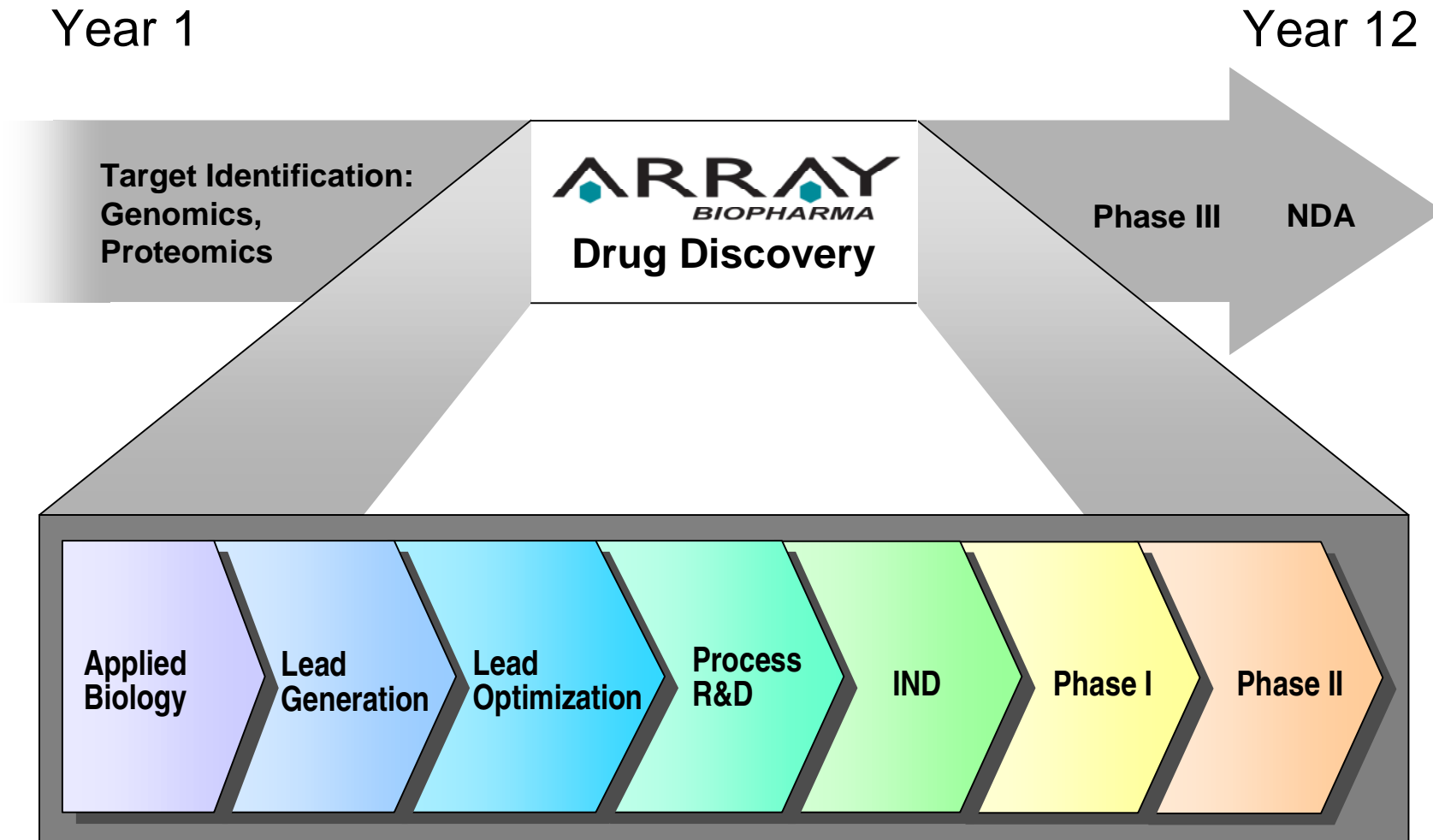# ARRAY
BIOPHARMA

An "Information-Centric" Tool for Better Decision Making in Drug Discover
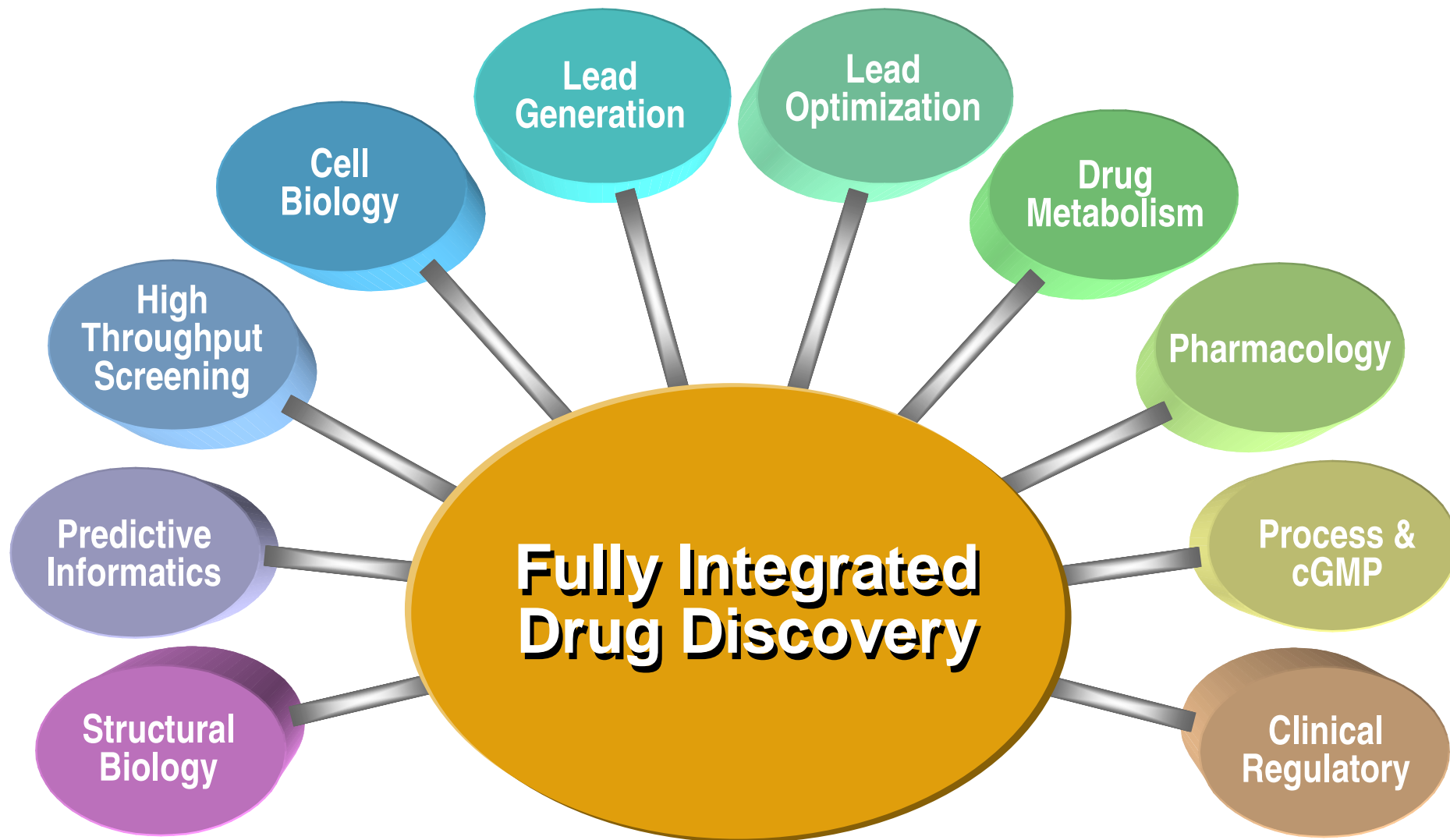
Outline

- Overview of Array
- Statement of Problem
- Limitations of Traditional Solutions
- Information-Centric Solutions
- "CoMotion Discovery" Today
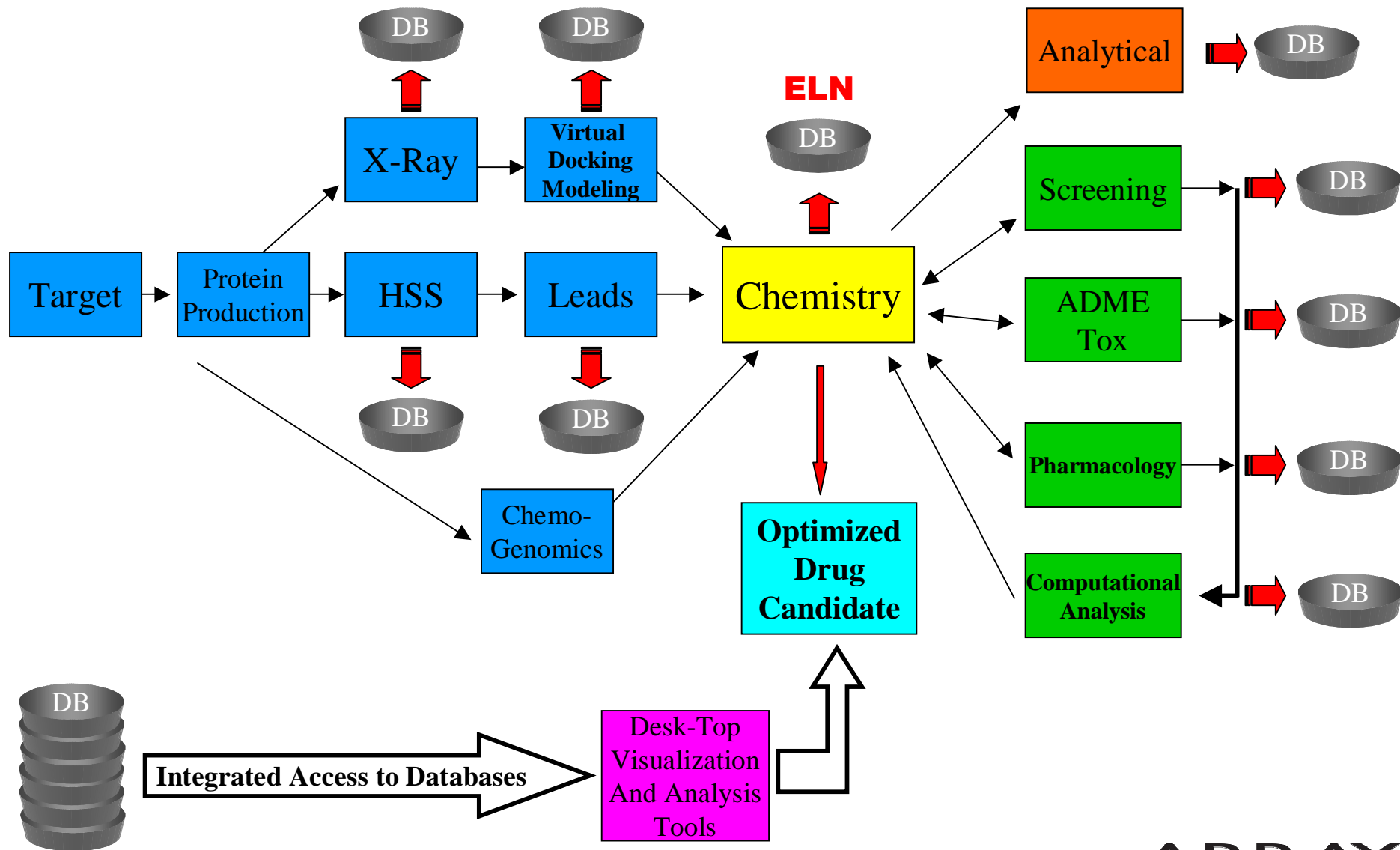- Future Directions

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Turning Genomics Into Breakthrough Drugs

Year 1

Year 12

Target Identification:
Genomics,
Proteomics

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Drug Discovery

Phase III   NDA

Applied Biology   Lead Generation   Lead Optimization   Process R&D   IND   Phase I   Phase II

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Array Discovery Platform

Array's Informatics Approach

Goal – Discover New Therapeutics Quicker and Cheaper

Quality

Information ➡ **Better Decisions**
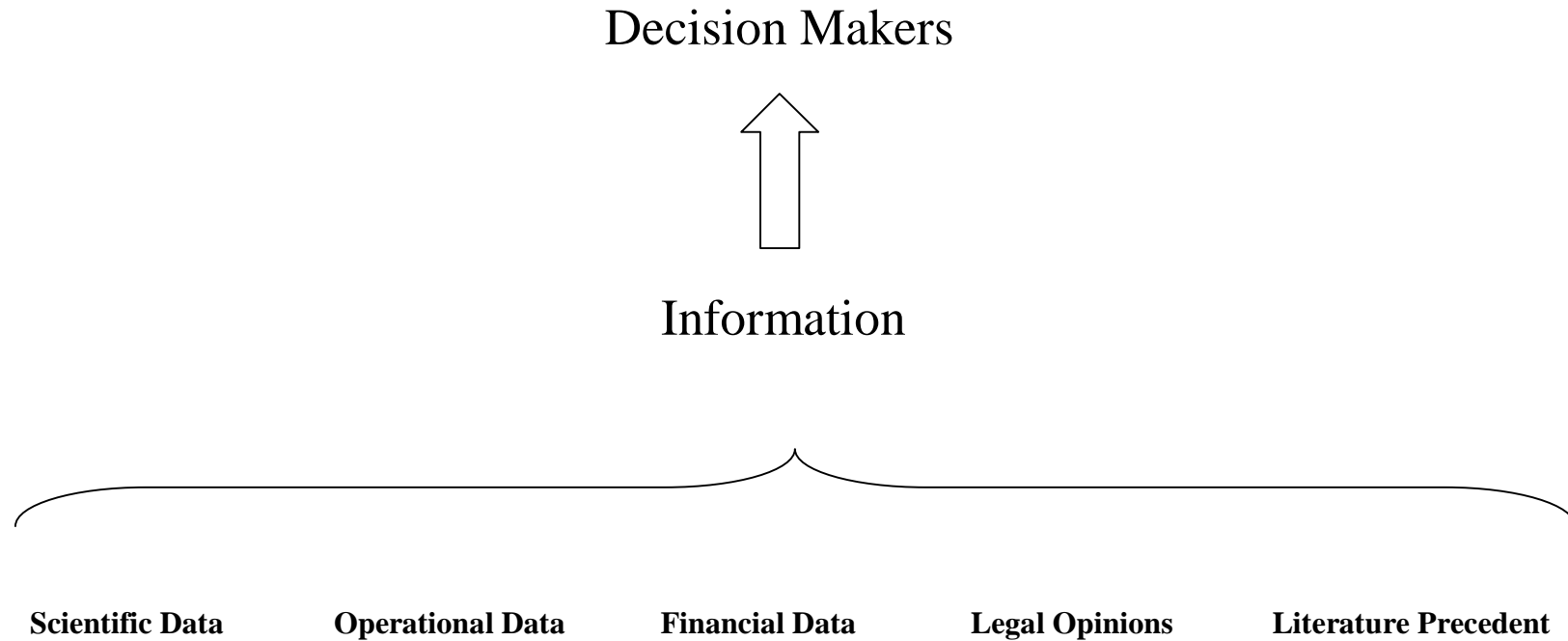
Speed

Cost

ARRAY *BIOPHARMA*
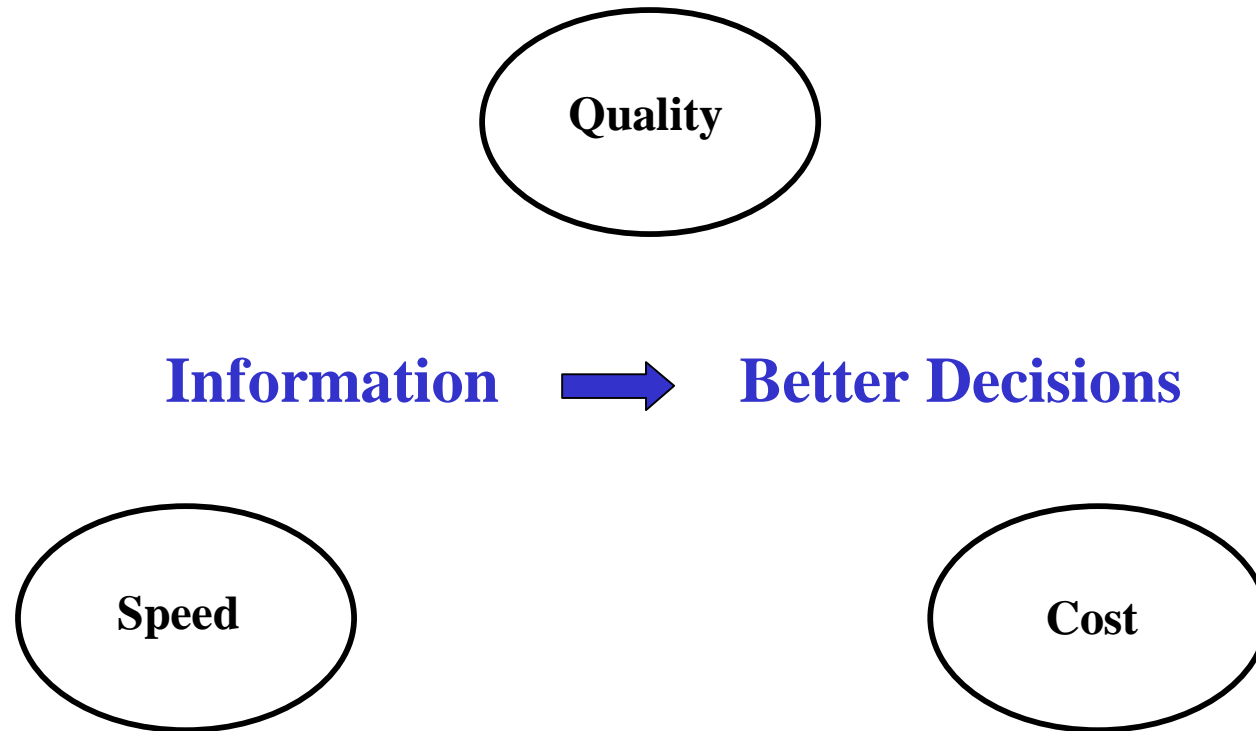
Statement of Problem - *General*

- Multiple projects to manage
  - Transparency of the plans and current status
  - Setting priorities
  - Communication of decisions
  - Utilization of current data

- Limited/Shared Resources
  - Coordination across departments
  - Setting priorities
  - Identifying and resolving conflicts
  - Anticipation of resource needs

Decision Makers

↑

Information

Scientific Data   Operational Data   Financial Data   Legal Opinions   Literature Precedent

Spread Throughout the Organization

Current Approaches for Dissemination of Information

- Regular "All Day" Meeting
  - Long PowerPoint presentations
  - Rehash old data
  - One project at a time
  - Decisions recorded in meeting minutes
  - Limited attendance

- Project manager
  - Single person to gather and disseminate status

- Existing project management software
  - Needs to be manually updated
  - Separate system from operational support systems
  - Compliance is poor

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What is Needed

- Dynamic capabilities
  - Real-time capture of pertinent data and updates
    - Information-Centric
  - Inclusion of user input
- Avoid redundant data entry
- Individual control over their part of project plans
- See across multiple projects
  - Priorities, conflicts, plans
- Facilitate and disseminate decisions
- Integrate data from disparate sources
- Semantically-rich data

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How Does "Semantically-rich" Help

- Information becomes the focus – not the application

- Allows for more meaningful <u>interaction</u> with the data
  - Queries
  - Views
  - Annotations

- Highlight the inter-relationships between data types

- Applications can understand the semantic meaning of the data
  - The display context defines the attributes that are germane
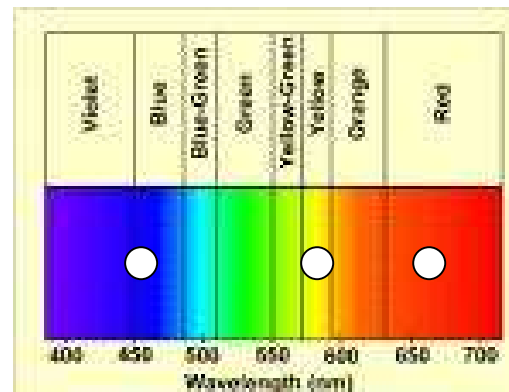 - the computer knows it's handling an "IC50" rather than just a "number" or a "float".

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How Does "Semantically-rich" Help

Gas Mileage vs Weight

MPG

BMW

Vet

Mustang

Pounds
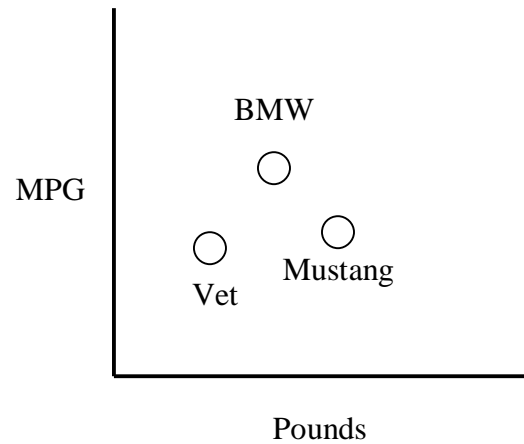
Color Plot

Accident Report

BMW	🔴
Corvette	🟢
Mustang	🔴

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CoMotion Discovery

- A System for Collaborative Visual Decision Support

- Enables your entire team – from scientists to executives – to understand the current status of every project in the pipeline and every compound in the project

- Captures observations, interpretations, and relationships along with "hard" data like assay results, project status data, and ELN reports

- Leverages data in your existing systems

- Facilitates live, interactive presentations and briefings

CoMotion Discovery
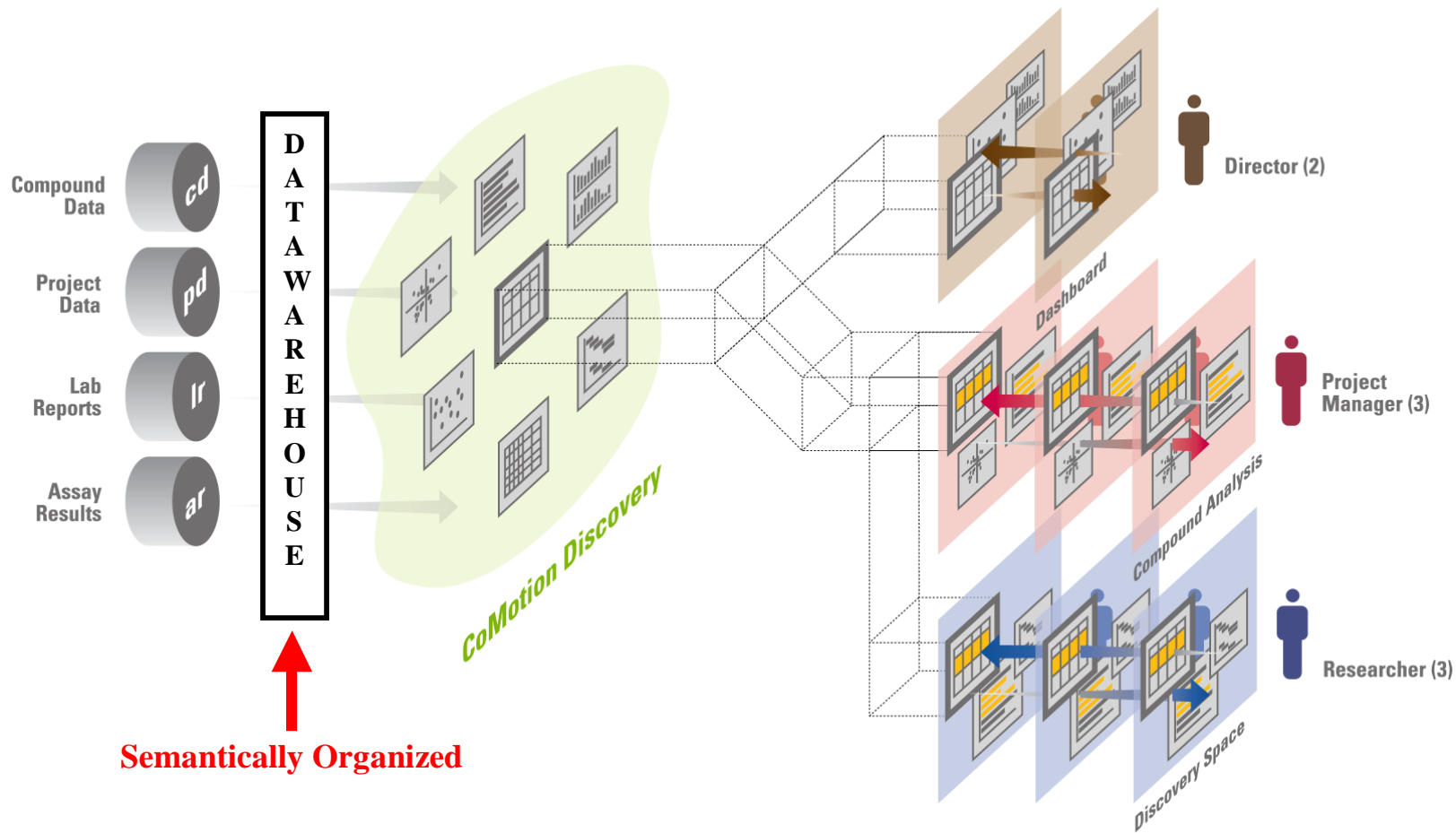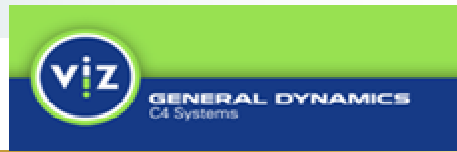
Run Flash Demo

Where Do We See The Utilization

- Individual Scientist
  - Tracking results – Looking for trends – Planning
  - Capturing the soft data – why
- Project Management
  - Individual research projects
    - Cross communication, resource planning, data gathering
    - Multiple departments
  - Candidate development
    - Tracking progress, identifying issues, planning across limited resources
- Senior Management
  - Resource allocation, Keeping informed with up-to-date information

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Acknowledgements

Scientific Computing Group
VIZ – General Dynamics

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