

Building Repositories: Does One Size Fit All?

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Presentation

- Repositories: A Shareholder Value Assessment
- Operational Value of Repositories
- Data Warehouse versus Active Repository
- Questions to Ask
- What to Do & Avoid
- How to be Successful
- Resources for You and Your Team

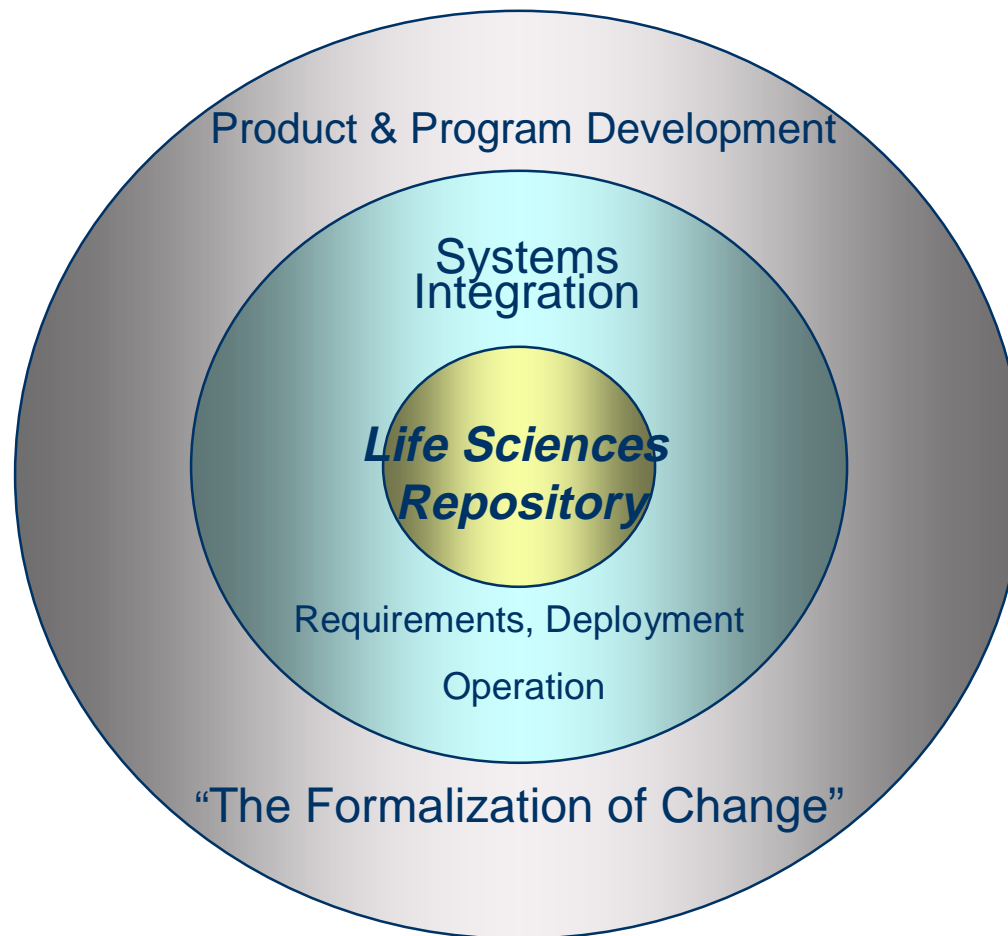
Shareholder Value of Information

- \$800 Million for a new pharmaceutical (Tufts University)
- 10 Years of Development (120 Months or \$6.67M/Mo)
- Hypothetical New Drug A = \$50M/Mo Sales (\$600M)
- Merck Example (01/06/2002)
 - P/E Ratio 19.13
 - Net Income 15%
- Shareholder Value of One Month Sales
 - \$50M Sales * 15% Net Profit * 19 P/E = \$142M/Mo
 - Stock Market Values Each New Month at \$142 Million of Value
- Moderate Large-scale Repository Costs Est. @ \$30M
 - Shareholder Value Assessment = ROI of < 1 month of new sales
 - Each extra month of sales is worth \$142M to Shareholders
 - Each month of R&D saved is worth an additional \$6.67M to Net

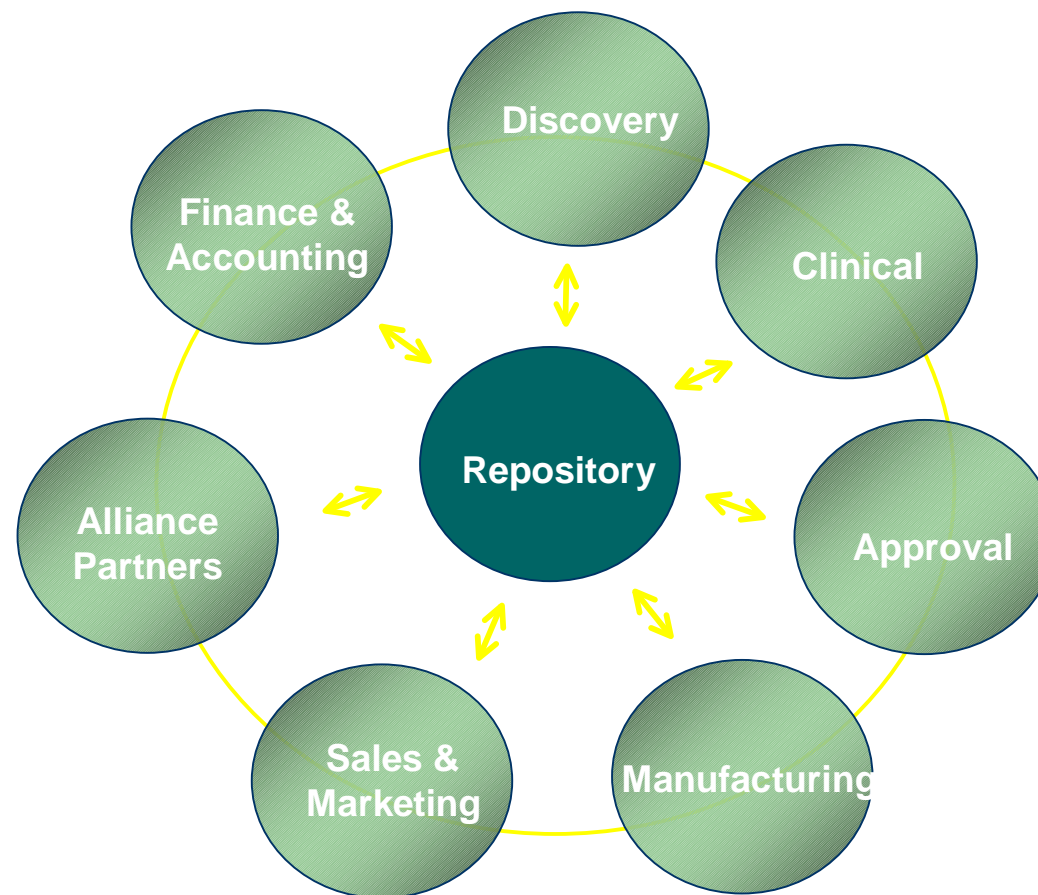
Enterprise Operational Value

- Integration of R&D, Marketing, Sales & Clinical
- Better compliance and faster approval
- Flexible and adaptive decision making
- Allows predictive modeling for sales and R&D
- Monitor markets, threats & competition
- Better allocation of resources and partners
- Enables electronic eCRM for patients
- Real-time management review and iteration

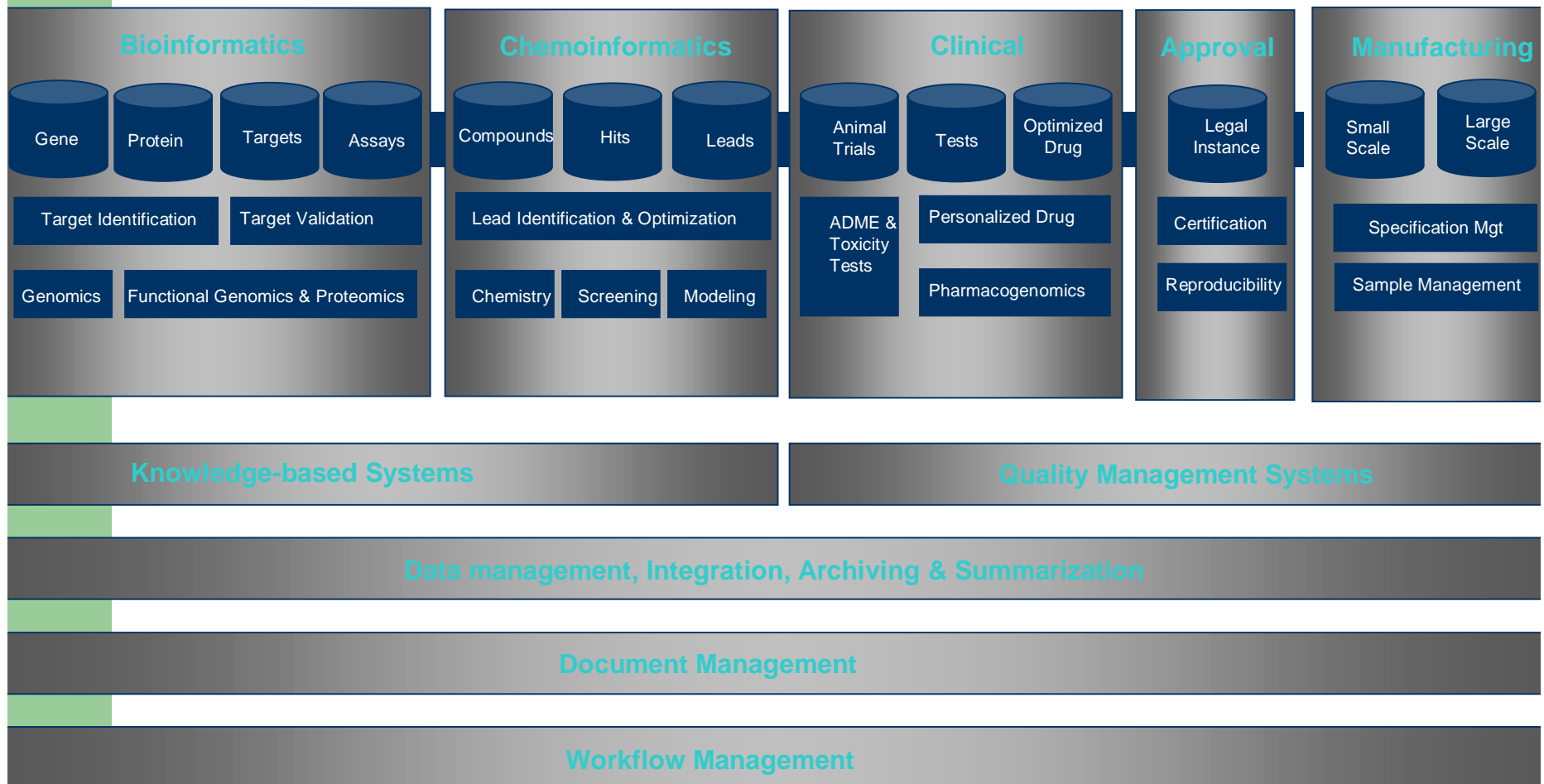
From Integrated Information to New Products and Services



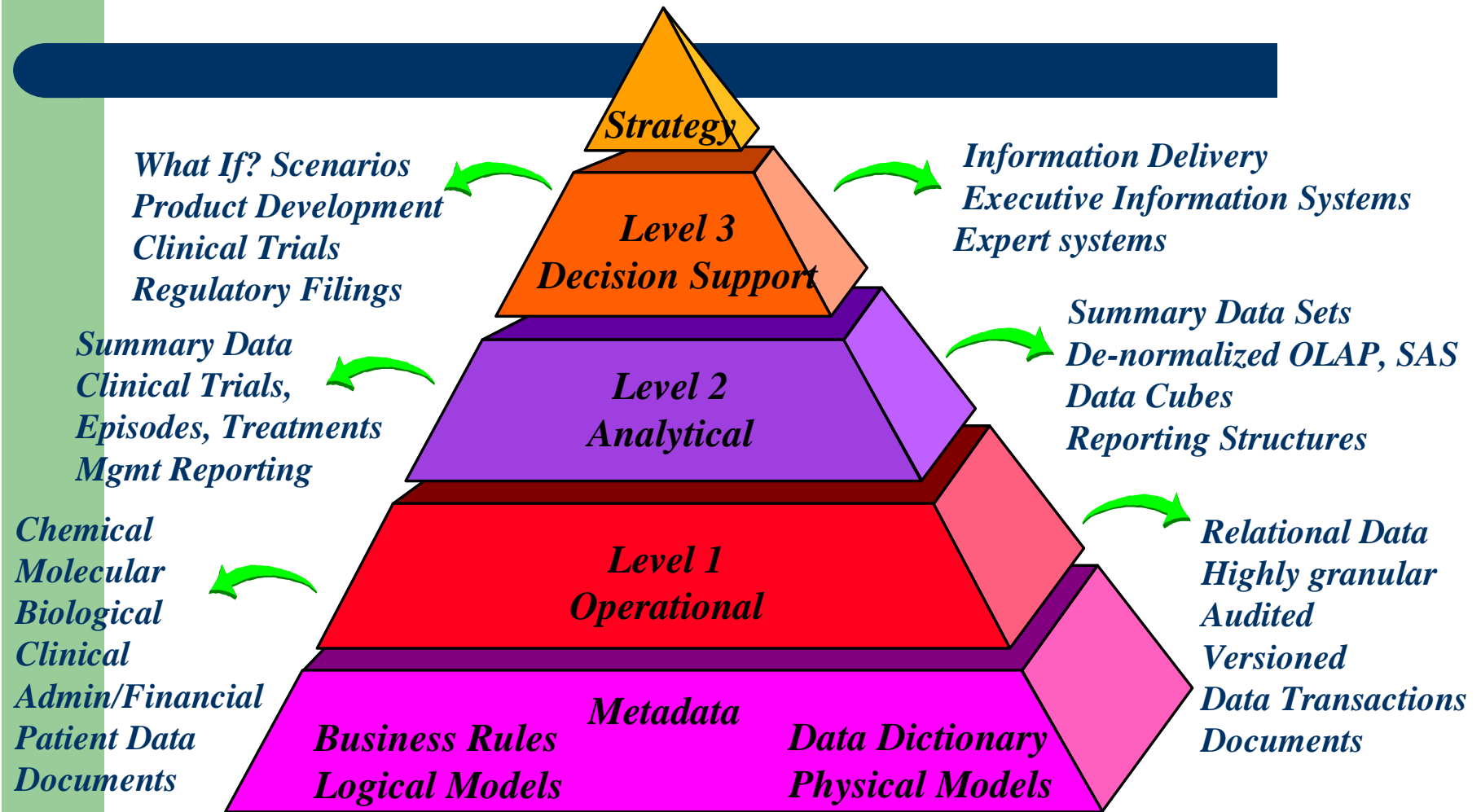
Integration Means Shared Knowledge



Integrating the Life Sciences Platform into a Repository



A Data Architecture for the Life Sciences



Data Warehouse

- Reporting database is the focus
- Merged transactions from operational systems
- Updated and used after the end of period close
- Can include integrated financial, clinical, administrative, manufacturing and discovery data
- Based on large-scale relational DBMS
- Can be web-enabled for ease of use

Real-time Active Repository

- Includes all features of Data Warehouse
 - Adds document and data integration
 - Adds global metadata
- Focus is on real-time management needs
- Daily, hourly updates heading to real-time
- “Pushes” useful information to clients
 - Researchers/Patients/Consumers
 - Partners
 - Management
- Demands non-stop enterprise architecture

Questions to Ask

- Do I need document and data integration?
- Can I integrate transactions and/or summaries?
- One or many data warehouses or databases?
- How do I merge my data sources to identify entities?
- How do I track history and modifications to data and documents?
- How do I sequence my requirements against deliverables? and get started?

Does One Size Fit All?

- Can you uniquely identify key entities for load?
- Is the Repository too large for one database?
- Can you synchronize the updates effectively?
- Is central access possible for the entire enterprise?
- Don't mix operations and decision support
- Are you operating independent business units?
- Is trans-border dataflow a legal issue for you?
- Are you experienced with VLDBs and DBMS?

How to Be Successful

- *Know your Customers & Requirements!*
- Have a senior management sponsor
 - Use internal and external partners
- Remember real-time computing is about delivering solutions early and often
 - Pick one solution and deliver it on-time
- Develop incrementally
 - Buy everything you can, e.g., data models & tools
- Focus on *Shareholder Value* first, then technology

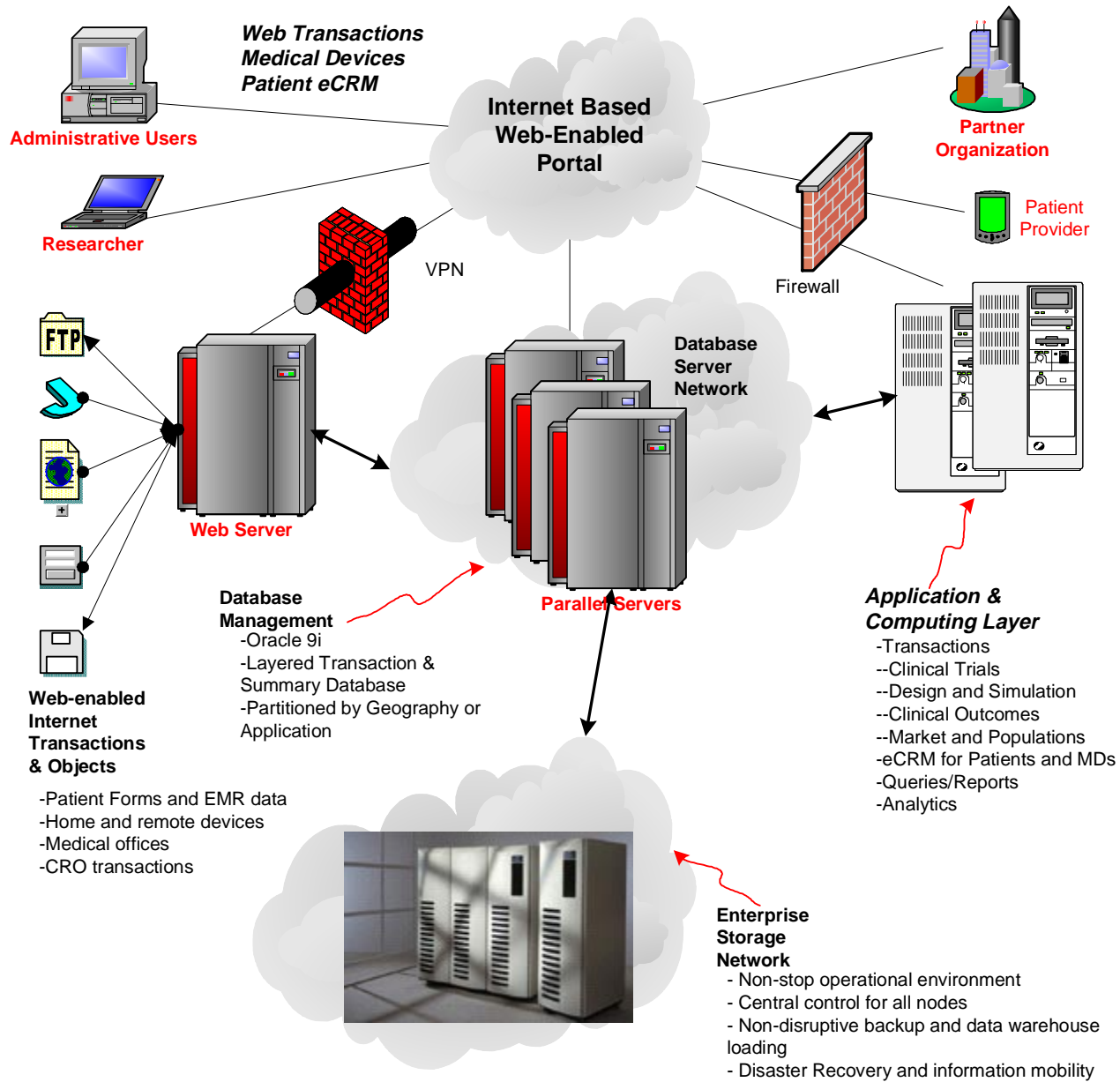
What To Do & Avoid

- Gather *all* requirements into a database
- Go real-time as soon as possible
- Avoid the “virtual” warehouse trap
- Focus on developing a defensible schedule
- Don’t wait for all the data and documents---get started with what you have available now
- Focus on cleaning, identifying and merging keys
- Data must be valid and reliable for management
 - Think globally

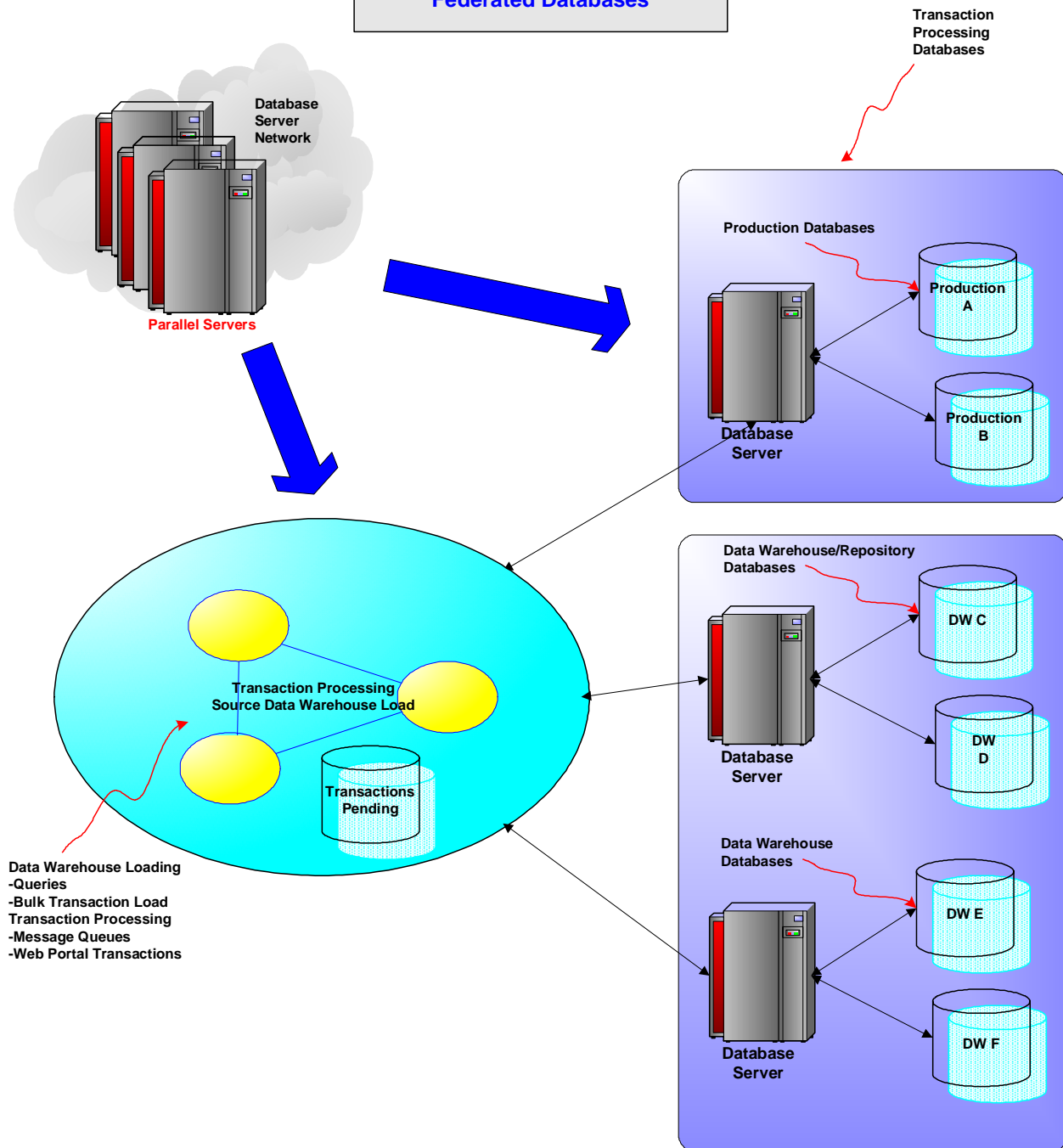
Example Architecture

- A Model Architecture for an Enterprise
 - Example Enterprise Data and Document Repository
 - Sun or IBM operating systems and computers
 - IBM or Oracle web-site
 - Oracle or IBM DB2 DBMS
 - Partitioned Repository of multiple data warehouses
 - Federated Database Architecture
 - EMC non-stop storage systems

A Model Architecture for a Global Bioinformatics Data Warehouse



A Model Architecture for the Federated Databases



Resources for Your Team

- Perseid Software Web Site
- EMC Whitepapers on Life Sciences
- PricewaterhouseCoopers Whitepapers
- Data Warehousing Institute
- Bill Inmon's Site
- IBM, Oracle and Sun

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