EDM COUNCIL WEBINAR SERIES
OPEN KNOWLEDGE / OPEN FIBO
MARCH 31, 2020
11AM EST / 4PM GMT

John Bottega
President
EDM Council
The Importance of Understanding Your Data

Hoping you are safe and healthy

It is during times like these that we realize **how important data in everything we do!** Combating this virus will depend upon accurate and timely data that will ultimately help medical professionals stem this crisis.

The **systemic impact of this crisis** will require the curation and use of data to fully understand the financial scope of the crisis and help decision-makers respond and secure our economy.

Let there be no mistake about it, what you do as information professionals impacts our businesses, our industries, and our entire society.
Agenda

Why Knowledge Graph
- The Case for Knowledge Graph in the Enterprise
- EDM Council Open Knowledge Graph and FIBO Initiative

Open Knowledge Graph/Open FIBO EDMC Updates
- New Capabilities
- Open FIBO Community

Advancing Knowledge Graphs
- Solution providers with FIBO Accelerators
- Open Knowledge Graph Opportunity

Knowledge Graph Training & Accreditation
- Course curricula and availability

Q/A
TODAY’S SPEAKERS

David Newman
SVP, Innovation, Wells Fargo
Chair, FIBO Program

Mike Meriton
COO, Co-Founder, EDMC

Robert Trypuz
KG/FIBO Project Manager
MakoLab

Jason Smith
VP / Technical Director
OMG - Object Management Group

Dean Allemang
Senior FIBO Advisor

Pawel Garbacz
KG/FIBO Co-Program Lead
MakoLab

Elisa Kendall
Senior Ontologist

Harsh Sharma
CDO Advisory
Knowledge Graph Expert
Why Knowledge Graph

The Case for Knowledge Graph in the Enterprise

David Newman
SVP, Innovation, Wells Fargo Bank
Chair, FIBO Program
THE CASE FOR KNOWLEDGE GRAPH IN THE ENTERPRISE

Siloed Organizations

Incongruent Data Models

Aging Standardless Technology

Proliferation of Bespoke Columns

Insufficient Metadata

Siloed Data Vendor Platforms

Cos ts

Inefficiencies

Errors

Compliance Failures

RISK Vulnerabilities

Limited Ability to Serve Customers

Explosion of Data

Incongruent Glossaries

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THE CASE FOR KNOWLEDGE GRAPH IN THE ENTERPRISE

Common Semantic Language
- Improve Precision and Understanding by Aligning Data at Rest with Data in Motion

Smart Data Quality Rules
- Better Search, Understand, Manage, and Govern Data Assets

Data Asset Knowledge
- Improve Regulatory Compliance and Risk Management

Holistic Linked Data
- Future Proof Evolving Data Needs of Business and Provide a Bridge to AI

Knowledge Graph
- Reduce Costs and Errors
- Increase Efficiencies
- Improve Insights
- Fulfill Regulatory Compliance
- Manage Risk
- Better Serve Customers

Take the First Step
Why Knowledge Graph

EDM Council
Open Knowledge Graph & FIBO Initiative

Mike Meriton
COO, Co-Founder, EDMC
Trend No. 1: Augmented Analytics
Trend No. 2: Augmented Data Management
Trend No. 3: Continuous Intelligence
Trend No. 4: Explainable AI

**Trend No. 5: Graph**

Graph processing to continuously **accelerate data preparation** and enable more complex and adaptive data science.

**Trend No. 6: Data Fabric**

.. Data fabric enables *frictionless access and sharing of data* in a *distributed data* environment.

..... the need to ask complex questions across complex data, which is not always practical or even possible at scale using SQL queries.

..... to efficiently model, explore and query data with complex interrelationships across data silos

..... It enables a single and consistent data management framework, which allows *seamless data access and processing* by design across otherwise siloed storage.
SEMANTIC TECHNOLOGY AND KNOWLEDGE GRAPH

Knowledge Graph

- Hosted & Supported by EDM Council
- 8+ Years of Development
- $5M+ Direct EDM Council Investment
- MIT Open Source
- Industry Accelerator for Graph Initiatives
SEMANTIC TECHNOLOGY AND KNOWLEDGE GRAPH

OPENFIBO

Financial Industry Business Ontology
What is Open FIBO?

• Extending FIBO to a broader Open-Source development community
  • Invite and encourage SMEs to contribute content, extensions and new structures

• Focus on Business Use Cases to Deliver Industry Value
  • Shared lab that can extend FIBO for solving industry business challenges & opportunities
    – Regulatory / Compliance / Risk / Fraud / Customer 360 / Alternative Data / More….
EDMC Agenda: Advocate Knowledge Graph Adoption

1. Provide Knowledge Graph Awareness, Training and Certification Programs
2. Support Shared Industry Ontologies as Accelerators to Business Solutions
3. Support a Community of Knowledge Graph Advocates
Open Knowledge Graph
Open FIBO EDMC Updates

New Capabilities

Robert Trypuz
KG/FIBO Project Manager
Four Foundational Pillars of Open FIBO

1. Large and knowledgeable FIBO Community
2. Public, transparent, and well-documented FIBO development process
3. Stable and well-managed FIBO development infrastructure
4. OMG standardization of FIBO
Pillar 1: FIBO Community

- FIBO Community is and always has been the most important pillar
- FIBO evolved out of concerns that arose during the 2008 financial crisis by individuals that had been working together in data governance and management
  - The most pressing issue at the time was that they needed to have a shared, common vocabulary that they could use within their institutions.
- FIBO Community
  - SMEs, ontology experts, and representatives of companies that implement FIBO on their KG platforms
  - 430 members on GitHub and
  - over 4400 members on EDMConnect platform
OKG / OPEN FIBO – NEW CAPABILITIES

Pillar 1: FIBO Community

OKG / FIBO / AUTO Community

• EDMC OKG Steering Group is responsible for…
  – the strategic orientation of the FIBO/AUTO/… evolution
  – review and approval of new releases
  – changes in the Steering Group membership

• EDMC Community Groups
  – Community Group is always ontology-specific.
  – its role is to propose, discuss and prepare changes to ontology

• Working Groups (aka Content Teams)
  – focus on a chosen part of ontology
OKG / OPEN FIBO – NEW CAPABILITIES

Pillar 2: Transparency

Transparency of FIBO Development Process

• FIBO code is publicly available and released under the open-source (MIT) license
• Open & public discussion concerning any changes in FIBO
• Be active on FIBO GitHub
  – Get involved in the discussion
  – Ask clarifying questions on recently opened issues to move the discussion forward
  – Answer questions for people on open issues
  – Review FIBO code on other people’s submissions
  – Create an extension to FIBO
  – Call for a new working group
  – Let us know about bugs and gaps in FIBO
  – Validate FIBO definitions and restrictions
OKG / OPEN FIBO – NEW CAPABILITIES

Pillar 2: Transparency

Transparency of FIBO Development Process

- A user-friendly space for FIBO development
- Professional FIBO documentation
  - Ontology guide
  - Principles of best practices
  - Developer guide
- How to create your own FIBO extension
### Pillar 3: Infrastructure

#### FIBO Development Infrastructure

- FIBO is developed as an ontology in the Web Ontology Language (OWL)

- Continuous Integration (automatic FIBO building and verification)

![FIBO Development Infrastructure Diagram]
OKG / OPEN FIBO – NEW CAPABILITIES

Pillar 3: Infrastructure

FIBO Development Infrastructure
Pillar 4: Standardization

Collaboration with OMG

Jason Smith
VP / Technical Director
Object Management Group
Open Knowledge Graph
Open FIBO EDMC Updates

Open FIBO Community

Elisa Kendall
Senior Ontologist
FIBO Working Groups

• Active groups include
  – Financial Business & Commerce (FBC) / Securities (SEC)
    • Focus is on representing instrument master data
    • Recent accomplishments include new pricing ontology, inclusion of examples
  – Derivatives (DER)
    • Focus is on representing standardized regulatory reporting & counterparty exposure
    • Q2 release will include example swap data
  – Indices and Indicators (IND)
    • Focus is on market indices (currently provisional)
    • Recent accomplishments include examples of how to represent constituents of the DJIA, working jointly on pricing with SEC, and will be working on corporate actions
FIBO WORKING GROUPS

• Approach is use case driven
  – Summaries are available on the EDM Council web site
    • https://spec.edmcouncil.org/fibo/use-cases
  – Detailed content is under development on our working group wikis
  – Ontology development guidelines are available
    • https://github.com/edmcouncil/fibo/blob/master/ONTOLOGY_GUIDE.md
    • Everything stems from use cases and preliminary terminology work
    • Naming conventions, modeling policies & best practices, QA guidelines
    • Growing number of automated tests help ensure that resulting ontologies meet QA policies

• Working groups use GitHub for issue management and community input
• Organize a FIBO working group
  – We help in the GTM organization + wiki
Advancing Knowledge Graphs

Solution Providers with FIBO Accelerators

Mike Meriton
COO, Co-Founder, EDMC
They are many companies that are already using FIBO for themselves or their end clients

We want to promote FIBO through business use cases

Call to Action:

– Call for business use cases and sample data sets
– Publish and share with the EDMC Open Knowledge Graph Community
– Continue to advance awareness and success
Advancing Knowledge Graphs

OKG / FIBO
OPEN KNOWLEDGE GRAPH OPPORTUNITY

Harsh Sharma
CDO Advisory, Knowledge Graph Expert
BUSINESS DRIVER FOR OPEN KNOWLEDGE GRAPH CONSORTIUM

From Crisis to Crisis – Opacity of Enterprise Risk brings the Global System to its Knees

Opaque Financial System, Regulations, Processes, Transactions, Data…

Transparency of Data & Risk – not just a Buzz Word

Business is Connected & inter-dependent more than ever before!

Health & Financial Crisis

- Global Covid Cases: 556,291
- Covid Deaths: 25,239
- Unknown # of Silent Carriers
- 3rd of Humanity under Lockdown
- Lack of Trust in Covid Data & Models
- How many Covid Strains?

Need of the Hour!

Understand ‘Connectedness’ of your Business & develop Continuous Intelligence

- 3.3 million unemployment Claims
- Stocks tumbled ~13% biggest one-day plunge ever
- Disrupted supply-chains for ~75% of U.S. businesses
- G20 Pledges $5 Trillion Stimulus

Opaque Financial System, Regulations, Processes, Transactions, Data…

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CONTINUOUS INTELLIGENCE – POWERED BY KNOWLEDGE GRAPHS

Pioneers

Google
facebook.
LinkedIn
twitter
amazon

*Practitioners

opencorporates
Walmart
Intuit

NASC
VISA
Zillow

Schneider
Electric
AMGEN

Device, Network 360, Supply-Chain Risk

Use Cases

Recommendation Engines (Pricing, IT Support, Employee 360), Conversational AI

Anti-Money Laundering, Payments Fraud

Data Protection, Privacy & Risk (PII360)

Intelligent Data Catalog

Device, Network 360, Supply-Chain Risk

Energy Grid Optimization

Covid360, Opioid Substance Abuse, Real-world Evidence, Personalized Medical Treatments

* For illustration only, not a complete list

Analyze your business Risk, Recover & Pivot to Growth

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**Open Knowledge Graph Lab**

Global, industry agnostic ecosystem to leverage and develop Knowledge Graphs of **mutualized value**

**Graph Consumers**
- Financial Services, Insurance, Life-Sciences, Healthcare, CPG, Retail
- CPG, CMT, Industrials, Resources...

**Enablers, Influencers**
- Mgmt. Consultancies
- System Integrators
- Academics/Research orgs
- Regulators
- Government Agencies
- NGOs...

**Standards Bodies**
- ISO (GQL Project), OMG, W3C...
- Industry Specific (HL7, ACORD...)

**KGraph Technology Makers**
- Property Graphs, RFD Triple Stores, Semantic Graphs
- Ontology Modeling, Reasoning Engines, NLP...
- APIs, Microservices
- Graph Visualization

**Commercial Marketplaces**
- Cloud Marketplaces (AWS, Azure, GCP...)
- **Hedera** Hashgraph
- Blockchain App Stores (InsurTech) **Intelligents**
- Open Source, Commercial Data Vendors

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Next Steps – Open Knowledge Graph Lab

• Business Planning & Development Sessions (Q2 / Q3 2020)
  • Develop and socialize proposal: vision & Charter, business plan, operating model, governance, deliverables, roadmap…
  • Identify founding members, seek funding commitment
  • Prioritize high value Use Cases
  • Graph Powered Intelligence – Whitepaper

• Soft launch & Operationalization (Q3/Q4 2020)

Complete Session Survey or reach out to let us know of your interest to participate
Knowledge Graph Training & Certification

Mike Meriton  
COO, Co-Founder  
EDMC

Dean Allemang  
Senior FIBO Advisor

Pawel Garbacz  
KG/FIBO Co-Program Lead
# Knowledge Graph Training & Certification

## OPEN Knowledge Graph

Accredited Course Curricula - 2 Consecutive Days

### DAY 1

1. **Knowledge Graph Business Case and Market Adoption**
   - Perspective On Data
   - Industry Use Cases
   - takeaways

2. **Knowledge Graph Enterprise Architecture**
   - Enterprise Architecture overview
   - Data languages (RDF, RDFS, SKOS)
   - Query language (SPARQL)
   - Modeling Language (OWL)
   - Enterprise Architecture Ecosystem

### DAY 2

3. **FIBO Industry Model review**
   - Structure
   - Content
   - Infrastructure

4. **Knowledge Graph Hands-on exercise**
   - Swaps in Finance
   - Toxic byproducts in Agriculture
   - Automotive manufacturing

5. **Course Summary & Accreditation**
   - Summary / Survey / Accreditation
Open Class Course Offerings

❑ **AMERICAS**  May 5th and 6th  
   08:00am – 02:00pm Pacific  
   11:00am – 05:00pm Eastern

❑ **APAC**  May 12th and 13th  
   08:00am – 02:00pm Singapore  
   09:00am – 03:00pm Japan  
   10:00am – 04:00pm Australia

❑ **UK/EMEA/INDIA**  May 19th and 20th  
   08:30am – 02:30pm BST  
   09:30am – 03:30pm CEST  
   01:00pm – 07:00pm IST

Or schedule your company dedicated (virtual) class

To register for the classes, click [here](#)
1. **Visit the NEW FIBO Website and Join the Community**
   - Download FIBO / Explore FIBO Documentation / New FIBO Viewer
   - Join FIBO Working Group(s) / Start a new working group
   - Visit: [https://spec.edmcouncil.org/fibo/](https://spec.edmcouncil.org/fibo/)

2. **Express an Interest in Strategic Collaboration**
   - Have your organization participate in Open Knowledge Graph Shared Lab Initiative
   - Submit Business Use case examples/demonstrations
   - Email: mmeriton@edmcouncil.org

3. **Register for Open Knowledge Graph Training & Accreditation – May 2020**
   - Visit the Training Landing Page to learn more and register
   - Visit: [https://edmcouncil.org/page/OKGVirtualTraining](https://edmcouncil.org/page/OKGVirtualTraining)

**Give us your feedback**

Complete the FIBO Webinar survey ([FIBO WEBINAR SURVEY](https://www.surveygizmo.com/s3/5523186/FIBO))
Thank You

Next Webinar: June 3rd