

# **NYISO DSS Release 1 Demonstration / Pilot**

January 22, 2003

NYISO Washington Ave., Conference Room D

# Today's Agenda

- **11:00 - 11:30**      **Kickoff**
- 11:30 – 12:00      Data Warehousing Overview / Review
- 12:00 – 1:00      Lunch (Team Q&A)
- 1:00 – 3:00      Tool Introduction / Scenario Walk-Thrus
- 3:00 – 4:00      Hands-On Scenarios
- 4:00 – 4:30      Feedback Discussion
- 4:30 – 5:00      Summary / Looking Forward / Close

# Kickoff Agenda

- Purpose and Objectives
- Team Introductions
- Project Summary
- What You Will See

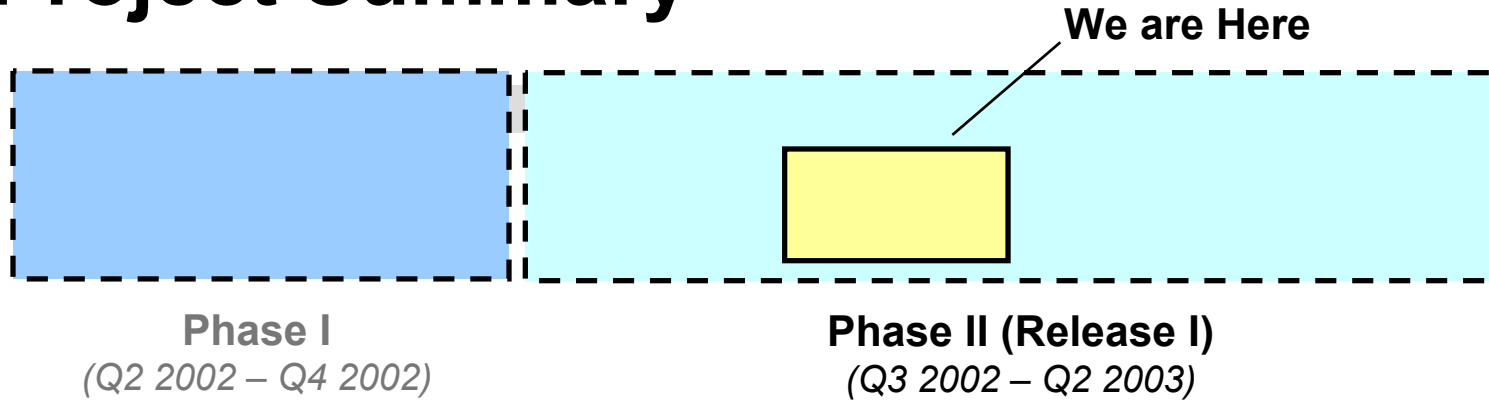
# Purpose and Objectives

- Allow the market to validate that progress is being made as expected towards the DSS system implementation and towards the project's overall business objectives
- Mitigate risk by receiving feedback on the DSS during the development process
- Resolve questions and/or issues efficiently with key stakeholders present
- Provide an opportunity for hands-on interaction with the DSS system and tools
- Bring the entire DSS community together to build relationships and momentum moving forward

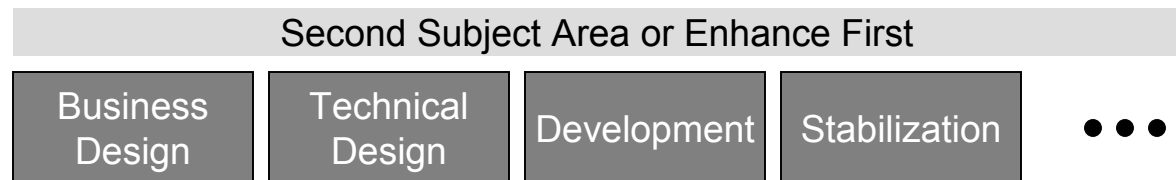
# Team Introductions

- Name
- Company
- Role in Market (Generation, Load, Transmission)
- Super Bowl prediction???

# Project Summary



Lessons Learned



**Future Projects**  
(2003 and beyond)

# What You Will See

- Brief overview
  - Single scenario with additional demonstration as time allows
- Real data
  - May 2002
  - Monthly, daily, hourly, SCD interval
  - Thoroughly masked to safeguard confidentiality
    - ▶ *Random identifiers for organizations, generators, busses, etc.*
- Real tools
  - Business Objects web client
  - Standard reports and ad hoc query capability
- Application under development
  - Some bugs are expected prior to full QA cycle



# What Makes a Month?

- Nearly 25 Million rows in the large SCD fact tables
  - Over 16 million rows in single table
- Approximately 4 GB disk space for final data
- 1700 distinct data elements
- Large data volumes require a solid, scalable architecture
  - Time spent planning up-front will ensure scalability for months and years to come



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# Data Warehousing Overview Agenda

- Definition
- Components
- Structural Example
- Terms
- Query Example
- Conceptual Models

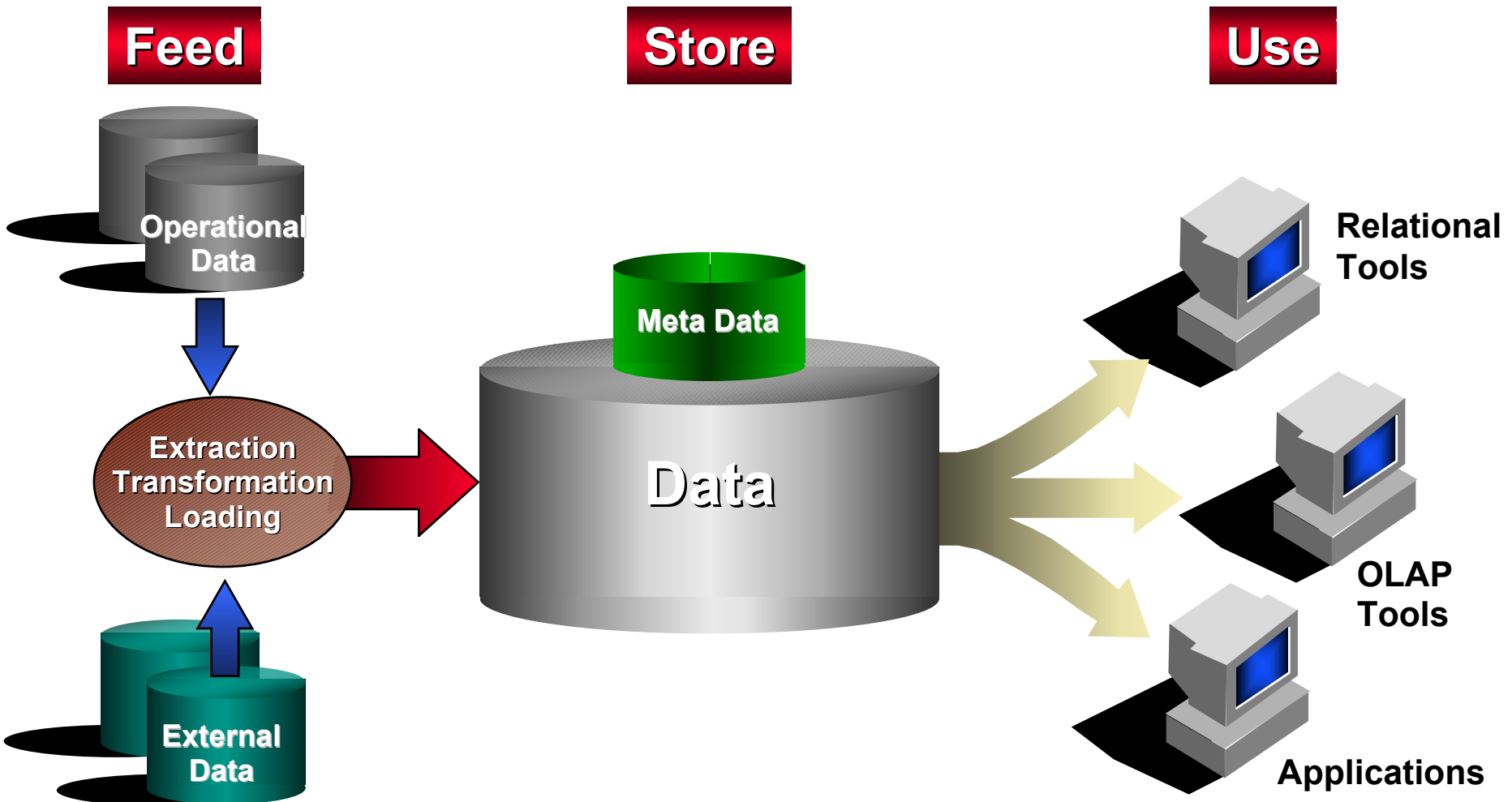
# Data Warehouse Definition

## ➤ Data Warehouse

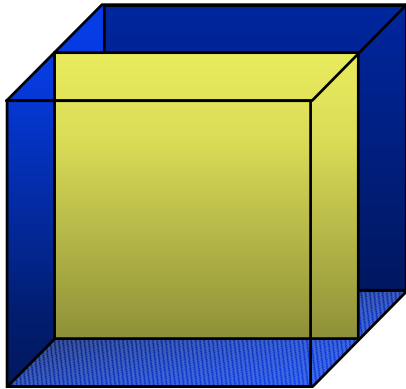
- *Repository of integrated, non-volatile and time-variant data, collected from heterogeneous transaction processing applications, and stored in a format optimal for reporting and strategic analysis for an enterprise*

*-- Bill Inmon*

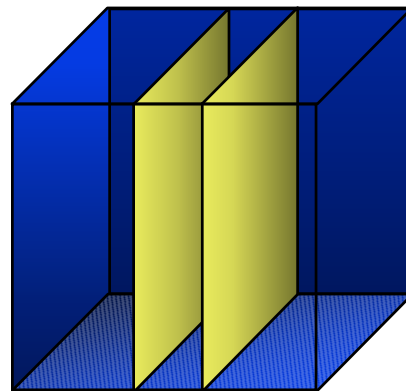
# Data Warehouse Components



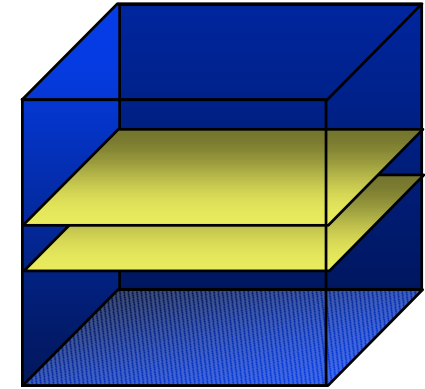
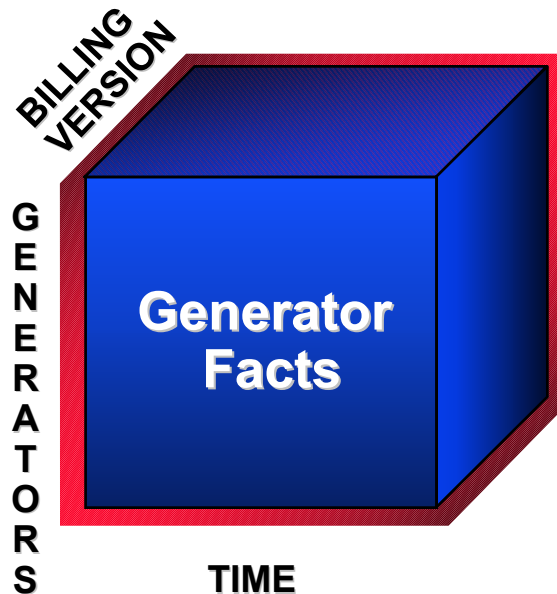
# Generator DW Structures



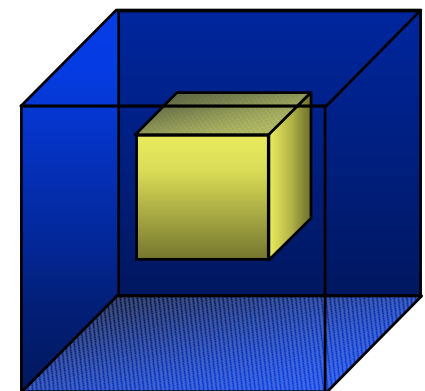
**Billing Version View**



**Time View**



**Generator View**



**Ad Hoc View**

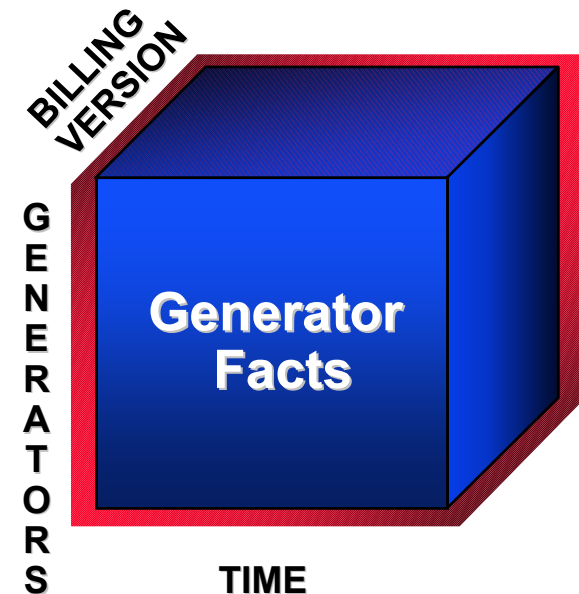
# Data Warehouse Terms

## ➤ Dimensions

- Elements used to constrain data
- Often textual descriptions
- *Time*
- *Billing version*
- *Generator (by org, by (sub)zone)*

## ➤ Facts

- Measurements of the business
- Often additive in nature
- Intersection of the dimensions
- *Settlement results*
- *Billing determinants*



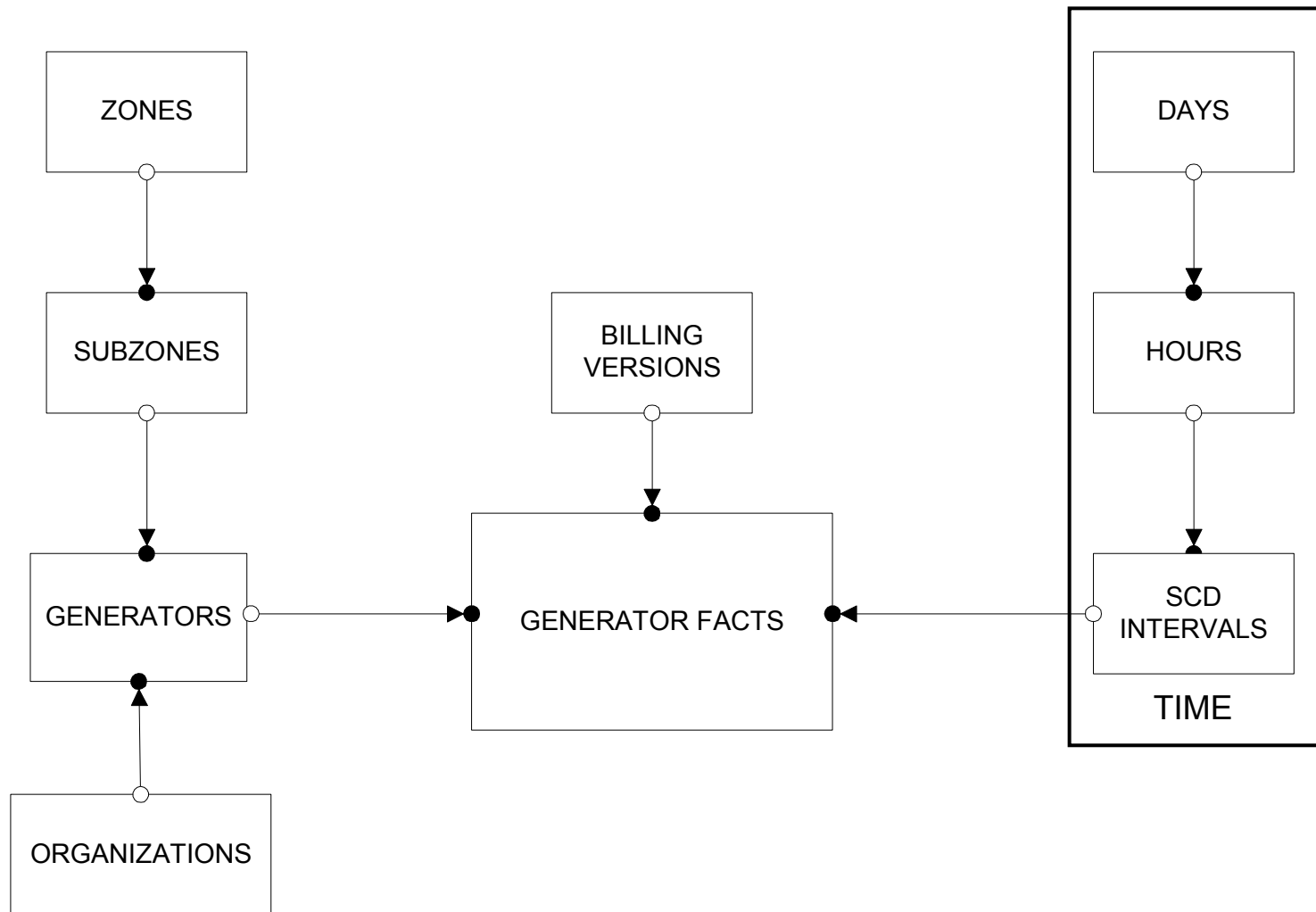
# Generator Query Examples

- How did my balancing energy settlement differ from the initial bill to the 4-month true-up version?
- Show the percentage increase/decrease in the balancing energy settlement for all generators in my organization from one quarter to the next in 2002
- Compare the balancing energy settlement for Generator X from one month to the next

Billing v3 (12 month)  
Billing v2 (4 month)  
Billing v1 (Initial)

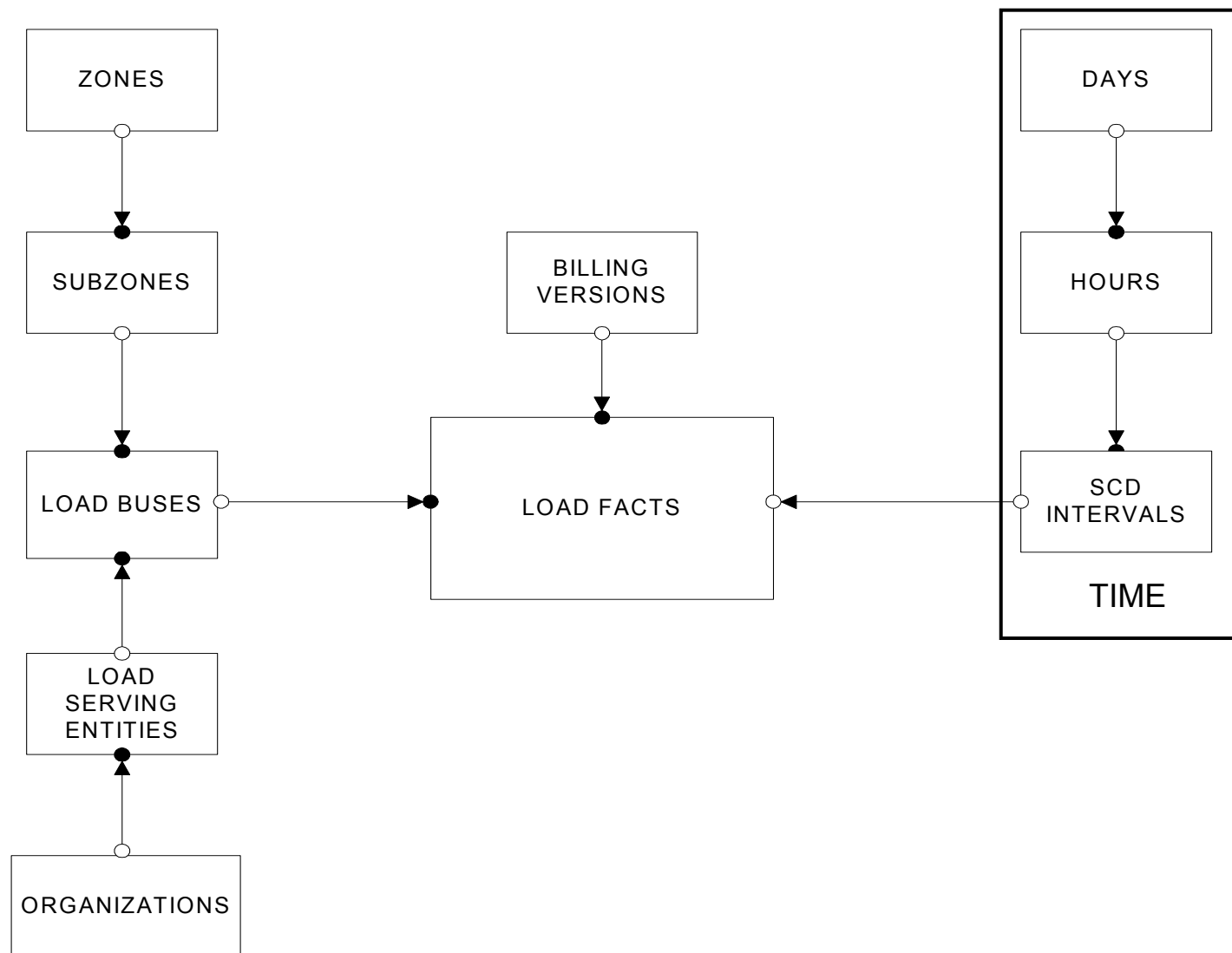
Gen X	5	27	57
Gen Y	2	13	60
Gen Z	11	4	69
	Jan..	May..	Sept...

# Generator Conceptual Model

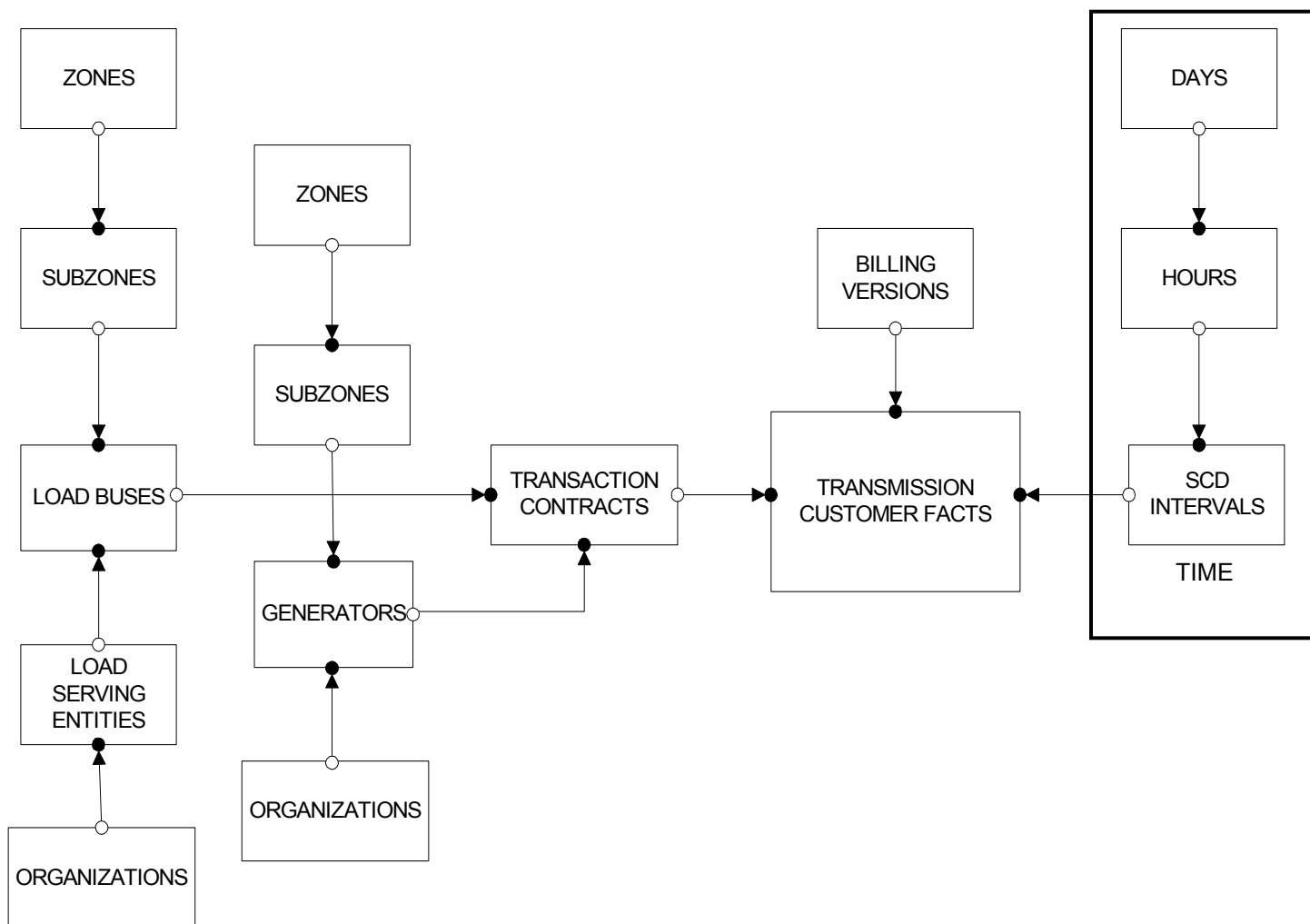




# Loads Conceptual Model



# Transmission Customers Conceptual Model



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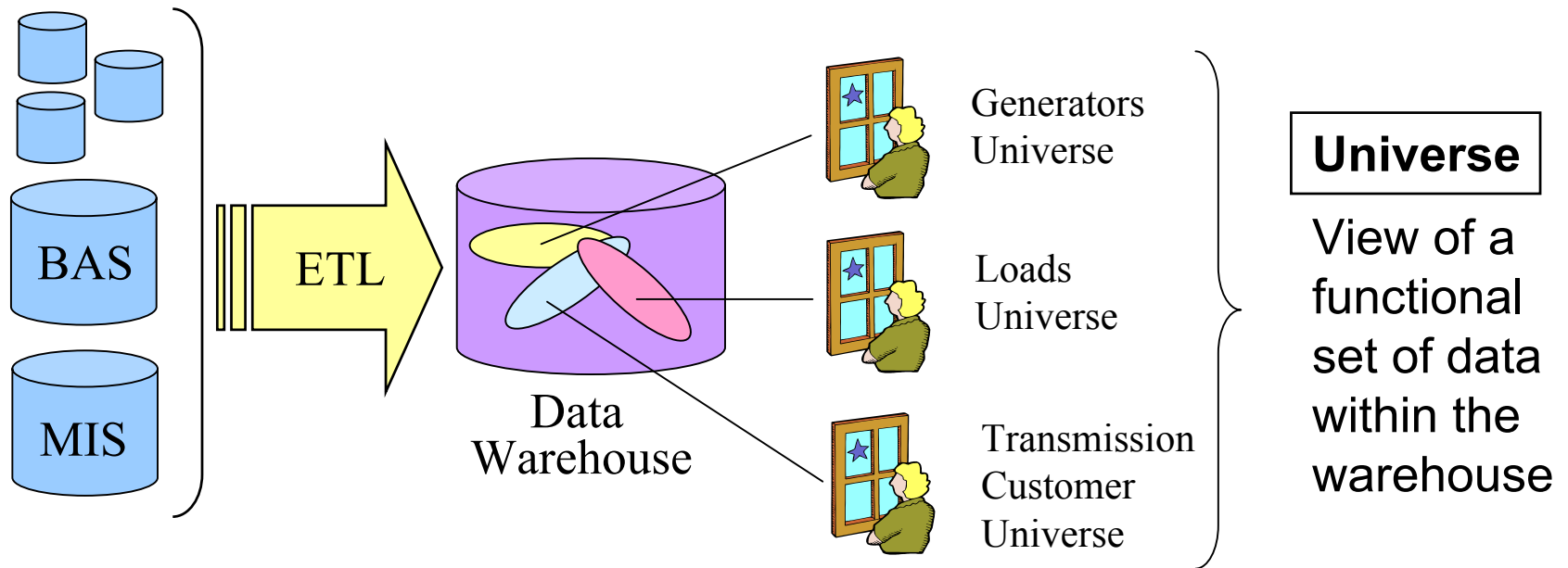
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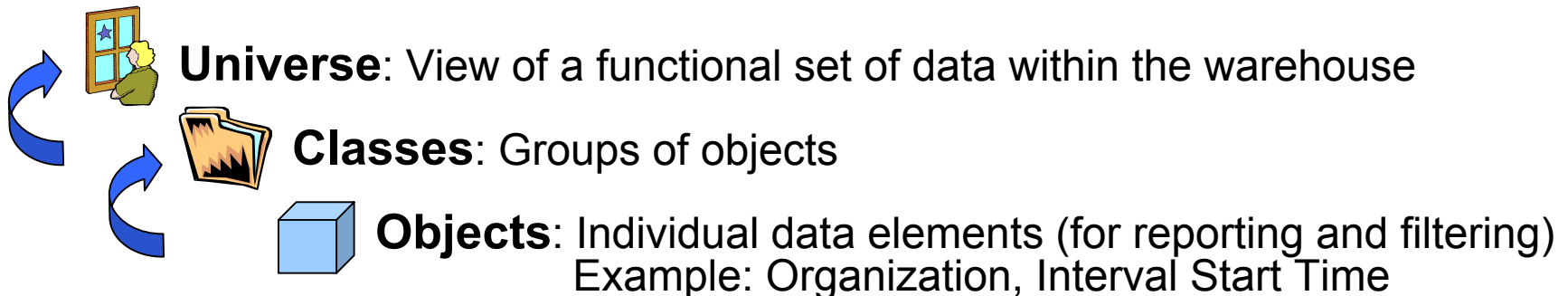
# Tool Introduction / Scenarios Agenda

- Business Objects Introduction
- Business Scenarios Overview
- Detailed Business Scenarios (7)

# Business Objects Introduction



## Hierarchy



# Business Objects Functionality

- Welcome Page
- Corporate Reports
- Personal Reports
- Query Design and Report Creation (Webi)
- Business Objects Application

# Business Scenarios

## Corporate Reports from Business Objects Start Page

- 1. Review Power Supplier Balancing Market Settlement Details**
  - ▶ Will present the results and billing determinants for a generator balancing market energy settlement calculation.
- 2. Review LSE Balancing Market Settlement Results**
  - ▶ Will summarize the results of the load serving entity balancing market energy settlement calculation.
- 3. Review Power Supplier RT BPCG Settlement Details**
  - ▶ Will present the results and billing determinants for a generator real-time bid production cost guarantee settlement calculation.
- 4. Review Transmission Customer Balancing Market Settlement Results**
  - ▶ Will summarize the results of the transmission customer balancing market energy settlement calculations (TUCs, LBMP and Replacement energy).



# **Business Scenarios (*continued*)**

## **Custom Reports and / or Ad Hoc Queries**

### **5. Create Personal Reports from Corporate Reports**

- ▶ Scenario will allow us to work through an example where a Corporate Report can be leveraged to create a Personal Report.

### **6. Analyze Power Supplier Balancing Market Settlement Details**

- ▶ Scenario will allow us to work through a query design example, modify the query, and see how to format the results.

### **7. Summarize LSE Balancing Market Settlement Results**

- ▶ Scenario will allow us to work through another query design example highlighting additional features (summarization, sub-totals, derived fields).

## Scenario (#1)

# Review Power Supplier Balancing Market Settlement Details

- *Actor:*
  - ▶ Austin Powers (Generation Trader, Mini-Me Generating)
- *Business Scenario:*
  - ▶ Austin was reviewing a NYISO settlements summary report (provided by his settlement analyst) when he noticed that balancing market settlements were much lower than normal. So, he needs to review the details of the calculation to see if the difference can be explained.
- *DSS Activity:*
  - ▶ Austin will use the DSS to review a pre-defined Corporate Report for the Power Supplier Balancing Market Energy Settlement Details to see if he can explain the lower-than-normal settlement values.
- *Illustrates:*
  - ▶ To access a pre-defined standard Corporate Report to quickly analyze, and print/export data, in/from the DSS
  - ▶ Specifically analyzing the settlement results and billing determinants of the power supplier balancing market energy settlement calculation.

## Scenario (#2)

### Review LSE Balancing Market Settlement Results

- *Actor:*
  - ▶ Manny Figures, II (Accountant, Tony's Public Authority)
- *Business Scenario:*
  - ▶ It is the end of the month, and Manny needs to do his month-end closing activities. The NYISO monthly Consolidated Invoice has not been published and he must make his accounting entries (regarding load purchases from NYISO markets), so he needs to estimate the charges/payments expected on the invoice in order to make the appropriate entries into Tony's general ledger (GL) system.
  - ▶ The desired report is also needed to quickly verify the amounts.
- *DSS Activity:*
  - ▶ Manny will use the DSS to use a report summarizing the prior month's NYISO settlements, which can be used to drill-up and down to review the settlement results at different time granularities.
- *Illustrates:*
  - ▶ To access a pre-defined standard Corporate Report to quickly analyze (drill up and down), and print/export data, in/from the DSS
  - ▶ Specifically using load serving entity balancing market load settlement results.

## Scenario (#3)

### Review Power Supplier RT BPCG Settlement Details

- *Actor:*
  - ▶ Buzz Stacks (Settlement Analyst, ZAP Generating Co.)
- *Business Scenario:*
  - ▶ An asset manager in Buzz's company asked him to explain why ZAP Generating sometimes does not get a RT BPCG payment for Generator OOM. Buzz decides he needs to show her how the calculation is made, so that the asset management team will better understand when they should expect a RT BPCG payment (\$).
- *DSS Activity:*
  - ▶ Buzz will use a DSS Corporate Report to review the Power Supplier RT BPCG settlement, to create a report containing the billing determinants and results for a sample set of data, for use in explaining the calculation to the asset manager.
- *Illustrates:*
  - ▶ To access a pre-defined standard Corporate Report to quickly analyze, and print/export data, in/from the DSS.
  - ▶ Specifically the power supplier real-time bid production cost guarantee settlement details report.

## Scenario (#4)

# Transmission Customer Balancing Market Settlement Results

- *Actor:*
  - ▶ Honest John (Real-Time Desk Trader, John's Power Dealer)
- *Business Scenario:*
  - ▶ John recently signed a contract(s) to buy power to meet his load requirements from an external third party (vs. the NYISO markets). He now is doing some follow-up analysis to determine the true-cost of the power purchases (needs to know what additional charges he incurred from NYISO).
- *DSS Activity:*
  - ▶ John will use a DSS Corporate Report to review the transmission customer settlements incurred from NYSIO for his transactions.
- *Illustrates:*
  - ▶ To access a pre-defined standard Corporate Report to quickly analyze, and print/export data, in/from the DSS
  - ▶ Specifically the transmission customer balancing market (TUC, LBMP and replacement energy) settlement details report

## Scenario (#5)

### Create Personal Reports from Corporate Reports

- *Actor:*
  - ▶ Bill Gates, Jr. (IT Developer, MacroLoad)
- *Business Scenario:*
  - ▶ MacroLoad is in the process of implementing a new system, which is designed to capture and store all of their NYISO settlements data. The system already has an existing interface capable of loading NYISO LSE settlement data, but the NYISO does not produce a file in the exact layout (results, prices and load). So, Bill Jr. needs to design a report/file in the DSS that matches the layout of his in-house system.
- *DSS Activity:*
  - ▶ Bill Jr. will use the existing LSE Balancing Market Settlement Details Report (which is close to the desired layout), and customize it to his system's specifications, and save it as a new Personal Report.
- *Illustrates:*
  - ▶ To access a pre-defined standard Corporate Report, customize it to personal specifications, and save it as a Personal Report
  - ▶ Specifically the LSE balancing market energy settlements.

## Scenario (#6)

# Analyze Power Supplier Balancing Market Settlement Details

- *Actor:*
  - ▶ Smithers (Mr. Burns' Assistant, Springfield Generating)
- *Business Scenario:*
  - ▶ Smithers boss, Mr. Burns, asked him to see how well Barney has been doing in operating Springfield's generator. So, he needs to review the Power Supplier Balancing Market Settlements and its billing determinants (notably actual output and basepoints) to be able to report back to Mr. Burns on Barney's ability to follow NYISO dispatch instructions.
- *DSS Activity:*
  - ▶ Smithers will use the DSS to create a DSS query, which will outline the generator's performance (comparison of actual vs. basepoints) as well as the settlements payments/charges incurred due to balancing market settlements.
- *Objective:*
  - ▶ To demonstrate ad-hoc querying ability and basic report formatting features
  - ▶ Specifically to review the settlement results and billing determinants associated with the power supplier balancing market energy.

## Scenario (#7)

### Summarize LSE Balancing Market Settlement Results

- *Actor:*
  - ▶ Jennifer Load (Settlement Analyst, MicroLoad)
- *Business Scenario:*
  - ▶ Jennifer's management team needs her to provide them a report summarizing how much balancing energy charges they incurred during May 2002. They asked to see it totaled for the month by load bus, but they also would like to see the daily result details.
  - ▶ It might also be helpful for them to see it totaled by zone and subzone.
- *DSS Activity:*
  - ▶ So, Jennifer will use the DSS to quickly create a set of custom reports:
    - BalMkt Load \$ for May 2002 by LSE/Load Bus
    - BalMkt Load \$ for May 2002 by Day/LSE/Load Bus
    - BalMkt Load \$ for May 2002 by Zone/Subzone
- *Illustrates:*
  - ▶ To create reports which summarize NYISO settlement results using several different dimensions
  - ▶ Specifically to review the LSE Balancing Market Settlement results.



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# Feedback Discussion

- What do you think overall?
- What functionality that you have seen would provide the most value?
- What *additional* functionality would provide the most value?
- How might you see your organization using these tools?
- What are the key business questions you are trying to answer with this data?
- What additional data would provide the most value?
- Any follow-up issues from morning demonstration

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# Summary

- Thank you for working with us today!
- This is the first phase of a long term commitment by the NYISO to provide you with the information you need to conduct business in our markets
- With the infrastructure in place, we can proceed to refine the specific information requirements (data and presentation) moving forward
- Your continued feedback is critical to our success
  - Feedback forms for today
  - Future DSS Task Force meetings