

Using Business Intelligence to Foster Information Openness

A Case Study in
EPA Emergency Management BI

Guident



Office of Emergency Management (OEM)



Mission

OEM's overall mission is to provide national leadership, advocacy, and assistance to prevent, prepare for, and respond to human health and environmental emergencies related to releases of oil and hazardous substances. OEM works with other EPA partners, federal agencies, state and local response agencies, and industry to:

- **Prevent** releases of hazardous chemicals and oil into the environment
- **Prepare** for environmental emergencies
- **Respond** to emergencies and removal actions to protect human health and the environment

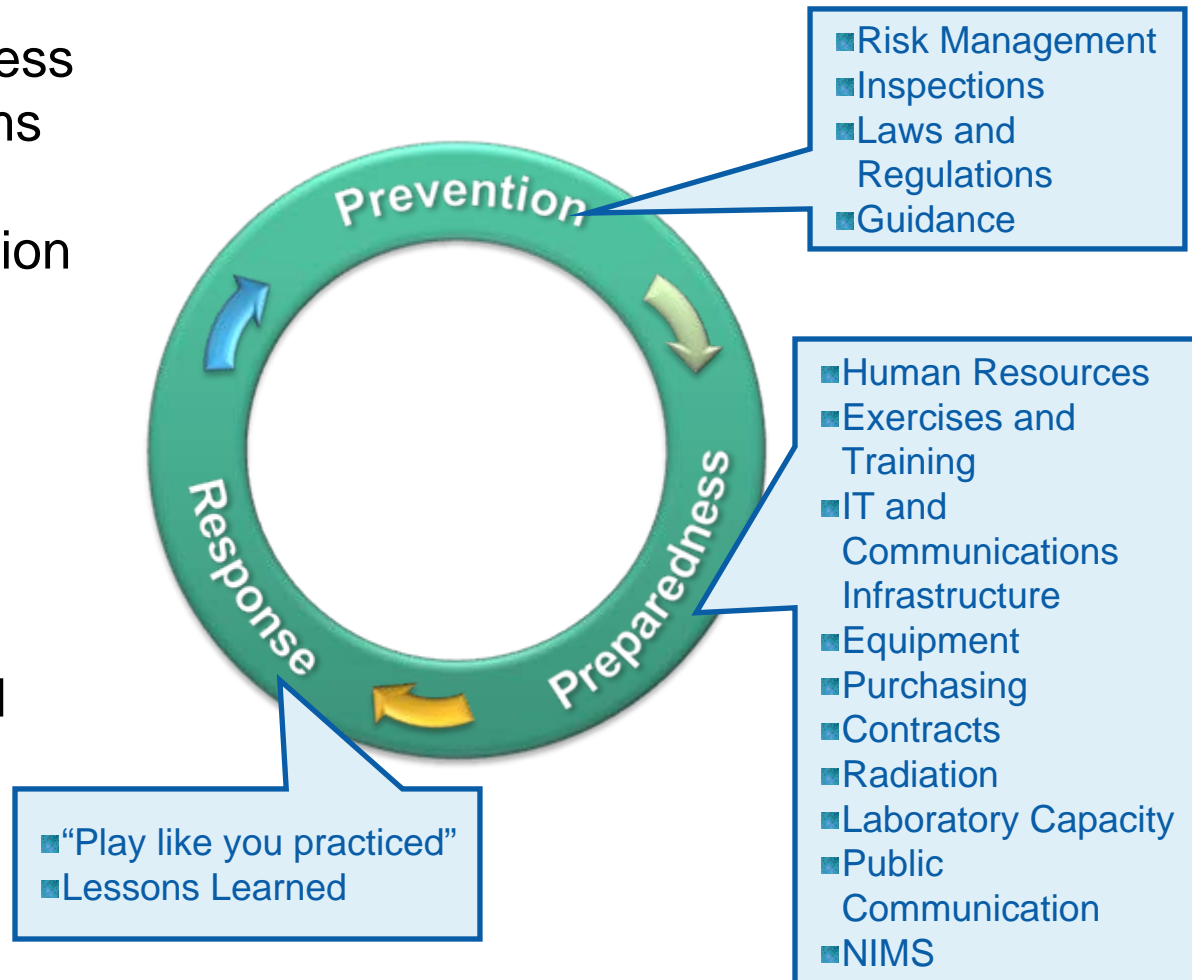
Resources

- Partnerships
- Regulatory and non-regulatory programs
 - policies, procedures, guidance
- Specialized technology and equipment
- Training and exercises

Emergency Management Program Business Challenge



- Prevention, Preparedness and Response programs have been traditionally separated by organization and pollutant.
- Truly linking these segments into a continuous Emergency Management Cycle requires integrated and accessible information.



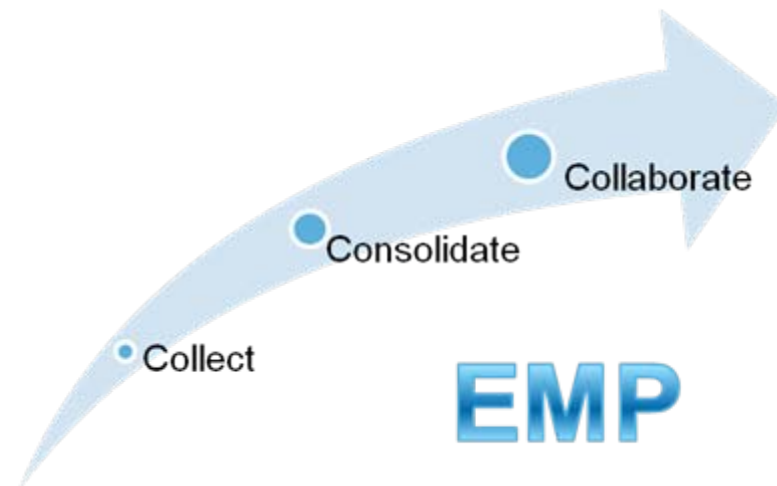
The Emergency Management Portal (EMP)



The EPA Emergency Management Portal is the central piece of EPA's Emergency Management architecture. When complete, it will tie together prevention, preparedness & response information to allow EPA's Emergency Management community access to the information they need to respond to and efficiently store data from large and small sites.

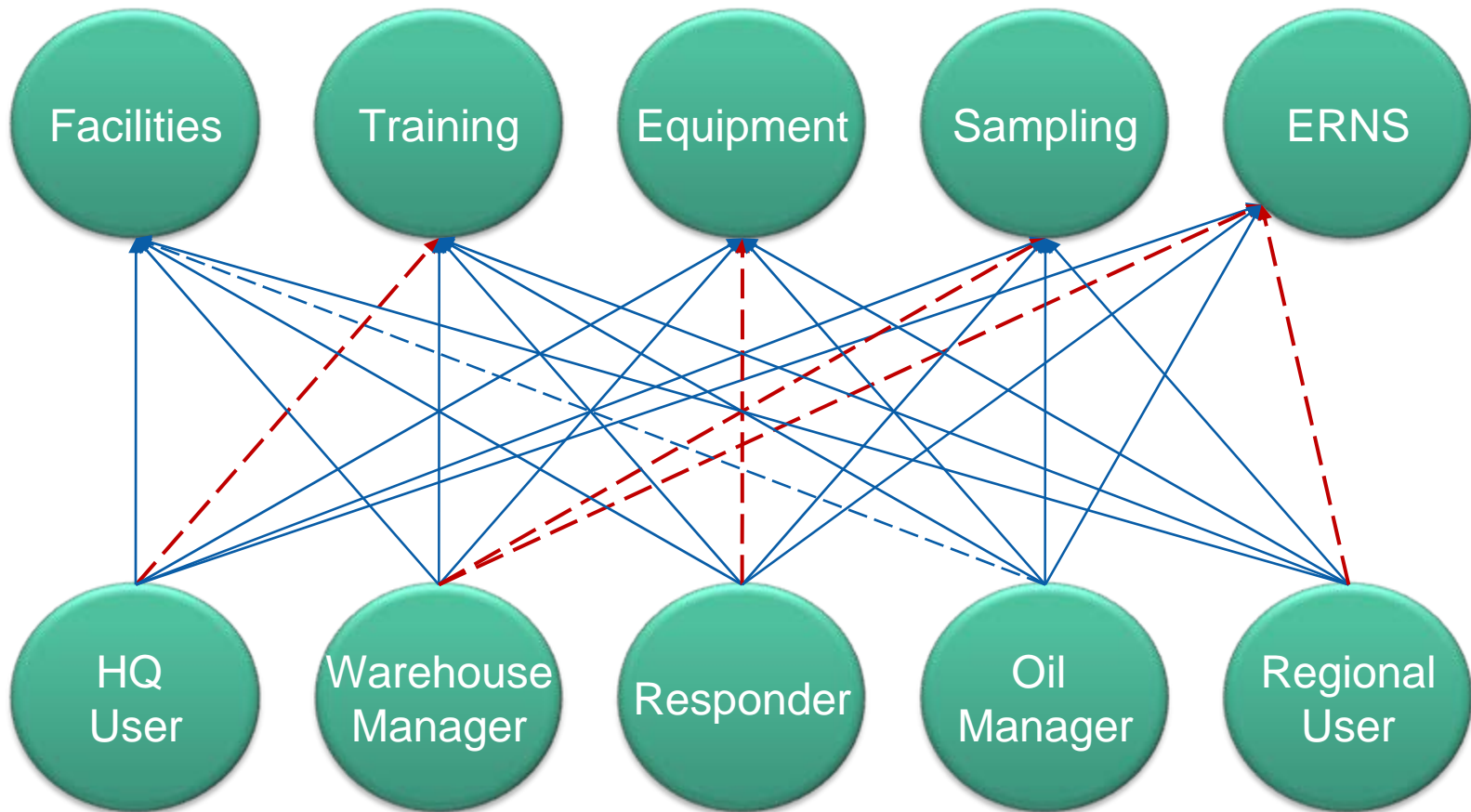
Core Data Sets:

- Site & Data Management
- Facility Status Information
 - Inspections and spills
- Resources
 - People (are they prepared?)
 - Equipment (supplies and gaps)
- Technical Information
 - State-of-art decon practices
 - Health and safety
 - Science and technology



Collect, Consolidate, Collaborate

Immature Reporting Environment



Data Delivery and Analysis Challenges



- Manual and costly
- Limited access
- Disparate systems
- IT support dependent
- Inconsistent / missing data
- Regional software / data differences

Data Delivery and Analysis Solution



Emergency Management Business Intelligence (EMBI)

- Consolidates the data
- Transforms for analysis
- Provides ad-hoc reporting and trending
- Fosters information sharing
- Facilitates effective decision making



Prevention
Preparedness
Response

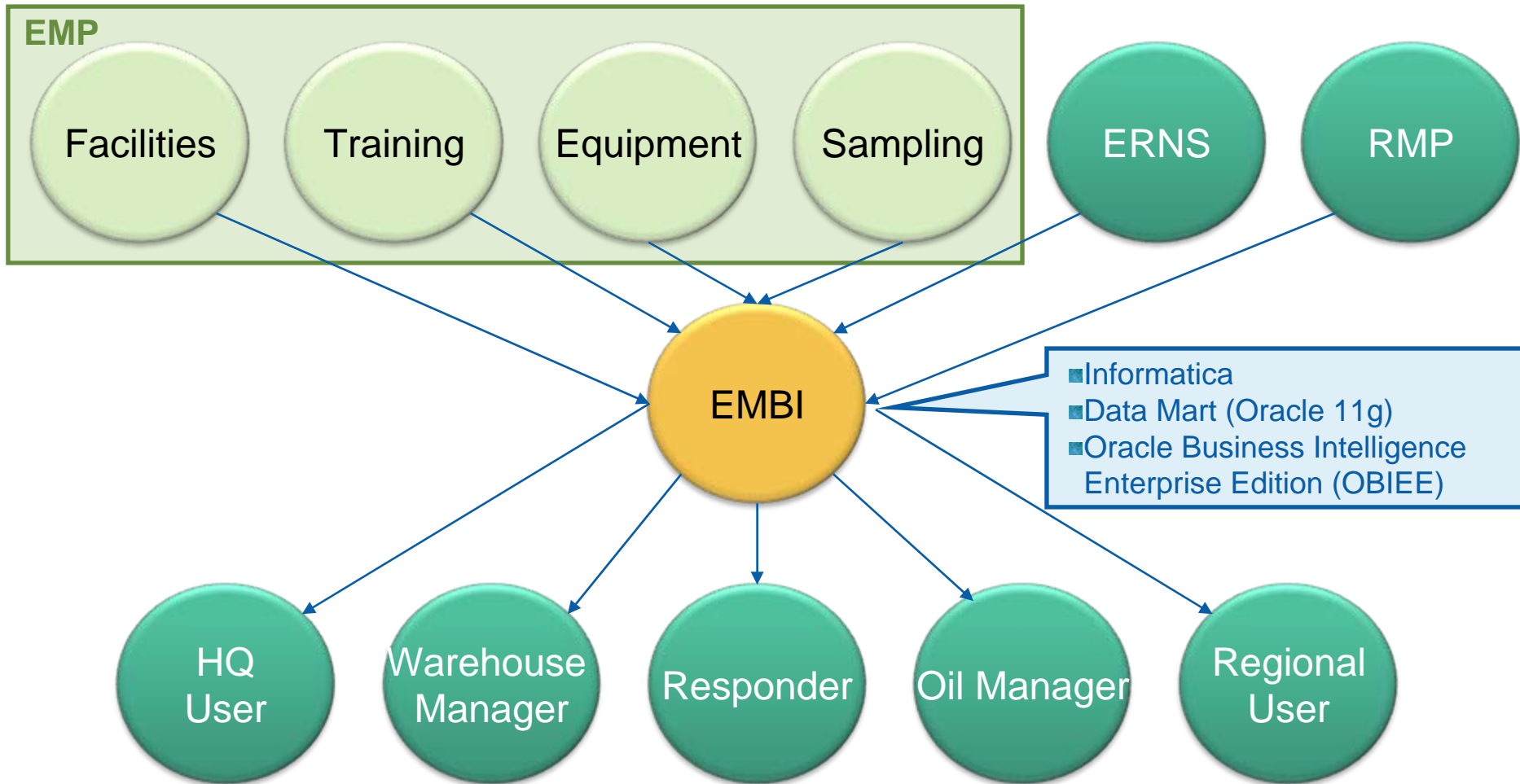


INFORMATION

EPA's Emergency
Management
Community

Analyze, Discover, Decide

Architected Reporting Environment



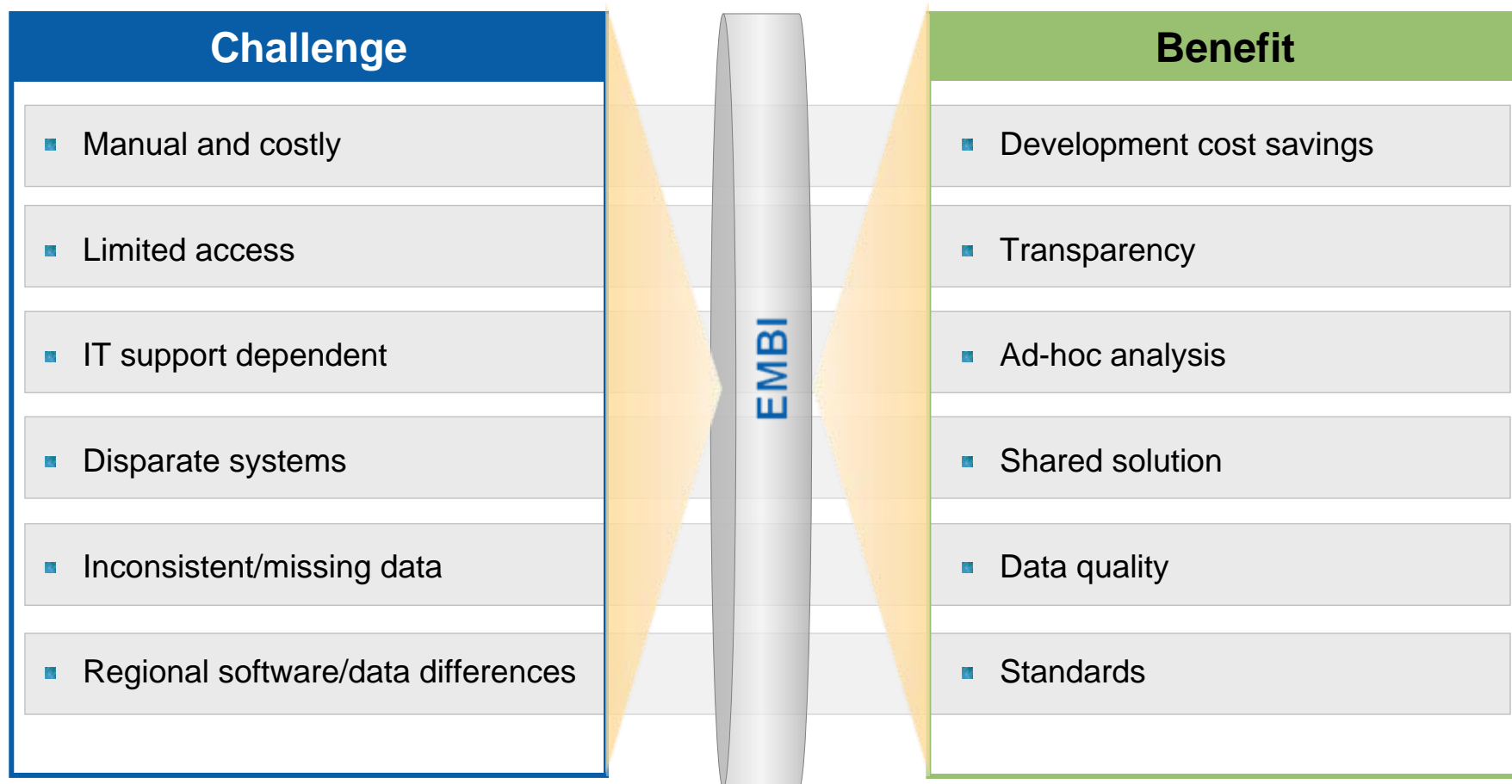
EMBI Technical Benefits

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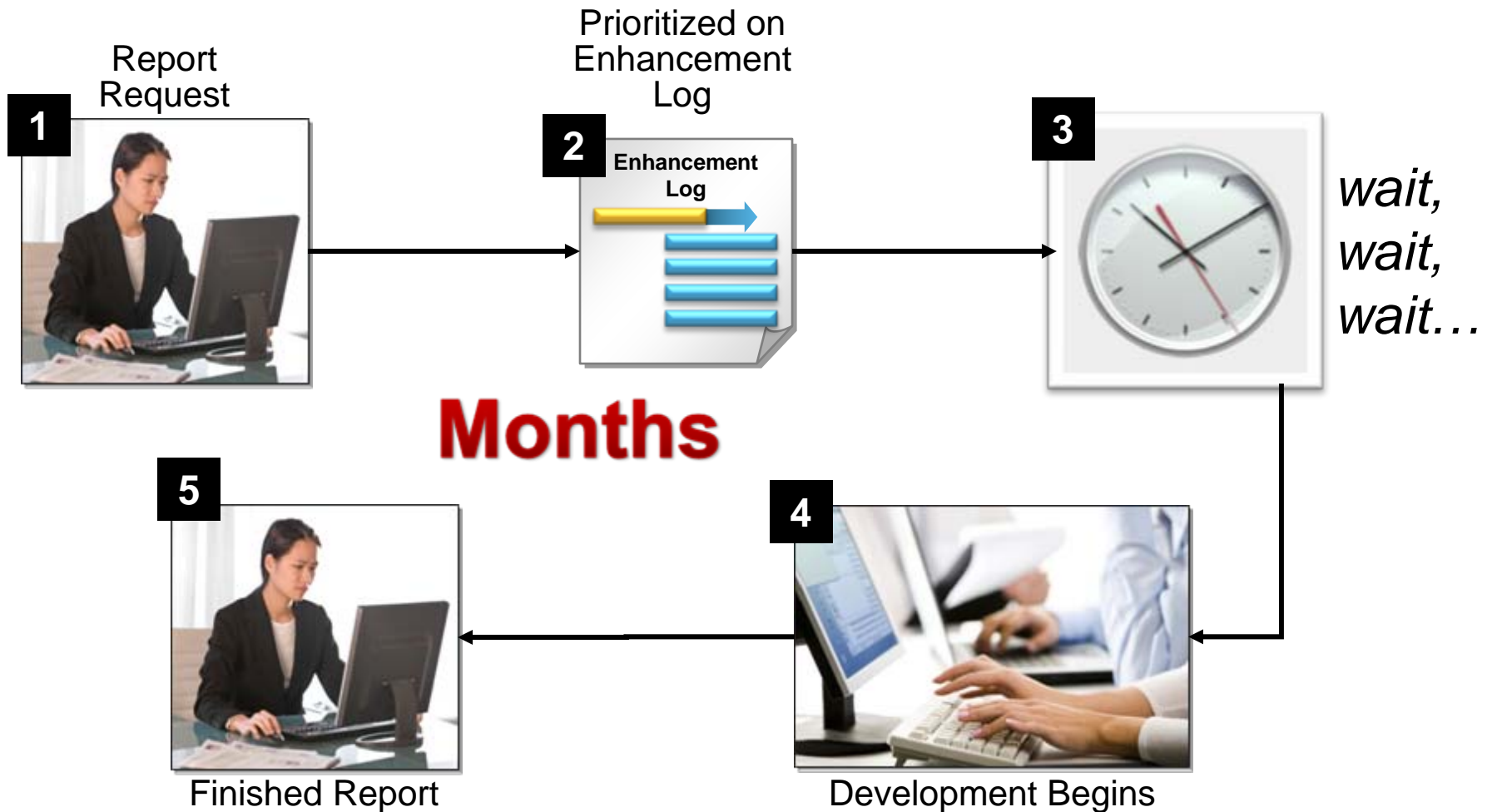
For Conference Purposes Only

EMBI's Technical Benefits



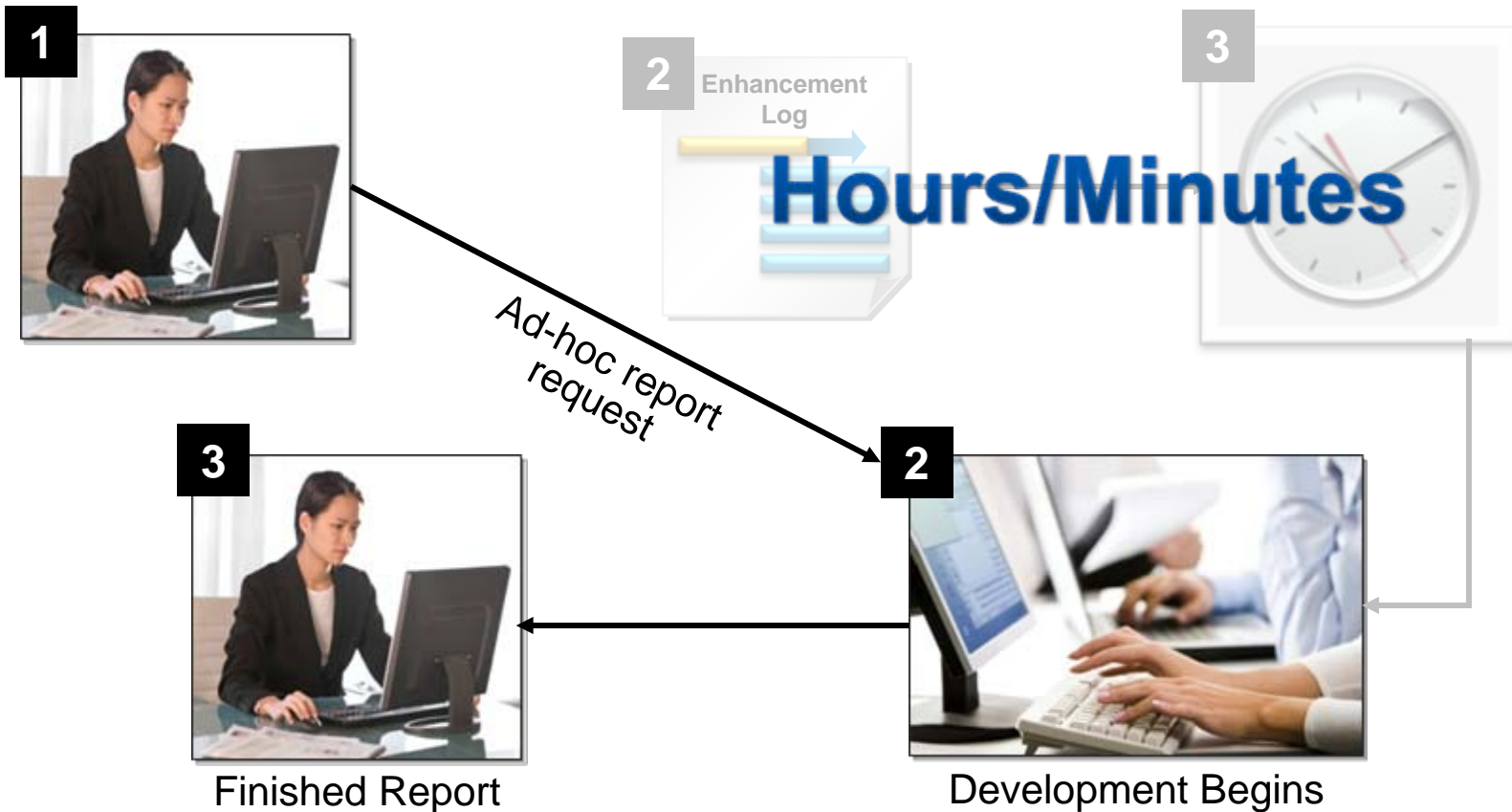
EMBI – Development Cost Savings

Standard Report Development Process



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Standard Report Development Process



EMBI – Data Quality and Standards



EMBI helps to easily identify data quality issues as a result of:

- Regional differences
- Data entry issues
- Missing data
- Non-standard field values

And can supply feedback to the source systems for correction

**All the
same
course!!!**

Course Name	People Trained
ICS 100	15
ICS – 100	40
ICS-100 Basic	12
Region 2 ICS 100	7

EMBI in Support of EPA's Mission

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Prevention – Are We Effective?

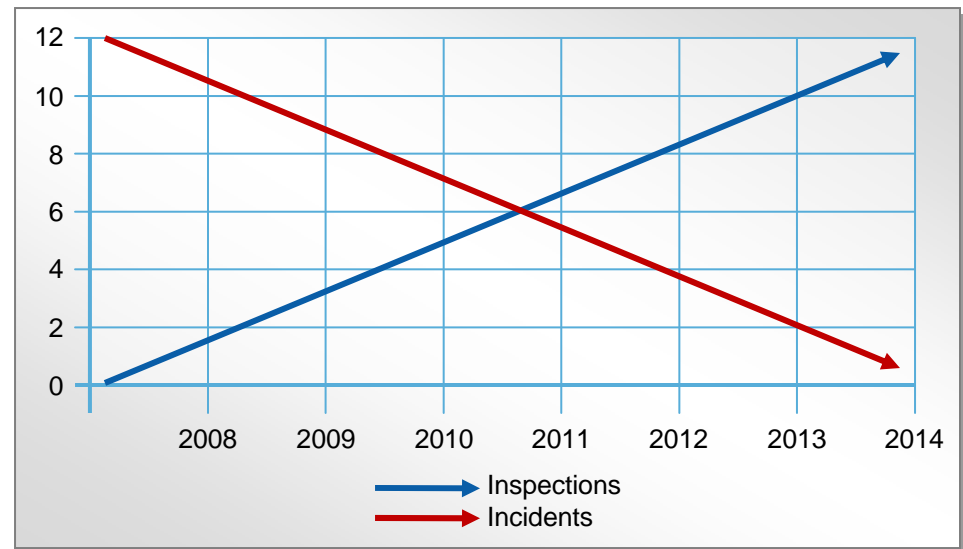


EPA's strategy for prevention consists of regulations, guidance, non-regulatory support and inspections, but.....is it working?

Integrating data with EMBI allows us to find out what actions lead to fewer spills

- More inspections
- Better guidance
- Public transparency
- Stronger partnerships

Each change to the chemical and oil programs can be compared against spills and other accidents to guide program decisions.



Preparedness – Are We Ready To Respond?



EPA has invested millions of dollars into its response programs so that we are ready for local and national emergencies. Professional responders (OSCs) and volunteers (RSCs) are continuously trained and equipment is purchased and maintained, but...can we measure our preparedness?

EMBI could provide a “Readiness Quotient” based on measures of:

- Responders: Training and Experience
- Equipment: Quantity and Availability



Emergency Management - Field Readiness Module
Key Leadership Position Depth Report on Region: "Region 3"

The Key Leadership Positions Depth Drill Down Report on Region is the result of drilling down from the Key Leadership Positions Depth Report, providing further details for the Personnel on Region 3.
File Loc: #110218 8/13/11 06

Last Name	First Name	Organization	Office Region Name	Email	Office Phone	Mobile Phone	Experience Status	Training Completed Date
Aguirre	Marcos A.	W3MCDOPERS	Region 3	Aguirre Marcos@epa.gov			EPA Incident Commander	07/10/08
Arnesen	John A.	W3MPE	Region 3	Arnesen John@epa.gov	215-814-3127	215-316-1291	EPA Logistics Section Chief	07/28/07
Banta	Wylee P.	W3MCDOPERS	Region 3	Banta Wylee@epa.gov			EPA Operations Section Chief	09/10/08
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Dovine	Jack L.	W3MCDOPERS	Region 3	Dovine Jack@epa.gov			EPA Operations Unit Leader	09/10/08
Dutka	Heen L.	W3MCDOPERS	Region 3	Dutka Heen@epa.gov			EPA Information Officer	09/10/08

Response – Can We Manage the Data?



Large responses generate large volumes of data that must be turned into information that allows everyone involved (Field Responders, Regional and HQ management, general public) to make better decisions. EMP can store the data, but.....can we turn it into useable, shareable information?

EMBI provides:

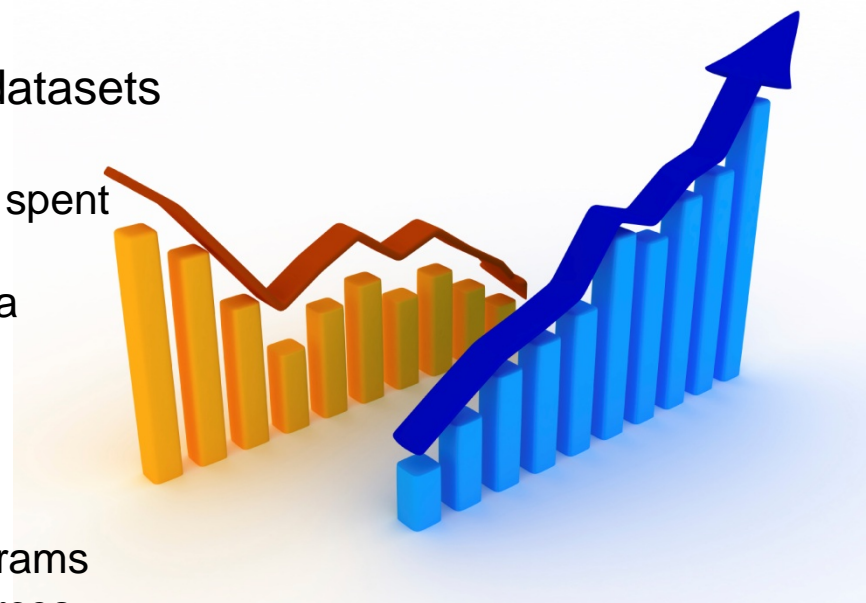
- Comparisons to thresholds
- Visualization
- Rapid analysis and sharing
- Flexible reporting



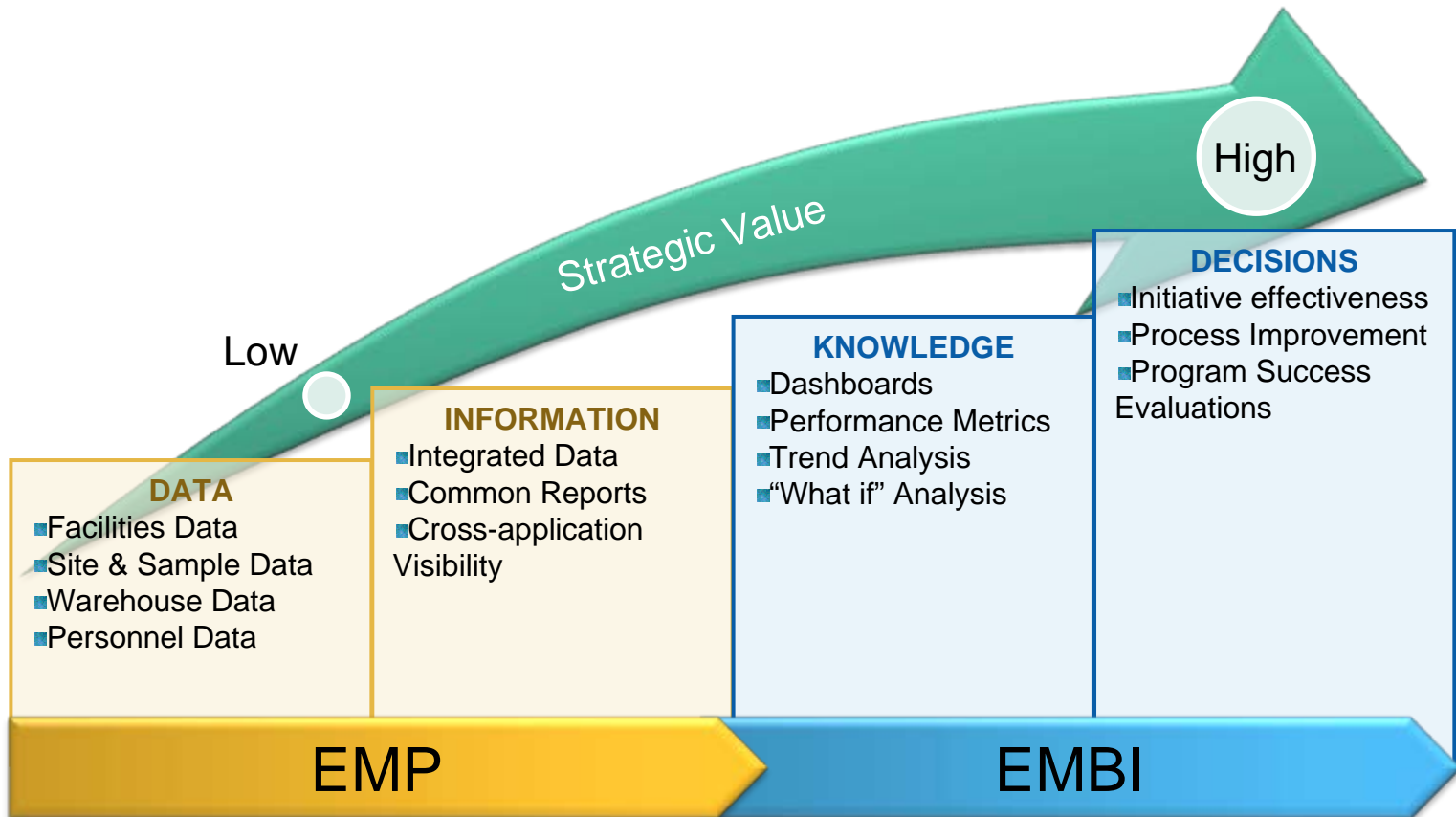
Program Effectiveness and Planning



- All government programs must demonstrate their effectiveness; but more than that, we must be able to use data to plan for the future success of Emergency Management.
- EMBI can be used to mine and combine datasets
- Program Measures
 - Human exposure avoided per million dollars spent
 - Acres protected per million dollars spent
 - Combine data from sites with population data
- Program Planning
 - Removal trends
 - Contaminants, Types of sites
 - Resources spent
 - Redirection of regulatory and guidance programs
 - Redirection of equipment and training resources



Information Intelligence Maturity



Contact Information



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Q&A

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