

Oil & Gas, the move from documents to data

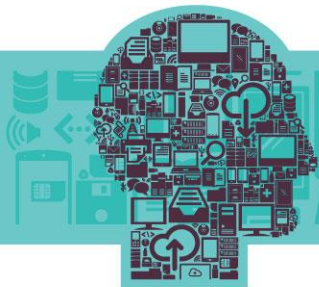


Information Weather Report



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Data vs. Documents



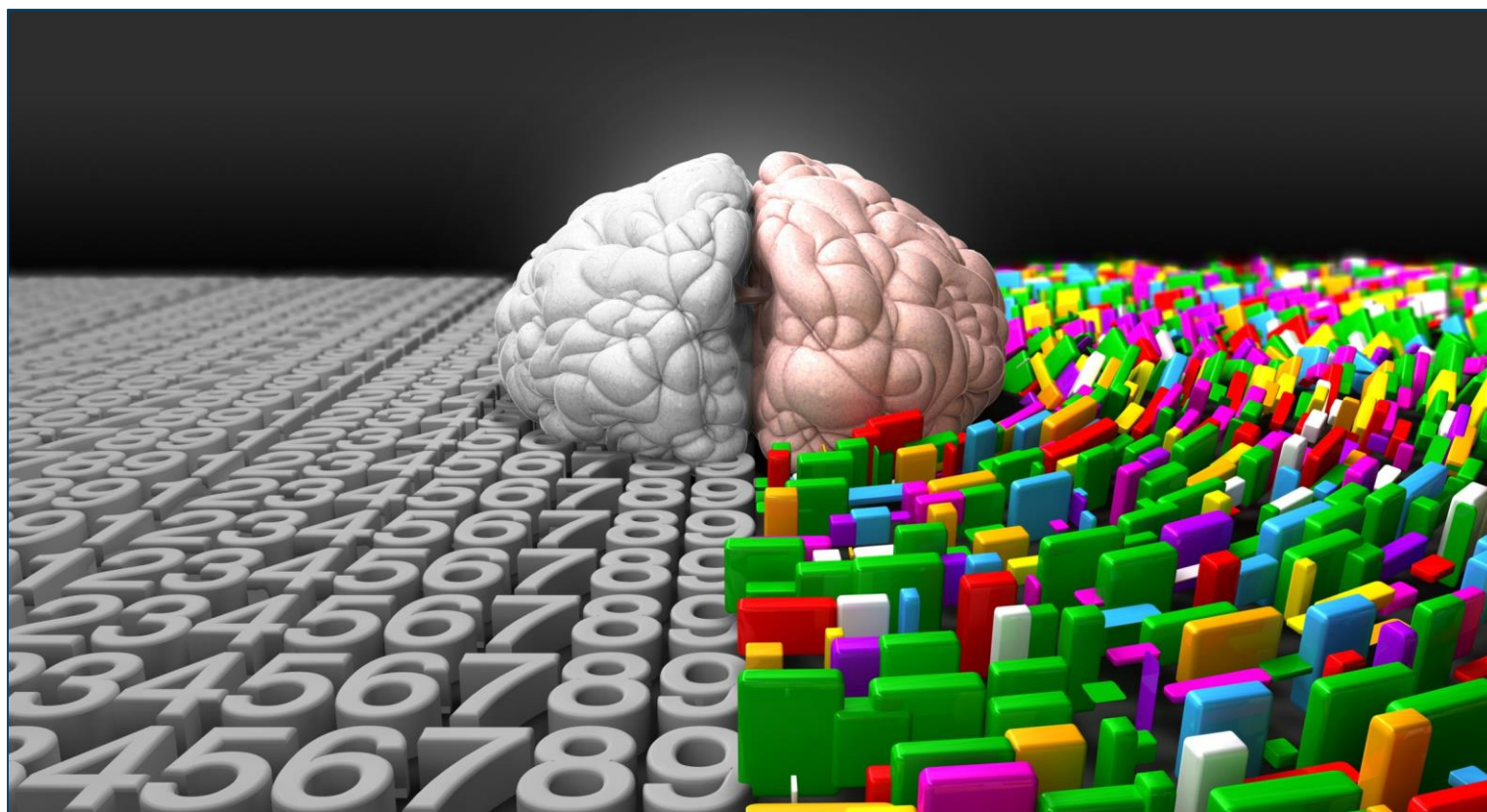
© [Curraheeshutter](#) | [Dreamstime.com](#) - Pressure Transmitter In Oil And Gas Process Photo



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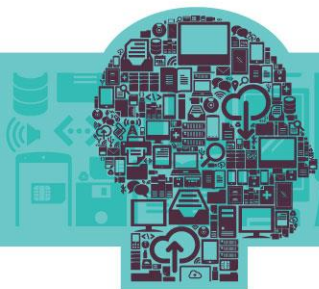
Two views of the World?



© Albund | Dreamstime.com - Left Brain & Right Brain Photo



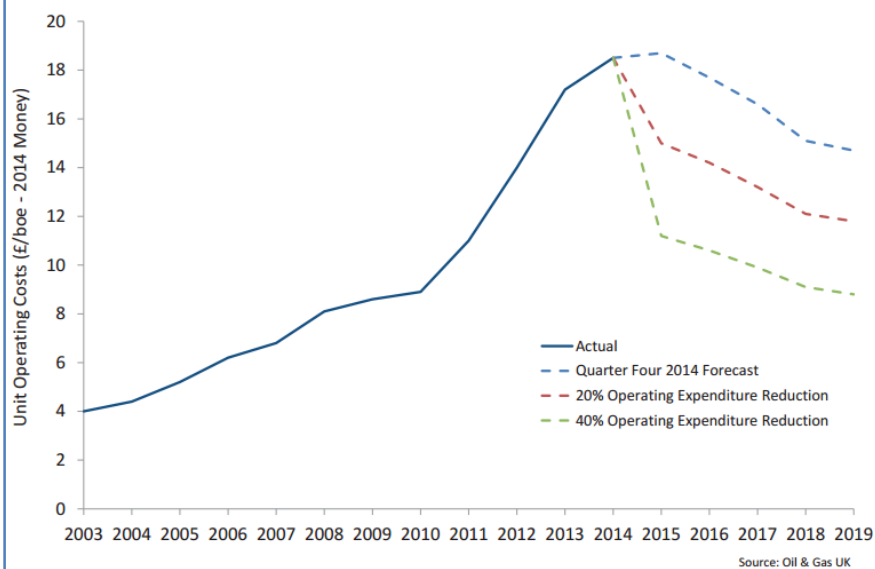
Business Context



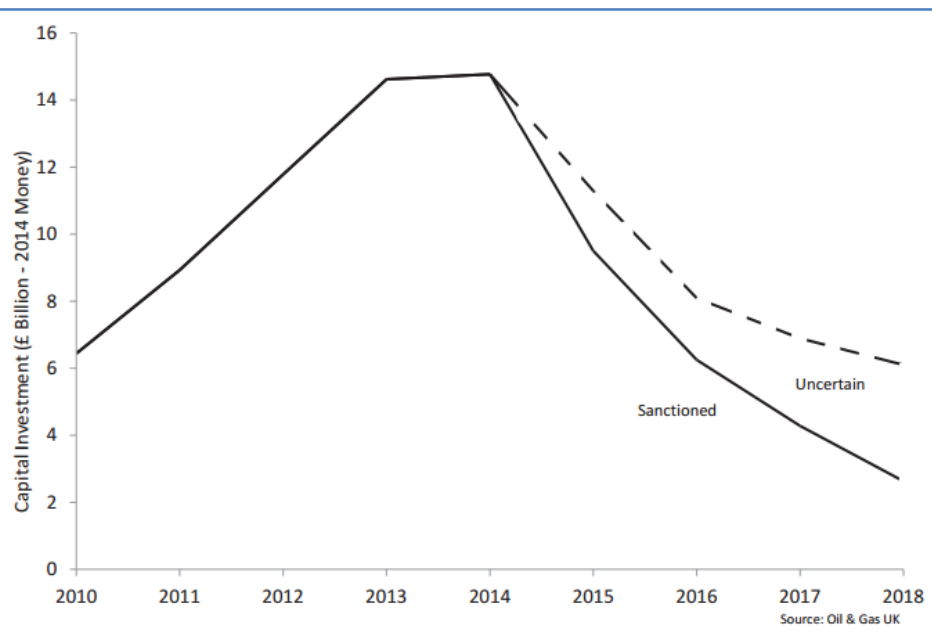
The Challenge / UK example

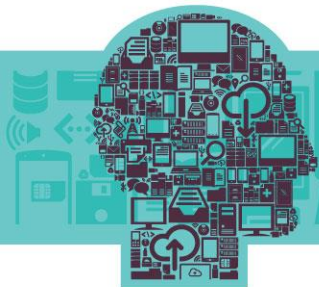
- Business issues** Major cost increases, oil price collapse, oil harder to find
Deep water, ultra high pressure / temperature, small pools
Asset integrity & legacy challenges

Figure 35: Average Unit Operating Costs



Source: Oil & Gas UK Activity Survey 2015 published Feb 2015





Wood Review 2014 - recommendations

“We’ve committed to implementing all of Sir Ian Wood’s recommendations to help maximise recovery of North Sea oil and gas”

Michael Fallon, UK Energy Minister, 2014



- Regulatory powers to implement: Transparency and **access to Data**
- Regulator Action (9): Facilitate the appropriate **sharing of information**
- Regulator Action (11): ensure licensees meet their obligations for **retention and release of data**
- Regulator Action (12): promote a sustainable, unified approach to the management of UK petroleum related **geoscience information**
- Regulator Action (14): Operators should provide **asset performance data** on a timely basis
(no industry wide definition of key metrics / shared knowledge / common terminology)
- Technology Strategy: establish technology theme groups

OPPORTUNITY

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Working Groups / UK example



People



Production
Efficiency



Standards &
Simplification



Logistics &
Maintenance

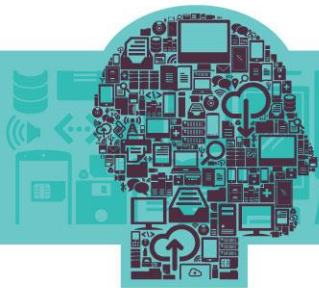


Late-Life Extension
& Decommissioning



HUGE Prize

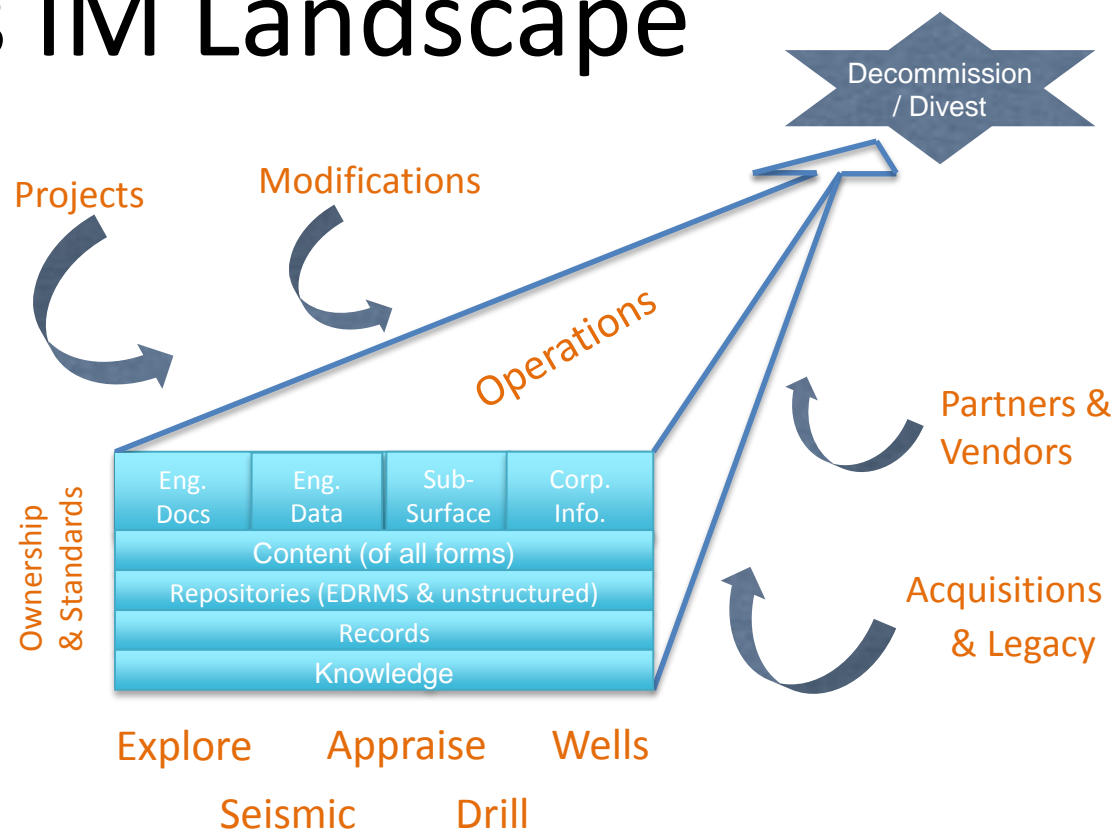
- Look outside the industry
- Example: Crossrail (London) £14.7bn project
- Saving 20% of total project cost
- How? Integrated IM and BIM



What is Oil & Gas IM?



Oil & Gas IM Landscape



Provide the right information to the right people at the right time

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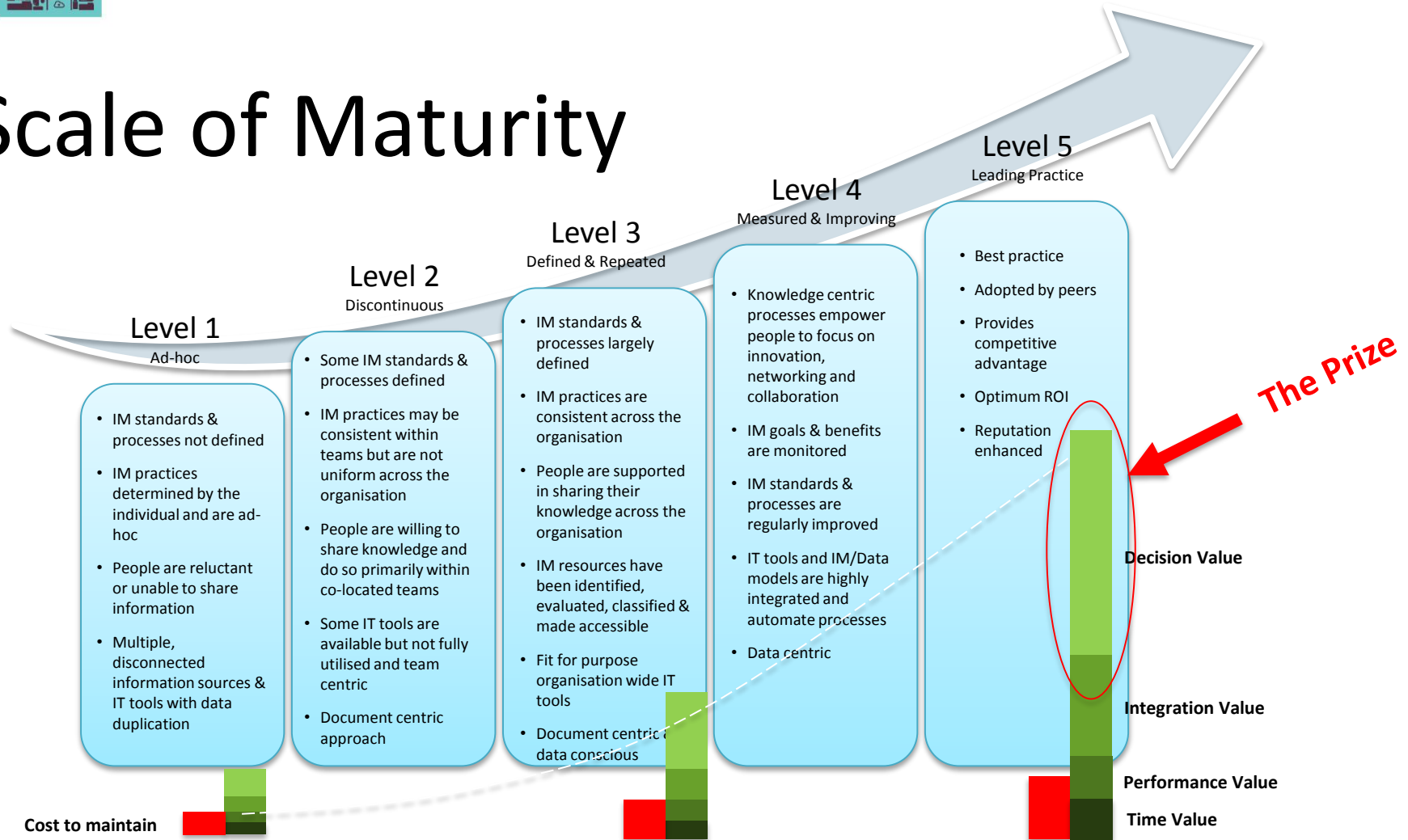


THE **aiim** CONFERENCE 2015

Business Areas/Percentage of participants providing the service	Dept. does not exist	We do not service dept.	Seismic Data Mgmt.	Engineer Data Mgmt.	Wells Data Mgmt.	Doc Control	Doc Mgmt.	Records Mgmt.	Library Service	Intranet Content Mgmt.	BMS Content Mgmt.
Marketing	36	27	0	0	0	9	36	18	18	9	9
Office Services	9	36	0	0	0	9	45	27	18	27	18
Quality	9	9	0	0	0	36	64	27	36	18	45
Business Development	36	18	18	9	18	9	45	18	27	0	9
Human Resources (HR)	0	27	0	0	0	9	45	55	36	27	36
Modification Engineering	9	0	0	27	0	73	73	64	36	18	36
Materials	0	27	0	9	0	45	64	45	36	18	45
Finance	0	27	0	0	0	9	55	55	36	27	27
Asset Integrity	18	9	0	18	0	64	73	36	45	9	55
Producing Assets	36	0	9	27	9	64	64	36	36	9	36
Well Integrity Management Services	18	18	9	18	36	36	64	45	36	9	45
Subsurface	9	27	55	0	45	36	55	55	45	27	45
Operations	0	9	0	27	9	82	82	82	55	27	55
Projects	0	0	9	27	18	100	100	73	55	27	55
Drilling, Completions and Well Services	0	36	9	0	36	27	45	55	36	27	45
Production	9	36	0	9	0	36	45	45	36	18	36
Well Operations	9	27	0	9	27	45	45	45	27	9	36
Health, Safety and the Environment (HSE)	0	18	0	0	9	55	64	45	45	18	45
Logistics	9	27	0	0	0	18	55	45	45	18	45
Commercial	9	18	0	0	0	27	64	45	45	18	45
Contracts	9	18	0	0	0	9	45	45	36	18	36
Decommissioning	18	18	9	9	18	55	45	45	45	9	18
Legal	0	18	0	0	0	9	45	64	36	18	45
Procurement	9	18	0	0	0	18	55	36	36	18	45
Information Systems (IS)	0	27	0	0	0	18	45	45	45	27	45
Board of Directors	0	55	0	0	0	9	36	27	18	18	27

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Scale of Maturity





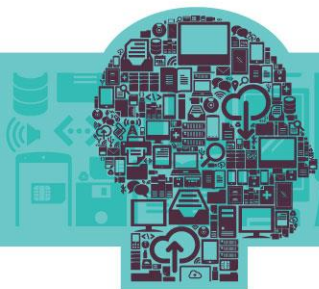
The Business Situation

Summary

1. Oil & Gas 'perfect storm'
2. Boardroom focus; Production, Cost, Risk
3. IM can make a material difference, or it could make things worse
4. Move from IM governance approach to **value creation & analytics**

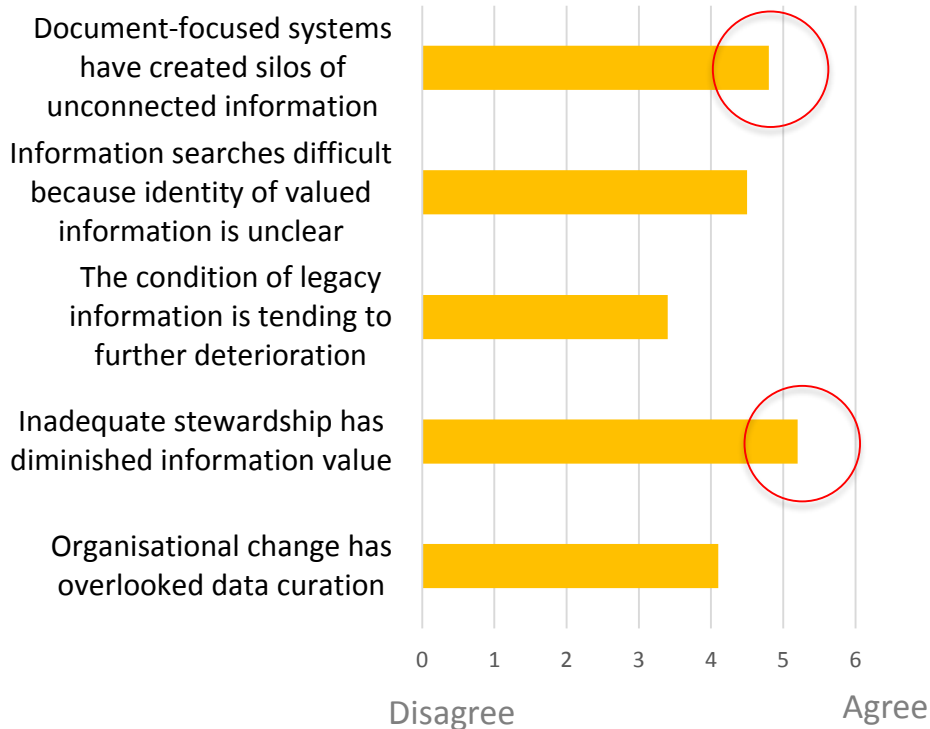


Tackling legacy information

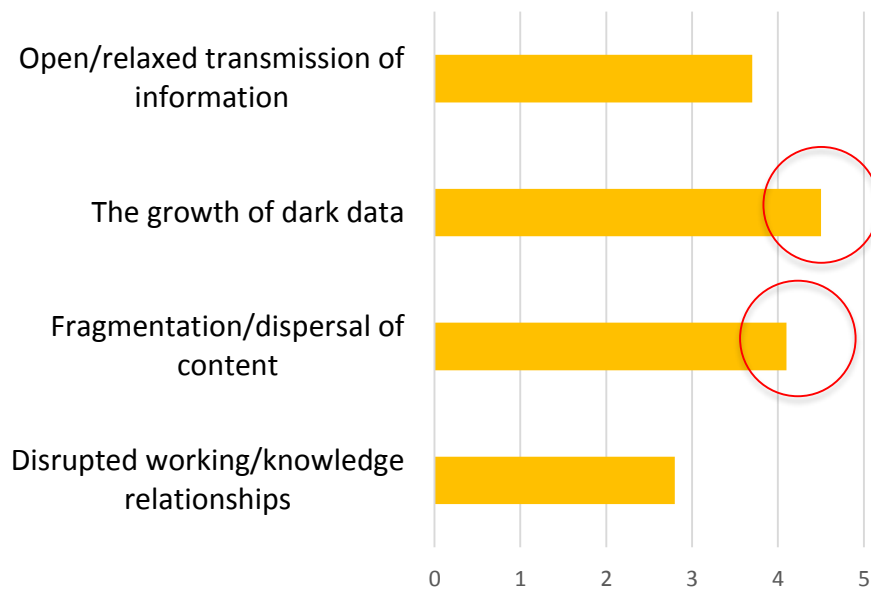


The Legacy

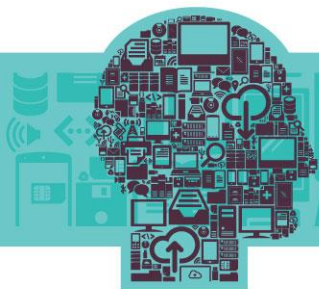
Today in oil & gas



The move from paper to digital has meant

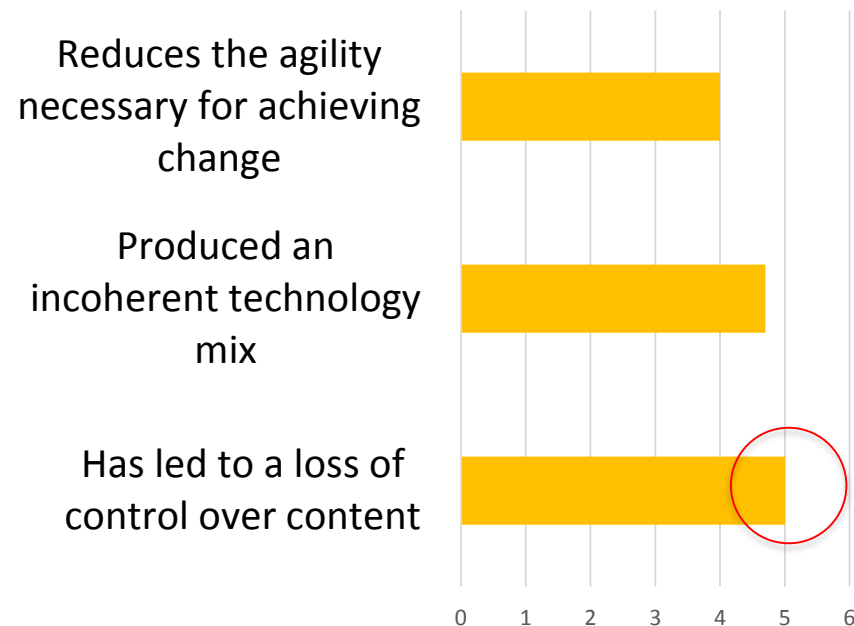


n=11 AIIM Oil & Gas SIG Jan 2015

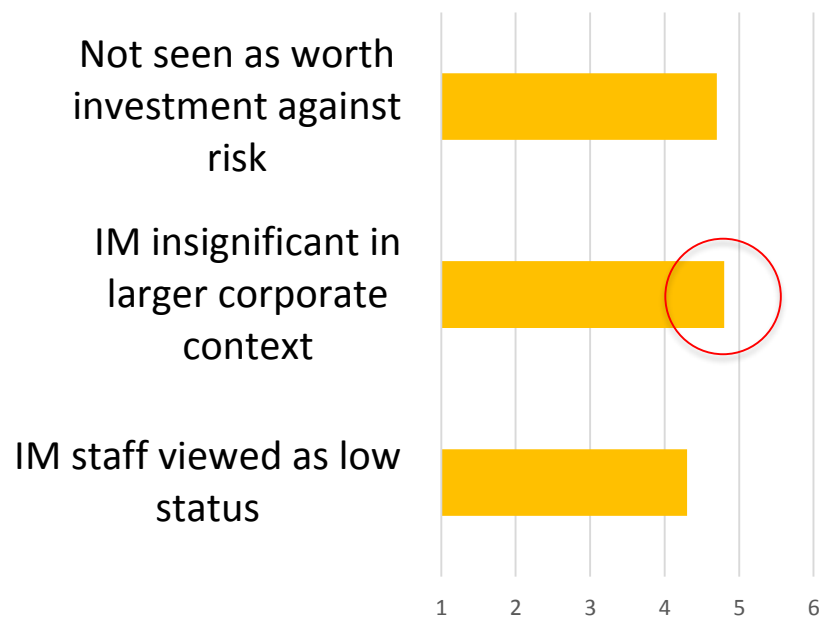


Corporate management

Outsourced IM (to EPC)



Perceptions of value





THE DATA ICEBERG

LOCKHEED MARTIN

80% OF ALL DATA IS HIDDEN FROM VIEW.
Business can avoid shipwreck by bringing it
to the surface.

WHAT IS BIG DATA?

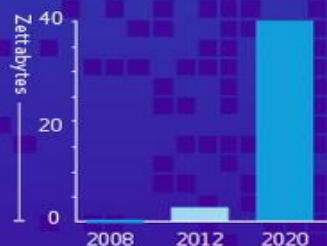
Large, complex, difficult to process sets of data coming from multiple sources, increasing exponentially and difficult to extract value from without the right methods and tools of analysis

SO WHAT'S THE PROBLEM?

THE FOUR V's OF BIG DATA

VOLUME

It grows exponentially.



VELOCITY

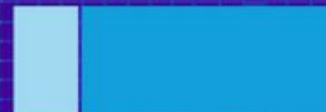
50-70% of an organisation's data is ROT*.



* ROT: Redundant, Obsolete or Trivial

VARIETY

It's messy, chaotic, diverse, loose.



80% of the digital data captured in the last 2 years is unstructured.

VERACITY

Is it reliable?
Is it predictable?



1 in 3 business leaders don't trust the information they use to make decisions.



Options

- 1. Think happy thoughts, put it off or leave it to someone else**
 - Ignore it. Cheap but has issues and risks
- 2. Work on it ‘in the background’, without support (or thanks)**
 - Farm it, govern it, (may fail)
- 3. Tackle it as project with business support**
 - Stakeholders with power
 - Combine manual & technical approaches
 - Focus on business performance



Learning Objective/ Key Takeaway One:

Goal: Provide the right information to the right people at the right time

Tackling legacy information

1. **Sell the prize:** Vital to have executive sponsorship
2. Relate it to business strategy & objectives
3. Understand what information you have
4. Run the legacy project to get the information into the right shape



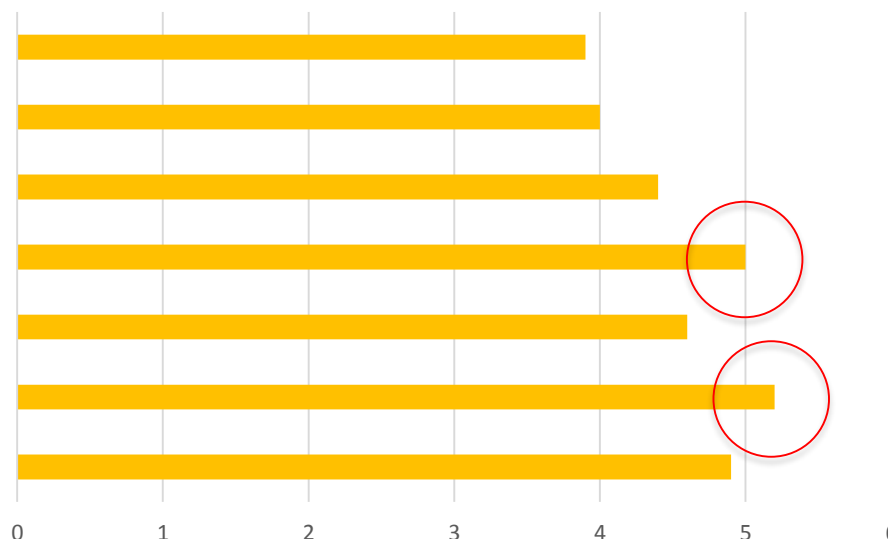
Mining data from documents



Data mining

Mining information from data organised as documents and records

- Is an improving option (new techniques)
- Will remain a task for document specialists
- Is highly challenging for paper documents
- Addresses only a small proportion of content
- Offers an uncertain base for decision-making
- Is complex, non-standard and inconsistent
- Means reliance on variable metadata





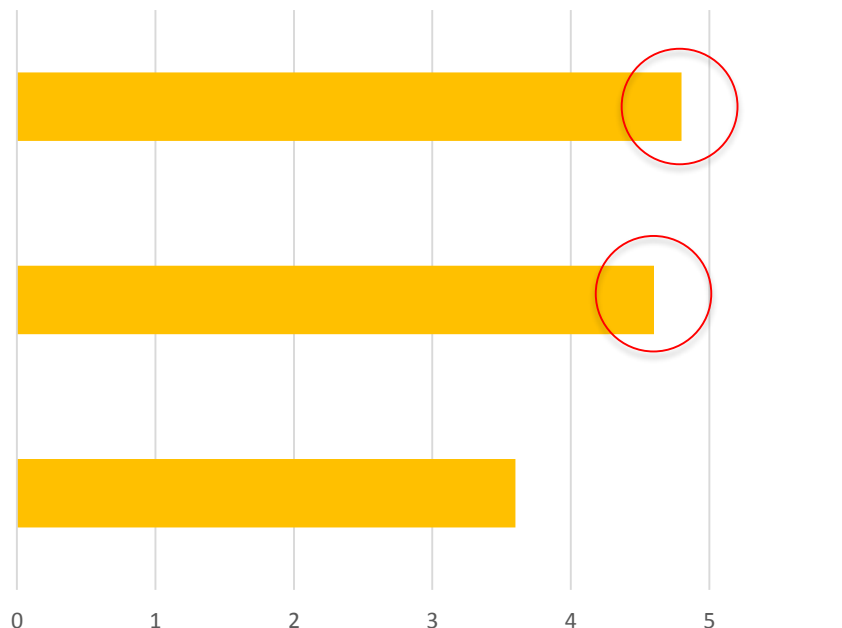
The technology angle

Tactics not strategy

Organisations focus on short-term technology provision rather than planned data management

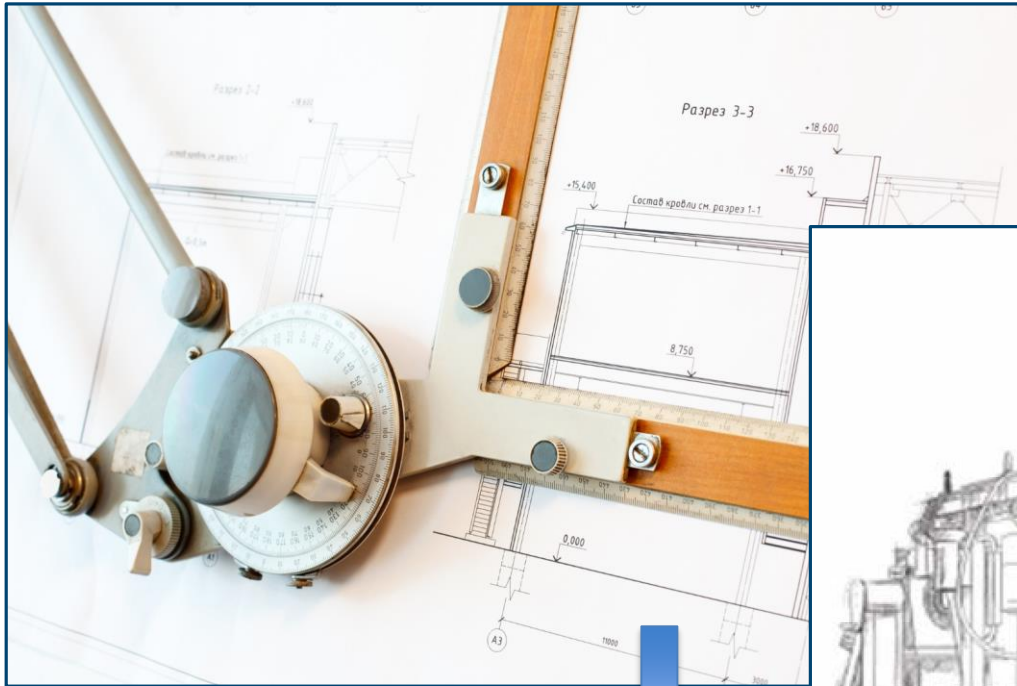
The integration of data systems to enhance business has been ignored since it is not a quick fix

Document management systems do not rank with cutting edge industry technologies



Legacy drawings to data-centric engineering

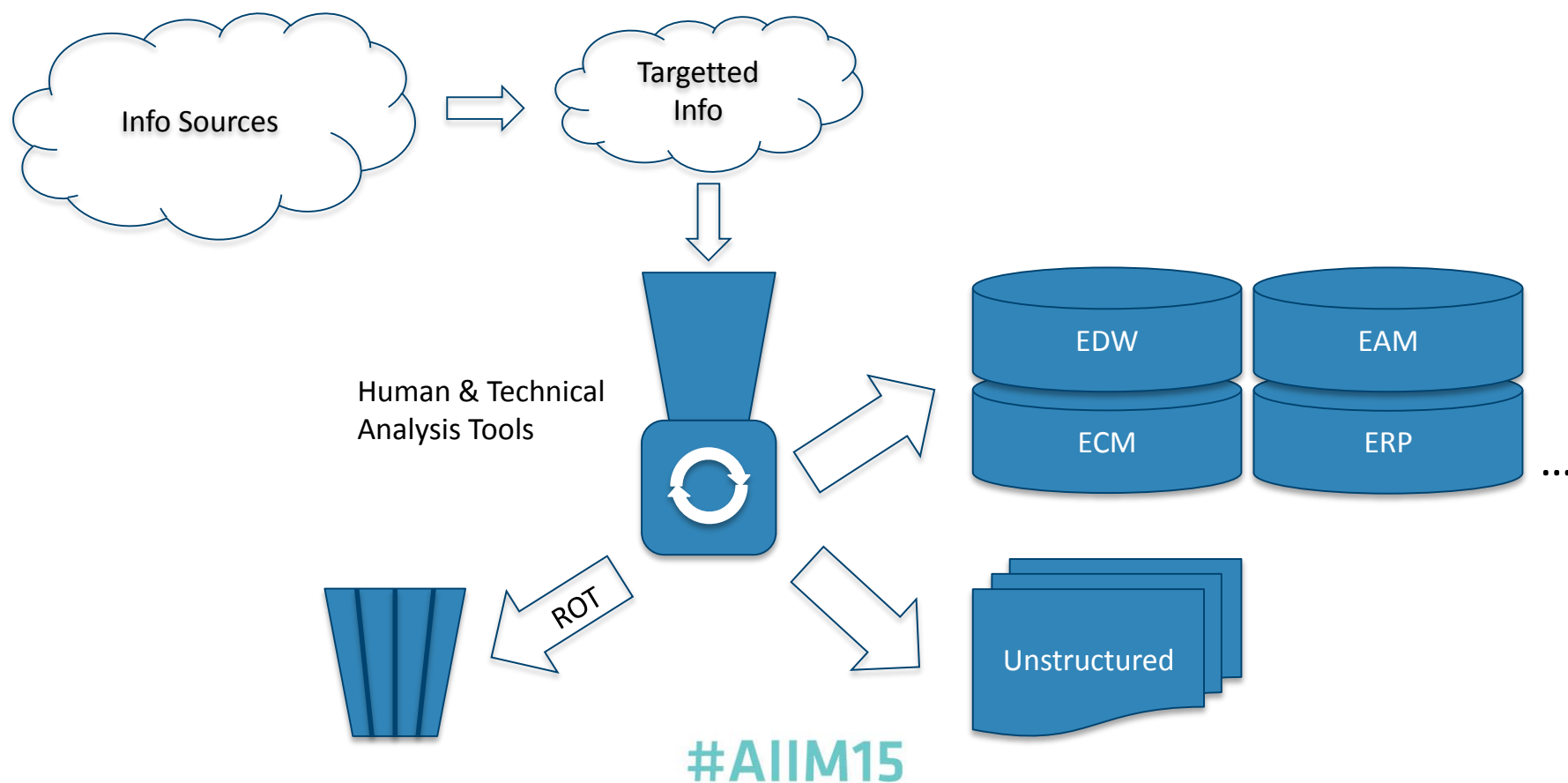
Whose information is it?



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Methods





What data do we want?

Example: ISO 15926

“Integration of life-cycle data for process plants including oil and gas production facilities”

Issues: 30% time wasted looking for information
Don't leave it to the EPC / vendors

Needs: Enable links between tags, sensors, documents

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Learning Objective/ Key Takeaway Two:

Mining Data from Documents

1. Data is necessary to permit **smarter engineering & analytics**
2. Re-processing drawings, to scrape data is often necessary
3. Tools can help if you know how to use them



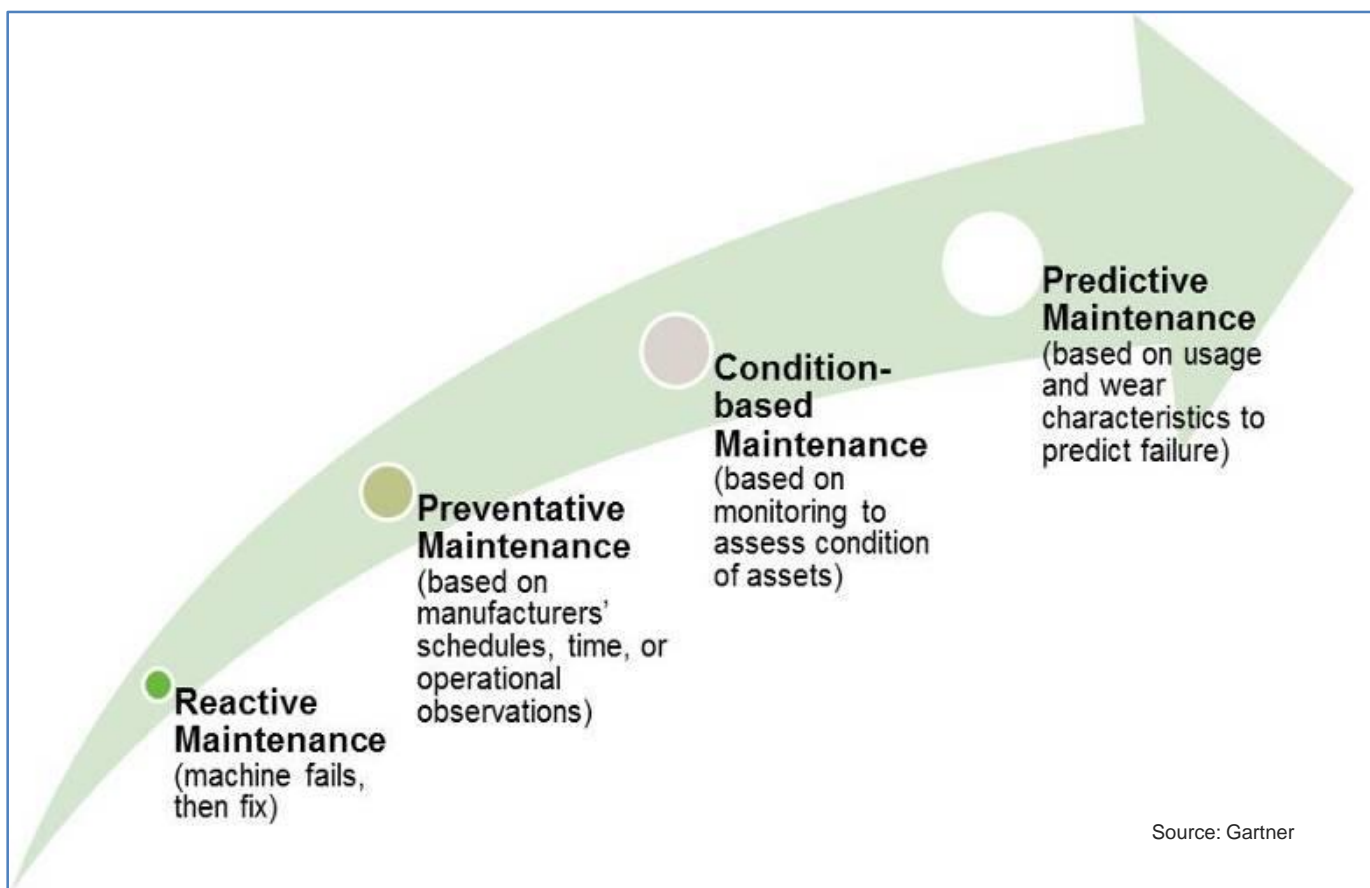
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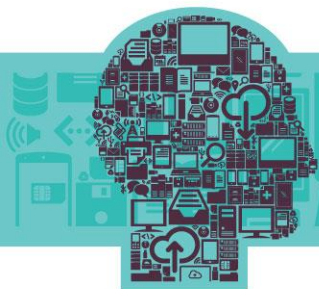
Using Data Analytically

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Smarter Maintenance





Information & Analytics





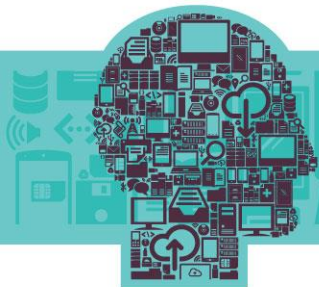
Situational Awareness



Information Visualisation

Automated storm
damage surveillance



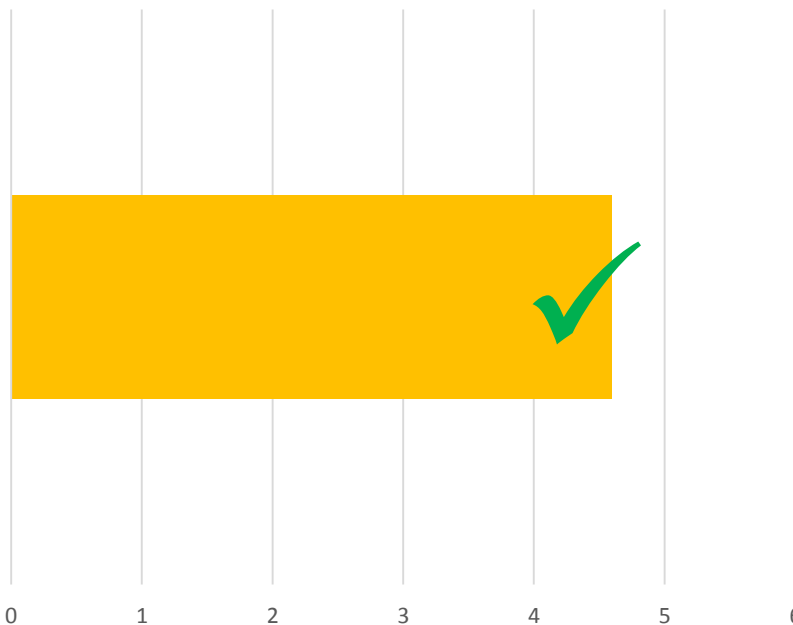


The future for IM

Optimism and consensus

May need
a new
name?

The future of IM lies in full enterprise
content management offering
business leverage





Learning Objective/ Key Takeaway Three:

Using Data Analytically

1. Pitching IM based on governance is tough.
Analytics & value creation are the levers you need to sell IM
2. Technology developing fast, big data approach yielding results
3. Be indispensable to the business, adapt with new skills
4. Show how IM can 'move the dial' – **go get the prize!**



LOCKHEED MARTIN



\$45bn turnover
120,000 employees
Civil IS & GS division
100 year+ history
Broad range of skills / clients
Long term relationships
Global reach
Strength and depth
Innovation



Aerospace & Defense



Information Technology



Space



Emerging Capabilities



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