

2011 CTA Conference

Performance Measures and Data
Analysis Technologies Workshop

Agenda

- Data Analysis Technologies
- The Changing Role of the Data Warehouse
- Multiple Data Silos
- Performance Benchmarking
- Data Analysis Projects

Agenda - Continued

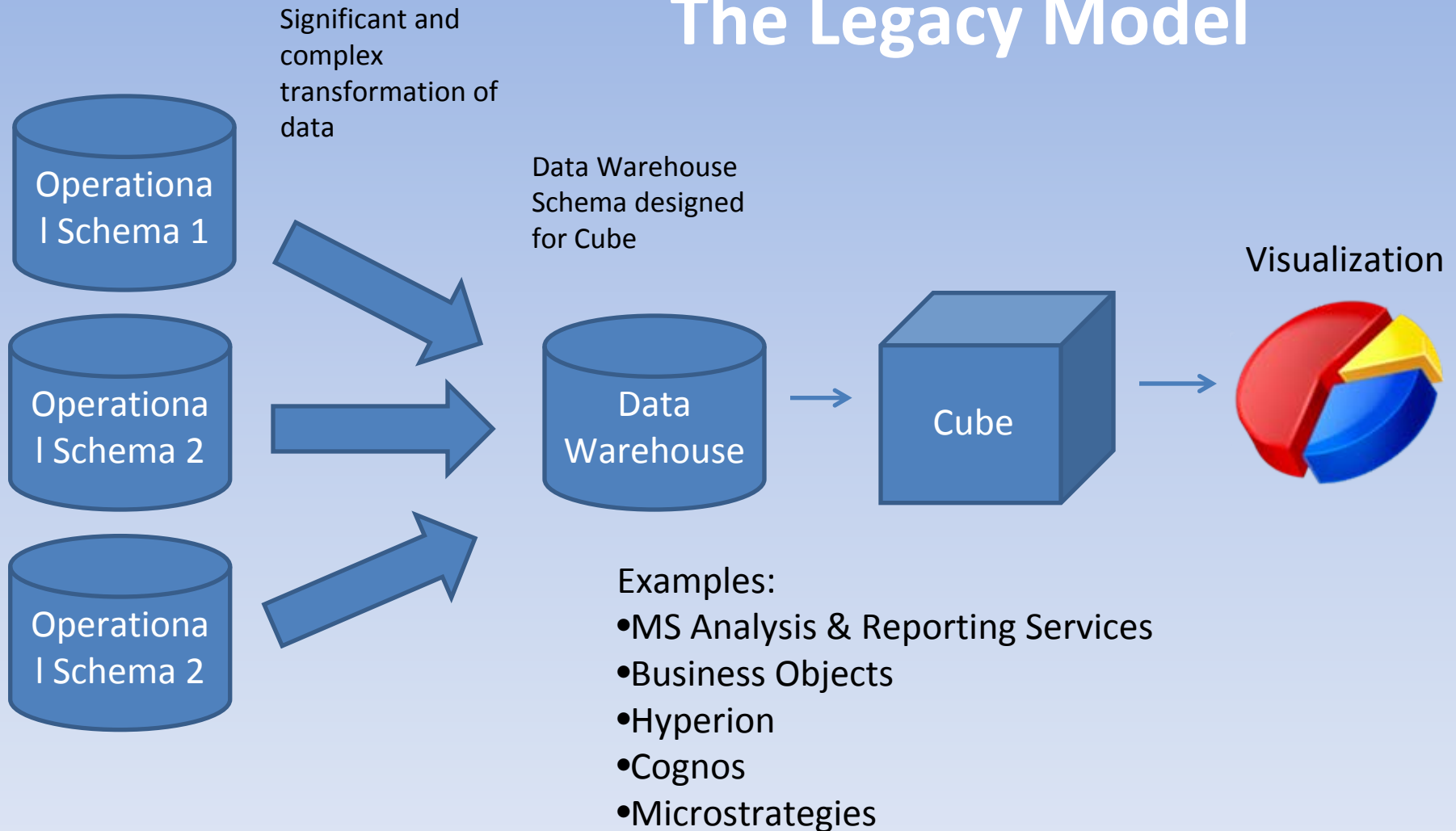
- Municipal Performance Benchmark Demo
- Municipal Performance Analysis Demo
- Kipp Schools of Harlem – Performance Analysis Demo
- Public Safety Department Demo

- Software that allows for the consolidation and presentation of operational data from a wide variety of sources in visually easy to understand way

- Home Grown Solution
- Software Solutions from:
 - MS Analysis & Reporting Services
 - Cogno's
 - Business Objects
 - Hyperion
 - Microstrategies
- ETL Software
- Database Software for Data Warehouse

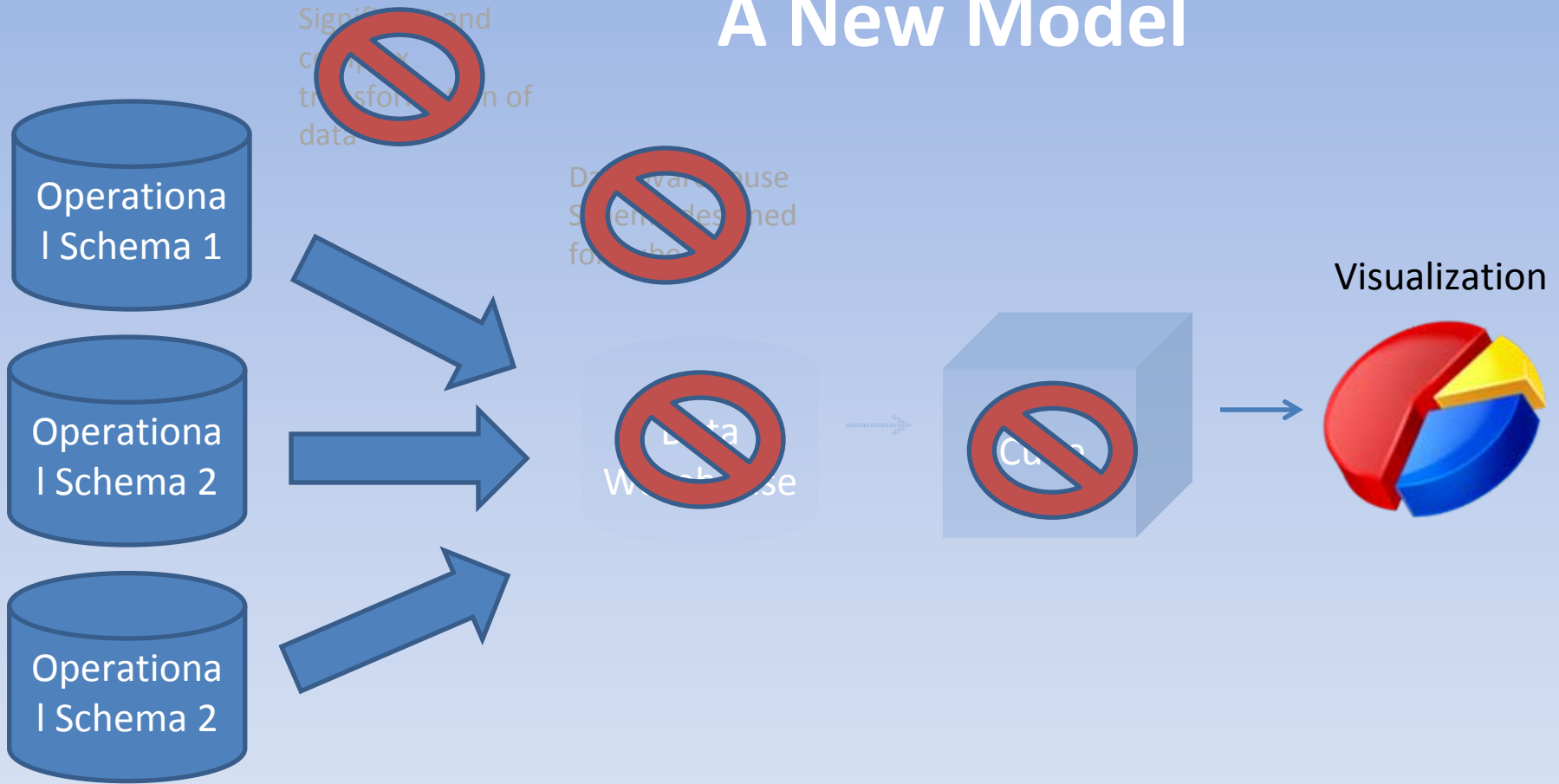
- Historically required for a successful Data Analysis project
 - Most visualization technologies were cube based.
 - Cubes required pre-organized data base to rearrange the various data silos into a data model that could be easy digested by the cube.
 - Data validation was done as a separate step by the data warehouse

The Legacy Model

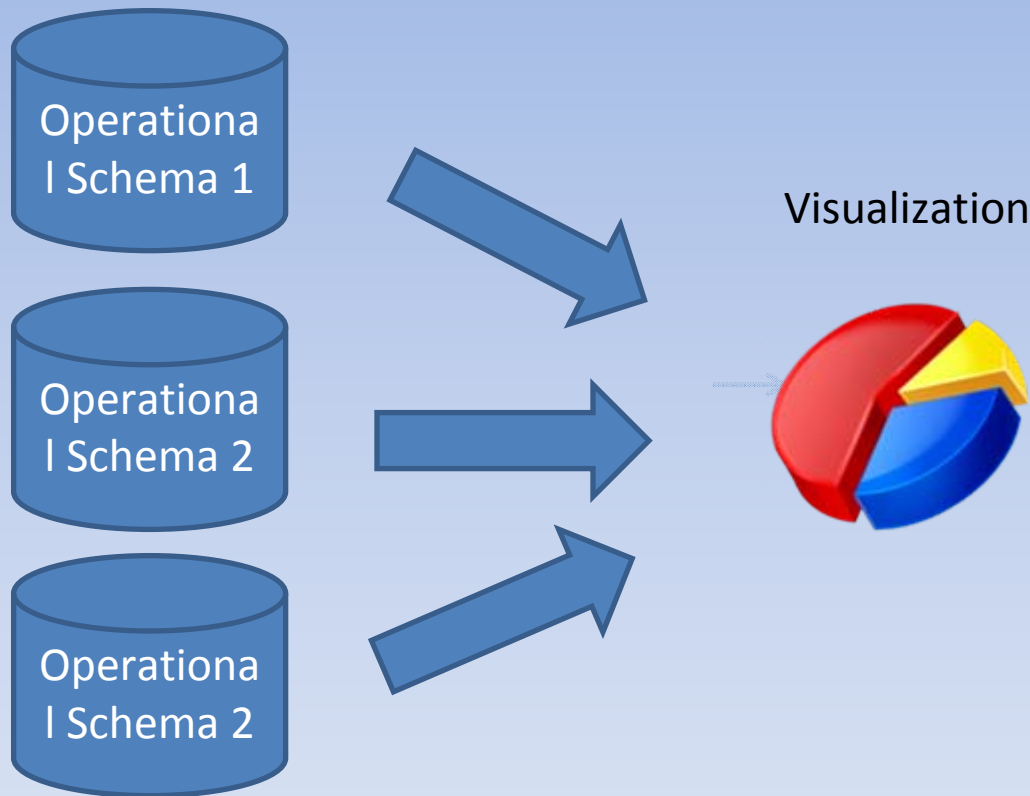


The Changing Role of Data Warehouse

A New Model



A New Vastly Simpler Model



Made possible by new technology that removes cubes and data warehouse

- Removal of Data Warehouse
- Removal of external ETL tools
- Ability to pull data from multiple data silos
- In Memory provides speed and simplicity
- Software Examples:
 - Applix
 - Spot Fire
 - SAP In-Memory
 - MS PowerPivot
 - Qlikview
 - ParAccel

Multiple Data Silos

- Success depends on the ability to easily and quickly incorporate new data silos as the need arises.
 - Inmate Management
 - Staff Deployment
 - Budget Utilization
 - Security Events
 - Overtime Utilization

- Comparing Data in Corrections has been discussed for 20 years with limited success
 - Agency do not want to share data until their data looks good
 - Fear of negative consequences from sharing
 - Difficult to agree on comparison metrics
 - Cost associated with building and sharing
 - Difficult to agree on common technologies

- If sharing were to occur benefits are significant
 - Targeted underperforming areas can be address more quickly
 - Endless debate over the level of performance stops
 - Best Practices of successful approaches can streamline performance gains and short circuit numerous less effective approaches to fixing the problem

- A new approach limits downside to sharing and provide significant upside
 - Data is shared through neutral 3rd party
 - No agency sees another's data at anytime
 - Data only shared as collective aggregates
 - Data sharing is optional

- Three Models
 - Large Technology Project - buying or building technology – Buy or Build your own custom system
 - Human Technology Project – Using people instead of technology
 - Cloud Model – Using a pre-built solutions

Data Analysis Projects

- Large Technology Projects – Many People, Many Months
 - Significant upfront design of data warehouse, Analysis Cube, and Visualizations
 - Build centralized data warehouse to pull together various operational data silos
 - Build data cube to allow for fast reporting and analysis
 - Build ETL (extraction, transformation, load) processes to move data from operational systems to data warehouse and from data warehouse to cubes
 - Build Visualizations
 - High Upfront Costs \$3M+.
 - Ongoing cost \$500,000 plus 2-3 staff = Annual cost of \$750,000
 - 5 Year Total Cost of \$6,750,000+
 - Several State Correctional Agencies have attempted this approach

Data Analysis Projects

- Human Technology Project – Replace technology with a small team of people
 - Technology – Excel, Access or other free simple to use software
 - Dedicate 2-3 people to manually collecting and analyzing data.
 - No upfront cost
 - Annual cost \$250,000
 - 5 Year Cost of \$1,250,000
 - Easier to hide redeployed head count than get approval for large project.
 - Baltimore Maryland’s – Performance Team uses this approach and has 8 business analysts on staff at a cost of \$600,000 per year – 5 year cost of \$3,000,000

- Cloud Technology Model
 - Low cost
 - No upfront cost
 - Fast to implement
 - Prebuilt Analysis with best practices
 - Ability to compare results to benchmark
 - Typically \$25,000-\$50,000 a year
 - 5 Year cost \$125,000-\$250,000

- Municipal Performance Benchmark Dashboard
- Municipal Performance Analysis Dashboard
- KIPP Schools of Harlem Student/Teacher Performance Analysis Dashboard
- Police Performance Analysis Dashboard

Intelligov Cloud Model

- Utilizes the latest Data Analysis Technologies
- Integrates GIS (Mapping) to provide spatial analysis
- Low cost
- Best Practice Model
- Performance Benchmarking
- General Data Analysis
- \$25,000-\$50,000 per year annual cost

- Compare your performance to the benchmark
- Where are you out performing others
- Where are you under performing others
- No sharing of details
- Safe to compare

- 9 Data Silos
 - City Task Workload
 - Housing Inspections
 - Financial
 - Payroll
 - Time and Attendance
 - Fire
 - Phone Switch
 - Web Site
 - Email
- Both Custom and Prebuilt Analysis
- 100's of Reports

Kipp Schools of Harlem Demo

- Data Silos so far
 - Operational Data – Schools, Teachers, Students, Courses
 - Student Test Data
 - Student Character Assessment Data
 - Teacher Assessment Data
- Adding Time and Attendance (both teacher and student) and payroll
- Ability to follow student and teacher performance across years and schools

- Data Silos
 - RMS (Records Management System)
 - CAD/911
 - Citations