that combines data visuals with verbal narrative
- To choose the best visuals for your story and filter those that just add noise
- To understand and connect with the audience when telling a data story

GEARED TO
BI and analytics designers and developers; anyone interested in learning to effectively communicate information using data storytelling techniques

Emerging Technology for Advanced Analytics

Mike Lampa

Moore's Law—the processing power of computers doubles every two years—continues to hold true. For analytics, this means increasing capabilities to crunch more data, more quickly, at reduced costs. Software capabilities are exploding with options to leverage increased processing power and capitalize on the big data buzz.

From little known start-ups to the mega-stacks, many new capabilities exist to acquire, integrate, manage, consume, analyze, and visualize data. These technologies enable increasingly complex data mining, pattern detection, machine learning, predictive modeling, and workflow collaboration. They create new opportunities to expand beyond traditional BI solutions into hyper-integrated advanced analytics that will ultimately blur the line between business operations and business analytics.

YOU WILL LEARN
- How hardware layers are evolving at all levels from chipsets to supercomputers supporting advanced analytics workloads
- How software providers are removing barriers to entry for advanced analytics
- How emerging technologies in hardware and software combine to address complex and demanding advanced analytics workloads
- Where big data finds its niche in the world of analytics-enabling technologies

GEARED TO
Chief information officers; chief analytics officers; chief technology officers; BI and analytics architects; enterprise architects; data scientists

Innovative Techniques for Advanced Analytics

Mike Lampa

The world of advanced analytics is about developing solutions that closely simulate the way humans think. The key is capability to assimilate massive volumes of diverse information, observe countless permutations of data points, and discover meaningful patterns and trends. Discovery is a typical goal, with specific questions to be answered frequently unknown. Original hypotheses may morph many times along the path to real business insight. Traditional BI practices struggle to realize "the art of the possible" that is the promise of advanced analytics. In this session, we'll look at proven innovative processes to enable the fast-paced, dynamic, and sometimes chaotic nature of advanced analytics projects. We'll explore creative ways to weave advanced analytics into the fabric of enterprise decision making, both strategic and tactical.

YOU WILL LEARN
- How project management evolves to support advanced analytics
- How to augment systems methodologies to embrace advanced analytics without compromising systems audit points
- How to leverage new technologies, reference architectures, and design patterns to bring advanced analytics to the masses
- How to develop the talent needed to become an advanced analytics enterprise
- How to drive adoption of advanced analytics throughout the enterprise

GEARED TO
Chief analytics officers; data scientists; business strategists; business analysts; functional line-of-business owners (chief marketing officers, sales executives, supply chain executives, chief operations officers, etc.)

XaaS: As a Service

Ankur Jain

Break away from the "tyranny of one" of software and infrastructure platforms, and explore the world of the cloud to try out cool new ideas. Take all the friction out of the need to invest in platforms and do your exploration with the same investment or less compared to traditional on-premises hosted infrastructure. In the 90s new ideas were arduous to try; now platforms are more open. But there is still residual reluctance due to the typical concerns of security, latency, and loss of direct control. Cloud and XaaS architectures let you think of solutions in a much more agile and innovative way.

One might typically imagine the three-layer cloud platform—IaaS, PaaS, and SaaS. But this course takes the concept of "as a service" to next level to apply to your analytics and help you design "sockets expressways" to create a web of APIs and services to make every layer of architecture available as a service.

YOU WILL LEARN
- Infrastructure as a service
- Platform as a service
- Data as a service (data engines, leveraging best-of-breed technology with security, identity, and access management built in)
- Information as a service (making data available as a service for queries and business functions)
- Business intelligence as a service
- Analytics as a service
- Disaster recovery as a service

GEARED TO
Chief information, analytics, technology, and data officers; IT program directors, managers, and data owners; IT infrastructure owners; BI, analytics, and enterprise architects; data scientists.

Big Data Ethics: The Power of Knowing

Lindy Ryan

With the arrival of big data, companies have a huge opportunity to exploit data for business value in new ways that bring up previously unexplored ethical quagmires. Separate from the laws that govern data use, ethics establishes the fundamental principles of right and wrong critical to the appropriate use of data in the technology age—especially for the Internet of Things. Unfortunately, though the concept of ethics is important, it rarely receives much attention until someone does something perceived as unethical.

The use of big data and analytics presents unique ethical questions for data-driven organizations. One of the most salient themes in concerns about using big data relates to the nature of knowledge and its connection with power. In the world of data, along with the "power of knowing" comes the obligation to use knowledge responsibly. Organizations need guidance on balancing business greed with ethical responsibility. This half-day course will provide a contextualized view of some of the ethical dilemmas arising in the big data democracy, as well as how to apply an ethical framework for decision making and collective responsibility in the dynamic realm of big data and analytics.

YOU WILL LEARN
- A contextualized view of ethical dilemmas in the big data democracy
- An understanding of key questions, concerns, and opportunities that surround big data—and which are grounded in practice versus myth
- An understanding of empirical definitions of ethics, values, and principles
- How to apply an ethical decision-making process to issues with big data

GEARED TO
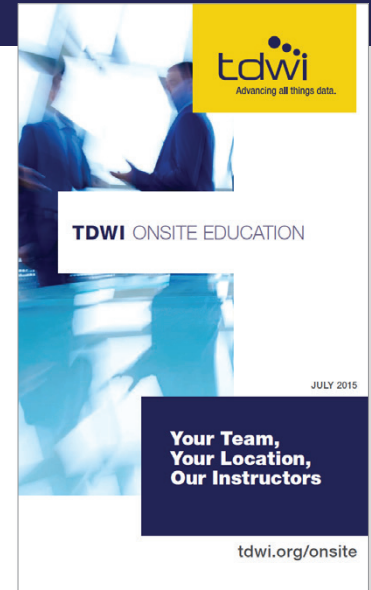Any person who handles data in an organization

tdwi
Advancing all things data.

TDWI ONSITE EDUCATION

Your Team, Your Location, Our Instructors

Download the Onsite brochure today

tdwi.org/onsite

TDWI Onsite delivers the highest quality business intelligence (BI) and data warehousing (DW) education directly to your office so each member of your team learns the same best practices, methodology, and strategy directly from the industry gurus. **Maximize your training budgets today. Schedule a free consultation.**

Core Tracks:

- Data Asset Management
- Core Business Intelligence Skills
- Data Analysis and Design
- Big Data

- Agile BI and DW Development
- Leadership and Management
- CBIP Certification

Contact:

Yvonne M. Baho
Director, Onsite Education
978.582.7105
ybaho@tdwi.org

TDWI CERTIFICATION

Get Certified in Orlando

Professionals holding a TDWI CBIP certification command an average salary of $125,905— $20,000 higher than the average for non-certified professionals.

Source: 2015 *TDWI Salary, Roles, and Responsibilities Report*
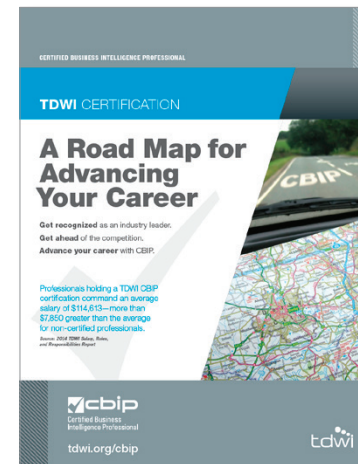
Download the CBIP brochure to advance your career today

tdwi.org/cbip

Vcbip
Certified Business Intelligence Professional

The TDWI Certified Business Intelligence Professional (CBIP) program is the business intelligence and data warehousing industry's most meaningful and credible certification available.

While you attend TDWI San Diego, take the opportunity to prepare for and complete the CBIP exams. TDWI offers exam preparatory sessions as well as other courses to complement your knowledge for taking the CBIP specialty exams. In addition, the many exam lab opportunities throughout the week make it convenient for you to complete your certification requirements all at one conference.

Why Become Certified?

DISTINGUISH YOURSELF PROFESSIONALLY

Your achievement of the CBIP credential tells the world— including current and prospective employers—that you are serious about business intelligence. Let your résumé show that your in-depth knowledge has been certified by TDWI, the industry's premier provider of education on all things data. You'll gain a competitive advantage and open up opportunities down the road.

GET AN EDGE OVER THE COMPETITION

Achieve CBIP status and gain:

// **SALARY.** Surveys consistently suggest certified professionals enjoy higher salaries.

// **RECOGNITION.** Have your BI expertise confirmed by a recognized industry organization.

// **SPECIALIZATION.** CBIP recognizes your experience in distinct skill areas, which helps employers confidently match your skills to their job requirements.

Is CBIP Right for You?

The CBIP program is designed for senior-level information systems and technology professionals in the business intelligence, data warehousing, and business analytics industry. A combination of experience, knowledge, and education provide the foundation for certification.

For More Information

Visit **tdwi.org/cbip** for step-by-step information on how to get certified, or contact us at 425.277.9126 or cbip@tdwi.org.

Advance Your Career with CBIP

Recommended Courses to Prepare for CBIP Certification

TDWI recommends the following courses offered in Orlando to help you prepare for CBIP exams. To learn more, visit tdwi.org/cbip.

To prepare for CBIP exams, consider:

IS Core Exam

S5A   p. 17
TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success

M7A   p. 20
CBIP Preparation for the Information Systems Core Exam

Data Warehousing Exam

S5A   p. 17
TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success

S5P   p. 17
TDWI Business Intelligence Architecture: Principles of BI Design

M7P   p. 21
CBIP Preparation for the Data Warehousing Exam

Business Analytics Exam

T1A   p. 21
TDWI Business Analytics: Exploration, Experimentation, and Discovery

T1P   p. 21
TDWI Predictive Analytics Fundamentals

T2A   p. 22
TDWI Big Data Fundamentals: Creating Value from Non-Traditional Data Sets

Data Analysis and Design Exam

S1   p. 16
TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis

M2   p. 19
Dimensional Modeling from a Business Perspective: A Model the Business Can Understand

Data Integration Exam

W5P   p. 27
TDWI Data Virtualization: Solving Complex Data Integration Challenges

F1   p. 32
TDWI Data Integration Principles and Practices: Creating Information Unity from Data Disparity

Leadership and Management Exam

TH1   p. 29
TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement

CBIP EXAM LABS

Sign up for exams at the conference registration desk. You will need a laptop that is Windows compatible and does not encrypt data on a USB drive. If your laptop does not meet these requirements, you can reserve one for loan.

Day	Time
Monday	5:30–7:00 p.m.
Wednesday	5:30–7:00 p.m.
Thursday	5:30–7:00 p.m.
Friday	8:00 a.m.–2:00 p.m.

Fee per Exam:
$325 TDWI Premium Members
$350 non-members

Exam Duration:
Maximum 90 minutes each

For more information, visit tdwi.org/cbip.

Hotel and Travel

Many courses sell out and hotel accommodations fill quickly at TDWI Orlando. Register for the conference and reserve your hotel room early to ensure availability, as space is limited.

LOEWS ROYAL PACIFIC RESORT at UNIVERSAL ORLANDO will serve as the official headquarters for TDWI Orlando.

LOEWS ROYAL PACIFIC RESORT AT UNIVERSAL ORLANDO
6300 Hollywood Way
Orlando, FL 32819
Phone: 866.360.7395

Website: **www.universalorlando.com/royalpacific**
Reservations: **www.loewshotels.com/en/Royal-Pacific-Resort/GroupPages/TDWI2015**

$175 plus tax for single/double occupancy.
This discounted rate is available through November 5, 2015.

TDWI has reserved a block of rooms at reduced rates for conference attendees (single or double occupancy).

Use the above URL or contact the hotel directly for reservations. Be sure to reference "TDWI" to get the conference rate. Rooms are limited, so reserve early. If you need special facilities or services, notify the hotel when you make your reservation.

For added convenience, you can book your hotel room and your conference registration with one easy payment. Visit **tdwi.org/OR2015/hotel** for more information.

CAR RENTAL DISCOUNTS
Avis is offering discounts on car rental fees for TDWI conference attendees.
Information: tdwi.org/OR2015/hotel

About Orlando

At Universal Orlando® Resort you'll find two spectacular theme parks, non-stop nightlife, and more, all in one convenient location. Experience the pulse-pounding thrills of Universal's Islands of Adventure®. Take a starring role in some of the biggest movies and TV shows ever created at Universal Studios®. And enjoy the best in restaurants, nightclubs, shopping, movies, and more at Universal CityWalk®. It's an entire universe of action, fun, and excitement that takes you where you never thought you'd go.

Universal Orlando is proud to offer tickets to both Universal Orlando theme parks for attendees, their guests, and their family members. Visit **www.universalorlando.com/convention/** for more information.

SPECIAL THEME PARK TICKETS FOR TDWI ATTENDEES
Attendees can purchase theme park tickets with ease and access special ticket options not available anywhere else.

UNIVERSAL CITYWALK®
Within walking distance, you'll find the newly renovated Universal CityWalk®—a bustling and easily accessible attraction day or night. The Loews Royal Pacific Resort, which plays host to TDWI Orlando, is a mere seven-minute walk from the Universal CityWalk® and the Universal Orlando® Resort theme parks and offers many bars, restaurants, and entertainment venues. CityWalk® is a veritable cornucopia of national food chains, including Red Oven Pizza Bakery, The Hot Dog Hall of Fame, Vivo Italian Kitchen, Menchie's, Cold Stone Creamery, and Antojitos Authentic Mexican Food.

OTHER ORLANDO ATTRACTIONS
From art and culture, dining and nightlife, to sporting events and theme park outings, Orlando offers something for everyone.

Make it a day: Orlando covers sporting pursuits from land to water to water hazard. Charter fishing excursions off the nearby Florida coast, kayak the crystal-blue coastal waters, or play one (or more) of the 168 golf courses in the area. For the relaxation-minded, Orlando boasts many renowned day spas and luxury retreats where you can forget your cares with a relaxing massage or sip a drink poolside. And of course, no trip to Orlando is complete without a visit to the Walt Disney World theme parks.

Besides these next-door attractions, downtown Orlando offers many choices for dining, dancing, and live music.

How to Register

Check one full-day class or one morning (A) class and one afternoon (P) class for each day that you will attend. Classes without an A or P designation are full-day classes.

SUNDAY, DECEMBER 6

○	S1	TDWI Dimensional Data Modeling Primer: From Requirements to Business Analysis
○	S2	The Future of Data Warehousing
○	S3	Faster, Must Go Faster: Analytics in a Real-Time World
○	S4	Building an Agile Business Culture
○	S5A	TDWI Business Intelligence Principles and Practices: Charting the Course to BI Success
○	S5P	TDWI Business Intelligence Architecture: Principles of BI Design
○	S6A	The New Analytical Ecosystem: Bridging the Worlds of BI and Big Data
○	S6P	Secrets of Analytical Leaders: Insights from Information Insiders

MONDAY, DECEMBER 7

○	M1	TDWI Data Visualization Fundamentals
○	M2	Dimensional Modeling from a Business Perspective: A Model the Business Can Understand
○	M3	Hands on: Data Mining with R
○	M4	Designing a Data Warehouse for High Performance
○	M5	What's Next? Competing with Data
○	M6	Practical Techniques for Aligning Business and IT: Navigating Politics and Culture
○	M7A	CBIP Preparation for the Information Systems Core Exam
○	M7P	CBIP Preparation for the Data Warehousing Exam

TUESDAY, DECEMBER 8

○	T1A	TDWI Business Analytics: Exploration, Experimentation, and Discovery
○	T1P	TDWI Predictive Analytics Fundamentals
○	T2A	TDWI Big Data Fundamentals: Creating Value from Non-Traditional Data Sets
○	T2P	BI and Analytics Organizations that Work: Resolving the Conflicts of Centralization and Self-Service
○	T3A	Creating an Analytically Driven Enterprise: Implementing an Analytics Program
○	T3P	Modernizing Your Data Warehouse Environment
○	T4A	Innovation Awareness: Getting Ready for Technology Shifts
○	T4P	Workshop: Developing the Business Intelligence and Analytics Road Map
○	T5A	Social Analytics in the Enterprise
○	T5P	Mobile Business Intelligence: Innovation and Advantage with a Mobile Workforce
○	T6A	Tipping the Sacred Cows of Data Warehousing
○	T6P	Tipping the Sacred Cows of Emerging Technologies
○	T7A	Exploring Cognitive Computing Approaches and Architectures
○	T7P	Big Data Search and Machine Learning: Now and Future

WEDNESDAY, DECEMBER 9

○	W1	Hands-on Data Visualization with R
○	W2	Bringing Business and IT Together: Practical Steps to Improved Working Relationships
○	W3	Serious Play for Advanced Analytics: What Works, What Doesn't, and Why
○	W4	Understanding Hadoop
○	W5A	TDWI Data Warehouse Automation: Better, Faster, Cheaper … You Can Have It All
○	W5P	TDWI Data Virtualization: Solving Complex Data Integration Challenges
○	W6A	Introduction to Graph Databases
○	W6P	Introduction to NoSQL for Those Used to SQL: Storing and Managing Operational Big Data
○	W7A	The Logical Data Warehouse: Architecture, Design, and Technology
○	W7P	New Data Storage Technologies: From Hadoop to MongoDB, and from SQL to NoSQL

THURSDAY, DECEMBER 10

○	TH1	TDWI Data Quality Management: Techniques for Data Profiling, Assessment, and Improvement
○	TH2	Power, Politics, and Partnership: Building an Analytics Culture
○	TH3	Hands-on Hadoop
○	TH4	Choosing the Right Analytic and Data Science Techniques
○	TH5	Demystifying Big Data: Designing an Architecture for Data and Analytics
○	TH6A	Data Modeling in the Age of Big Data
○	TH6P	TDWI Data Governance Innovations: Adapting for Agile, Big Data, and Cloud
○	TH7A	Harness the Power of "What-If" Analytics: Shaping Your Future with Simulation
○	TH7P	Enriching Your Analytics with Open Data Sources

FRIDAY, DECEMBER 11

○	F1	TDWI Data Integration Principles and Practices: Creating Information Unity from Data Disparity
○	F2A	Data Storytelling: The New Horizon in Business Analytics
○	F2P	Data Storytelling Workshop
○	F3A	Emerging Technology for Advanced Analytics
○	F3P	Innovative Techniques for Advanced Analytics
○	F4A	XaaS: As a Service
○	F5A	Big Data Ethics: The Power of Knowing

STEP 2. CALCULATE YOUR PAYMENT

Conference price includes complimentary TDWI Premium Membership. Current TDWI Premium Members get a $275 discount off the conference price (in lieu of complimentary Premium Membership). Multiple-day packages do not require consecutive days.

FEES—SUPER EARLY REGISTRATION (through October 16, 2015)

USE PRIORITY CODE OR3

○ Standard Package (3 days)	$2,040
○ Mega Package (4 days)	$2,560
○ Giga Package (5 days)	$3,015
○ Tera Package (6 days)	$3,400

FEES—EARLY REGISTRATION (October 17–November 6, 2015)

USE PRIORITY CODE OR3

○ Standard Package (3 days)	$2,350
○ Mega Package (4 days)	$2,945
○ Giga Package (5 days)	$3,470
○ Tera Package (6 days)	$3,910

FEES—REGULAR REGISTRATION (November 7–December 4, 2015)

○ Standard Package (3 days)	$2,550
○ Mega Package (4 days)	$3,205
○ Giga Package (5 days)	$3,770
○ Tera Package (6 days)	$4,255

FEE FROM TABLE ABOVE $ _____

– CURRENT MEMBER DISCOUNT (Deduct $275 from above) $ _____
Premium Membership status will be validated when your registration is processed

– TEAM DISCOUNT (Deduct 10% from above) $ _____
For 3 or more people from the same company registering at the same time

+ LATE FEE (After December 4, 2015—add $50) $ _____

= TOTAL FEE $ _____

STEP 3. REGISTER

Online: tdwi.org/OR2015/register

Phone: 425.277.9201 (M–F, 9:00 a.m.–5:00 p.m. PT)

Rest easy—online registrations are secure. Our secured server environment keeps your information private.

TDWI's Federal Tax ID Number is 20-4583700.
TDWI is a division of 1105 Media, Inc.

REGISTRATION DEADLINES (PRIORITY CODE OR3)

Super Early Registration Deadline . . . . October 16, 2015
Early Registration Deadline . . . . .November 6, 2015
Regular Registration Deadline . . . . .December 4, 2015
After December 4, please register on site. Registration will be limited to space available. You will incur a $50 late registration fee after December 4.

TEAM DISCOUNT

When three or more people from a single company or government agency register at the same time, the entire team receives a 10% discount.
All registration forms must be submitted together in order to qualify for the team discount.

TDWI PREMIUM MEMBERSHIP INCLUDED

All registrations for three or more days include a one-year TDWI Premium Membership. If you are already a current TDWI Premium Member, you will instead be eligible for a $275 discount off the conference price (in lieu of complimentary Premium Membership). Visit tdwi.org/premium-membership for more information on TDWI Premium Member benefits. Premium Membership is activated on your conference registration date, so you can begin to enjoy benefits right away.

REFUND AND CANCELLATION POLICY

You may substitute another person in your place by calling 425.277.9201 (M–F, 8:00 a.m.–5:00 p.m. PT) before November 20, 2015.

If you must cancel, your refund request must be e-mailed to registration@tdwi.org no later than November 20. Your fee will be returned, less a 20 percent cancellation fee. No refunds or credits will be issued after November 20.

CONFERENCE QUESTIONS?

Phone: 425.277.9181
E-mail: education@tdwi.org

TDWI is your source for in-depth education and research on all things data.

EARLY REGISTRATION DISCOUNT

SUPER EARLY—SAVE 20%
SAVE UP TO $855 WHEN YOU REGISTER BY OCTOBER 16

EARLY—SAVE 10%
SAVE UP TO $345 WHEN YOU REGISTER BY NOVEMBER 6
USE PRIORITY CODE OR3

tdwi
Advancing all things data.

TDWI is your source for in-depth education and research on all things data. TDWI advances the art and science of realizing business value from data by providing an objective forum where industry experts, solution providers, and practitioners can explore and enhance data competencies, practices, and technologies. Learn more at tdwi.org.

tdwi.org/OR2015