Introduction
To IBM Cognos Dynamic Cubes

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About Today’s Presenters

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Join Today’s Discussion!

• Enter all questions in the chat window of the webinar as we go

• Live on Twitter:
  – Follow @IronsideGroup and tweet us with any questions throughout or after
  – Be sure to use the hashtag #DynamicCubes to join the live discussion

• We will answer as many questions as possible at the end of this presentation – Thanks!
Upcoming Events

- **3/4/14** SPSS Data Mining Workshop, NYC
- **3/7/14** IBM Cognos User Group, Pittsburgh
- **3/11/14** IBM Business Analytics Workshop Series (TM1) Washington DC
- **3/18/14** Incentive Compensation & Sales Performance Management (Varicent) Webinar
- **4/8/14** IBM Cognos Dynamic Cubes Hands-On Workshop Atlanta, GA

Visit our website, ironsidegroup.com/events/ for additional details and links to register!
Core Services
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- Big Data & Analytics
- Business Intelligence
- Performance Management
- Data Warehousing & Integration
- Software Sales

Industry Solutions
- Automotive
- Banking & Financial Services
- Healthcare
- Higher Education
- Insurance
- Retail & Consumer Products

Functional Solutions
- Customer Service
- Finance
- Governance, Risk & Compliance
- Human Resources
- Sales & Marketing
- Supply Chain & Operations

Technology Expertise
- Cognos BI
- Cognos TM1, CDM and ICM
- Varicent / SPM
- SPSS & R
- Netezza, Big Insights, Streams
- DataStage, InfoSphere

Professional Training
- Cognos
- TM1
- SPSS

Managed Services
- Business Analytics as a Service
- On-Premise or Cloud Hosted
- On-Shore Remote Development

AUSTIN / ATLANTA / BOSTON / DETROIT / NEW YORK / PHILADELPHIA
• Data Warehouses are growing.
• User expect ‘google-like’ fast response time.
• Interfaces are **empowering** end-users and changing the game.
• Data is more complex and segmented.
Dynamic Cubes Mission

- High performance analytics over large data volumes
- Extend Dynamic Query with in-memory caching of members, data, expressions, results, and aggregates
- Aggregate awareness, aggregate optimization
• Achieves high performance on **high volume data** in a relational source. Uses a combination of:
  – caching
  – optimized pre-aggregates (in-memory and in-database)
  – optimized SQL
• Star or Snowflake data warehouse schemas are required.
• Powerful in-memory OLAP cubes over terabytes of warehouse data.
• Dynamic Cubes are utilized as data sources for OLAP Analysis and **Dynamic Query Mode** is required.
• You’ll need increase memory and horsepower to take full advantage of this new technology.
- Extends DQM caching to provide in-memory caching of data, expressions, members and aggregates.

- Caches are generally shared across all users.

- Security is applied on top of the caches, so everyone benefits.
Dynamic Cubes Embrace and Extend the Dynamic Query story

- Broad and Powerful Analytics
  - Dashboards
  - Scorecards
  - Ad-hoc Query
  - What-If Analysis
  - Trend & Statistical Analysis

Unified Workspace

Common Business Model

- Dynamic Cubes
- Dynamic Query Mode
- OLAP Over Relational
- Classic Query Mode
- Dimensionally Modified Relational

Open Data Access

Database Aggregates
- Large Enterprise Data Warehouse
- Relational Sources
- Modern and Legacy Sources
- 3rd Party OLAP Sources
- Application Sources
- PowerCubes

Dynamic Cubes
- Aggregate aware
- Powerful in-memory capabilities
- High performance with large data volumes
- Easily optimized aggregates
- All IBM Cognos Interfaces
- Part of the BI query stack (no additional cost)
Introduction to Dynamic Cubes

- Uses existing Cognos Studios (Workspace Advance, Report Studio, Analysis Studio, etc)
- Looks and feel just like any other cube
- 64 bit – Only limited by RAM on the server
- No limit to the level of detail
  - Example: SKU, Policy #, UPC, etc.
- Defining the cache using **Aggregate Advisor** is the key!
Workflow

1. Cube Designer
2. Administration console
3. Dynamic Query Mode server
4. Studio applications
5. Optimize and analyze

Model

Deploy

Run
Components of Dynamic Cube

- Dynamic Cube Designer (Client Tool)
Components of Dynamic Cube

- Cognos BI – Administration and Data Stores (Cognos BI Portal)
Components of Dynamic Cube

- Dynamic Query Analyzer → **Aggregate Advisor** (Client tool)
# Dynamic Cube Demo

![Dynamic Cube Demo](image)

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Double-click to edit text.
Things to Consider

- Dynamic Cubes are modeled using IBM Cognos Cube Designer.
- Similar to Framework Manager, Cube Designer is a client tool that publishes definitions back to Cognos BI portal.
- Does not leverage any existing metadata in Cognos. You must model the cube from scratch.
- Must have a good data mart as the source. The designer is not an ETL tool.
• **Aggregate Advisor** - analyze the model and/or usage patterns and recommends aggregates that will make reports and analysis run even faster.

• The Aggregate Advisor will give you recommendations for **database aggregate tables** and **in-memory aggregates**:
  – It will generate the SQL for aggregate table recommendations, which can be provided to the DBA.
  – It also creates in-memory aggregates which are automatically loaded whenever the cube is started.
Load In-Memory aggregations (DQA)

- It is highly recommended that you run Dynamic Query Analyzer against your Dynamic Cube **after** you publish it.
- DQA will recommend in-memory aggregation that can be loaded when the cube starts.
- The in-memory aggregations will take up large amounts of memory. You must configure the maximum size of the in-memory aggregation space **prior** to publishing the DQA recommendations.
- **Remember** by default only the dimension members are cached, **not** the measure data.
Why would I use Dynamic Cubes vs. Existing Technology?

- Dynamic Cubes does NOT indicate that other cube technologies are going away.
- You cannot solve all business problems with one cube technology.
- Supplement to existing Cognos BI Solutions
- Scalability limitations are unavoidable with Powercubes and TM1.
- **TM1 and Powercubes are not going away!**
- No additional Licensing Requirements

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<tr>
<th>Application Objective Key Question</th>
<th>If yes</th>
<th>Notes / Considerations</th>
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| Write-back, what-if analysis, planning/budgeting, or other specialized applications? | TM1 | Medium data volumes  
High volatility / Write-back  
**Note:** no pre-aggregation (aggregation happens on the fly) can impact performance at high data & high user volumes |
| Can the source be a data warehouse that is structured in a star/snowflake schema? | Dynamic Cubes | High data volumes  
Low latency / Fast performance  
Optimized aggregates / aggregate-aware  
**Note:** Star or snowflake schema is the optimal structure for reporting – Highly recommended to maximize performance. |
| Must the application source be one or several operational/transactional systems, and is a consistent interactive analysis experience a top priority for your users? | PowerCubes | Low / medium data volumes  
Data movement into cube structure  
**Note:** Data latency is inherent to cube build times  
Data volume per cube must be managed |
| Must the application source be one or several operational/transactional systems, and is there a need to control latency (ie, some queries hitting the cache / some queries hitting latest data)? | OLAP Over Relational (OOR) | Low / medium data volumes  
Caching for performance (Dynamic Query)  
Leverages existing Framework Manager model  
**Note:** Processing associated with operational/transactional systems impacts performance |
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<th>Application objective</th>
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### Self Service Jump Start - Dynamic Cubes

#### Overview
Ironside has perfected self-service business intelligence on the IBM Cognos platform. Proven methodology that incorporates decades of research and experience attacks all of the key reasons for self-service failure in the enterprise. This solution combines requirements gathering, business analysis, training and development into a series of agile sprints that yields simple and straightforward self service query models that are designed to optimize the user experience. Includes data management health check, training and mentoring, integrated SharePoint business glossary framework, and metadata modeling.

#### Business Problems
- Slow running self-service queries
- Mass confusion among users around how to use self-service model
- Slow performance
- Low adoption
- Inaccurate or incorrect answers
- Double counting
- Incorrect aggregation of numbers
- Inconsistent naming standards
- No data governance
- Users do not know how to use self-service tools

#### Solution Highlights
- Rapid and iterative approach
- Top down design to support business use cases
- Addresses all common reasons for self-service failure
- Drives adoption of new tools and platforms
- Ensures accurate and timely information
- Improves analyst staff effectiveness
- Genesis for larger data governance initiatives
- Dramatically improved query performance
- Simplified models
- Well crafted end to end user experience

#### Solution Assets
- Requirements gathering
- Design and build, or redesign and build of a complete self service metadata model
- Includes maximum of 4 design iterations
- Limited to 100 database fields
- Includes custom workshop training and development of actual business reports with the core reporting team
- Includes recommendations for OLAP and DW redesign, with optional implementation from Ironside’s IM specialists
- Includes automated generation of data dictionary template in SharePoint and direct linkage to Cognos BI for an inline living business glossary / data dictionary

#### Reference Customers
- SAC Capital – Fund Accounting
- Bain Capital – Private Equity
- SSgA - Finance

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Questions?