

Alec Sharp

Tolido

Ferguson

prof.dr. Peter Boncz

Panos Alexopoulos

Jos van Dongen

Brinkman

Jan Henderyckx

UTRECHT + LIVE VIDEO STREAM

WORKSHOPS

MARCH 28 2024

MARCH 27 2024

DATA WAREHOUSING & BUSINESS INTELLIGENCE SUMMIT 2024

Key Changes in Data Architecture, Data Mesh Light, Gen-Al Impact on Data Management, Knowledge Grahps, Datamodelleren, Data Engineering & Analytics, Data Governance for Compliant AI

- Data Architecture Key Changes
- **Conceptual Data Modelling**
- Knowledge Graphs
- **Generative Al in Data Management**
- Data Mesh Light
- Hybrid Query Processing
- **Data Governance for Compliant AI**
- Mixed Source Data Engineering & Analytics
- Openness, Sharing Data and Privacy by Design

WORKSHOPS MARCH 28

- Data Products From Design, to Build, to Publishing and Consumption | Mike Ferguson (half day, English spoken)
- Concept Modelling for Business Analysts | Alec Sharp (half day, English spoken)
- Knowledge Graphs Pragmatic Approach and Best Practices Panos Alexopoulos (half day, English spoken)

Acclaimed speakers

Alec Sharp, Ron Tolido, Mike Ferguson, prof.dr. Peter Boncz, Panos Alexopoulos, Jos van Dongen, Thomas Brinkman and Jan Henderyckx

INFORMATION AND REGISTRATION: WWW.DWBISUMMIT.COM







The Data Warehousing & Business Intelligence Summit covers trends, new technologies, emerging paradigms offered to you by thought leaders on these domains. It offers practical guidelines, tools and do's and don'ts to support current and upcoming issues. You will meet acclaimed international speakers and thought leaders from The Netherlands and representatives of large international organizations. Our line-up includes Alec Sharp, Ron Tolido, Mike Ferguson, prof.dr. Peter Boncz, Panos Alexopoulos, Jan Henderyckx, Thomas Brinkman and Jos van Dongen.

This top-tier line-up of speakers is eager to share their knowledge and experience with you. On the first conference day, you can join us in Utrecht or attend online via our live video stream. The second conference day consists of three half-day workshops in Utrecht.

Some topics that will be covered:

- Data Architecture Key Changes in 2023/2024
- Conceptual Data Modelling and The Data-Process-Connection
- Knowledge Graphs as Providers of Large Scale Data Semantics
- Generative AI in Data Management and Analytics
- Data Mesh Light avoiding the mess
- Hybrid Query Processing in MotherDuck
- Data Governance as Keystone for Compliant AI and Digital Trust
- Mixed Source Data Engineering & Analytics
- Openness, Sharing Data and Privacy by Design

Parallel sessions and video recordings

Conferences Seminars Workshops In-house Training

To rig an optimal and full programme, we are working with parallel sessions. Whether you participate in Utrecht or online, you will still have to choose on March 27. However, since 2020, for obvious reasons, we have been working with video recordings. Conference participants will have access to these video recordings for several months after the conference so whichever parallel session you choose, the other one can always be watched afterwards.

Who should attend

The DW&BI Summit is geared to for IT Executives, IT Management and Architects, business intelligence and data warehousing professionals who wish to take a detailed and practical look at the latest developments in Data Warehousing and Business Intelligence. The following professionals should attend:

- Sponsors of BI and DW programs
- Business technology managers
- IT executives and managers
- BI/DW project managers
- Data warehousing architects
- Business intelligence practitioners
- Business analysts
- Data scientists
- Technology architects
- Data architects and data modelers
- Project and program managers
- Data integrators
- Developers of BI and DW systems
- Business and IT consultants

CONFERENCE OUTLINE



WEDNESDAY MARCH 27 - LIVE + STREAMING

Session 1

Data Architecture Evolution and the Impact on Analytics Mike Ferguson, Managing Director, Intelligent Business Strategies Ltd

Session ZA	Session 2D	
Hybrid Query Processing in MotherDuck Prof.dr. Peter Boncz, Database scientist & researcher, Centrum Wiskunde & Informatica (CWI)	Connecting Meaning, The promise and challenges of Knowledge Graphs as providers of large-scale data semantics Panos Alexopoulos, Founder, Panagiotis Alexopoulos	
Session 3A	Session 3B	
Generative AI in Data Management and Analytics – A New Era of Assistance, Productivity and Automation Mike Ferguson, Managing Director, Intelligent Business Strategies Ltd	Democratisering van Data: Het Kwadrantenmodel in Actie Thomas Brinkman, Data Architect, CJIB	
<mark>Session 4A</mark> Data Governance as Keystone for Compliant AI and Digital Trust Jan Henderyckx, Managing Director, BearingPoint	Session 4B Mixed Source Data Engineering & Analytics: a best of both worlds approach Jos van Dongen, Director Erasmus Data Collaboratory, Erasmus University Rotterdam	

Session 5

Data Mesh Light – getting there, step by step, avoiding the Mess Ron Tolido, CTO and Executive VP, Capgemini

Session 6

Concept Modelling and The Data-Process Connection Alec Sharp, Founder, Clariteq Systems Consulting

THURSDAY MARCH 28 – WORKSHOPS

9:00 - 12:30

Data Products - From Design, to Build, to Publishing and Consumption Mike Ferguson, Managing Director, Intelligent Business Strategies Ltd

9:00 - 12:30

Concept Modelling for Business Analysts Alec Sharp, Founder, Clariteq Systems Consulting

13:30 - 17:00

Knowledge Graphs - pagmatic approach and best practices Panos Alexopoulos, Founder, Panagiotis Alexopoulos

Schedule March 27:

09:00-09:15 Opening 09:15 - 10:15 Session 1 10:15 – 10:30 Coffee break 10:30 – 11:30 Session 2A and 2B 11:30 - 12:30 Session 3A and 3B 12:30 – 13:30 Lunch

13:30 - 14:30 Session 4A and 4B 14:30 - 15:30 Session 5A and 5B 15:30 – 15:45 Coffee break 15:45 - 16:45 Session 6 16:45 - 16:50 Closure 16:50 Reception



1. Data Architecture Evolution and the Impact on Analytics

Mike Ferguson, Managing Director, Intelligent Business Strategies Ltd

In the last 12-18 months we have seen many different architectures emerge from many different vendors who claim to be offering 'the modern data architecture solution' for the datadriven enterprise. These range from streaming data platforms to data lakes, to cloud data warehouses supporting structured, semi-structured and unstructured data, cloud data warehouses supporting external tables and federated query processing, lakehouses, data fabric, and federated query platforms offering virtual views of data and virtual data products on data in data lakes and lakehouses. In addition, all of these vendor architectures are claiming to support the building of data products in a data mesh. It's not surprising therefore, that customers are confused as to which option to choose.

However, in 2023, key changes have emerged including much broader support for open table formats such as Apache Iceberg, Apache Hudi and Delta Lake in many other vendor data platforms. In addition, we have seen significant new milestones in extending the ISO SQL Standard to support new kinds of analytics in general purpose SQL. Also, AI has also advanced to work across any type of data.

The key question is what does this all mean for data management? What is the impact of this on analytical data platforms and what does it mean for customers? This session looks at this evolution and helps customers realise the potential of what's now possible and how they can exploit it for competitive advantage.

- The demand for data and AI
- The need for a data foundation to underpin data and Al initiatives
- The emergence of data mesh and data products
- The challenge of a distributed data estate
- Data fabric and how can they help build data products
- Data architecture options for building data products
- The impact of open table formats and query language extensions on architecture modernisation
- Is the convergence of analytical workloads possible?

2A. Hybrid Query Processing in MotherDuck (Dutch spoken)

Prof.dr. Peter Boncz, Database scientist & researcher, Centrum Wiskunde & Informatica (CWI)

MotherDuck is a new service that connects DuckDB to the cloud. It introduces the concept of "hybrid query processing": the ability to execute queries partly on the client and partly in the cloud. The talk covers the motivation for MotherDuck and some of its use cases; as well as the main characteristics of its system architecture, which heavily uses the extension mechanisms of DuckDB. To provide context, the talk will therefore also provide a brief overview of the DuckDB architecture.

- DuckDB
- History: MonetDB, VectorWise, Snowflake
- MotherDuck: DuckDB in the cloud
- Hybrid Query Processing
- Applications: Data Teams & Low-latency Web Analytics.

2B. Connecting Meaning, The promise and challenges of Knowledge Graphs as providers of large-scale data semantics

Panos Alexopoulos, Founder, Panagiotis Alexopoulos

Ever since Google announced that "their knowledge graph allowed searching for things, not strings", the term "knowledge graph" has been widely adopted, to denote any graph-like network of interrelated typed entities and concepts that can be used to integrate, share and exploit data and knowledge.

This idea of interconnected data under common semantics is actually much older and the term is a rebranding of several other concepts and research areas (semantic networks, knowledge bases, ontologies, semantic web, linked data etc). Google popularized this idea and made it more visible to the public and the industry, the result being several prominent companies, developing and using their own knowledge graphs for data integration, data analytics, semantic search, question answering and other cognitive applications.

As the use of knowledge graphs continues to expand across various domains, the need for ensuring the accuracy, reliability, and consensus of semantic information becomes paramount. The intricacies involved in constructing and utilizing knowledge graphs present a spectrum of challenges, from data quality assurance to ensuring scalability and adaptability to evolving contexts.

In this talk, we will delve deeper into the significance of knowledge graphs as facilitators of large-scale data semantics. The discussion will encompass the core concepts, challenges, and strategic considerations that architects and decision-makers encounter while initiating and implementing knowledge graph projects.

The session will cover:

- Understanding Knowledge Graphs: Exploring the fundamental concepts and significance of knowledge graphs in integrating, organizing, and harnessing data across diverse domains
- Challenges in Building Knowledge Graphs: Identifying and dissecting primary hurdles such as data quality assurance, schema alignment, scalability, and ongoing maintenance

Adeptevents

Conferences Seminars Workshops In-house Training

IT & Business Technology

- Strategic Dilemmas: Examining critical decision points and dilemmas faced by architects and executives when designing and executing knowledge graph initiatives
- Crafting an Effective Strategy: Outlining guidelines to formulate a robust knowledge graph strategy tailored to specific organizational goals, considering scalability, interoperability, and domain relevance.

3A. Generative AI in Data Management and Analytics – A New Era of Assistance, Productivity and Automation

Mike Ferguson, Managing Director, Intelligent Business Strategies Ltd

The emergence of generative AI has been described as a major breakthrough in technology. It has reduced the time to create new content and triggered a new wave of innovation that is impacting almost every type of software. New tools, applications and functionality are already emerging that are dramatically improving productivity, simplifying user experiences and paving the way for new ways of working. In this keynote session, Mike Ferguson, Europe's leading IT industry analyst on Data Management and Analytics, looks at the impact generative AI is having on Data Management, BI and Data Science and what it can do to help shorten time to value.

- What is generative AI?
- What are the business benefits of generative AI?
- How is generative AI being used in data management?
- How is generative AI being used in data science and BI
- What does this mean for business going forward?
- What should you do to get started

3B. Democratisering van Data: Het Kwadrantenmodel in Actie (Dutch spoken)

Thomas Brinkman, Data Architect, CJIB

Traditioneel zijn datawarehouses primair ontworpen voor het oplossen van analysevraagstukken. Met de opkomst van datademocratisering groeit de behoefte om data breder binnen organisaties in te zetten. Dataconsumenten willen de beschikbare gegevens vrijer benutten, en historische data in datawarehouses wordt steeds waardevoller als bron voor het trainen van Almodellen. In dit evoluerende landschap wordt het integreren van privacy by design in de architectuur essentieel. Het moet niet langer worden gezien als een hindernis, maar eerder als een katalysator voor deze vooruitgang. Het kwadrantenmodel van Damhof biedt hierbij een leidraad. Door deze benadering toe te passen, ontstaat niet alleen de mogelijkheid om te voldoen aan de groeiende eisen van dataconsumptie en Al-ontwikkelingen, maar leggen we ook een solide basis waarop innovatie wordt gestimuleerd.

- Datawarehouses en de rol binnen datascience
- Privacy by Design als katalysator
- Kwadrantenmodel in combinatie met datavirtualisatie
- Kostenreductie van experimenten.

4A. Data Governance as Keystone for Compliant AI and Digital Trust

Jan Henderyckx, Partner, BearingPoint

Data governance is the process of managing the availability, usability, integrity, and security of data in an organization. It is essential for ensuring that data is used ethically, responsibly, and in compliance with regulations and standards. Data governance also enables the development and deployment of AI systems that are aligned with the values, goals, and expectations of the stakeholders and the society. In this keynote, we will discuss how data governance can serve as a keystone for building ethical AI and digital trust. We will explore the challenges and opportunities of data governance in the context of AI, and present some best practices and frameworks for implementing data governance in AI projects. We will also share some examples and case studies of how data governance can help achieve ethical AI and digital trust outcomes. The keynote will conclude with some recommendations and future directions for data governance in the AI era.

By the end of this session, you will be able to:

- Define data governance and its importance for data and AI systems
- Identify the challenges and opportunities of data governance in the context of AI
- How to apply best practices and frameworks for data governance, such as data lifecycle management, data stewardship, data ethics principles, and data audit and assessment
- Explain how data governance can support ethical AI and digital trust outcomes, such as fairness, privacy, explainability, and reliability
- Recognize the roles and responsibilities of various actors and stakeholders in the AI ecosystem for data governance.

4B. Mixed Source Data Engineering & Analytics: a best of both worlds approach (Dutch spoken)

Jos van Dongen, Director Erasmus Data Collaboratory, Erasmus Universiteit Rotterdam

Erasmus University Rotterdam (EUR) is one of the largest academic institutions of the country whose mission is 'creating a positive societal impact', and where the United Nations Sustainable Development Goals serve as a compass for research and education alike. With the variety and diversity of topics within EUR, an open, flexible, affordable, and easy to use data & analytics solution is key to support data & AI projects. At the same time there are



many internal and external factors that need to be considered: the adoption of and migration to cloud solutions, the push for open science and open source, an ever faster changing technology landscape, and finally the breathtaking speed with which AI solutions are coming to market. Making future proof choices in this environment is a daunting task as one could imagine. Nevertheless, choices have been made and consist of a mix of open source and proprietary solutions, both on-premise and in the cloud, and guided by modern software engineering principles. This session will highlight the following:

- The influence of modern software engineering principles like CI/CD on data engineering, data management, and analytics
- How to remain independent and prevent lock in from any vendor or cloud provider
- The tradeoff between building, buying, and renting hard and software
- How to standardize on tools and technology and remain flexible at the same time.

5. Data Mesh Light – getting there, step by step, avoiding the Mess

Ron Tolido, CTO and Executive VP, Capgemini

The Data Mesh approach has been well on its way as an alternative data management approach that does justice to the federative nature of most organizations and the need to provide ownership of data as close as possible to the business domains – where data is actually created and used. However, the transformational impact of Data Mesh is potentially big, and many organizations have found it difficult to implement the approach in all of its dimensions at once. Why not take a lighter approach, reaping benefits one by one, rather than going for an unprepared, deep dive into the Data Mesh rabbit hole?

- Recap: the key elements of the Data Mesh approach
- Best and worst practices from real life
- Crafting a step-by-step approach

- Architectural and technological considerations
- Adding semantics to the Data Mesh
- Using generative AI to augment a Data Mesh.

6. Concept Modelling and The Data-Process Connection

Alec Sharp, Founder, Clariteq Systems Consulting

Whether you call it a conceptual data model, a domain map, a business object model, or even a "thing model," a concept model is invaluable to process and architecture initiatives. Why? Because processes, capabilities, and solutions act on "things" – Settle Claim, Register Unit, Resolve Service Issue, and so on. Those things are usually "entities" or "objects" in the concept model, and clarity on "what is one of these things?" contributes immensely to clarity on what the corresponding processes are.

After introducing methods to get people, even C-level executives, engaged in concept modelling, we'll introduce and get practice with guidelines to ensure proper naming and definition of entities/concepts/business objects. We'll also see that success depends on recognising that a concept model is a description of a business, not a description of a database. Another key – don't call it a data model!

Drawing on almost forty years of successful modelling, on projects of every size and type, this session introduces proven techniques backed up with current, real-life examples. Topics include:

- Concept modelling essentials things, facts about things, and the policies and rules governing things
- "Guerrilla modelling" how to get started on concept modelling without anyone realising it
- Naming conventions and graphic guidelines ensuring correctness, consistency, and readability
- Concept models as a starting point for process discovery
- Practical examples of concept modelling supporting process work, architecture work, and commercial software selection.



INTERNATIONALLY ACCLAIMED SPEAKERS



ALEC SHARP, a senior consultant with Clariteq Systems Consulting, has deep expertise in a rare combination of fields – business-oriented data modelling, business process analysis and redesign, and business analysis and requirements specification. Increasingly, his

work involves facilitation, organisational change, and project recovery. His 40 years of hands-on consulting experience, practical approaches, and global reputation in model-driven methods have made him a sought-after resource around the world. Alec is also a popular speaker at conferences related to Business Process Management, Business Analysis, and Data Management, mixing content and insight with irreverence and humour. Alec literally wrote the book on business process modelling, "Workflow Modelling: Tools for Process Improvement and Application Development, Second Edition." Popular with process improvement specialists, business analysts, consultants, and business professionals, it is consistently a top-selling title on business process modelling, analysis, and design, and is widely used as an MBA textbook.

He was awarded DAMA's Professional Achievement Award, a global award given to one professional a year for contributions to the Data Management profession.

Alec's educational workshops are conducted virtually and in-person at many well-known organisations. These include Business-Oriented Data Modelling, Business-Oriented Data Modelling – Masterclass, Working With Business Processes, Advanced Business Process Techniques, and Model-Driven Business Analysis Techniques. His classes are practical, energetic, and fun, consistently earning "excellent" ratings.



MIKE FERGUSON is Managing Director of Intelligent Business Strategies Limited. As an analyst and consultant he specialises in business intelligence / analytics, data management, big data and enterprise business integration. With over 40 years of IT experience,

Mike has consulted for dozens of companies on business intelligence strategy, technology selection, enterprise architecture, and data management. He has spoken at events all over the world and written numerous articles. Formerly he was a principal and co-founder of Codd and Date Europe Limited – the inventors of the Relational Model, a Chief Architect at Teradata on the Teradata DBMS and European Managing Director of Database Associates. Mike teaches in Data Warehouse Modernisation, Big Data Architecture & Technology, Centralised Data Governance of a Distributed Data Landscape, Practical Guidelines for Implementing a Data Mesh, Embedded Analytics, Intelligent Apps & Al Automation, Migrating Data Warehouse to the Cloud, Modern Data Architecture and Data Virtualisation.



RON TOLIDO is an Executive Vice President, CTO and Master Architect of Capgemini's Insights & Data global business line. He published several books and numerous articles and posts on innovation, AI, data architecture and technologypowered transformation. He is the lead author

of Capgemini's 'TechnoVision' yearly trend series and the editorin-chief of the 'Data-powered Innovation Review' magazine publications. A frequent speaker, Ron is a guest lecturer at the TIAS Business School. He has served for a decade at The Open Group's governance board.



JAN HENDERYCKX is trusted advisor, speaker and author who has been active in the field of Information Management and Information Governance and strategy since 1986. He has presented, moderated and taught workshops at many international conferences and User Group

meetings worldwide. Jan's experiences, combined with information architecture and management expertise, have enabled him to help many organisations to optimise the business value of their information assets.

Jan is partner at BearingPoint, a Belgian based consultancy company focusing exclusively on information management and data insight. BearingPoint is not tied to specific vendors and cares for delivering vendor neutral advice. The teams distinctive experience and no nonsense approach, quickly enables businesses to make the most out of their data.

Jan has published articles in many leading industry journals, and has been awarded numerous best speaker awards. Jan holds the DAMA-I Certified Data Management Professional and Data Governance and Stewardship certificates at the mastery level.



PETER BONCZ has been active in the database community during the past four decades, making him a veteran. He leads the Database Architectures research group of research institute CWI in Amsterdam and has been involved in six startup companies so far. He was

recently appointed ACM Fellow for his contributions to modern database architectures, and is also professor at VU University in Amsterdam, specializing in analytical databases. He is also the founder and chairman of the graph database organization Linked Data Benchmark Council (LDBC), though this year he is on leave from the latter function, during his sabbatical stay at MotherDuck. His academic background is in core database architecture, with the architecture of MonetDB the main topic of his PhD thesis -MonetDB won the 2016 ACM SIGMOD systems award. This work focused on architecture-conscious database research, which studies the interaction between computer architecture and data management techniques. His specific contributions are in cacheconscious join methods, query and transaction processing in columnar database systems, and vectorized query execution. Peter Boncz has a strong track record in bridging the gap between academia and commercial application, receiving the Dutch ICT Regie Award 2006 for his role in the CWI spin-off company Data Distilleries. In 2008 he founded a new CWI spin-off company called Vectorwise, dedicated to state-of-the art business intelligence technology. He is also the co-recipient of the 2009 VLDB 10 Years Best Paper Award, and in 2013 received the Humboldt Research Award.



BY. Lo

JOS VAN DONGEN is the director of the Erasmus Data Collaboratory – House of AL where data & AI come to life. The EDC is part of the Erasmus Centre for Data Analytics, in which Jos serves as a member of the management team. Before joining ECDA in July 2023 he worked as an

analytics advisor and architect at SAS Institute. Jos has been a consultant, teacher, and data analytics expert since 1991. In 2006 he started writing and presenting about new developments in the data space and regularly speaks at national and international conferences.



PANOS ALEXOPOULOS has been working since 2006 at the intersection of data, semantics and software, contributing in building intelligent systems that deliver value to business and society. Born and raised in Athens, Greece, he currently works as Head of Ontology at

Textkernel BV, in Amsterdam, Netherlands, leading a team of data professionals in developing and delivering a large cross-lingual Knowledge Graph in the HR and Recruitment domain. In addition, he is develops and delivers training workshops for practitioners in the fields of Data Semantics, Natural Language Processing, and Artificial Intelligence.

Panos has published several papers at international conferences, journals and books, and he is a regular speaker in both academic and industry venues, striving to bridge the gap between academia and industry so that they can benefit from each other. He is also the author of the O'Reilly book "Semantic Modeling for Data -Avoiding Pitfalls and Dilemmas", a practical and pragmatic field guide for data practitioners that want to learn how semantic data modeling is applied in the real world.



THOMAS BRINKMAN currently working in the Innovation Lab of the CJIB, where he studies the role of architecture in combination with social issues. As a partially self-employed entrepreneur, he enjoys sharing his knowledge and experience with others. Thomas has been

fascinated by computers from a young age. In 2001 he began his career as a database developer, working primarily on ERP applications such as PeopleSoft. Soon he saw the need for data warehousing for integrated data analysis. A few years later, he seized his opportunity in the early days of server virtualization, driven by his love of new technologies. Nevertheless, Thomas returned to the field of Business Intelligence, this time at Norsk-Tipping. His technical background, combined with the experience in BI and his commitment to social issues, resulted in the development of more and more architectural solutions.

CONFERENCE APP



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9:00 - 12:30

DATA PRODUCTS - FROM DESIGN, TO BUILD, TO PUBLISHING AND CONSUMPTION (English spoken)

Mike Ferguson, Managing Director, Intelligent Business Strategies Ltd

This half-day workshop looks at the development of data products in detail. It also looks at the strengths and weaknesses of data mesh implementation options for data product development. Which architecture is best to implement this? How do you co-ordinate multiple domain-oriented teams and use common data infrastructure software like Data Fabric to create high-quality, compliant, reusable, data products in a Data Mesh. Is there a methodology for creating data products? Also, how can you use a data marketplace to share and govern the sharing of data products?

Most companies today are storing data and running applications in a hybrid multi-cloud environment. Analytical systems tend to be centralised and siloed like data warehouses and data marts for BI, cloud storage data lakes for data science and stand-alone streaming analytical systems for real-time analysis. These centralised systems rely on data engineers and data scientists working within each silo to ingest data from many different sources and engineer it for use in a specific analytical system or machine learning models. There are many issues with this centralised, siloed approach including multiple tools to prepare and integrate data, reinvention of data integration pipelines in each silo and centralised data engineering with poor



understanding of source data unable to keep pace with business demands for new data.

To address these issues, a new approach called Data Mesh emerged in late 2019 attempting to accelerate creation of data for use in multiple analytical workloads. Data Mesh is a decentralised business domain-oriented approach to data ownership and data engineering to create a mesh of reusable data products that can be created once and shared across multiple analytical systems and workloads.

This half-day workshop looks at the development of data products in detail and also, how can you use a data marketplace to share and govern the sharing of data products across the enterprise to shorten time to value.

Learning Objectives:

- Strengths and weaknesses of centralised data architectures used in analytics
- The problems caused in existing analytical systems by a hybrid, multi-cloud data landscape
- The emergence of data mesh and data products
- What exactly a data product is and the types of data products that you can create
- The benefits that data products offer and what are the implementation options?
- How to organise to create data products in a decentralised environment so you avoid chaos?
- How business glossaries can help ensure data products are formally defined, understood by business users and semantically linked
- The critical importance of a data catalog in understanding what data is available
- What software is required to build, operate and govern a data mesh of data products for use in a data lake, a data lakehouse or data warehouse?
- What is data fabric software, how does it integrate with data catalogs and connect to data in your data estate
- An Implementation methodology to produce ready-made, trusted, reusable data products
- Collaborative domain-oriented development of modular and distributed DataOps pipelines to create data products
- How a data catalog and automation software can be used to generate DataOps pipelines
- Managing data quality, privacy, access security, versioning, and the lifecycle of data products

- Publishing semantically linked data products in a data marketplace for others to consume and use
- Governing the sharing and use of data products in a data marketplace
- Consuming data products in an MDM system
- Consuming and assembling data products in multiple analytical systems like data warehouses, lakehouses and graph databases to shorten time to value.

Who is it for?

This seminar is intended for business data analysts, data architects, chief data officers, master data management professionals, data scientists, IT ETL developers, and data governance professionals. It assumes you understand basic data management principles and data architecture plus a reasonable understanding of data cleansing, data integration, data catalogs, data lakes and data governance.

Detailed course outline

Most companies today are storing data and running applications in a hybrid multi-cloud environment. Analytical systems tend to be centralised and siloed like data warehouses and data marts for BI, cloud storage data lakes or Hadoop for data science and standalone streaming analytical systems for real-time analysis. These centralised systems rely on data engineers and data scientists working within each silo to ingest data from many different sources, clean and integrate it for use in a specific analytical system or machine learning models. There are many issues with this centralised, siloed approach including multiple tools to prepare and integrate data, reinvention of data integration pipelines in each silo and centralised data engineering with poor understanding of source data unable to keep pace with business demands for new data. Also, master data is not well managed. To address these issues, a new approach emerged in late 2019 attempting to accelerate creation of data for use in multiple analytical workloads. That approach is Data Mesh. Data Mesh is a decentralised business domain-oriented approach to data ownership and data engineering to create a mesh of reusable data products that can be created once and shared across multiple analytical systems and workloads. A Data Mesh can be implemented in a number of ways. These include using one or more cloud storage accounts on cloud storage, on an organised data lake, on a Lakehouse, on a data cloud, using Kafka or using data virtualisation. Data products can then be consumed in other pipelines for use in streaming analytics, Data Warehouses or Lakehouse Gold Tables, for use in business intelligence, feature

stores for use data science, graph databases for use in graph analysis and other analytical workloads.

This half-day workshop looks at the development of data products in detail. It also looks at the strengths and weaknesses of data mesh implementation options for data product development. Which architecture is best to implement this? How do you coordinate multiple domain-oriented teams and use common data infrastructure software like Data Fabric to create high-quality, compliant, reusable, data products in a Data Mesh. Is there a methodology for creating data products? Also, how can you use a data marketplace to share and govern the sharing of data products? The objective is to shorten time to value while also ensuring that data is correctly governed and engineered in a decentralised environment. It also looks at the organisational implications of Data Mesh and how to create sharable data products for use as master data, in a data warehouse, in data science, in graph analysis and in real-time streaming analytics to drive business value? Technologies discussed includes data catalogs, data fabric for collaborative development of data integration pipelines to create data products, DataOps to speed up the process, data orchestration automation, data observability and data marketplaces.

- What are data products?
- What makes creating data products different from other approaches to creating data for use analytical workloads?
- A best practice methodology for creating data products
- How to design semantically linked data products to enable rapid consumption and use of data to produce new insights
- Quick start mechanisms to speed up data product design
- Defining common business data names for data products in a business glossary
- Data modelling techniques for data products
- Discovering data needed to build data products using a data catalog
- Developing DataOps pipelines to engineer the data needed using data fabric
- Publishing data products the role of the data marketplace
- Governing access to and use of data products across the enterprise
- Consuming and assembling data products for use in multiple analytical workloads
- Technologies and skills needed.

FOR MORE INFORMATION, GO TO WWW.ADEPTEVENTS.NL/MDP-EN

CONCEPT MODELLING FOR BUSINESS ANALYSTS (English spoken)

Alec Sharp, Founder, Clariteq Systems Consulting

Concept Modelling (or Conceptual Data Modelling) has seen an amazing resurgence of popularity in recent years, and Alec Sharp illustrates the many reasons for this along with practical techniques and guidelines to ensure useful models and business engagement.

Whether you call it a conceptual data model, a domain model, a business object model, or even a "thing model," the concept model is seeing a worldwide resurgence of interest. Why? Because a concept model is a fundamental technique for improving communication among stakeholders in any sort of initiative. Sadly, that communication often gets lost – in the clouds, in the weeds, or in chasing the latest bright and shiny object. Having experienced this, Business Analysts everywhere are realizing Concept Modelling is a powerful addition to their BA toolkit. This session will even show how a concept model can be used to easily identify use cases, user stories, services, and other functional requirements.

Realizing the value of concept modelling is also, surprisingly, taking hold in the data community. "Surprisingly" because many data practitioners had seen concept modelling as an "old school" technique. Not anymore! In the past few years, data professionals who have seen their big data, data science/AI, data lake, data mesh, data fabric, data lakehouse, etc. efforts fail to deliver expected benefits realise it is because they are not based on a shared view of the enterprise and the things it cares about. That's where concept modelling helps. Data management/governance teams are (or should be!) taking advantage of the current support for Concept Modelling. After all, we can't manage what hasn't been modelled!

The Agile community is especially seeing the need for concept modelling. Because Agile is now the default approach, even on enterprise-scale initiatives, Agile teams need more than some user stories on Post-its in their backlog. Concept modelling is being embraced as an essential foundation on which to envision and develop solutions. In all these cases, the key is to see a concept model as a description of a business, not a technical description of a database schema.

This workshop introduces concept modelling from a non-technical perspective, provides tips and guidelines for the analyst, and explores entity-relationship modelling at conceptual and logical levels using techniques that maximise client engagement and understanding. We'll also look at techniques for facilitating concept modelling sessions (virtually and in-person), applying concept modelling within other disciplines (e.g., process change or business analysis,) and moving into more complex modelling situations.

Drawing on over forty years of successful consulting and modelling, on projects of every size and type, this session provides proven techniques backed up with current, real-life examples.



Topics include:

- The essence of concept modelling and essential guidelines for avoiding common pitfalls
- Methods for engaging our business clients in conceptual modelling without them realizing it
- Applying an easy, language-oriented approach to initiating development of a concept model
- Why bottom-up techniques often work best
- "Use your words!" how definitions and assertions improve concept models
- How to quickly develop useful entity definitions while avoiding conflict
- Why a data model needs a sense of direction
- The four most common patterns in data modelling, and the four most common errors in specifying entities
- Making the transition from conceptual to logical using the world's simplest guide to normalisation
- Understand "the four Ds of data modelling" definition, dependency, demonstration, and detail
- Tips for conducting a concept model/data model review presentation
- Critical distinctions among conceptual, logical, and physical models
- Using concept models to discover use cases, business events, and other requirements

- Interesting techniques to discover and meet additional requirements
- How concept models help in package implementations, process change, and Agile development

Learning Objectives:

- Understand the essential components of a concept model

 things (entities) facts about things (relationships and
 attributes) and rules
- Use entity-relationship modelling to depict facts and rules about business entities at different levels of detail and

perspectives, specifically conceptual (overview) and logical (detailed) models

- Apply a variety of techniques that support the active participation and engagement of business professionals and subject matter experts
- Develop conceptual and logical models quickly using repeatable and Agile methods
- Draw an Entity-Relationship Diagram (ERD) for maximum readability
- Read a concept model/data model, and communicate with specialists using the appropriate terminology.

FOR MORE INFORMATION, GO TO WWW.ADEPTEVENTS.NL/CMB-EN

13:30 - 17:00

KNOWLEDGE GRAPHS - PRAGMATIC APPROACH AND BEST PRACTICES (English spoken)

Panos Alexopoulos, Founder, Panagiotis Alexopoulos

This seminar explores the strategic implementation of Knowledge Graph initiatives within organizations, offering a comprehensive framework that blends cutting-edge techniques with real-world case studies. It equips participants with the crucial understanding needed to make informed decisions, optimize initiatives, and unlock the transformative potential of Knowledge Graphs in today's data-driven landscape.

In today's data-driven landscape, the concept of a knowledge graph has emerged as a pivotal framework for managing and utilizing interconnected data and information. Stemming from Google's proclamation that shifted the focus from searching for



strings to understanding entities and relationships, the term encapsulates a network of interconnected entities and concepts, facilitating data integration, sharing, and utilization within organizations.

Amid the widespread adoption of knowledge graphs across diverse domains, ensuring the accuracy, reliability, and consensus of semantic information becomes an imperative. The construction and utilization of these graphs present multifaceted challenges, ranging from ensuring data quality to scaling and adapting to evolving contexts.

Implementing a successful Knowledge Graph initiative within an organization demands strategic decisions before and during its execution. Often overlooked are critical considerations such as managing trade-offs between knowledge quality and other factors, prioritizing knowledge evolution, and allocating resources effectively. Neglecting these facets can lead to friction and suboptimal outcomes.

This half-day seminar delves into the technical, business, and organizational dimensions essential for data practitioners and executives embarking on a Knowledge Graph initiative. Offering insights gleaned from real-world case studies, the seminar provides a comprehensive framework that combines cuttingedge techniques with pragmatic advice. It equips participants to navigate the complexities of executing a knowledge graph project successfully.

Moreover, the session addresses pivotal strategic dilemmas encountered during the design and execution phases of knowledge graph projects, and outlines potential approaches to tackle these challenges, empowering attendees with actionable strategies to optimize their initiatives.



Learning Objectives

- Understand the key factors determining the feasibility and viability of implementing a knowledge graph in an organization.
- Identify and articulate the fundamental questions crucial for preparing and launching a successful knowledge graph initiative.
- Learn techniques to determine and prioritize the content requirements of a knowledge graph.
- Grasp best practices in schema design for knowledge graphs, addressing real-world challenges of uncertainty and vagueness.
- Explore strategies and guidelines for populating a knowledge graph, evaluating available knowledge extraction systems.
- Gain insights into assessing and prioritizing quality dimensions within a knowledge graph.
- Explore practical applications of knowledge graphs, such as entity disambiguation and semantic search, optimizing performance through design principles.
- Gain insights into methodologies for ongoing maintenance and evolution of knowledge graphs, ensuring their sustained relevance and adaptability across time.

Who is it for?

- Data practitioners: Data scientists, data engineers, data analysts, and database administrators seeking to deepen their understanding of knowledge graphs, their implementation, and the technical intricacies involved.
- Technology Leaders: Architects, CTOs, and IT professionals exploring or leading initiatives involving data integration, semantic technologies, and knowledge management systems.
- Business Executives and Managers: Leaders and decisionmakers responsible for overseeing data strategies, innovation, and organizational transformation, aiming to comprehend the strategic implications and business value derived from knowledge graph initiatives.

Course Outline

The seminar will walk participants through 8 key stages of introducing, developing, delivering and evolving Knowledge Graphs in an organization. These are:

Stage 1 – "Knowing where you are getting into"

- Clarification of the knowledge graph concept
- Key factors influencing the ease or difficulty of building a knowledge graph
- Evaluating feasibility and viability of implementing a knowledge graph in a specific organization and for a particular business problem

Stage 2 – "Setting up the stage"

- Exploring 5 key questions essential before initiating knowledge graph development
- Defining what, why, how, who, and the stakeholders involved in the project
- Outlining actions required to seek and discover answers to these questions

Stage 3 – "Deciding what to build":

- Delving into knowledge graph specification
- Use of competency questions for gap analysis between organizational knowledge capabilities and needs
- Scoping and prioritizing knowledge graph content

Stage 4 - "Giving it a shape"

- Schema design using Ontology Representation and Engineering
- Identification of conceptual modeling best practices, dilemmas, and pitfalls
- Addressing uncertainty and vagueness

Stage 5 – "Giving it substance"

- Exploring the challenging task of knowledge graph population
- Description of population tasks and associated difficulties
- Designing optimal population pipelines

Stage 6 – "Ensuring it's good":

- Assessing knowledge graph quality, defining dimensions, and metrics
- Insights into quality trade-offs and prioritization of dimensions
- Measuring quality and effective prioritization of focus areas

Stage 7 – "Making it useful":

- Typical knowledge graph applications
- Guidelines and best practices for optimizing knowledge graph usefulness and value

Stage 8 – "Making it last":

- Addressing the challenge of knowledge graph maintenance and evolution
- Detecting, measuring, and monitoring concept drift
- Best practices for enabling continuous improvement and preventing knowledge graph obsolescence over time.

INFORMATION DATA WAREHOUSING & BUSINESS INTELLIGENCE SUMMIT 2024



DATE AND TIME

The conference will take place on March 27 and 28. On March 27 the programme starts at 9:00 am and ends at 4:45 pm. Registration commences at 8.00 am. On March 28 the workshops starts at different times, please check the website.

VENUE

The conference will be held at: Van der Valk Hotel Utrecht Winthontlaan 4-6 3526 KV Utrecht

Contact details hotel: Tel. (+31)30 8000800 E-mail: utrecht@valk.nl Website hotel: www.vandervalkhotelutrecht.nl

On the hotel **website** you can find a full itinerary and directions. The hotel is located on a 35 minutes drive from Amsterdam Schiphol Airport and is also easily accessible by public transport.

HOW TO REGISTER

Please register online at **www.dwbisummit.com**. For registering by print, please scan the completed registration form and send this to **seminars@adeptevents.nl**. We will confirm your registration and invoice your company by e-mail therefore please do not omit your e-mail address when registering.

REGISTRATION FEE

Early registration can save a significant amount. Below are the registration deadlines to obtain discount.

Options	On-premise March 27	Online
Best rate (ends January 24, 2024)	€ 586.50	€ 416.50
Early registration (Jan. 25 – Feb. 21, 2024)	€621	€441
Regular registration (starts February 22)	€ 690	€490

The fee for the half day workshop is only \in 370 if combined with the conference. The 10% early bird discount until Februari 21 also applies to these workshops. On the Adept Events **Adept Events** website you can register for these workshops separately if desired.

Delegates also gain four months access to the conference recordings of March 27 so there's no need to miss out on any of the sessions that we run in parallel. Members of KNVI section BI&A are eligable for 10 percent discount on the registration fee.

All pricing is VAT-excluded and EU VAT regulation stipulates that if you attend an event on-premise in The Netherlands, we are required to include local VAT. In case of discrepancy in registration fee between the website and the PDF brochure, the information on this page of the website always prevails.

Team discounts

Discounts are available for group bookings of two or more delegates representing the same organization made at the same time. Ten percent off for the second and third delegate and fifteen percent off for all delegates when registering four or more delegates (all delegates must be listed on the same invoice). This cannot be used in conjunction with other discounts.

PAYMENT

Full payment is due prior to the conference. An invoice will be sent to you containing our full bank details including BIC and IBAN. Your payment should always include the invoice number as well as the name of your company and the delegate name. Payment by credit card is also available for attendees. Please mention this in the Comment-field upon registration and find further instructions for credit card payment on our customer service page.

Cancellation Policy

Cancellations must be received in writing at least three weeks before the commencement of the conference and will be subject to a \in 75,- administration fee. It is regretted that cancellations received within three weeks of the conference date will be liable for the full conference fee. Substitutions by other persons can be made at any time and at no extra charge.

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