

Enterprise Data Modeler / Data Architect / Data Governance / Data Engineer - Summary of Qualifications

- 30 years of Hands-on & Information Technology Management experience in Data Architecture, Data Modeling, UNIX, Data Governance, Java, Oracle, Software Product Development, Team Management, and high capacity, clustered, distributed OLTP data systems
- Two of the software products I have helped make and/or upgrade to enterprise level OLTP have sold for five hundred million to over **three billion dollars to NCR** (Banking & Cash Management System) and DELL (EMR Insurance Payer System)
- LinkedIn <https://www.linkedin.com/in/hanabal> skype: hanabalkhaing, US Citizen, 1-800-930-7966, IJTIO.COM
- Note: **NOSQL & NON-SQL DO NOT SUPPORT DATA MODELING, those are legacy 1950's file system databases, not RDBMS**
- Note: Data Modelers are **NOT** industry specific. All clients must complete an analysis and business requirements documents to be able to use a data modeler. **"Real" Data projects are usually \$8,000,000 to \$34,000,000+**
- Note: Data Architect and Data Modeler are not the same role. Data Architecture Design is contained within the Data Modeler Skill Sets, but Data Modeling is not within the skill set of a Data Architect. Data Architects are "Big Picture," pure design, budget, and metrics. Data Modelers have 30+ skill sets and are for the fine details of database design in addition to understanding the "Big Picture" of the total design.

Professional Experience

IJTIO LLC, Sanofi Pharmaceutical Data, ATOS, Third Party Clients C2C San Francisco, CA, Manhattan, NY 03/2021 – Present

Sr. Enterprise Data Modeler (Full 30+ skill sets)

- BI Data Modeling, ER/Studio, CA Erwin, Kimball, Inmon, Codd, ACORD data strategies, Physical & Logical Data Models
- IBM Cognos BI, Framework Manager, Dashboards, Object Model, Object Oriented Design, BigID InfoSphere, HIPAA
- Oracle AWR reports, multi-dimensional data model for AWR reports, join indexing, performance, work load repository
- ERP/GRP – FHIR R4 HL7 Medical ERP Development, Multi-dimensional database, Java Code, Accounting, Claims, EMR
- Pharmaceutical batch and ingredient tracking database, **fatal mix tracking database** integration into FHIR R4
- Data Governance Policy Design & **Proactive Strategy**, Business/Data Glossary, Data Lineage, product definition
- Data Governance & Quality Dashboard with Data Metrics for growth, quality, integrity (trustworthy), and usage
- Data Governance Policy & Legal Policy integration for data retention, archiving, authorization, and best practices
- Pandemic Contact Tracing Data Model, integration with FHIR HL7 v4.0.1, pharmaceutical & insurance claim databases
- Pandemic GIS for geological, pollution, and climate data database for non-refrigeration vaccine development
- Pandemic vaccine trial test data and multi-dimensional data modeling, IBM InfoSphere data lineage
- Pandemic vaccine trail patient nutrition tracking database, selenium & vitamins A, C, & E tracking, patient cohort DB
- Pandemic canonical data model for collection of data from multiple sources, export to FHIR XML, reverse pipeline
- Pandemic and secondary epidemic tracking data model, secondary COVID-19 carrier data analytics for HVAC
- Pandemic research spider database, collect & structure existing research from data lake & websites using OCR to DB
- Pandemic contact database for doctors, patients, researchers, research assistants, connect to related research
- Pandemic FHIR disease tracking with tracking of relatives, friends, acquaintances, combined with GIS data from Kafka
- Pandemic social media data spider & auto comparison to "official" pandemic metrics, HIPAA identity compliance
- Pandemic DB interoperability HIPAA compliance, encrypted PII & PHI in XML files using AES encrypted strings
- IBM InfoSphere, Metadata Database, DataStage ETL, Canonical Data Models for ETL, Data Dictionary, XML
- Informatica ETL, Informatica Data Governance, Informatica Data Catalog, Automated Data Quality Reports & Triggers
- Data Modeling, ER/Studio, CA Erwin, Kimball, Inmon, Codd, ACORD data strategies, Physical & Logical Data Models
- MDM, Oracle, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data Defense
- SDLC, Agile, Cloud Services & Servers, SaaS, Azure Cloud, Oracle Cloud, AWS Cloud/Lambda, AWS Glue ETL, Snowflake
- Informatica Cloud ETL / Cloud Data Integration, Automated data protection, quality checks and triggers
- Oracle, DBMS, RDBMS, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data
- SDLC, Agile, Cloud Services & Servers AWS, Azure, Oracle, SaaS, Snowflake chmod, MDM + data mart Inmon Strategy
- Pharmaceutical Data, Health data, Relational & Multidimensional Data, Normalized and Snowflake Strategy, ISAM
- IoT Sensor data, telematics for biochip transponders, sensor code automatic real-time translator, test data, star labs
- **Combine & AES Encrypt data from multiple sources into one comprehensive source**, real-time automated ETL
- Government health surveillance & health data system, disease spread lineage diagram, Patient Zero Analysis, Intel DB
- Bio-weapons, Pandemic, and Epidemic Auto-detection Framework (Data model, Java base code), row-level security

ARTIBIS Corp. CCNC, TerraNova, MetLife, Aflac, C-2-C clients

Manhattan, NY 06/2013 – 03/2021

Sr. Enterprise Data Modeler

- Data Modeling, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies, Conceptual Physical & Logical Data Models
- IBM Cognos BI, Framework Manager, Dashboards, Object Model, Object Oriented Design, Table Design, CRUD
- Accomplished the design and deployment of a pharmaceutical supply chain DB, Oracle AWR & Cognos Reports
- Accomplished the design and deployment of 12+ Cognos 11 BI Dashboards with KPI Metrics with drill capabilities
- Accomplished new (BIM) Business Information Modeling System – Proactive management & real-time data
- Accomplished the creation of a business intelligence system using Cognos and Multidimensional Data Modeling
- Accomplished Pharmaceutical **Fatal Mix Alert System**, Pharmaceutical Ingredient DB, Allergy Alert DB, Prescription DB
- Accomplished Automatic Diagnosis and ICD code match system, patient encounter symptoms and service ratings
- Accomplished the creation of new CCAR data model, Trade Surveillance System, 401k Record Keeping
- Accomplished Assets Under Administration real-time reports & Multidimensional Data Model
- Oracle Cloud ERP (Oracle Applications), Oracle Financials OFSAA, Oracle Government Cloud
- Encrypted Data Warehousing
- Oracle AWR reports, multi-dimensional data model for AWR reports, join indexing, performance tuning, metadata
- Oracle, DBMS, RDBMS, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data
- SDLC, Agile, Cloud Services & Servers AWS Azure Oracle, SaaS, Snowflake, MDM + data mart Inmon Strategy, ISAM
- Medicare, Medicaid, and insurance billing system

TE Connectivity / Formerly Tyco Electronics Corp.

Harrisburg, PA 08/2007 – 04/2013

Enterprise Data Modeler, Data Architect (IBM Stack), IT Analyst (Production Support)

- Data Modeling, ER/Studio, CA Erwin, Kimball, Inmon, Codd, ACORD data strategies, MDM, Finance Data Model, ISAM
- Accomplished deployments of Cognos BI Dashboards, Analytics Dashboards, Story Presentations, KPI Metrics
- Accomplished production deployment and version control release system
- Accomplished supply chain management system for manufacturing and Internet Backbone Ship Fleet, DBMS, RDBMS
- Oracle, Oracle on Solaris UNIX, IBM software integration on Solaris UNIX
- Oracle Financials OFSAA, Oracle Applications / Oracle ERP, Data Warehousing, MDM, Supply Chain Data
- IBM Cognos, Framework Manager, Dashboards, Object Model, Object Oriented Design, Table Design, CRUD
- SDLC, Agile, 6 Sigma, Cloud Services & Servers AWS Oracle, SaaS, Snowflake, MDM + data mart Inmon Strategy
- Data Lineage, Change Data Capture, IBM InfoSphere
- SAP, SAP ERP, SAP Manufacturing, SAP Supply Chain, Supply Chain Database & ETL, data level integration

PA PENNDOT / Deloitte

Harrisburg, PA 02/2007 – 05/2007

Sr. Enterprise Data Modeler

- Data Modeling, Data Architecture, Data Governance, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies
- Accomplished MDM design for new data systems and internal data encryption, Welfare & Unemployment database
- Government Data Management, raw data analysis, government portal, DMV data model, Voter Registration via DMV
- Data best practices documentation, advanced data governance for government data, cyber security, 2-factor auth
- IDEF1X, UML, 3NF 3rd normalized data to multi-dimensional design, OLTP capable data performance, SOA, RDBMS, ISAM
- Oracle Database

NC Department of Justice / Technisource government contract

Raleigh, NC 11/2006 – 02/2007

Sr. Enterprise Data Modeler, Encryption Specialist

- Data Modeling, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies, RDBMS, DBMS, ISAM
- IBM Cognos, Business Intelligence
- Accomplished Social Security number encryption database & data architecture design, Data Encryption serial key
- Accomplished a system design to prevent police officer identity theft, data security design, Data Governance Policy
- Oracle, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data Defense
- AES database encryption inside the database, disk level, and in transit encryption

Transoft Inc. (Acquired by NCR for Cash Management Software – 500 million +)

Cary, NC 12/2004-11/2006

Sr. Enterprise Data Modeler

- Accomplished a redesign and port of the cash man. database to Oracle, improved data quality and performance
- Data Modeling, Temporal Data Modeling, Multidimensional Data Modeling, Relational Data Modeling, Data Steward
- SAS to Oracle PowerCenter ETL mappings, Designer, Workflow Manager, Workflow Monitor, and Repository Manager
- Data Encryption, Data Governance, Requirements Collection, Technical Writing, Kimball, Inmon, Codd data strategies
- Cash Management, ERP Financial System, CRM Warehouse, Supply Chain, Federal Reserve Physical Cash Supply Chain
- BIS & BIM for control of physical cash from Federal Reserve to Banks & ATMs, Data Governance & Security Policy
- SDLC, SaaS, IaaS, PaaS, Cloud Architecture, Informatica IDQ MDM ETL, Oracle ESB, DDL, CVS Version Control
- OptiCash, OptiVault, Cash Management Supply Chain Software, MDM + data mart Inmon Strategy, ISAM

NC Department of Public Instruction HCL Government Contract

Raleigh, NC 01/2004 - 12/2004

Sr. Enterprise Data Modeler

- IBM Cognos BI, Framework Manager, Dashboards, Object Model, Object Oriented Design
- Accomplished creation of a new application for public school meals management & accounting anti-fraud system
- Development lead, deployment project plan, disaster recovery project plan
- Data Modeling Physical & Logical, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies, MDM, RDBMS, DBMS
- Oracle, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data Defense, ISAM

Perot Systems (Acquired by Dell for EHR software \$3.9 + billion)

Tampa, FL Dallas TX, Plano, TX 01/2003 - 12/2003

Data Architect, Enterprise Data Modeler / Data Architect Health Care ERP/ HIPAA / HEDIS, Digital Insurance Claims

- Data Modeling Physical & Logical, CA Erwin, Kimball, Inmon, Codd data strategies, IDEF1X, OLTP Health Care ERP
- Data Modeling Conceptual, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies, MDM, RDBMS, ISAM
- IBM Cognos, Dashboards, Framework Manager
- Accomplished Health Care ERP OLTP system, performance updates, data structure redesign, HEDIS, EHR
- Accomplished Pharmaceutical Fatal Mix Alert System, Pharmaceutical Ingredient Database
- Accomplished Allergy Alert Database, Prescription Data Automated Cross Reference
- Oracle, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data Defense, DBMS
- FHIR, HL7, FHIR Metrics & Data Lineage System, Medicare, Medicaid, & Insurance Billing
- Bulk encrypted data transfer from multiple sources and to multiple sources for encrypted health care data

Sony Latin America (TEKSystems Staffing Contract) (Hands-on Manager)

Miami, FL 02/2002 - 12/2002

Enterprise Data Modeler

- Relational Data Modeling - Logical & Physical, OLAP to OLTP upgrade, 3NF, Multidimensional data modeling
- Accomplished product and customer database redesign, web-based Data Entry System
- Managed 14 development & Data teams over 14 countries, provide technology direction & Data Governance
- Created Data model for on-line product displays and inventory and internal data entry system, CDC, Data Vault, CVS
- Erwin, HTML & CSS Web Interfaces to databases, NextStep / Apple WebObjects, EOModeler, MDM, IDEF1X, UML
- Oracle, RDBMS, DBMS, ISAM, ETL, streaming data, data replication, bulk data transfer, big data, SAP integration
- Oracle Financials OFSAA, Oracle ERP (Oracle Applications), data warehousing, MDM, supply chain data
- Sun Solaris UNIX 7 and 8, SuSe Linux, Linux Cluster High Availability & Scale-ability, OLTP eCommerce & Retail

Univision (TEKSystems Staffing Contract)

Miami, FL 10/2001 – 01/2002

Data Modeler

- Relational Data Modeling - Logical & Physical, 3NF Dimensional Modeling, Data Entry Forms & Data Model, CRM
- CA Erwin, TOAD, OLAP, OLTP, Extract Transform and Load (ETL) process design, data validation server side & client
- Data Governance, Data Warehousing, CDC, Data Vault, CVS version control, IDEF1X, UML, 3NF third normalized data
- Oracle, Oracle RMAN, Performance Tuning, SQL, PL/SQL
- Accomplished new creation of a web-based OLTP data entry system, application, metrics system, and data model

Mars Music**Miami, FL 06/2001 - 09/2001****Data Modeler, UNIX Systems Administrator**

- Data Modeling Conceptual, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies, MDM, Snowflake schema
- IBM Cognos BI, Dashboards, Framework manager
- Accomplished Retail ERP, data systems design, Relational Data Modeling - Logical & Physical
- Accomplished **advertising targeting** database by demographics, colors, location, sports teams, etc.
- Accomplished retail e-commerce system, data model, and application, Data entry and update forms, SCM & Inventory
- Data Modeling Physical & Logical, CA Erwin, Kimball, Inmon, Codd data strategies, IDEF1X, OLTP Health Care ERP
- Oracle, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data Defense
- Oracle Financials OFSAA, data warehousing, MDM for Supply Chain Data

Hewlett Packard (Data Force, Miami FL, 1099, other contract)**San Francisco, Cupertino, CA 12/1999 - 12/2000****Data Modeler**

- Data Modeling, Logical & Physical, HTML & CSS Web Interfaces to databases, Java, [Temporal Data Modeling](#), IDEF1X
- Erwin, ETL, data conversion, materialized views, 3NF Dimensional Modeling, data validation, order fulfillment data
- Accomplished creation of a new e-commerce system for (pandi), \$12 million daily sales, 10 million unique users
- Production Architecture Design & Performance Tuning (10 million Unique Users) OLAP, OLTP, Customer Data, CRM
- B2B Product development e-commerce, B2C e-commerce, E-commerce project manager UNIX, ePrise transition
- Data Architecture Design Strategy, Three and Four Tier Unix Clustered Systems Design, OLTP eCommerce
- Oracle, SQL, PL/SQL, Java Stored Procedures, Oracle JDBC Drivers, scale-ability for over 10 million unique users
- Oracle Financials OFSAA, Oracle Applications, Oracle Application Server, Data Warehousing
- Automated Java Code & Web Interface, Product Database, CRM, Data Governance, CVS
- Data Management, Data Lineage, Data Movement ETL, Informatica IDQ, Unstructured Data Lake, 3NF, 2NF, ISAM
- Structured Relational Data, Metadata, Data Growth Metrics System
- Supply chain database, telematics compatibility with UPS telematics, real-time data, object oriented data

Nortel Networks (Acquired by Avaya)**RTP NC 08/1999 - 12/1999****Data Modeler**

- Data Modeling Physical & Logical, CA Erwin, Kimball, Inmon, Codd data strategies, IDEF1X, OLTP Health Care ERP
- Data Modeling Conceptual, ER/Studio, CA Erwin, Kimball, Inmon, Codd data strategies, MDM, Snowflake schema
- IBM Cognos BI, NeXT/Apple WebObjects
- Oracle, Change Data Capture & Automated Replication Backup, Anti-ransomware Relational Data Defense
- Oracle Financials OFSAA, Data Warehousing, Sales Data, Supply Chain Data for Manufacturing
- Accomplished the creation of a new metrics system, ERP Data Modeling, CRM Warehouse, MDM

Bank of America (Nations Bank Merger Project, SAI Software Staffing Contract)**Charlotte NC 01/1998 – 08/1999****Data Modeler, Web Interface Developer**

- Data Modeling, physical, logical, conceptual, OLTP [Temporal Data Modeling](#), IDEF1X, UML
- Accomplished web interface design, data merge for merger of Nations Bank and Bank of America, Release System
- Accomplished a new multidimensional data model design for atomic finance data, & custom reports
- Data Warehousing, MDM
- Web Design, web interface to database systems, Adobe Photoshop
- ColdFusion, Perl, LiveWire Server Side JavaScript, ETL (LiveWire is now called JSON), LiveWire data validation
- Data merging & ETL between Nations Bank and Bank of America, Data Warehouse, MDM, 3NF, 2NF, Snowflake
- Sybase to Oracle Migration, T-SQL, SQL, PL/SQL, Java Stored Procedures, Oracle JDBC Drivers, Oracle Financials OFSAA
- Release and version control system, Production Deployments, Architecture Roadmap, Blueprint
- Sun Solaris UNIX, Data Architecture Design & Review, Database consolidation, Version Control CVS
- Mortgage data and rate equations, historical data analysis applications, data analysis dashboard
- Location data optimization, change interface based on customer location to meet legal requirements
- Bank data, financial systems, investment system to bank integration for real-time data
- Banking app prototype, Nokia, IBM Simon, Kyocera, blackberry mobile banking app prototype data model

Electronics & Encrypted Data Communications Specialist, UNIX System Administrator

- North Carolina National Guard Service
- University of North Carolina State
- Accomplished multiple certifications in IT and Telecom., Data Models for government and educational institution data
- Accomplished anti-fraud system for student loans (18 billion in fraud detected, automated detection & data vault)
- Project Manager Database Migration from VSAM to Oracle, ETL, CSV files, Project Plan, Implementation Plan
- Cryptography, Java Cryptography, Data Encryption, Human Intelligence System
- Transec Encryption, Broadcast Encryption, Telecom., Radio Frequency Encryption
- Graph Database AI prototype, Dynamic node and data dependency, neurological pattern map and copy
- Spread Spectrum hardware and software, Spread Spectrum encryption, Communications Channel Scale-ability
- Crime Time-line to Database Design, Statistics and Metrics Database, Operations Data
- Leadership & People Management Training PLDC, 95B, 95B-10, 31U, 31D
- OTJ Logistics Training, CID Training, OTJ Electronics Communications Training, MSE Satellite
- OTJ Data Modeling, Encryption Training, Networking Training, UNIX Training, Data Governance Policy Development
- Oracle 6, 7.3, PostgreSQL, Sybase, Data Warehouse, MDM, 3NF, Multidimensional Data Modeling, Kimball/Inmon
- Java, Java Cryptography, JDBC, T-SQL, SQL, PL/SQL, 3NF, 2NF multi-dimensional format Kimball strategies
- Solaris UNIX, Digital UNIX, DEC OSF/1 AXP, DEC Alpha, NeXTSTEP, HP MSE, HPUX UNIX
- C/C++/Objective-C, Object Code Design, Objected-Oriented Design (OOD)
- Hardware Repair/Customization, Laptop Repair/Customization, Custom OS, Custom Boot Systems, Virtual Machines,
- MS Soft-windows visualization, network-boot / thin client configuration, motherboard capacitor replacement
- Department of Defense Architecture Framework (DoDAF), TOGAF, Architecture Roadmap
- Joint Capabilities Integration and Development (JCIDS) / JAD Joint Application Design
- Sybase to Oracle migration, T-SQL to PL/SQL stored procedure migration
- Columnar Database to Relational Database Migration, Tabular Database to Relational Database Migration
- Large System ETL (1.2 PB), disk array, multi-system clusters, advanced data storage, table partitioning
- RCS Version Control, Data Vault Triggers
- NoSQL file system database (UNIX)

Education

NCSU

1993-1996

- Mechanical Engineering

Government Certifications & Military Baccalaureate Degrees (US Army, National Guard)

- Military Law Enforcement 95B, cross trained CID 31D & civilian law enforcement
- Military Information Technology, Encrypted Telecommunications, Communications Specialist 31U
- Military PLDC (Management & Leadership Development, Anti-Sexual Harassment Training)

Alliance Française - Paris France (Multi-lingual Database Character Set Project)

2013

- French levels 1, 2, & 3 immersion course, computer vocabulary study, French to English Database Reverse Engineering, English to French Database Reverse Engineering, Translation Matrix, Database Multi-Language & Multi-Character set database, ISO-8859 and others

On The Job Training Courses

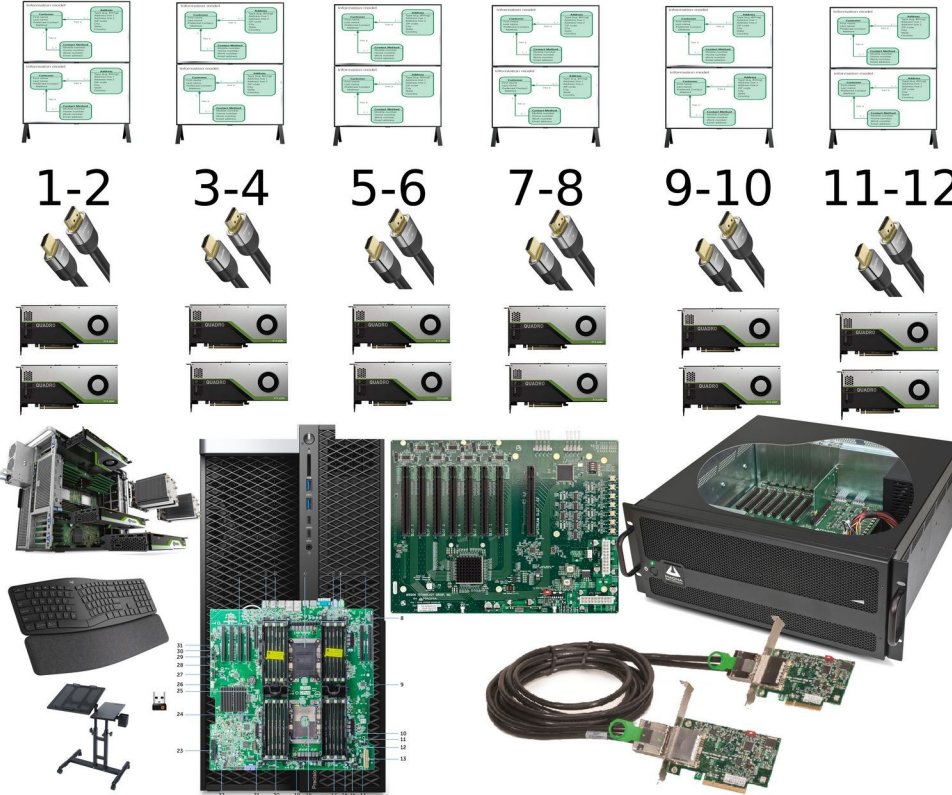
- Data Modeling, Cryptography (1991 - 1996)
- Java, Statistics Application Development, IBM Cognos/Cognos Original (1993)
- Leadership Development
- Telecommunications
- Oracle, UNIX/Linux
- Cash Management, Banking, Manufacturing Supply Chain, 95B, 31U, 31D, PLDC Management/Leadership
- Data Security, Cyber Security (PCI DSS, ISO 27001/27002, CIS, NIST), Intrusion Detection, LogCheck, PortSentry
- Civilian Law Enforcement, Military Law Enforcement
- Crime Statistics & Data Collection, Case Analysis System, GIS/GRP
- NeXTStep, Apple WebObjects, Objective-C, EOModeler Data Modeler, Erwin Data Modeler
- E/R Studio Data Modeler
- Scripted Code Generators – Create Cluster capable code directly form physical data models
- Automated Change Data Capture for relational databases
- Eclipse / Ant
- Change Data Capture, Data Vault, Data Encryption, AES
- Diversity Training
- Anti-sexual Harassment Training
- Anti-Fraud Training
- Anti-Insider Trading Training

Languages

- English Language (Native)
- Japanese (Beginner)
- French (Intermediate)
- Russian (Beginner)
- Spanish (Beginner)

Full ERP Data Project Hardware, Software, & Labor Cost Estimate

Sharp 8M-B120C 120" Class 8K UHD Professional LCD Display



DATA ENGINEERING SYSTEM

16-61 STARS / MONITOR, 192-732 total
 @ **525 - 725 STAR ERP** = 52%-100% VIEW
 CAPABILITY

SHARP 8M-B120C / PN-H120
 120-INCH CLASS 8k Commercial Display
 \$150,000 x 12 = \$1,800,000
 (Req. 36' x 36' room 14'- 22' ceiling)

ASUS NVIDIA RTX 4000 8GB
 QUAD DP X 12 = \$15,000

UPGRADE electrical grid & FLOOR
 REINFORCEMENT = \$60,000
 240V second electrical grid = \$55,000
 COOLING SYSTEM = \$30,000
 Custom Mounting Rack = \$20,000

EB7NE-X8G2 PCIE board = \$4000
 ExpressBox 7 X8G2 = \$4500

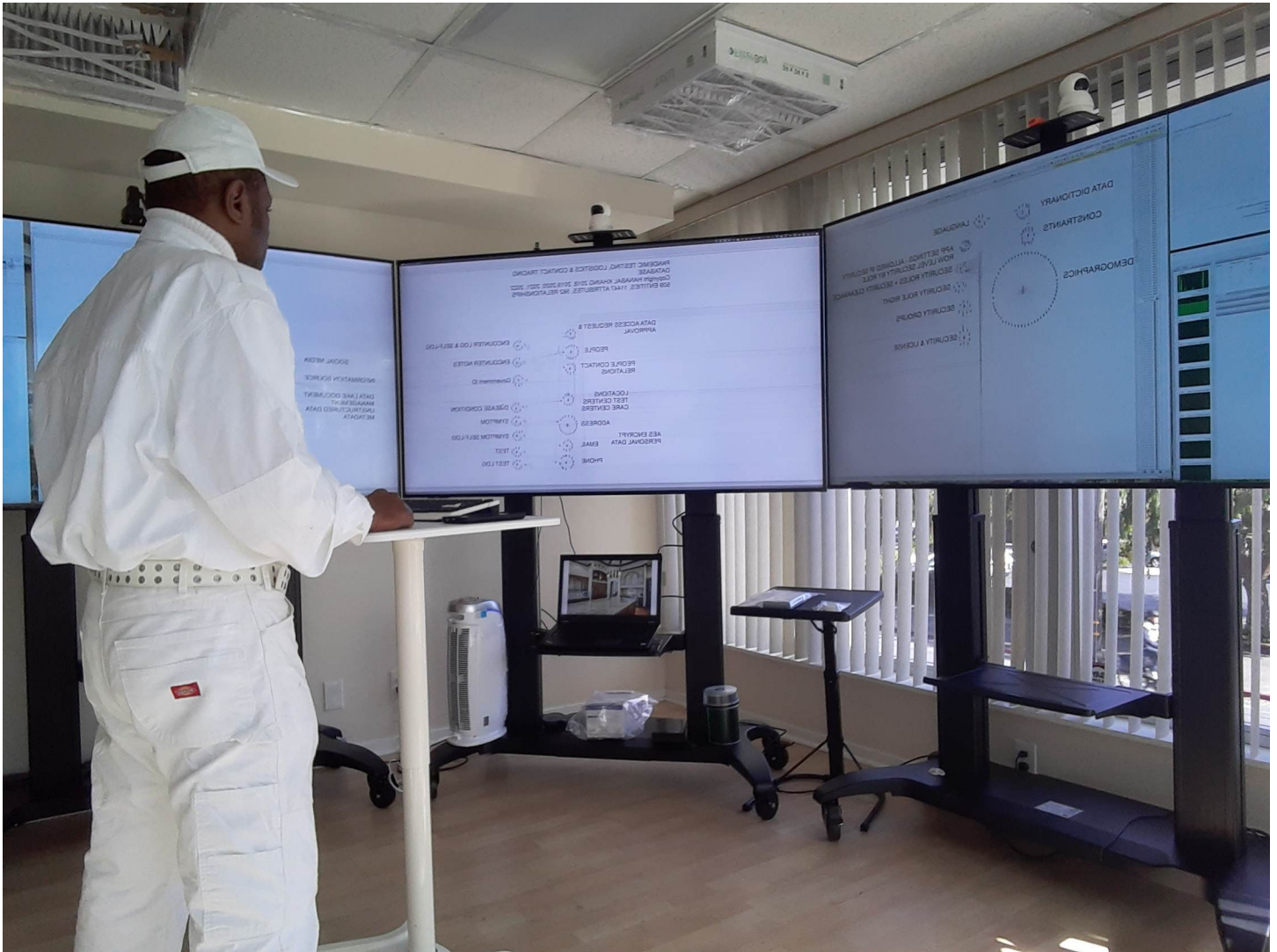
WIRELESS KEYBOARD = \$120
 WHEELED CART = \$100
 DP TO HDMI cables X 48 = \$3600

DELL 7920 WORKSTATION 28-CORE X 2
 DUAL CPU 3TB RAM = \$130,000
 Shipping, insurance, installation = \$9750

MINIMUM Hardware TOTAL: \$2,132,070

ERWIN, E/R STUDIO: \$15,000
 UNIX/Linux DB & App Server HW: \$60,000
 Oracle, IBM Licenses: \$224,000
 HARDWARE & SOFTWARE : **\$2,431,070**
 DATA CENTER FACILITIES: **\$2,800,000**
 MIN. TOTAL: \$5,231,070
 LABOR: \$400,000

TOTAL: \$5,631,070
(\$2,815 HOURLY RATE)



Enterprise Data Modeling & Data Engineering System: \$313,000

Capabilities: data modeling, data profiling, QA Test, Stress Test, HP LoadRunner performance testing, ER Studio, Erwin, Oracle, DB2, PostgreSQL, ERP development, Medical ERP development, code generation, eclipse, netbeans IDE. (Real-Time Data Systems Development)

Visualization: 201 inch monitor, full data model view with over 500 tables / screen.

Larger systems start at \$8,000,000 due up-front, used for rapid development, 6 months to 1 year rapid development projects.

Work Samples

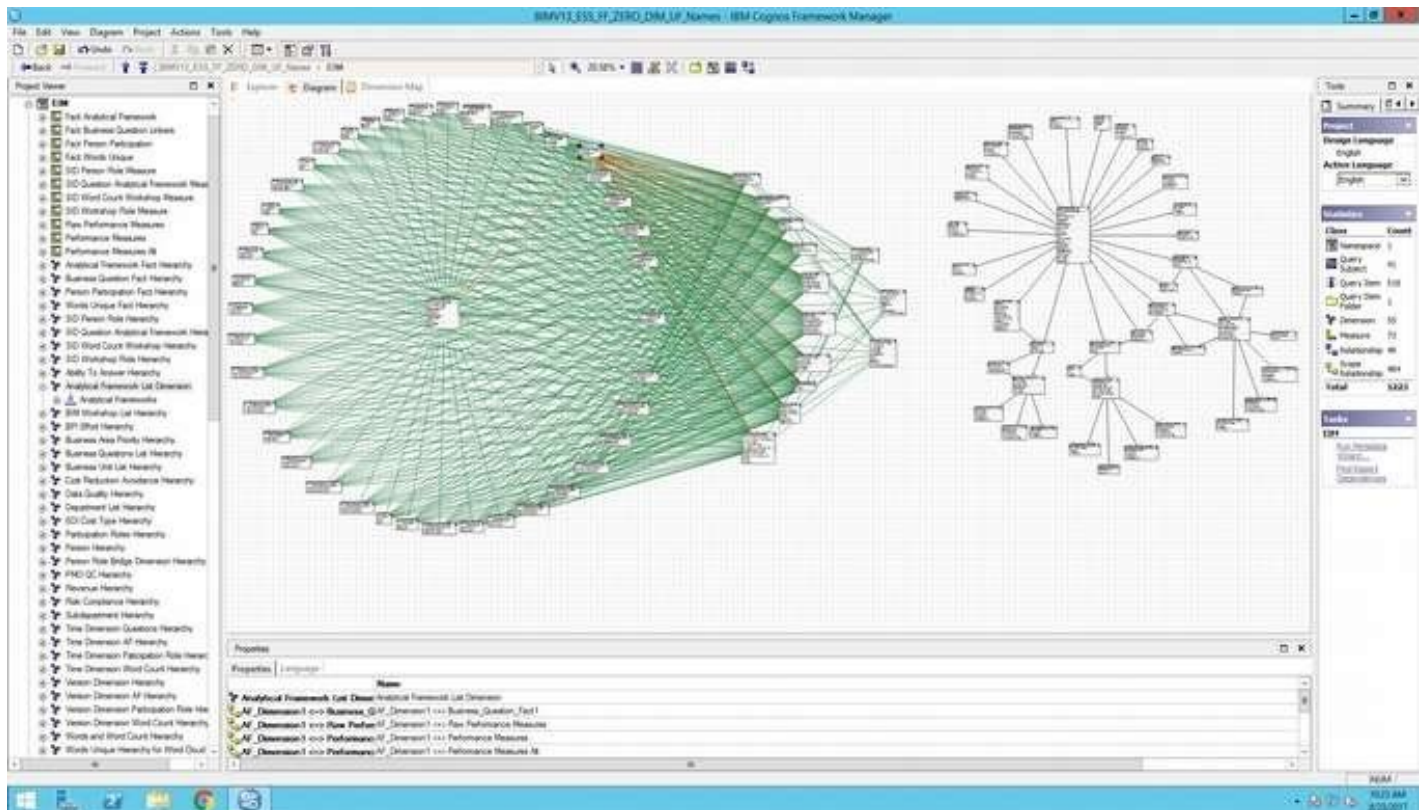


Illustration 1: IBM Cognos Business Intelligence Framework Manager Java Object Model & Multidimensional Data Model **BI Database Design, ETL, & IBM Cognos integration with interactive dashboards cost: \$2,001,980 + IBM licenses (Build time 12 weeks)**



Illustration 2: Cognos/Hyperion/SAP Compatible Customer Contact and Financial Transactions Extended Star Schema Multidimensional Data Model with many many-to-many relationships using surrogate ID tables (6- week construction/collaboration time, **Cost: \$150,000**)

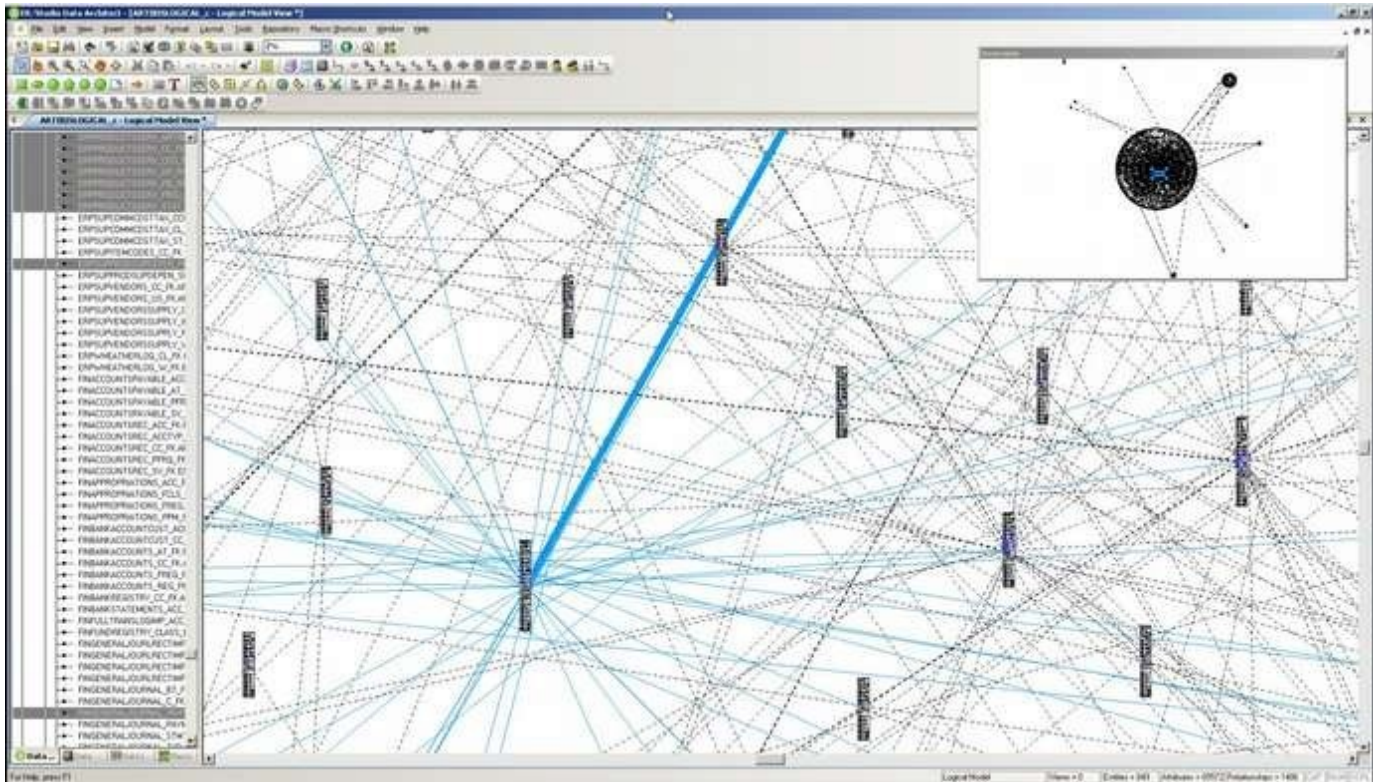


Illustration 3: Financial, HR, Manufacturing, and Supply Chain ERP Data Model in E/R Studio (zoom level 1%, Full **Data Engineering System Required** to view 100%, 10,000+ tables, 29,000 relationships, 130,000 attributes) **Cost to build: \$5,897,652 = approximately \$590 / entity/table, including labor, all costs, ETL, etc. (I reduced cost for this by over 23 million. Competitor estimates were between 30 million and 390 million from companies as large as IBM) (Build time 13 months)**

PANDEMIC TESTING, LOGISTICS & CONTACT TRACING
 DATABASE
 Copyright HANABAL KHAING 2020
 509 ENTITIES, 11447 ATTRIBUTES, 562 RELATIONSHIPS

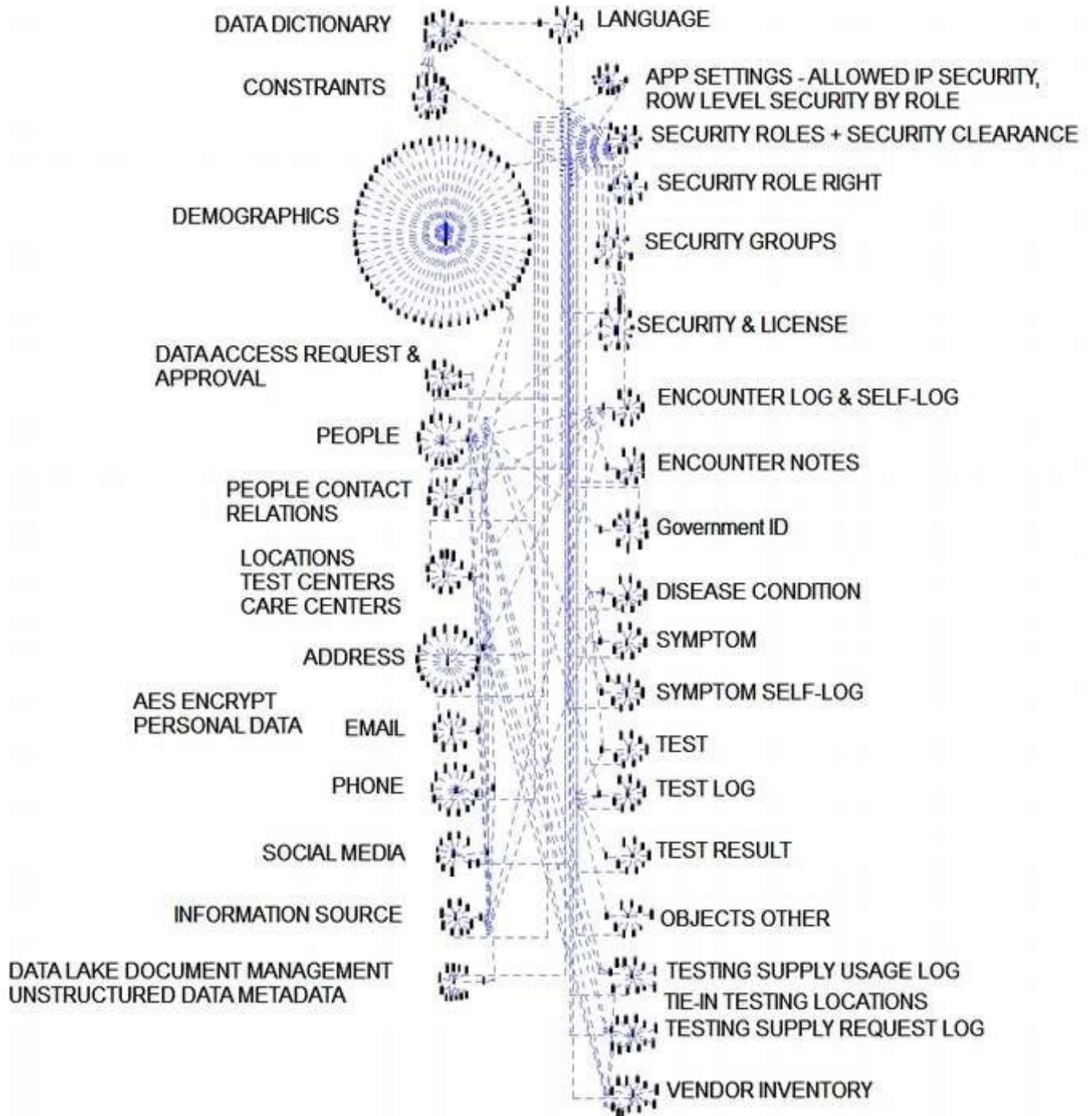


Illustration 4: Pandemic Contact Tracing Data Model – IBM Cognos Compatible (zoom level 1% - Data Engineering Station Required to see at 100% zoom) **Cost: \$1,607,310** (including base code in Java – 90 days to construct 2 shifts / day priority job)

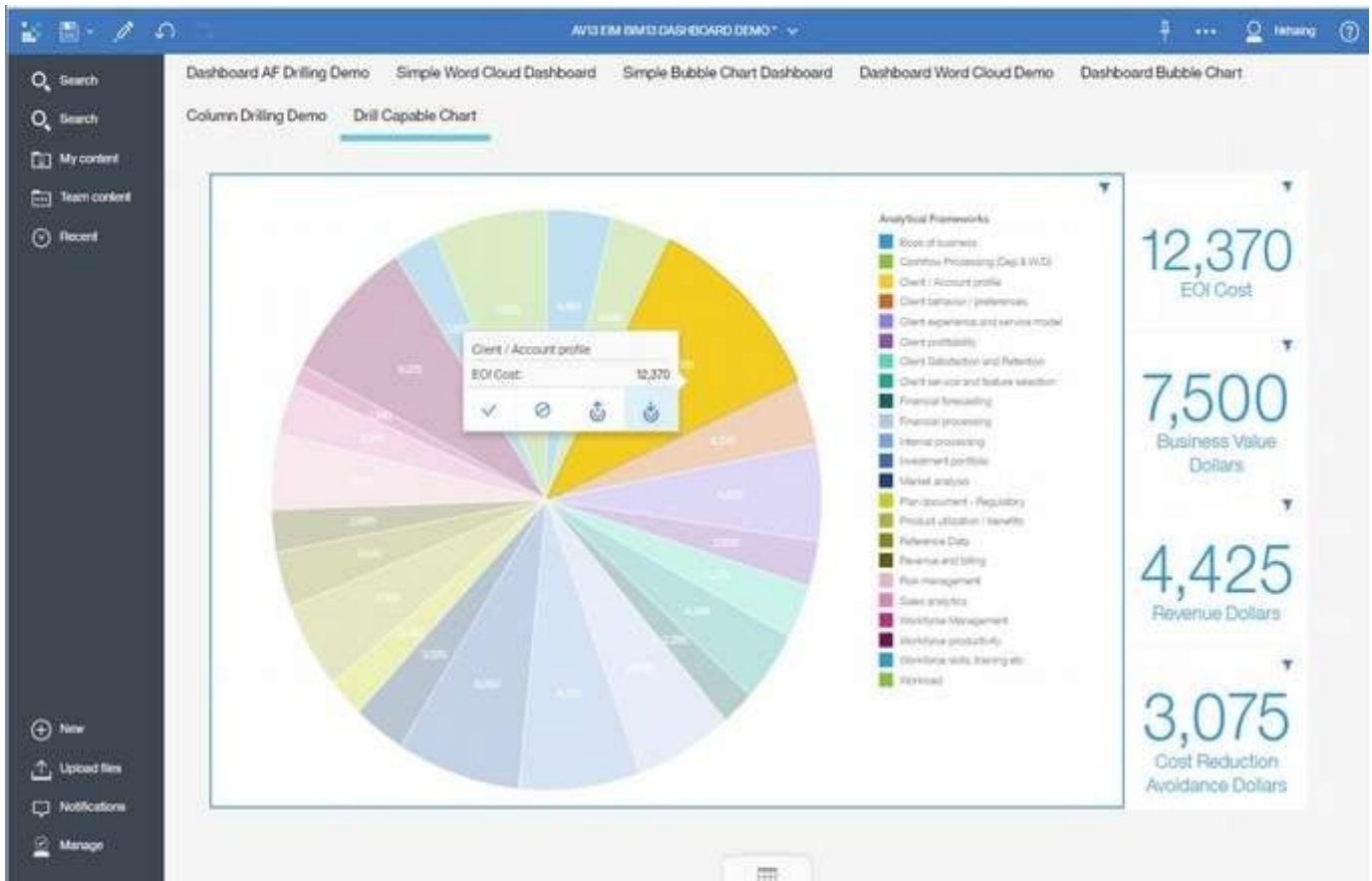


Illustration 5: IBM Cognos Business Intelligence (BI) Feature Activation using Multidimensional Enterprise Data Modeling, (BIM) Business Information Modeling – Proactive real-time management data – **BI Database Design, ETL, & IBM Cognos integration with interactive dashboards cost: \$2,001,980.** IBM Cognos license estimate: \$1,000,000 + annual support fees. **(Build time 12 weeks)**

LinkedIn Articles

Data Governance

<https://www.linkedin.com/pulse/data-governance-bim-mdm-hanabal-thalen-khaing>

The 30 Plus Skillsets of a Data Modeler

<https://www.linkedin.com/pulse/30-plus-skillsets-data-modeler-hanabal-thalen-khaing>

How to Make IBM Cognos Work (BI / Business Intelligence)

<https://www.linkedin.com/pulse/how-make-ibm-cognos-work-hanabal-thalen-khaing/>

Code That Writes Code

<https://www.linkedin.com/pulse/code-writes-hanabal-thalen-khaing/>

Advanced Temporal Data Modeling for High Speed Currency and Financial Transaction Systems

<https://www.linkedin.com/pulse/advanced-temporal-data-modeling-high-speed-currency-financial-khaing/>

Anti-Fraud Time Dimension & Triggers for Data Modeling

<https://www.linkedin.com/pulse/anti-fraud-time-dimension-triggers-data-modeling-thalen-khaing/>

How and Why You Should Encrypt Your Data INSIDE Your Database

<https://www.linkedin.com/pulse/how-why-you-should-encrypt-your-data-inside-database-thalen-khaing/>

Hadoop & NoSQL Data Modeling & OLTP

<https://www.linkedin.com/pulse/hadoop-nosql-does-support-data-modeling-nor-oltp-hanabal-khaing/>

Data Modeling Stations & Data Projects

https://www.linkedin.com/posts/hanabal_datagovernance-datamodeling-activity-6756783424809308161-ij60

Pandemic Contact Tracing and Data Modeling

<https://www.linkedin.com/pulse/pandemic-contact-trace-testing-data-modeling-hanabal-thalen-khaing/?trackingId=o0jBBuQ%2FT22T8jSlrEzPIQ%3D%3D>

How Business Requirements Become Data Models

<https://www.linkedin.com/pulse/how-business-requirements-become-data-models-hanabal-thalen-khaing/>

FHIR & Health Care Data

<https://www.linkedin.com/pulse/how-implement-fhir-hanabal-thalen-khaing/>