



Journey to a Real Time Enterprise

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Chevron is made up of many different businesses



- Capital intensive with long-lived assets
- Information intensive with time scales from seconds to decades



Explore
Develop



Produce



Ship



Refine
Blend



Store
Pipe



Distribute



Market



- Operate in 180 Countries
- 2005 Revenues of \$194 billion
- 2005 Net Income of \$14.1 billion
- 53,440 Employees

Large Volumes of Different Types of Data are Characteristic of Our Business



Explore /
Develop

- 50 3D seismic projects = 350 TB +
- 100 simulation models = 10 TB +
 - 100-million-cell earth model
 - 2-million-cell simulation model



Produce

Large offshore field

- 2000 I/O points
- Data stream = 10 GB / day



Refine / Blend

Large refinery

- 30,000 I/O points
- 1 TB / year processed data;
1 TB / day raw data
- 75,000 coefficient simulation model



Chevron International Exploration and Production

- 9 Business Units & 17,000+ Employees
- Operating in more than 35 countries
- Operates over 16,000 wells in about 200 fields



Many functions are needed

Petroleum Engineering

Facilities Engineering

Petrophysics

Geology

Geophysics

Supply Chain Management

Finance

Planning

Field Operations

Reservoir Engineering

Project Management

Research



Human Resources

Information Technology

Process Engineering

Project Management

I&E Control Systems Engineering

Law

Completion Engineering

Chemical and Corrosion Engineering

Maintenance Engineers

Compliance Management

Health Safety and Environment

Drilling



The Upstream Field Environment



Performance is driven by volumes, unit costs and **decision quality**

Production Operations



Exploration and Development



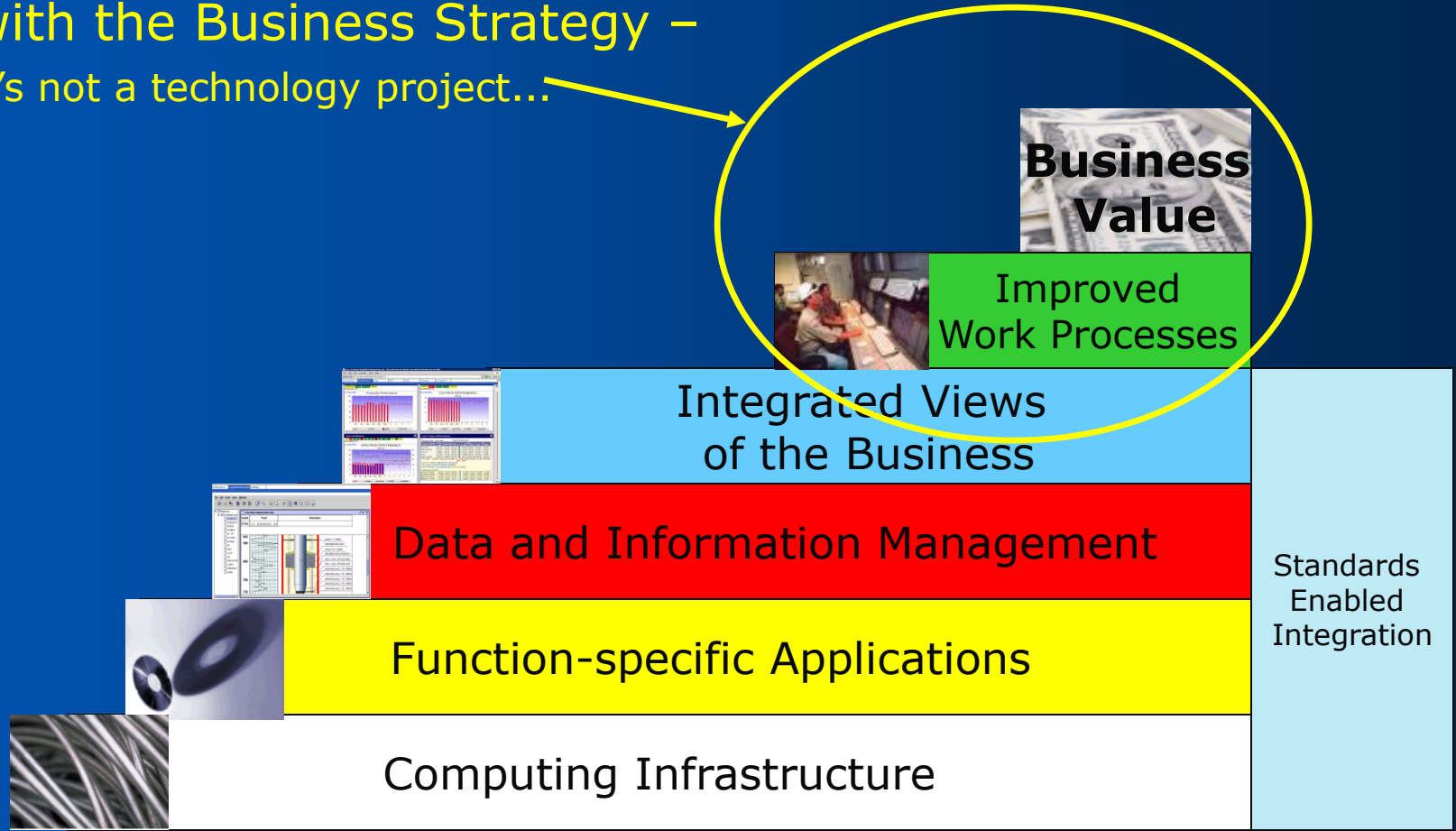
Information Systems
are key to decision
quality support



Many steps required to enable business transformation

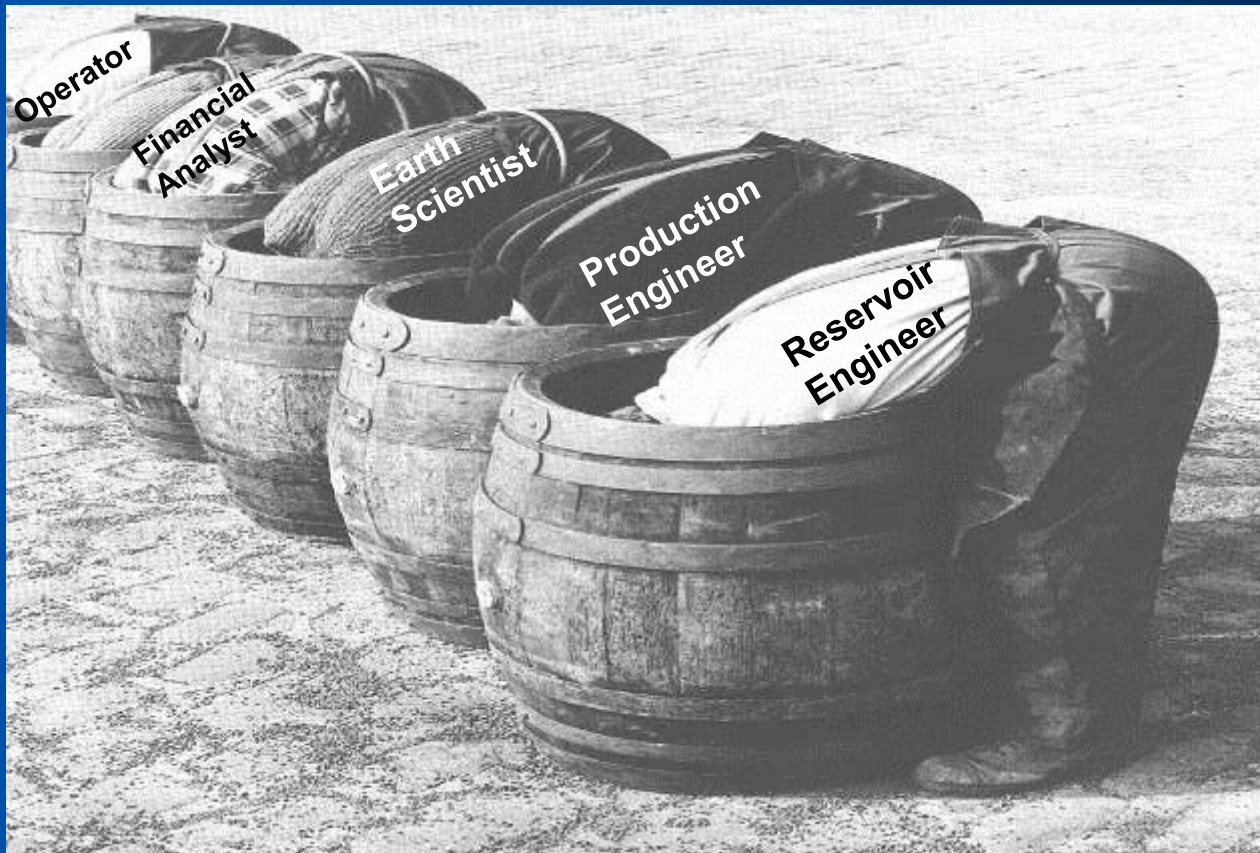
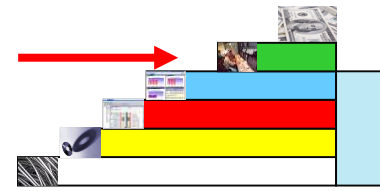


Must integrate the IT Strategy with the Business Strategy – it's not a technology project...



Work Processes

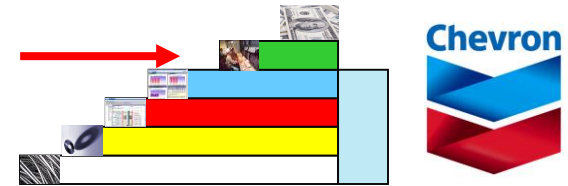
The challenge of integration



Functionality silos are reduced by providing integrated data and views of data

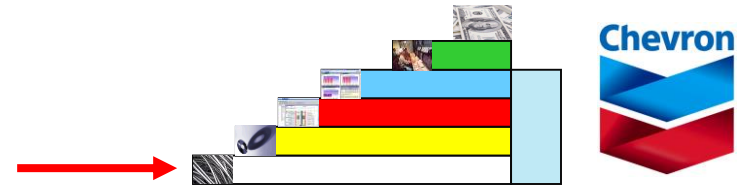
Adapted from Adolfo Henriquez

Improved Work Processes



- Chevron is focusing on improving key work processes to maximize business value
- Standard, integrated systems are a key enabler for improved work processes
- Partnership with business functions is a requirement for success
- Success comes a bit at a time
 - it's a long journey
 - a continuous learning process

Computing Infrastructure



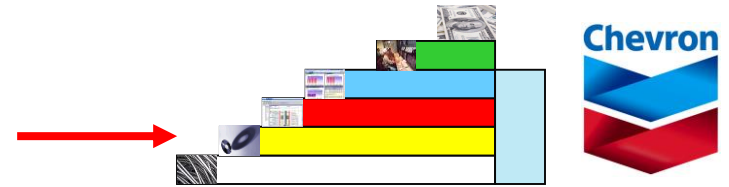
- Chevron has obtained great value from a standardization of:

- PCs & Productivity Applications
- Network & Servers
- Security
- Technical Computing



- Central Design – design once and deploy everywhere
- Support costs have been reduced
- Reliability has been increased
- Started in 1997 with PCs, updated in 2001 / 2002 along with servers, network, security standardization
- IT learned how to manage large, complex projects

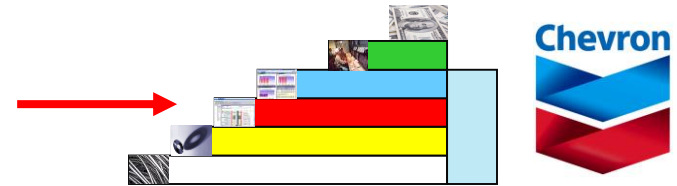
Function-specific Applications



- Many different tools are required to operate a complex business
- No one vendor can supply all of our needs
- Initial focus was on standardizing tools for specific functions
- But the business is now demanding data sharing across functions
- Could lead to many connections & data transfer points

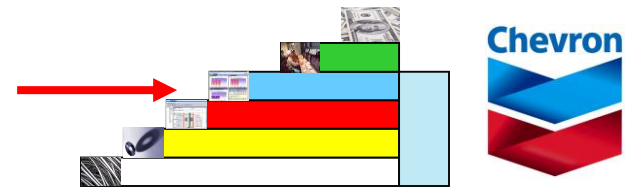


Data and Information Management



- Data captured once, stored once and leveraged for multiple work processes and applications – define Systems of Record for key data types
- Common data models used in all systems enable integration of data across functions
- Data ownership, roles, & responsibilities are clearly defined
 - Data quality is critical
- Prioritize most critical data types – we can't do everything at once
- Real time data and other data types need to be used in concert with other data to make decisions

Integrated Views of the Business



- An integrated view of major work processes cannot be obtained from function-specific applications
- People shouldn't need to learn every application that they need to see some data from
- Real-time data is one of the components of an integrated view
- Some key data types are needed at all organizational levels and can be readily rolled-up and drilled-down
- Many different views of data are valuable

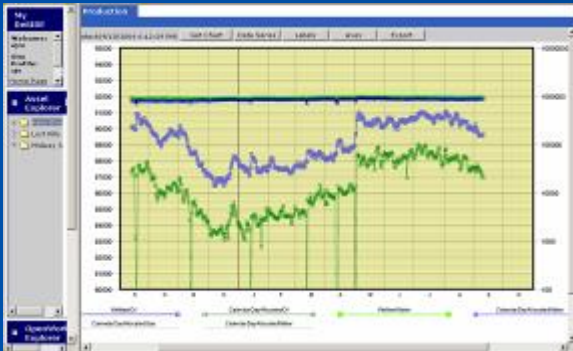
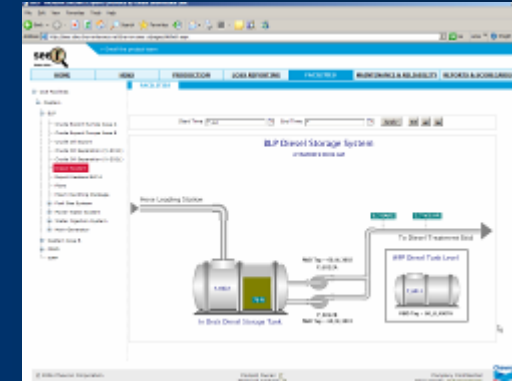
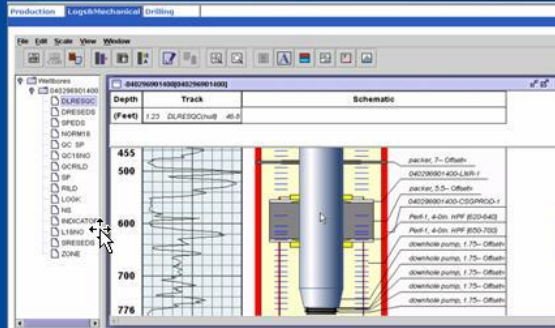
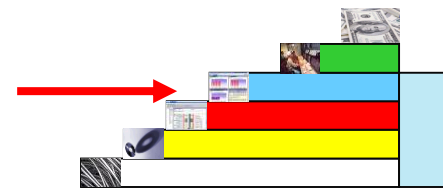
.....so what do we do ????

Utilize an Event Driven Architecture

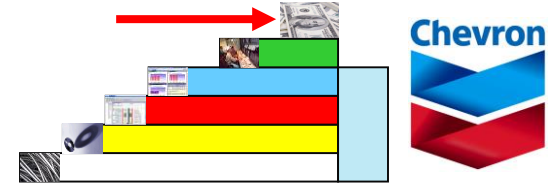


- Utilize a Service Oriented Architecture connecting data producers with information consumers
 - Service Orientation – exposing systems, applications & data as services enables more rapid integration across functional systems
 - Business Intelligence – A platform consisting of:
 - ▶ Data Warehousing of key analytical data
 - ▶ Time Series data feeds & analysis
- Chevron is piloting this approach in several locations with some initial success.....though we still have a long way to go

Integrated Views of the Business



What has Chevron Learned.....



- Work on things the business cares about
 - Understand your Business Strategy and focus IT efforts in areas that can make a bottom line impact
 - Continually recycle with Business Users to ensure that you've got it right
- Get your infrastructure sorted out – you can't focus on transformation if you are worrying about reliability & performance issues
- Standardize as many of your large applications as possible
- Implement consistent data models
- Deploy a Service Oriented Architecture to allow you to quickly pull together data from many sources
- Start small and build on successes

Questions



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