Improving Data Quality with Timely Electronic Data Delivery

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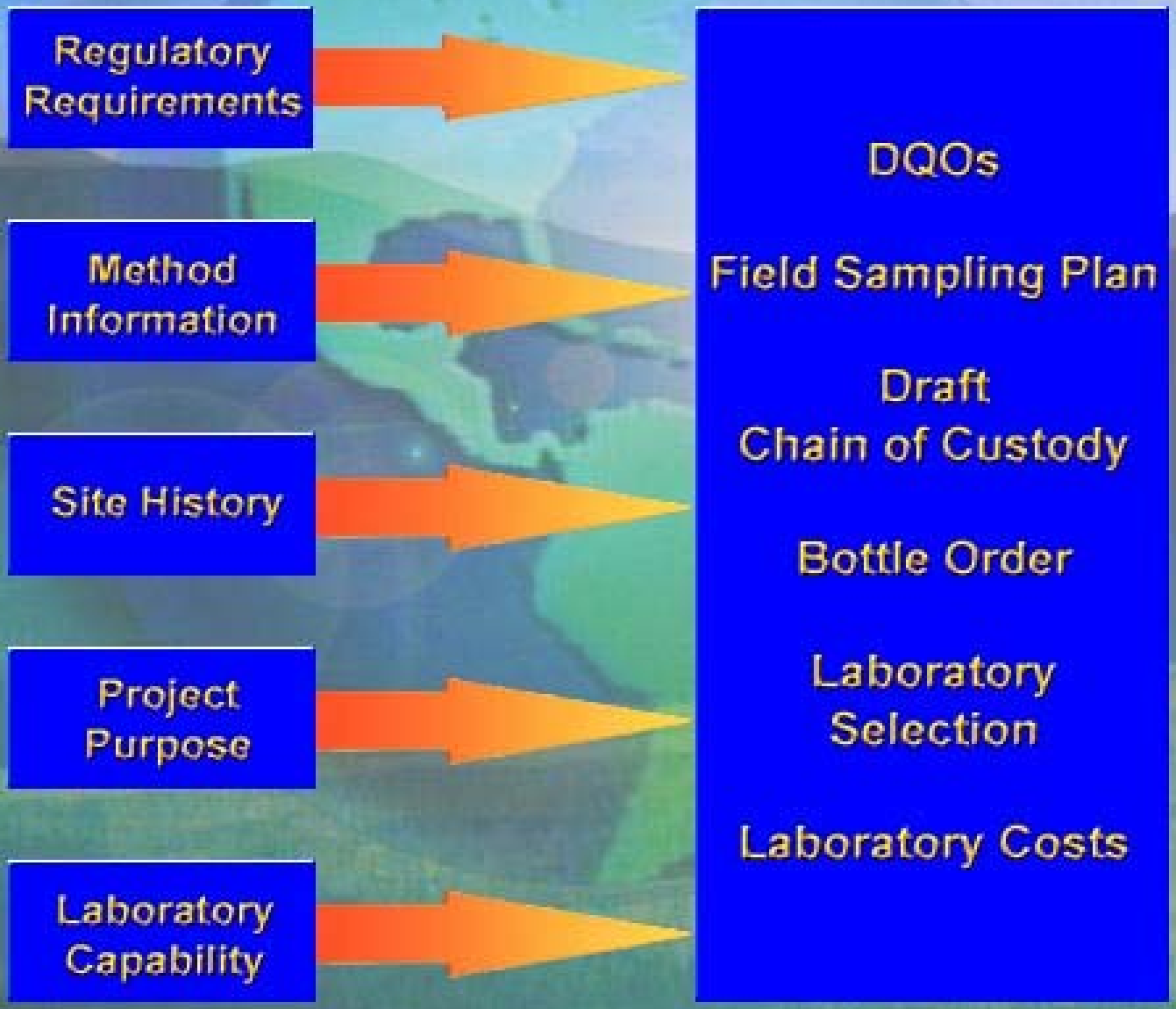
March 6, 2002

The value of data is in its use, not in its storage

Electronic Data Philosophy

- Data is entered once and used multiple times
- Each entity is only responsible for the data they create
- Electronic mechanisms are in place to verify data at time of submission/creation/collection allowing automatic checking against project requirements in real-time

Project Setup Activities



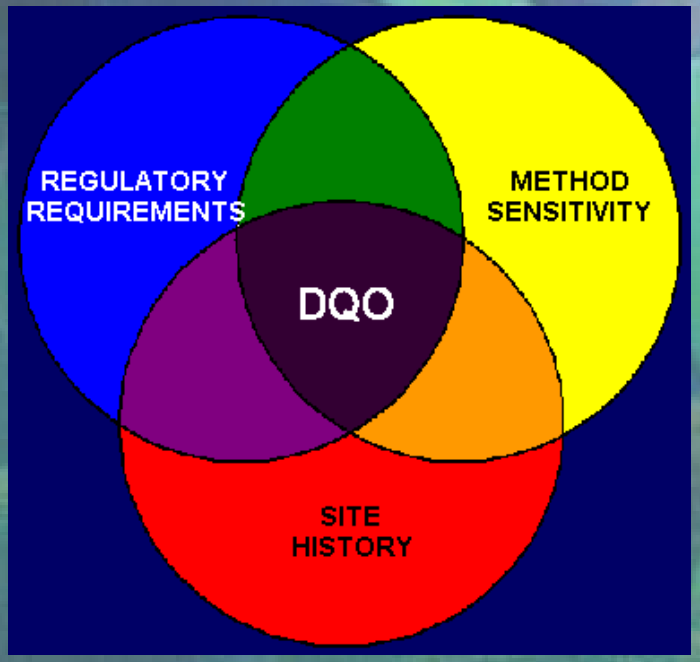
Data Transfer Standards

- Regulatory Requirements
- Method Information (example: SW-846)
- Laboratory Capability
- DQOs
- Field Sampling Plan
- Boring Logs
- Well Construction Logs

Data Transfer Standards
(con't)

- Chain of Custody
- Cooler Receipt
- Laboratory Report

Cradle-to-Grave Data Management Review Database



- Site History
- Regulatory Requirements
- Methods

Data Quality Objectives

Laboratory Selection

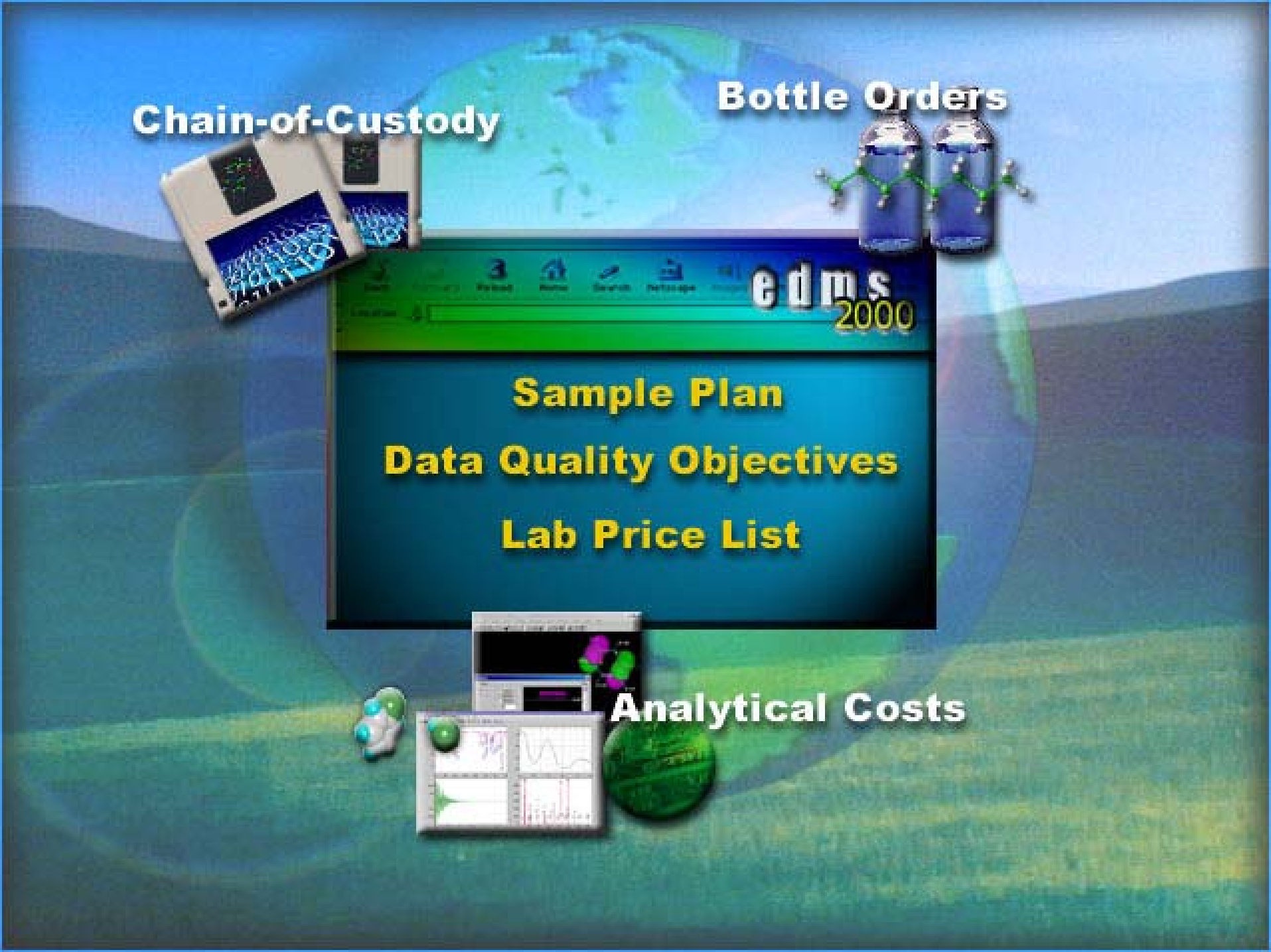
edms 2000

Regulations

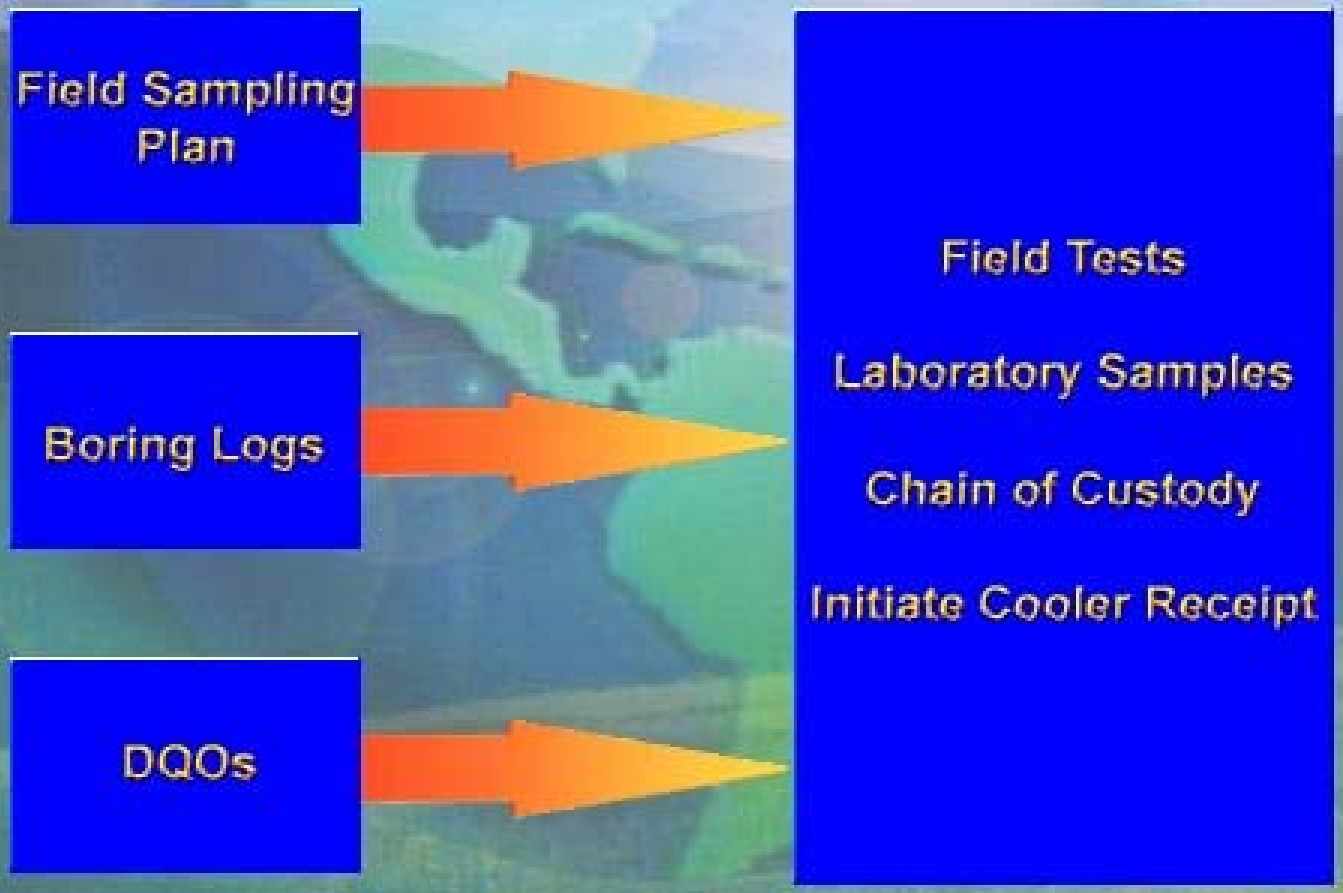
Site History

Lab Methods

Sampling Plan


Chain-of-Custody
Bottle Orders
edms 2000
Sample Plan
Data Quality Objectives
Lab Price List
Analytical Costs

Field to Lab Activities



Data Quality Improvements 1

- Statistics on time saved by being able to electronically verify field work against DQOs and Field Sampling Plan.
- Electronic review provides a mechanism by which the project chemist can quickly and easily verify that data being collected comply with project documents
- Through this process the project chemist is assured that the data collected wiill be usable for the project

Assess Sample Collection Activities

Final COC

Cooler Receipt

Cooler Temperatures

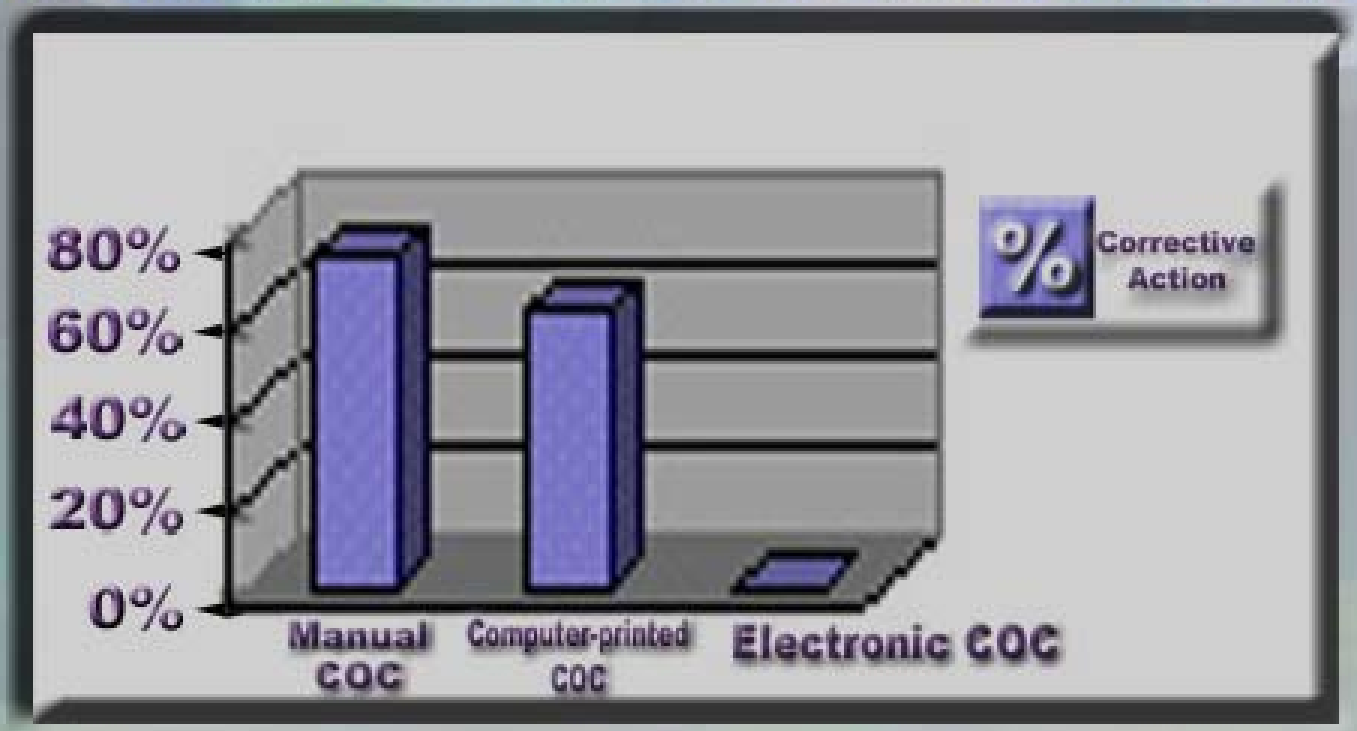
Method Substitutions

Breakage, etc.

Data Quality Improvements 2

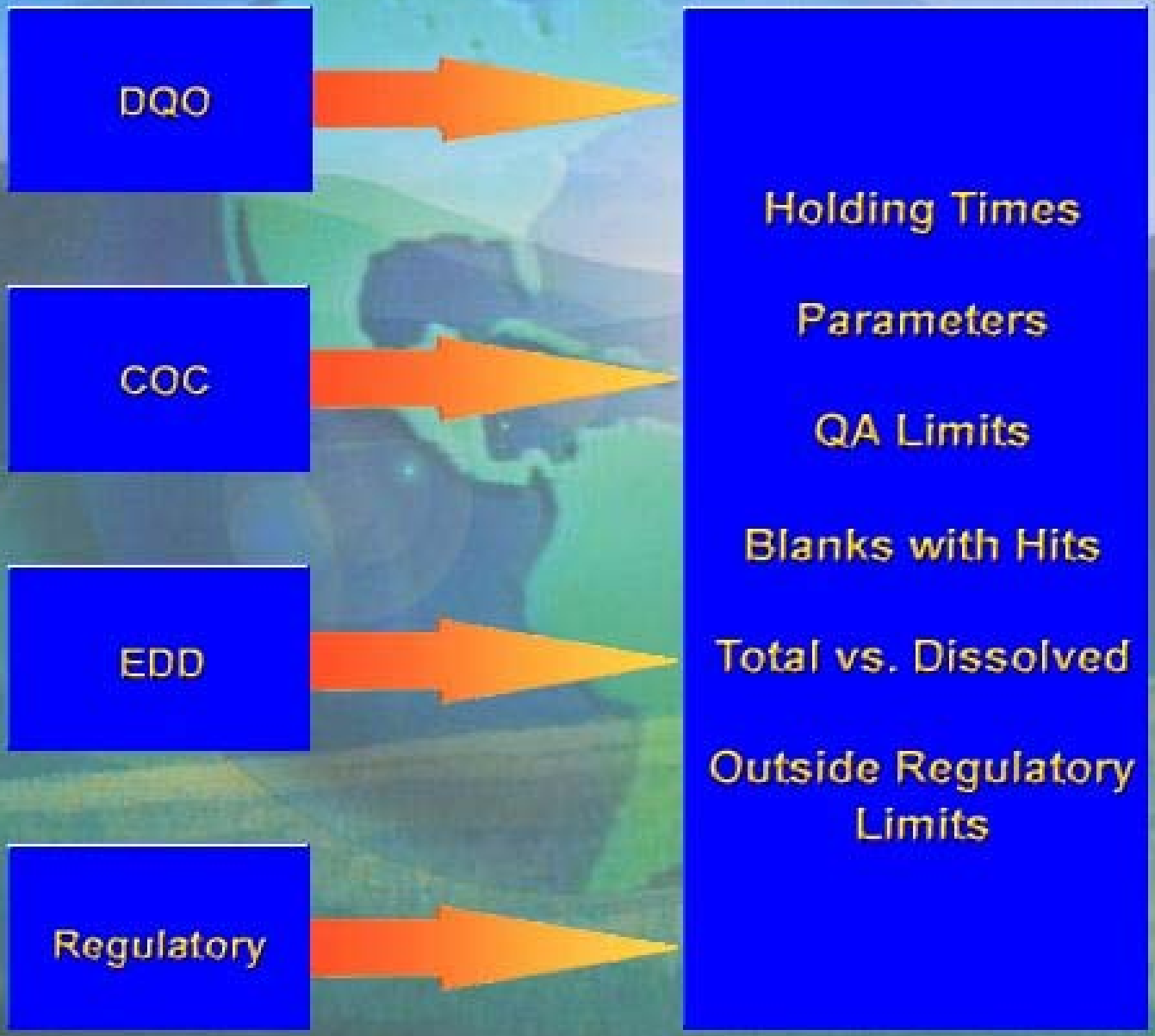
- Shipment status reviewed real-time
- Samples meet holding times
- Adequate and appropriate sample preservation
- Breakage addressed while crews are in the field

Percentage of Lab Reports Requiring Corrective Action



Laboratory Activities

Assess Data Quality



Data Quality Improvements 3

- Electronic assessment of clean-up, preparation and analytical method compliance
- Electronic assessment of analytical holding time compliance
- Electronic assessment of Quality Control and Quality Assurance
- Electronic assessment of method quality objectives (PARCC and sensitivity)
- Reduction in transcription errors

Assessing Data Usability

Sampling Plan

EDD

COC

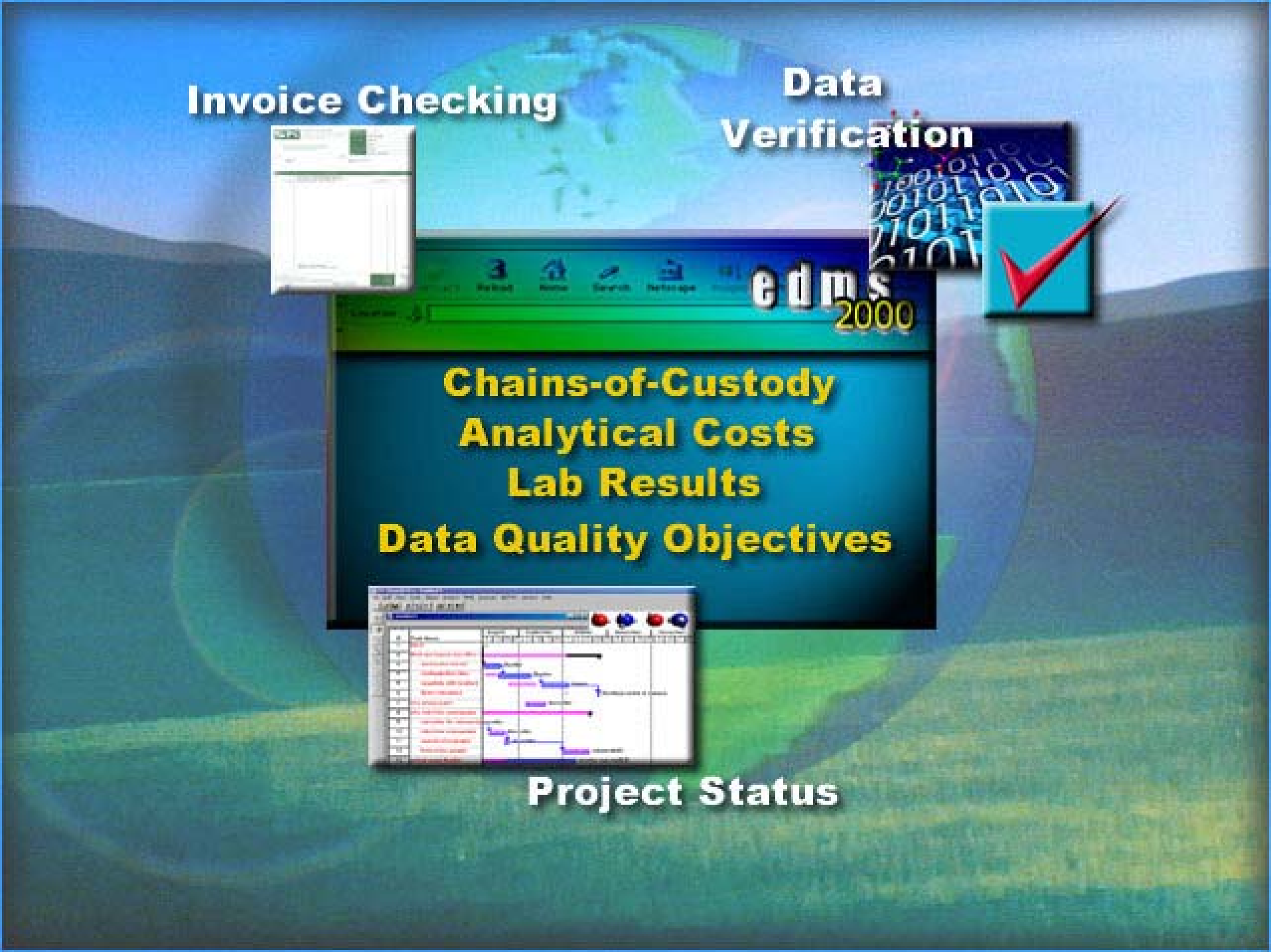
DQO

→

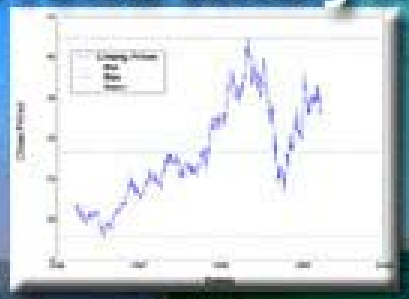
Completeness Check at End of Project

Data Usability Activities

- Do the Results Make Sense?
- Summarize QA/QC
- Write-up Data Assessment
- Add Validation Notes


Invoice Checking
Data Verification
edms 2000
Chains-of-Custody
Analytical Costs
Lab Results
Data Quality Objectives
Project Status

Trend Analysis



Project Completion

edms 2000

Regulations

Site History

Sampling Plan

Regulatory Reporting

Data Quality Objectives

Laboratory Selection

edms 2000

Regulations

Site History

Lab Methods

Sampling Plan

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