The Business Intelligence Lifecycle

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What Is Business Intelligence?

A broad category of ***applications*** and ***technologies*** for ***gathering***, ***storing***, ***analyzing***, and providing access to data to help ***enterprise users*** make better ***business decisions***.

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Business Intelligence Includes:

Query and Reporting

Decision Support Systems (DSS)

Executive Information Systems (EIS)

On-Line Analytical Processing (OLAP)

Statistical Analysis

Forecasting

Data Mining

Enterprise Information Portals (EIP)

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BI Architectural Goals

- **Provide platform to deliver a great user-analyst experience**
  - With data that is consistent, centralized and easily accessible
  - Without getting in the way of OLTP systems
- **Ability to incorporate data from internal or external sources - regardless of format or platform**
- **Agile so that it can adapt to changes in the business**

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BI User Requirements

Support decision making – about managing & planning

- Who/what/when/where/why/how of a business
- Facilitate queries without hindering operational systems performance or having to change the design
- Provide centralized repository of consistent data
- Answer complex queries quickly
- Enable data mining to discover new relationships in data

Provide different levels of analysis

- View data from many perspectives
- Easily navigate from summary to detail

End user acceptance and usage is the true measure of success

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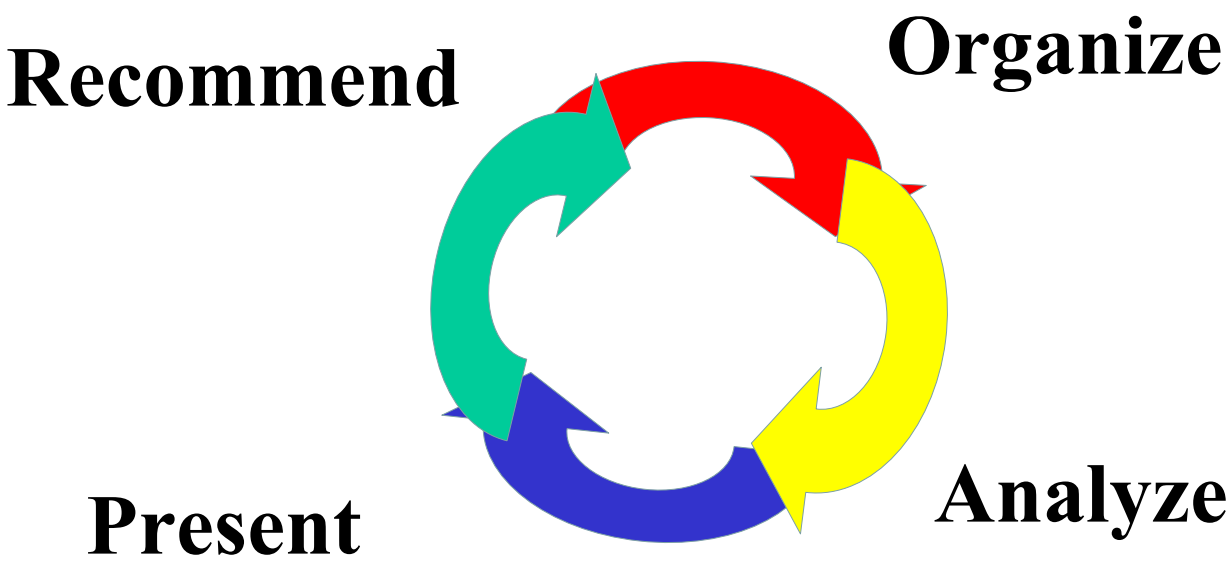
The Business Intelligence Lifecycle



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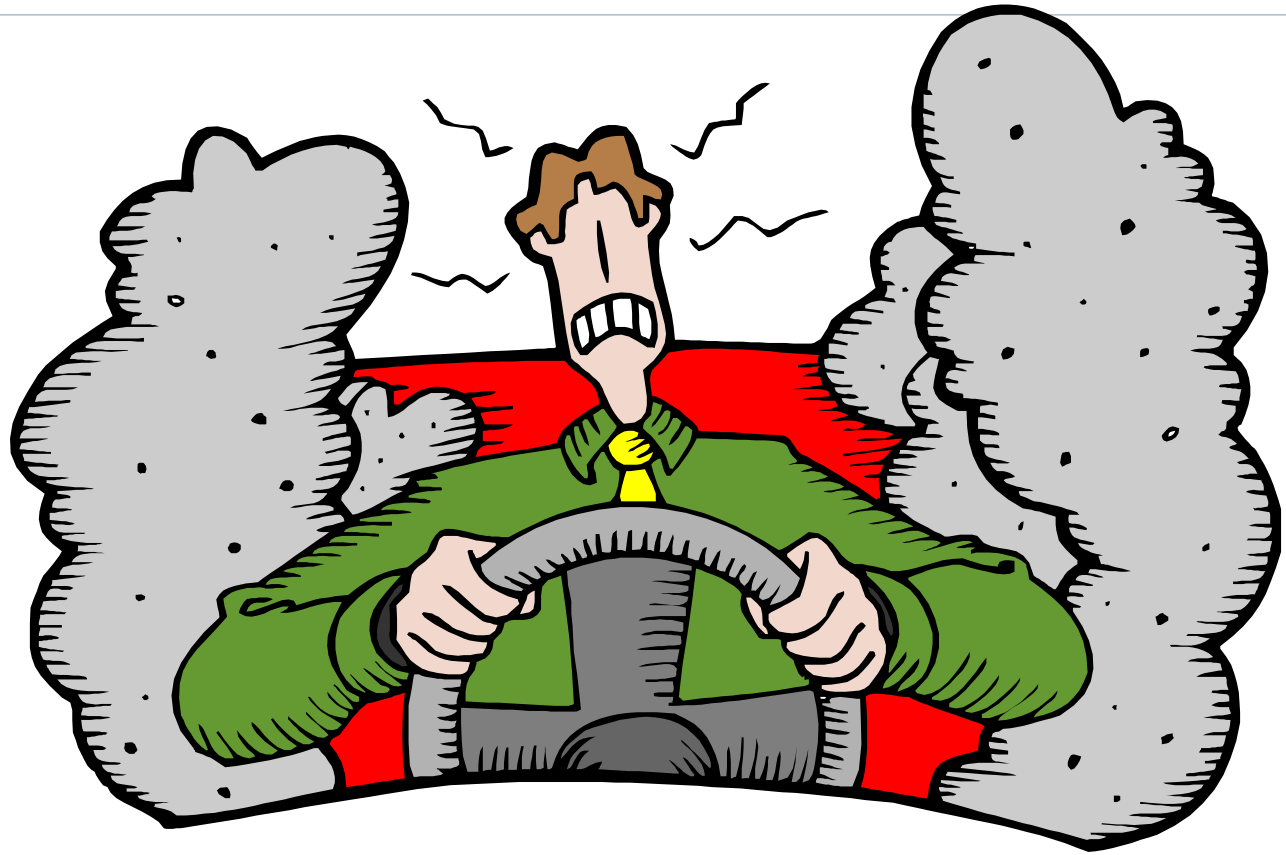
Look out Maslow!



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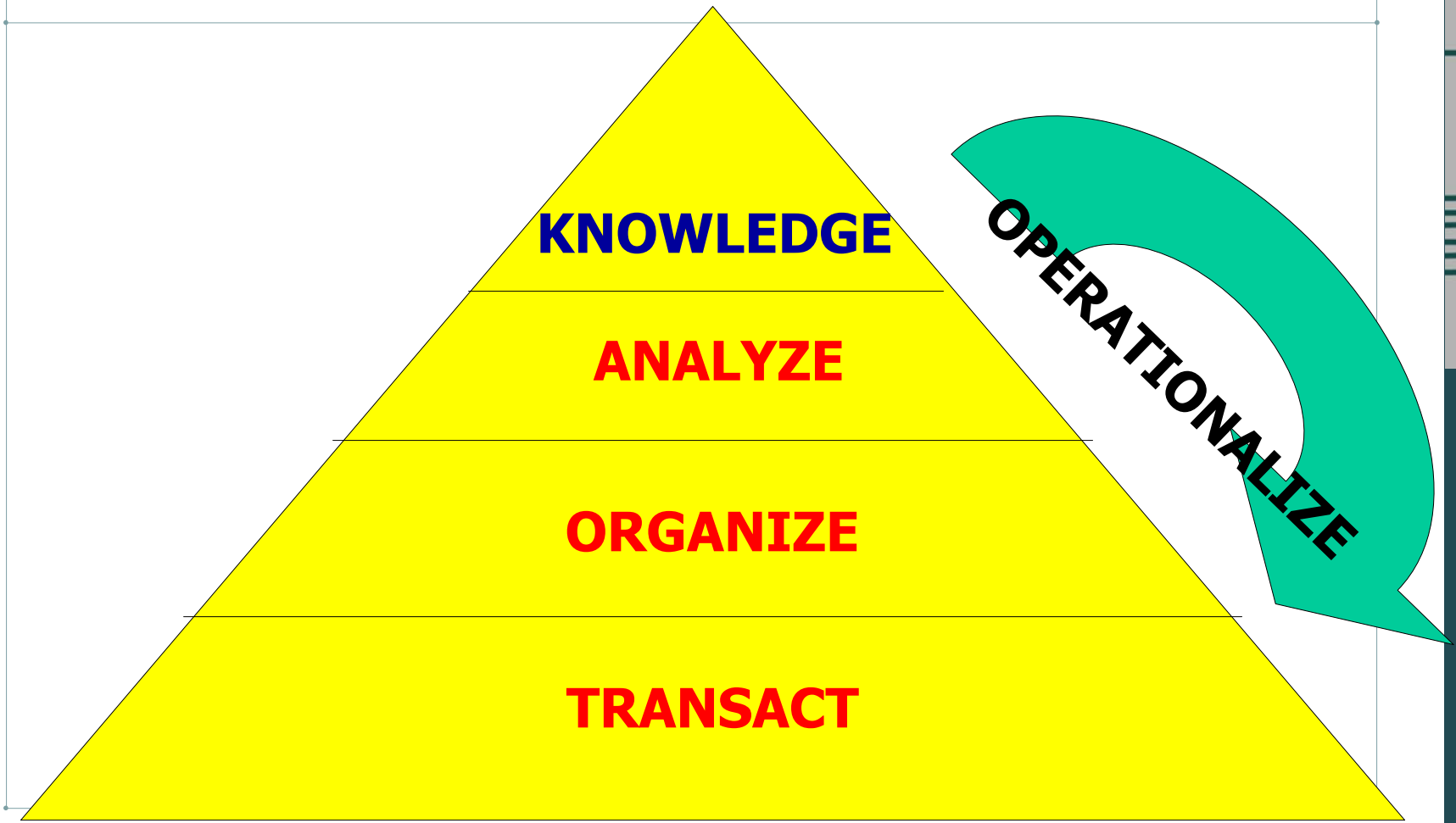
Hierarchy of Information Needs



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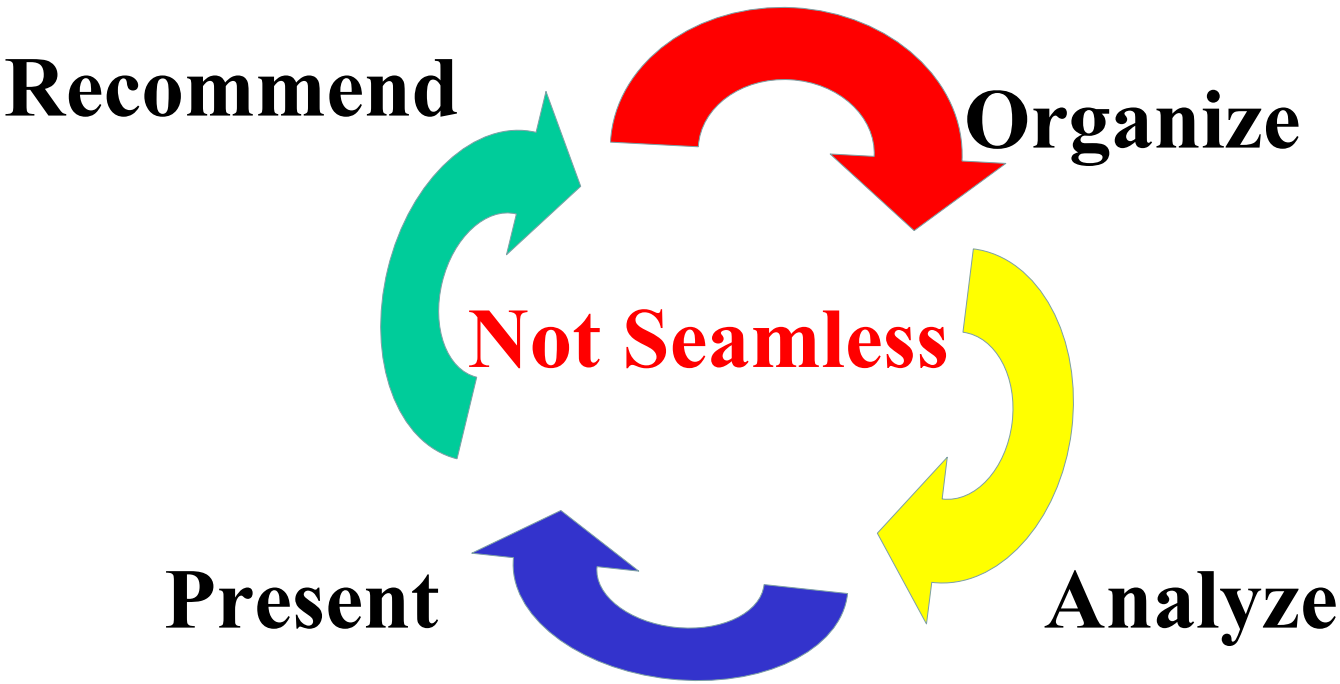
The BI Lifecycle – Reality Check



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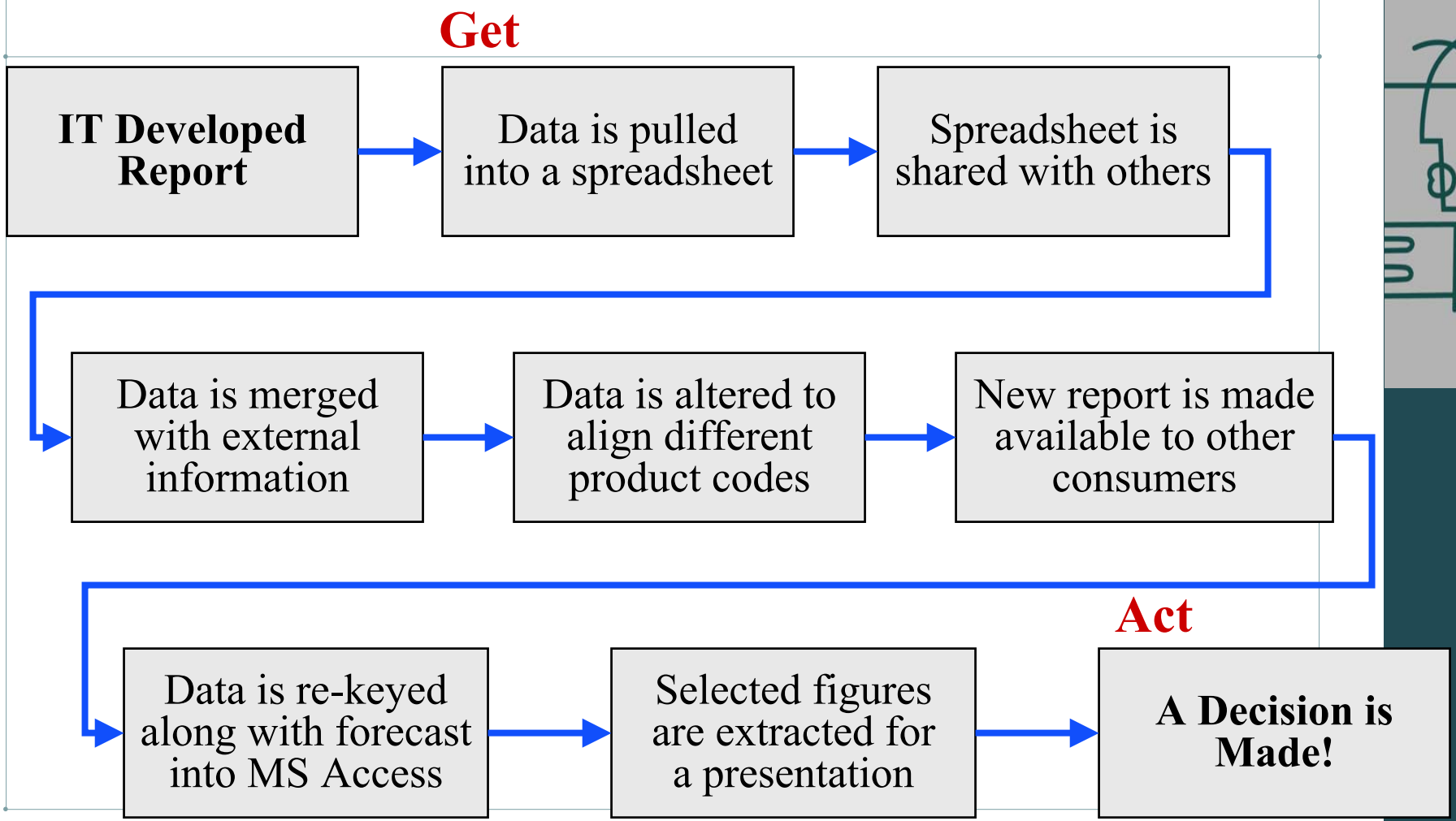
The Steps Between "Get" and "Act



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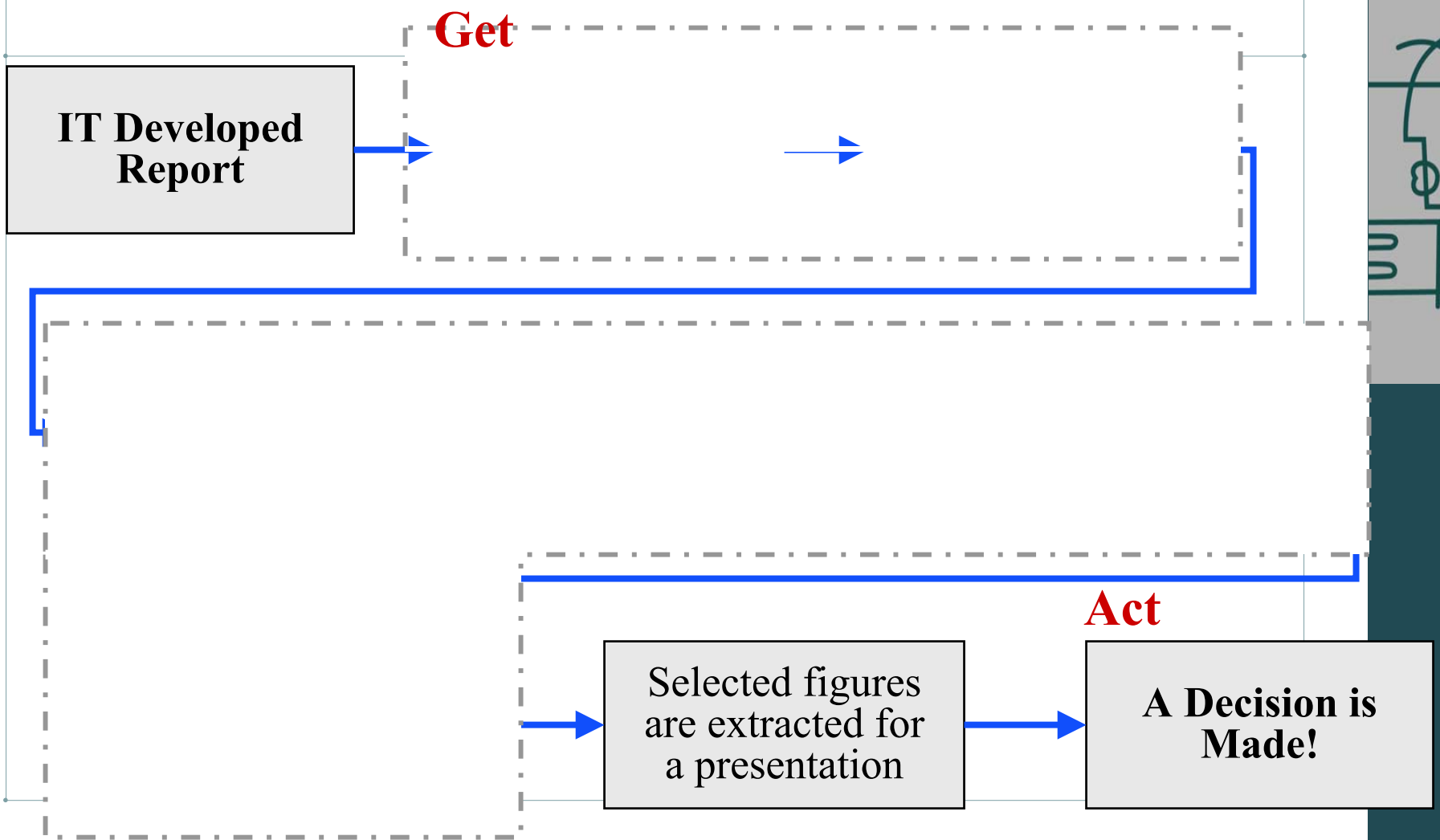
Extending Down the Info Supply Chain



The BI Lifecycle - Processes

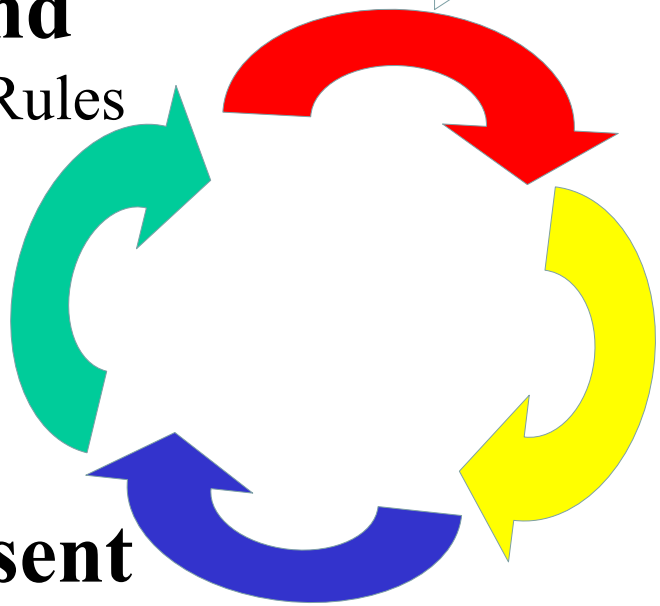
Transactions

Organize
- Extract
- Transform
- Load

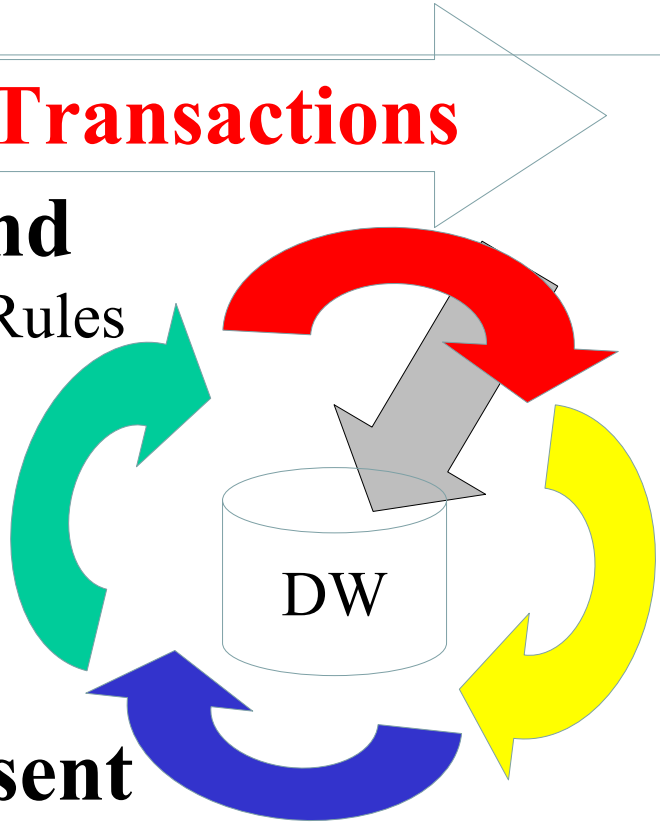
Analyze
- Derive
- Trend
- Variance

Present
- Format
- Annotate
- Deliver

Recommend
- Business Rules
- Alert
- Modify



The BI Lifecycle - Organize



The BI Lifecycle - Organize

Activities:

Plan, Audit, Cleanse, Model, Transform, Map, Load

Tools:

Ascential, Brio, Informatica, Microsoft, IBM

Structures:

ODS, Data Warehouse, Data Marts

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Step By Step™ Lifecycle

Establish the Program	1. Develop the Rationale 2. Target the Opportunities 3. Define the Architecture 4. Create the DW Program
Prepare the Project	5. Plot the Project Tasks 6. Establish the Infrastructure 7. Procure the Tool Kit 8. Assemble the Team
Initiate the Database	9. Investigate Consumer Needs 10. Triage the Source Elements 11. Model States and Dimensions 12. Design the Database 13. Acquire Source Data 14. Populate the Database
Explore the Data	15. Iterate Base Table Design 16. Explore Consumer Usage Interactively 17. Tune Collection Design 18. Plan Cycles and Production Migration
Implement the Deliverables	19. Prepare for Release 20. Train the Consumers 21. Initiate Support Processes 22. Migrate to Production
Expand the Environment	23. Manage the DW Inventory 24. Synchronize with Evolving Business Needs 25. Evangelize Endlessly 26. Do it Again!

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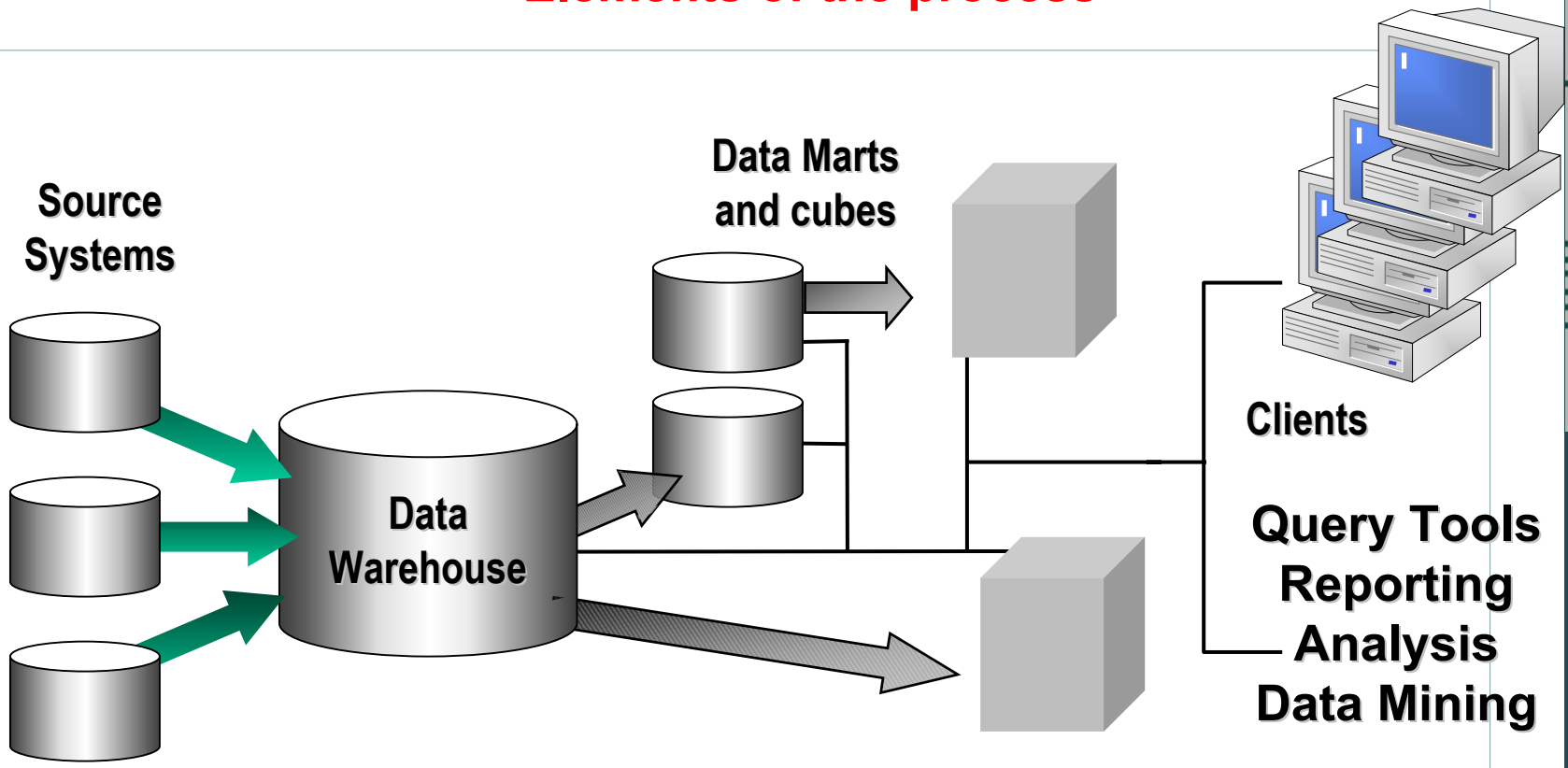
Classical BI Architecture

Elements of the process



Design the Data Warehouse → Populate Data Warehouse → Create OLAP Cubes → Query The Data

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Data Warehouse Architecture

Principles

Rules-of-the-road relating what is unique about data warehousing.

Information Architecture

A framework for managing the usage, meaning, structure, and movement of data within the enterprise.

Technical Architecture

A component strategy for a data warehouse.

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Data Warehouse Definition

Subject Oriented	**Regrouped into Business Topics**
Integrated	**Connected by Common Domains**
Consistent	**Rationalized to Explain Variances**
Non-Volatile	**Organized for Repeatability**
Time Variant	**Presenting Multiple Periodicity**
Historical	**Retaining As-Was Detail**
Dimensional	**Standardized for Business Access**
Adaptive	**Configured for Future Needs**

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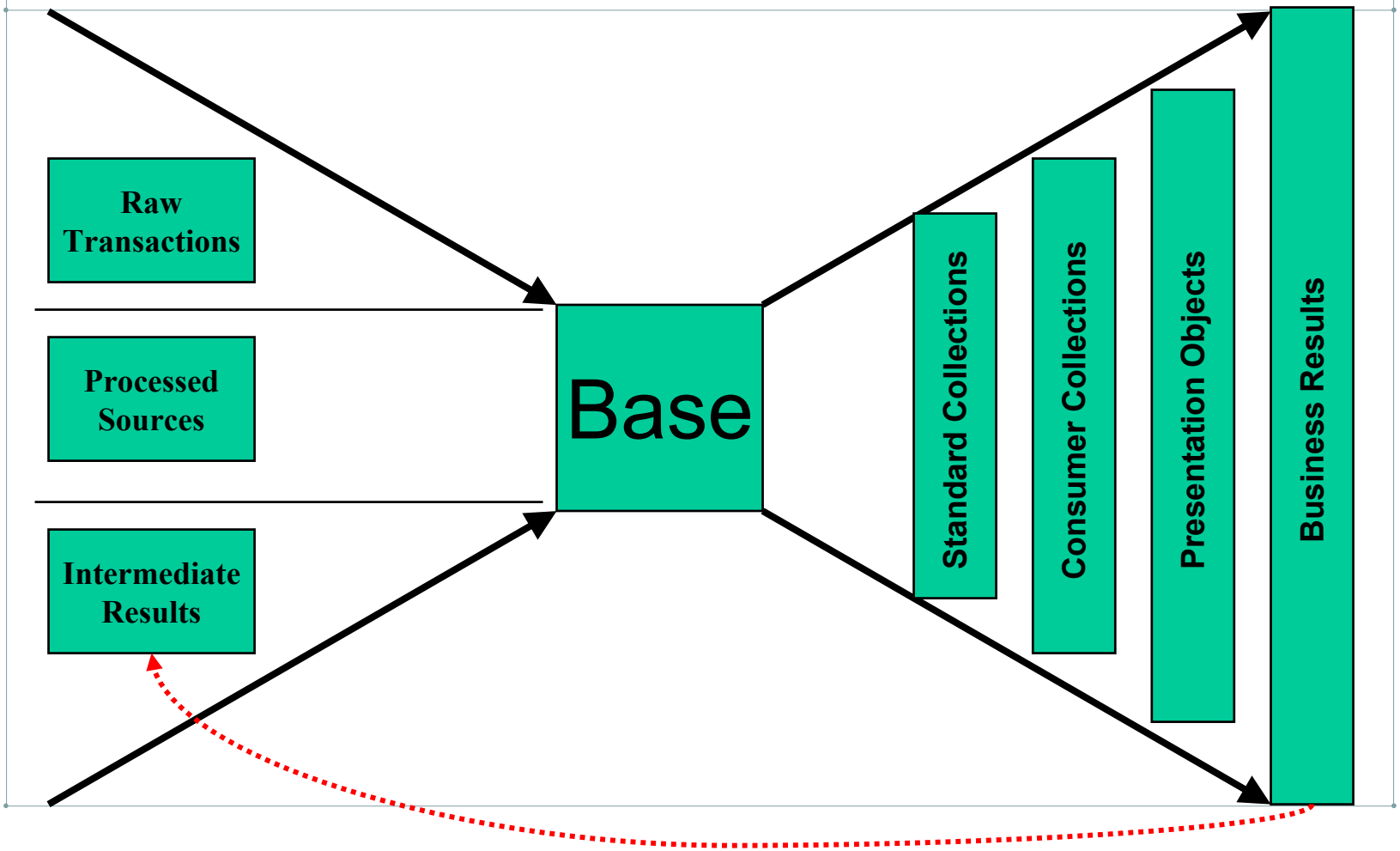
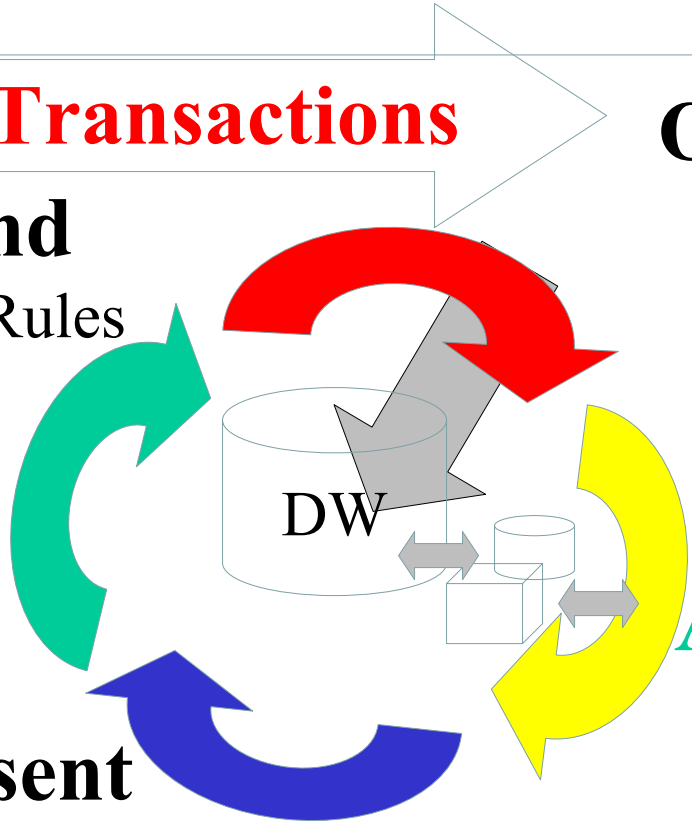
Collect – Integrate – Specialize



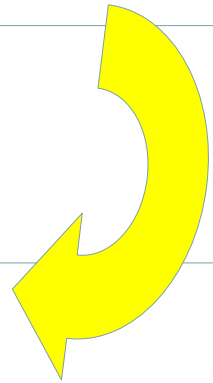
Optimal Design

- Retains fundamental integrated base detail
- Provides common reference & translation tables for integration
- Uses data-driven quality management
- Retains as-is and as-was for consistency
- Creates the right number of collections
- Supports a diversity of data structures
- Captures intermediate results in the information supply chain

The BI Lifecycle - Analyze



The BI Lifecycle - Analyze



Activities:

Query, Reporting, Stat. Analysis, OLAP, Data Mining

Tools:

Brio, Hyperion, IBM, Informatica, Microsoft, SAS, SPSS

Structures:

ODS, Data Warehouse, Data Marts, Cubes

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ACCLIMATE

The OLAP Design Methodology for Effective Solutions

Assemble the Team
Conduct FSR Interview
Conduct IS Analyst Interview
Leverage DW infrastructure
Identify OLAP Engine and Presentation Tools
Model Presentation Modes Collaboratively
Amend OLAP Design for Prime Time
Train the Consumers
Exploit the OLAP Solution

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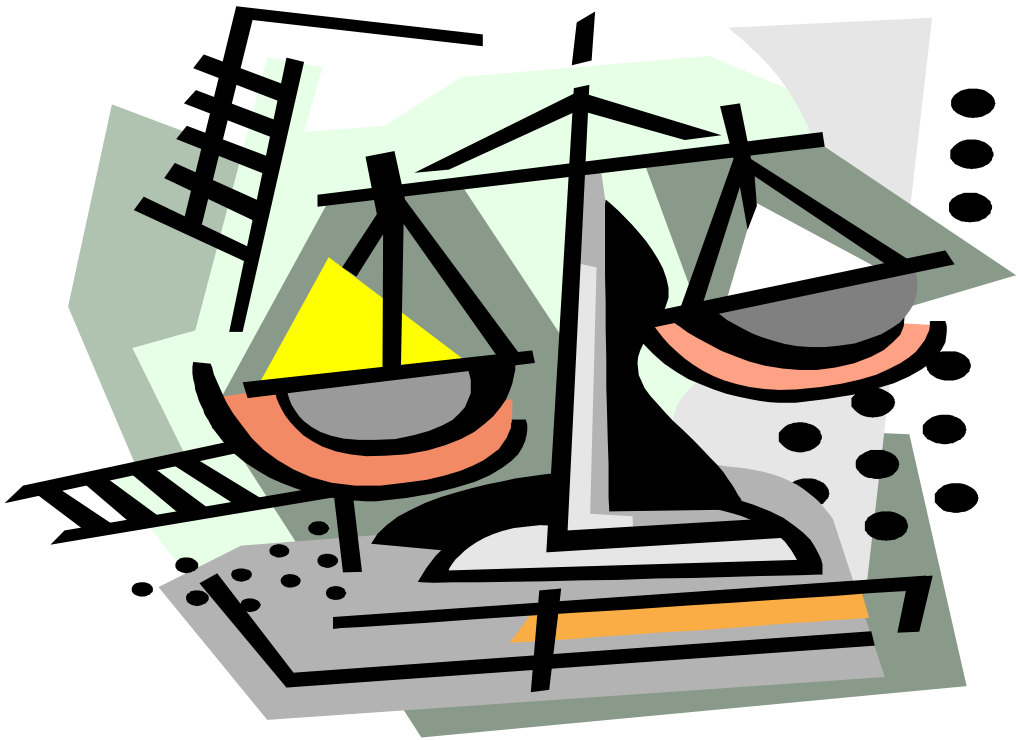
Back End vs. Front End



What is OLAP?

OnLine Analytical Processing

- **"It's a cool way of cheating that enables you to get queries answered incredibly fast" – John Miller, SQL Server Program Mgr**
- **OLAP aggregates data (it pre-summarizes data) across all dimensions**
  - Example: by MO, QTR, YR or by Country, State, City …
- **Basic argument:**

  "Why read through each and every detailed transaction to get an answer when the question can be answered more quickly using summary level data" – Aggre Gate Tables

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Why Use OLAP With DWHS?

OLAP is an enabling technology that supports dynamic analysis

- Intuitive multidimensional model provides drill-down, slice & dice, drill-through
- Fast response times against huge databases
- Offers complete syntax for expressing analytical queries and business logic
- Optimizes the use of network resources as well as Internet/Intranet deployments

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Understand the Tool Categories

Report

Driven by output image

Weak access specification

Non-interactive usage

Query

Driven by access specification

Output format options secondary

Interactive but non-exploratory

Analyze

Driven by exploratory paradigm

Deterministic access path

Output format not a design concern

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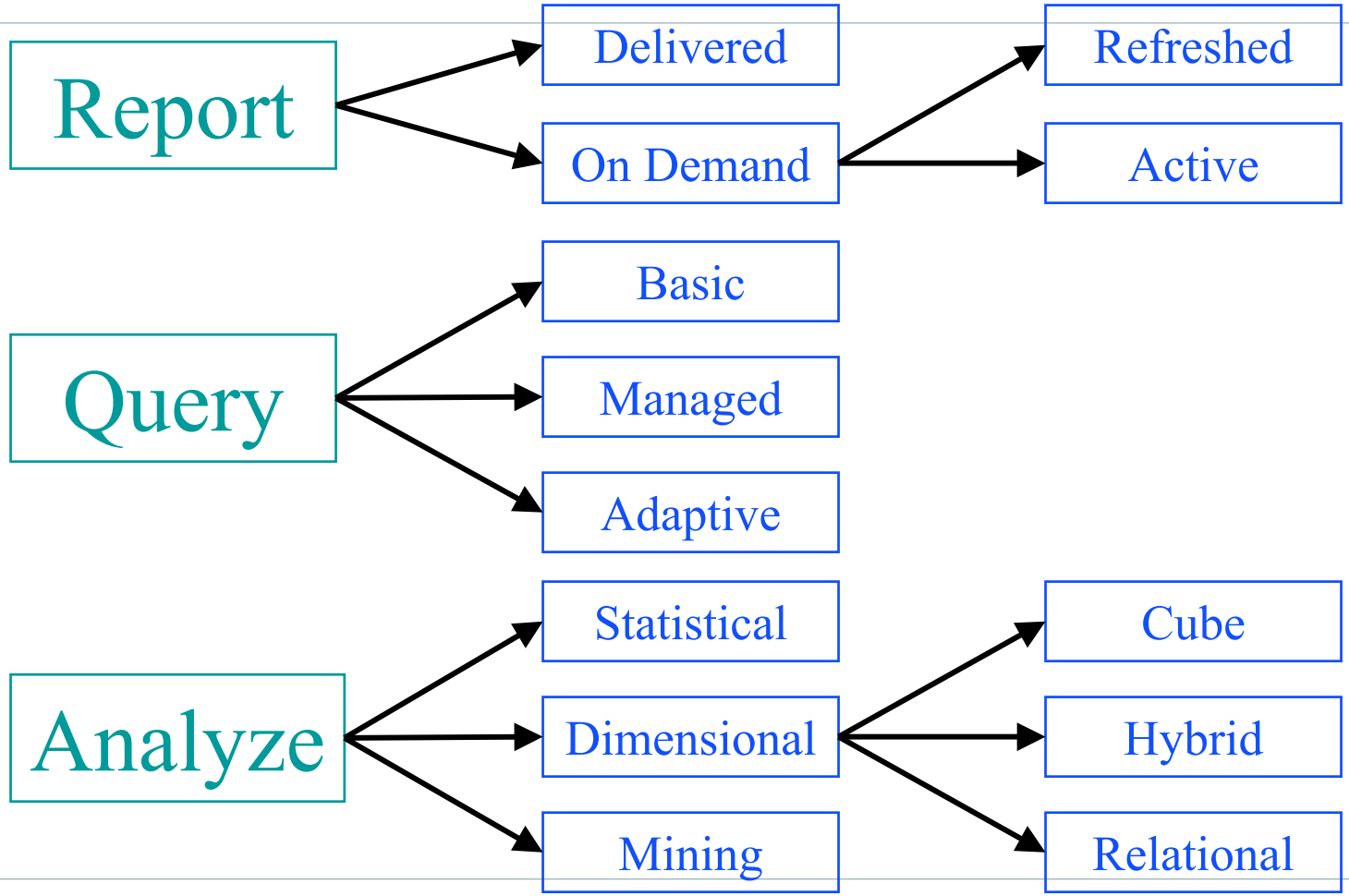
Understand the Tool Sub-Categories



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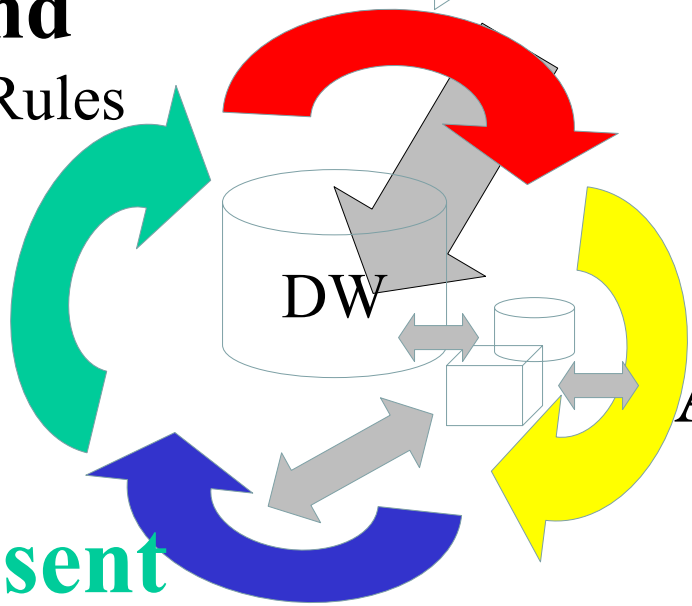
The BI Lifecycle - Present



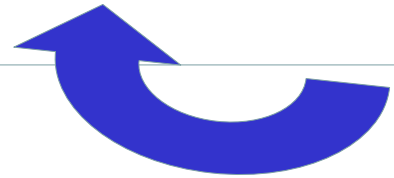
Organize
- Extract
- Transform
- Load

Analyze
- Metrics
- Trends
- Variance

Present
- Format
- Annotate
- Deliver

Recommend
- Business Rules
- Alert
- Modify

The BI Lifecycle - Present



Activities:

Format, Annotate, Chart, Publish, Deliver

Tools:

Brio, Crystal, Hyperion, Microsoft, Proclarity

Structures:

ODS, Data Warehouse, Data Marts, Cubes

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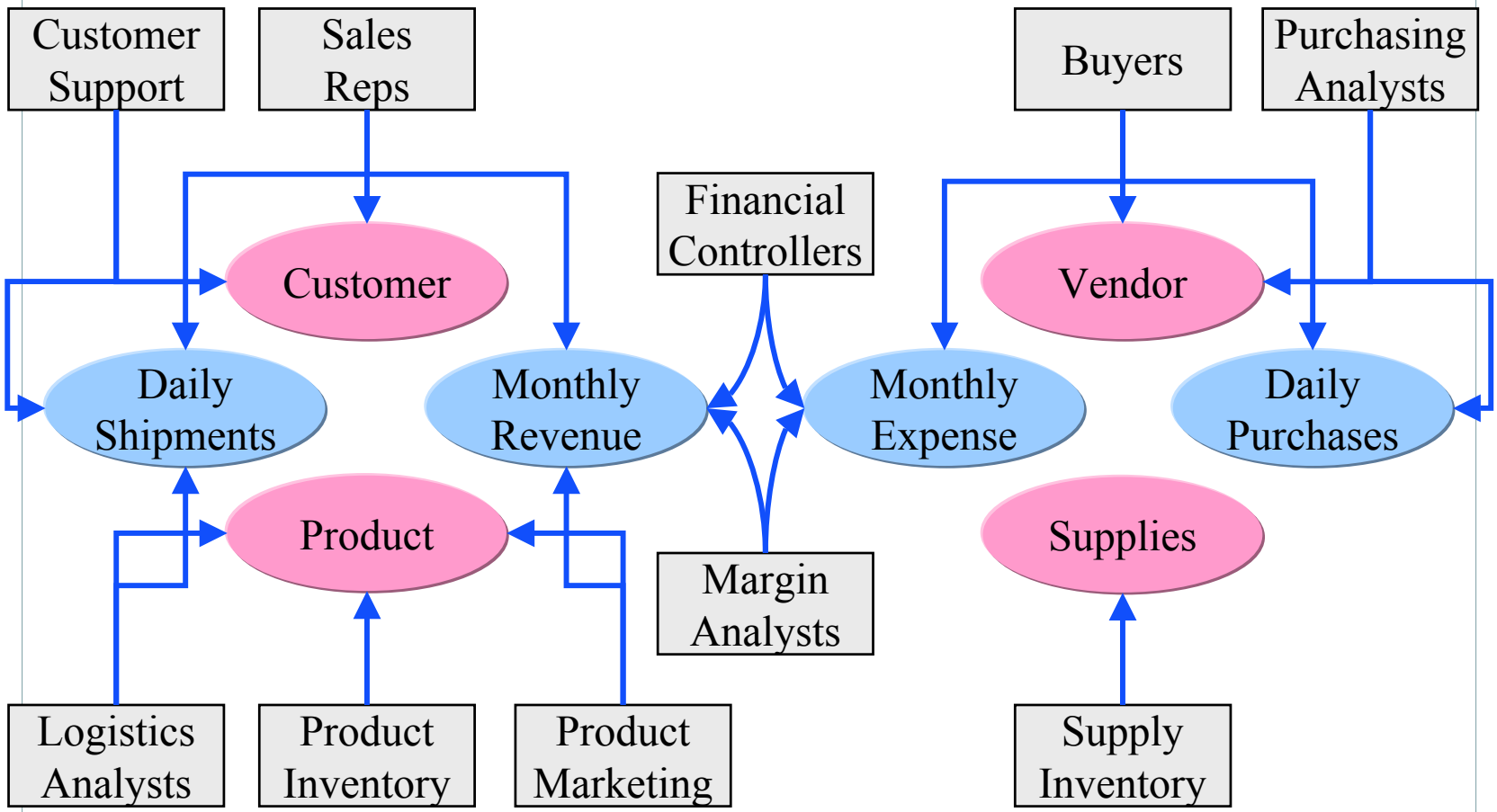
Constituencies: Expand the Use



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Know Your Consumers

Value-Added Distributor	**Builder**	Creates custom solutions
	Provider	Develops queries and provides data
	Mentor	Helps indirect consumers learn the tools
Direct Information Consumer	**Hunter**	Validates a vision
	Miner	Searches for insights
	Planner	Sets new targets
	Forecaster	Projects the future
	Analyst	Seeks the cause
	Tracker	Scans for targets
	Clerk	Generates results for others
Indirect Consumer	**User**	Uses data but not data access tools
	Skeptic	Does not do data (or so they say)

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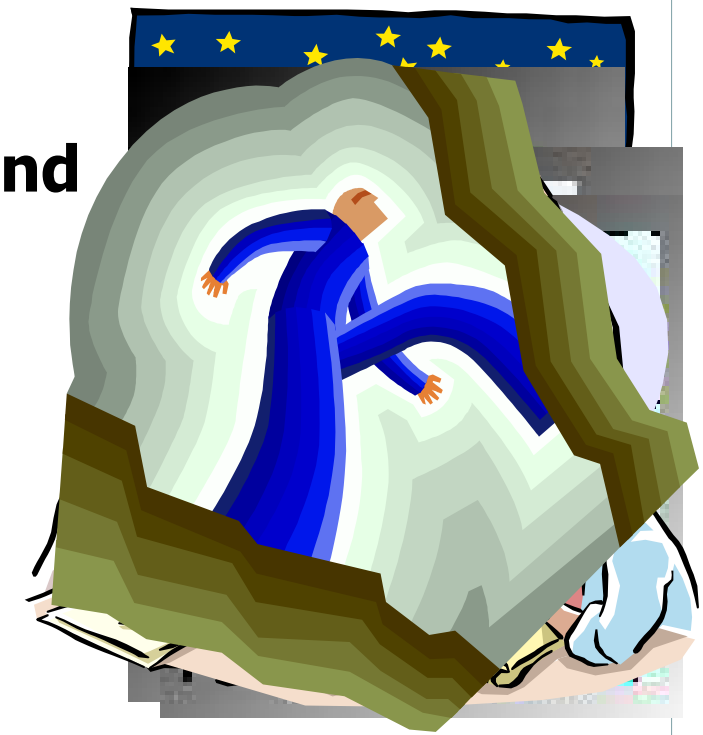
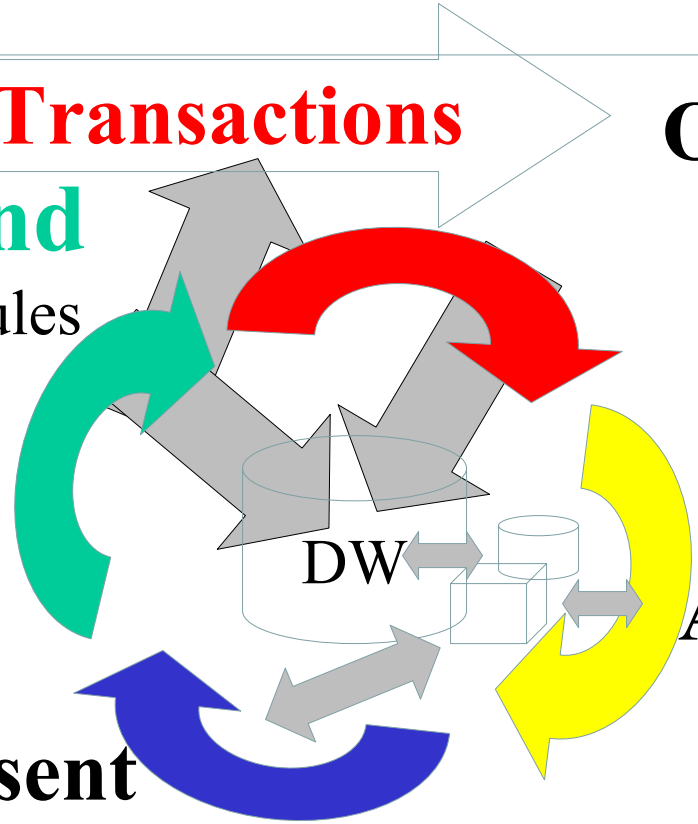
Seven Habits for Designing Highly Effective OLAP Solutions

- **Visualize**
- **Design with the end in mind**
- **First things first**
- **Focus on the Customers**
- **Listen first, then execute**
- **Collaborate**
- **Review, Analyze, Iterate**



The BI Lifecycle - Recommend



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Present
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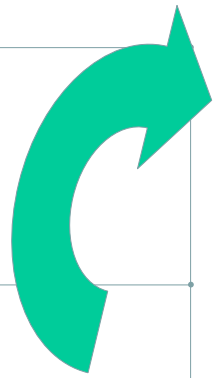
- Deliver

Recommend
- Business Rules
- Alert
- Modify

The BI Lifecycle - Recommend



Activities:

Business Rules - Alerts, Exceptions, Modify

Tools:

Brio, Crystal, IBM, Hyperion, Microsoft, Proclarity

Structures:

OLTP, ODS, Data Warehouse, Data Marts, Cubes

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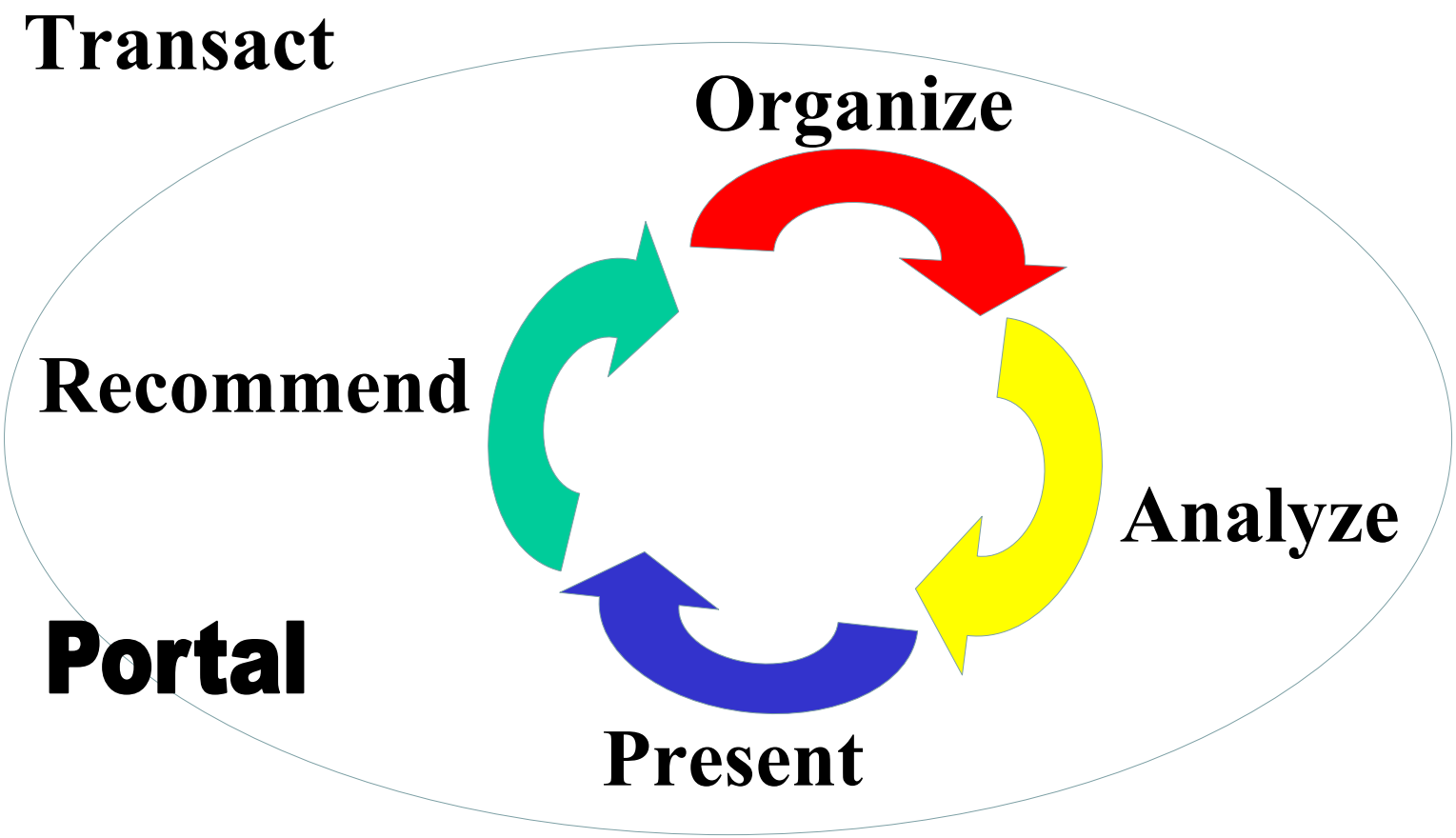

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Portals

"Enterprise Information Portals are applications that enable companies to unlock internally and externally stored information, and provide users a single gateway to personalized information needed to make informed business decisions. "

". . . an amalgamation of software applications that consolidate, manage, analyze and distribute information across and outside of an enterprise (including Business Intelligence, Content Management, Data Warehouse & Mart and Data Management applications.)"

- Merrill Lynch Analysis, 1999

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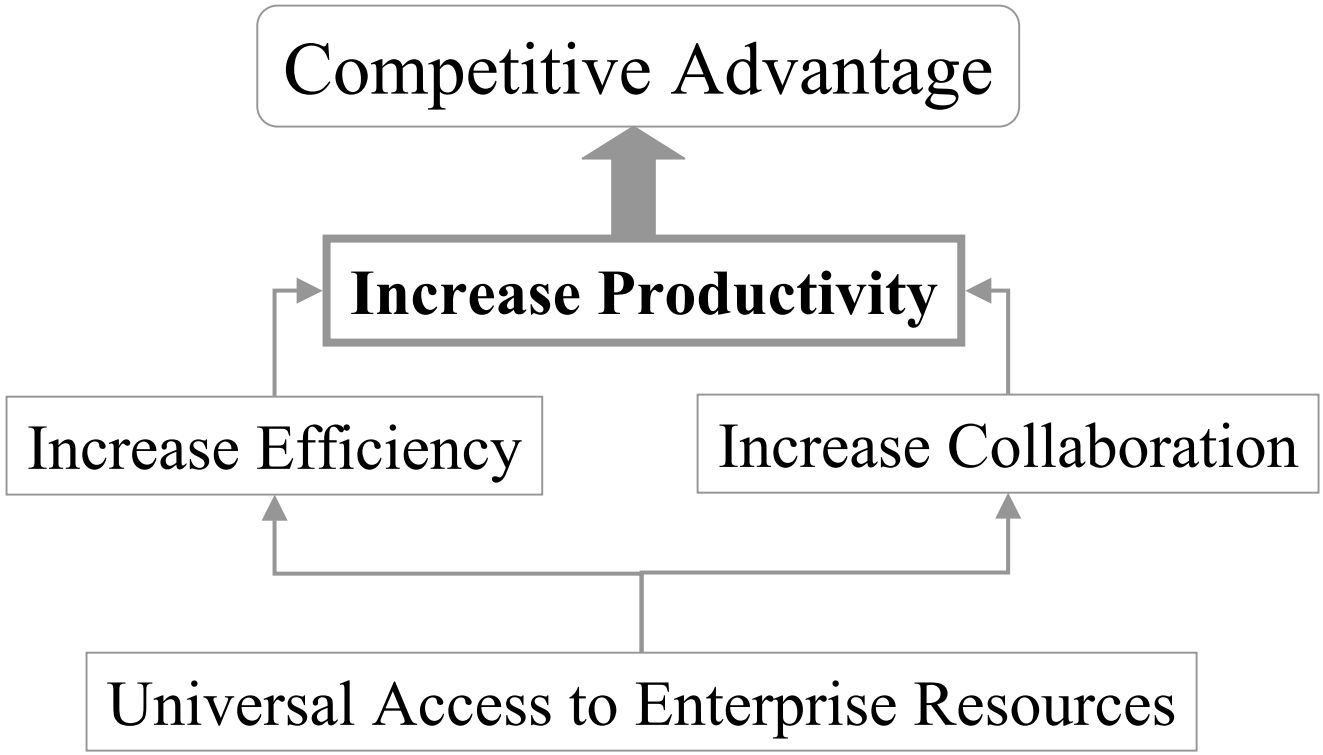
Relation of Benefits



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End of Presentation

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