BARRY
DEVLIN

Implementing
Data Fabric, Mesh, or Lakehouse

Unravelling Digital Information Systems

ONLINE LIVE STREAMING

DECEMBER 1-2, 2022

ABOUT THIS SEMINAR

Data Mesh has emerged in the past year or so as one of the most talked about topics in analytics. Data Lakehouse has captured the attention of many organisations struggling with Data Lakes. Meanwhile, Data Fabric is being proposed by many vendors and analysts as the new way forward for Data Warehouses. All three patterns propose novel, varied, and partially overlapping solutions to old data delivery problems.

But what are they? Are they truly novel or simply marketing hype? Are they the same thing? How do they relate to the Data Warehouse, Lake or Hub? What are their benefits and drawbacks? Should you be planning a Mesh or a Fabric? Is a Lakehouse the solution you need? Whichever you choose, where would you start?

Data Mesh, the most unusual of the three patterns, suggests you learn from agile, domain-centric software development and eliminate centralised bottlenecks, such as enterprise Data Warehouses. Data Lakehouse proposes you start from your Data Lake and build a Warehouse on it. Data Fabric starts from metadata and recommends automating your data delivery infrastructure.

However different, all these new and old terms, with overlapping scopes and diverse promoters, are types of Digital Information Systems, designed to manage and deliver data/information to all digital business processes in today's complex distributed and network-centric environments.

In this seminar Dr. Barry Devlin explains and positions Data Fabric, Lakehouse, and Mesh, as well as other concepts, old and new, using as a foundation the Digital Information Systems Architecture (DISA) first defined in "Business unintelligence."

Building on the conceptual and logical architectures, we examine how implementation differs between the three patterns, what are the starting points, and what the principal challenges are.
Existing and emerging technologies for Data Storage, Preparation, and Virtualization; Data Catalogs; and other tools, both on-premises and Cloud, are described. Also explored are a variety of organisational issues, methodologies, and implementation approaches.

WHAT YOU WILL LEARN

- History, meaning, and detailed functionality of Data Fabric
- Data Mesh, and Data Lakehouse
- An introduction to the Digital Information Systems Architecture (DISA) and its business and technical uses
- Technical rationale, structure, and components of the DISA conceptual and logical architectures
- An in-depth comparison of Data Fabric, Mesh, and Lakehouse with Data Warehouse, Lake, and Hub, using DISA as a basis
- Possibilities and challenges of new database and data management technologies in Cloud, on-premises, and hybrid environments
- The central role of context-setting information and metadata
- Adaptive Processes as the basis for data preparation, information creation, and insight discovery
- Using data virtualization and preparation as tools for integration of all types of content and data in Cloud, on-premises, and hybrid environments
- Practical planning and implementation steps from Data Warehouse/Lake to Data Lakehouse, Fabric, or Mesh

WHO SHOULD ATTEND

- Enterprise, systems, solutions and Data Warehouse architects
- Systems, strategy and Business Intelligence managers
- Data Warehouse, Data Lake and IT systems designers and developers
- Data and database administrators
- Tech-savvy business analysts

OUTLINE

1. The Path to the Present

- A brief history of decision-making support
- Data Warehouse (hub & spoke and star schema) and marts: business, technology drivers, and challenges
- Operational BI: business, technology drivers, and challenges
- The emergence and impact of Big Data, the Internet of Things and Artificial Intelligence
- Data Lake: business, technology drivers, and challenges
- Logical Data Warehouse: business, technology drivers, and challenges
- Initial definitions of Data Fabric, Lakehouse, and Mesh

2. Architectural View I: Information as Foundation

- Modern, future-proof hypotheses for a new architecture
- Overview of conceptual and logical architecture structures
- Thinking Spaces: Information, Process, and People
- Key information considerations - timeliness/consistency, structure/context, and reliance/usage
- From silos and layers to pillars - supporting multiple storage and processing technologies

3. Information Storage: Principles and Technologies

- Information types: process-mediated data, human-sourced information, machine-generated data, and context-setting information
- Relational databases, NoSQL stores, Hadoop-based databases, graph, XML- and JSON-based stores, and object stores
- Cloud considerations
- Current Data Lake implementations
- Mapping Data Warehouse and Lake to the REAL Architecture

4. Deep Dive: Data Lakehouse

- Origins, meaning, drivers, and detailed definitions
- Commentary on drivers and definitions
- Example patterns and vendor-specific architectures
- Products, tools, and techniques
- Logical architecture view and detailed implementation considerations
- Criticisms, pros and cons
- Do you need a Data Lakehouse?

5. Context is Everything: Modernising Metadata

- From DIKW to the manifest meaning model
- Information, knowledge, meaning, decision, action
- Metadata as context-setting information – sources and stores, tools and techniques, including data glossary, data dictionary, and data catalog
- Modelling, ontologies, and knowledge graphs

6. Deep Dive: Data Fabric

- Origins, meaning, drivers, and detailed definitions
- Commentary on drivers and definitions
- Key concepts: active metadata and automated data orchestration
- Example patterns and vendor-specific architectures
- Products, tools, and techniques
- Logical architecture view and detailed implementation considerations
- Pros and cons
- Do you need a Data Fabric?

7. Architectural View II: Process as Intermediary

- Conceptual and logical architecture considerations
- Merging of business and IT processes
- Defining adaptive, closed-loop processes across business and IT
- Logical architecture components: choreography, instantiation, assimilation, and reification
- The new role of users in "application development" - opportunities and dangers
- Microservices, SOA, and related concepts

8. Evolution of Information Preparation

- Data Preparation, ETL, Replication, Data Warehouse Automation, Wrangling, and Data Virtualisation
- Data pipelines and data ops
- Batch, real-time and Lambda architectures
- Streaming, messaging, immutable logs and Kappa architecture

9. Deep Dive: Data Mesh

- Origins, meaning, drivers, and detailed definitions
- Commentary on drivers and definitions
- Key concepts: domain-driven design, data as a product, decentralised governance
- Example patterns and vendor-specific architectures
- Products, tools, and techniques
- Logical architecture view and detailed implementation considerations
- Criticisms, pros and cons
- Do you need a Data Mesh?

10. Architectural View III: People and Organisation

- Conceptual architecture considerations – psychosocial mindset
- Extending the manifest meaning model to decisions and actions
- Decision-making and action-taking in a closed-loop, real-time environment
- Organisational considerations; changes in IT culture and responsibilities
- The rise of AI and ML in decision making and developer responsibilities

11. Final Comparisons and Ethical and Economic Considerations

- Comparing Data Lakehouse, Fabric, and Mesh with one another
- Comparing all three with current best practice
- Outlook for further developments
- Ethical issues
- bias, privacy erosion
- facial recognition and affective computing
- Surveillance capitalism and economic issues of Big Data and AI
- Conclusions

SPEAKER

Barry Devlin is Founder and Principal, 9sight Consulting. Dr. Barry Devlin is among the foremost authorities on Business Insight and one of the founders of Data Warehousing, having published the first architectural paper in 1988.

With almost 40 years of IT experience, including 20 years with IBM as a Distinguished Engineer, he is a widely respected industry analyst, consultant, speaker and author of the seminal book, "**Data Warehouse-from Architecture to Implementation**" and numerous White Papers. His 2013 book, "**Business unIntelligence-Insight and Innovation beyond Analytics and Big Data**" is available in both hardcopy and e-book formats.

As founder and principal of 9sight Consulting, Dr. Devlin provides strategic consulting and thought-leadership to buyers and vendors of BI solutions. He is continuously developing new architectural models for all aspects of decision-making and action-taking support.

Now returned to Europe since 2018, Barry's knowledge and expertise are in demand internationally.

INFORMATION

PARTICIPATION FEE

€ 1100

The fee includes all seminar documentation.

SEMINAR TIMETABLE

9.30 am - 1.00 pm
2.00 pm - 5.00 pm

HOW TO REGISTER

You must send the registration form with the receipt of the payment to:
info@technologytransfer.it

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PAYMENT

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GENERAL CONDITIONS

DISCOUNT

The participants who will register 30 days before the seminar are entitled to a 5% discount.

If a company registers 5 participants to the same seminar, it will pay only for 4.

Those who benefit of this discount are not entitled to other discounts for the same seminar.

CANCELLATION POLICY

A full refund is given for any cancellation received more than 15 days before the seminar starts. Cancellations less than 15 days prior the event are liable for 50% of the fee. Cancellations less than one week prior to the event date will be liable for the full fee.

CANCELLATION LIABILITY

In the case of cancellation of an event for any reason, Technology Transfer's liability is limited to the return of the registration fee only.

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Registration fee:
€ 1100

If registered participants are unable to attend, or in case of cancellation of the seminar, the general conditions mentioned before are applicable.

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