

Tracking exploration opportunities. A case study.

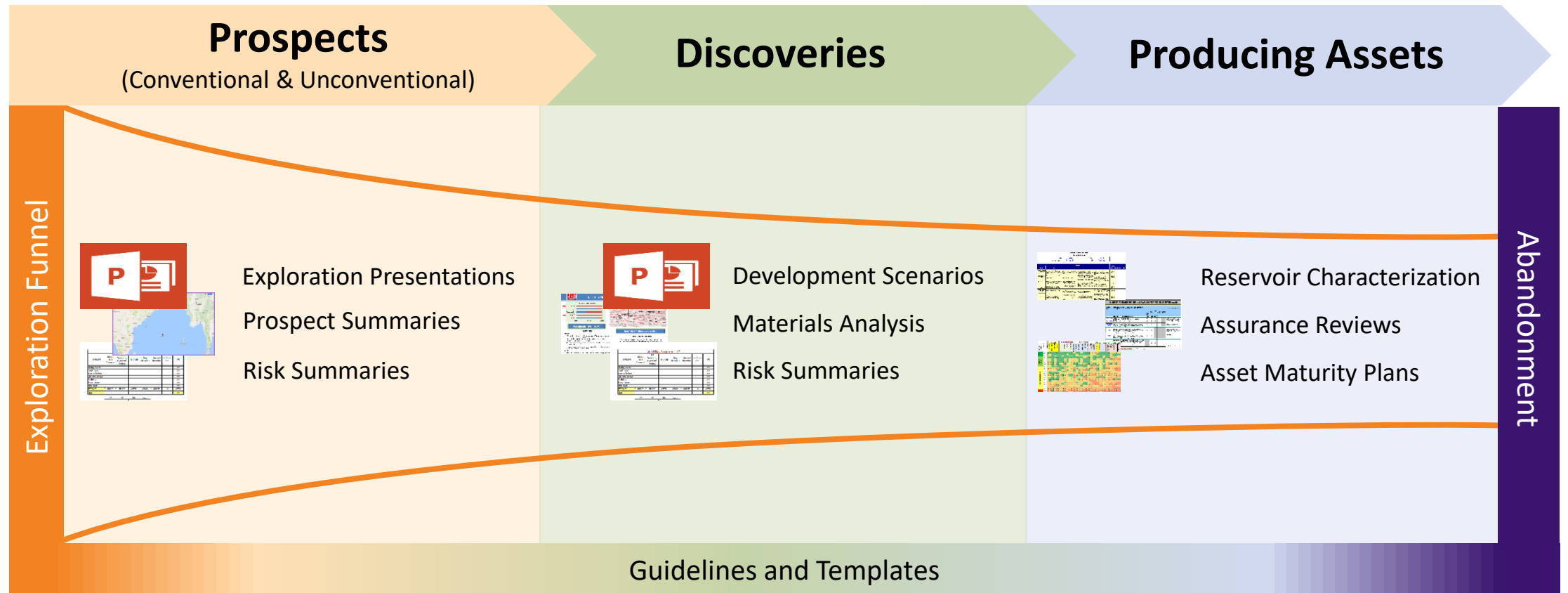
Glenn Mansfield, Director, Flare Solutions Limited

4th October 2016, Kuala Lumpur, Malaysia

Introduction

- ◆ Case study:
 - Tracking exploration opportunities
- ◆ The client
 - A multinational oil company, involved in conventional and unconventional assets, from exploration through development and operations.
- ◆ The challenge
 - Client has a well defined documented approach to assessing opportunities, including exploration opportunities, development and production
 - The issue was to help users to connect/adhere to the existing paper-based business process
- ◆ This case study looks at the evolution of the **pilot** project

Problem definition: Opportunity Assurance



Issues with:

Security

Sharing

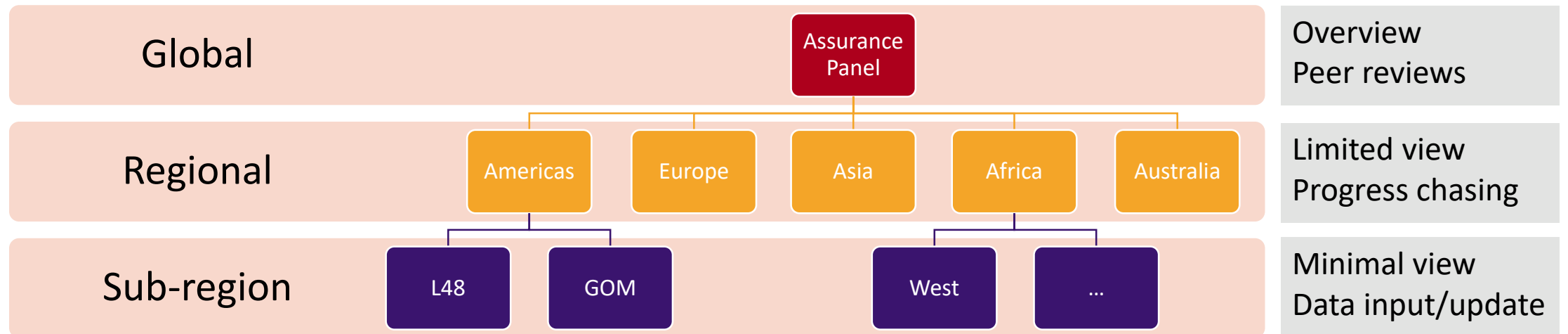
Searching

Reporting

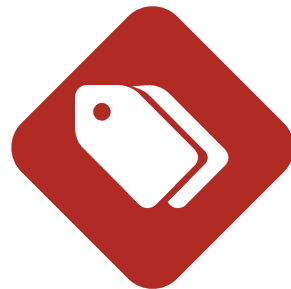
Compliance

Learning

The Scope



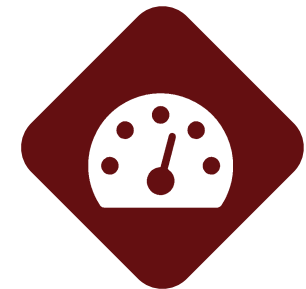
Flexible
Security



Publish: Capture &
Tagging, Data
Extraction

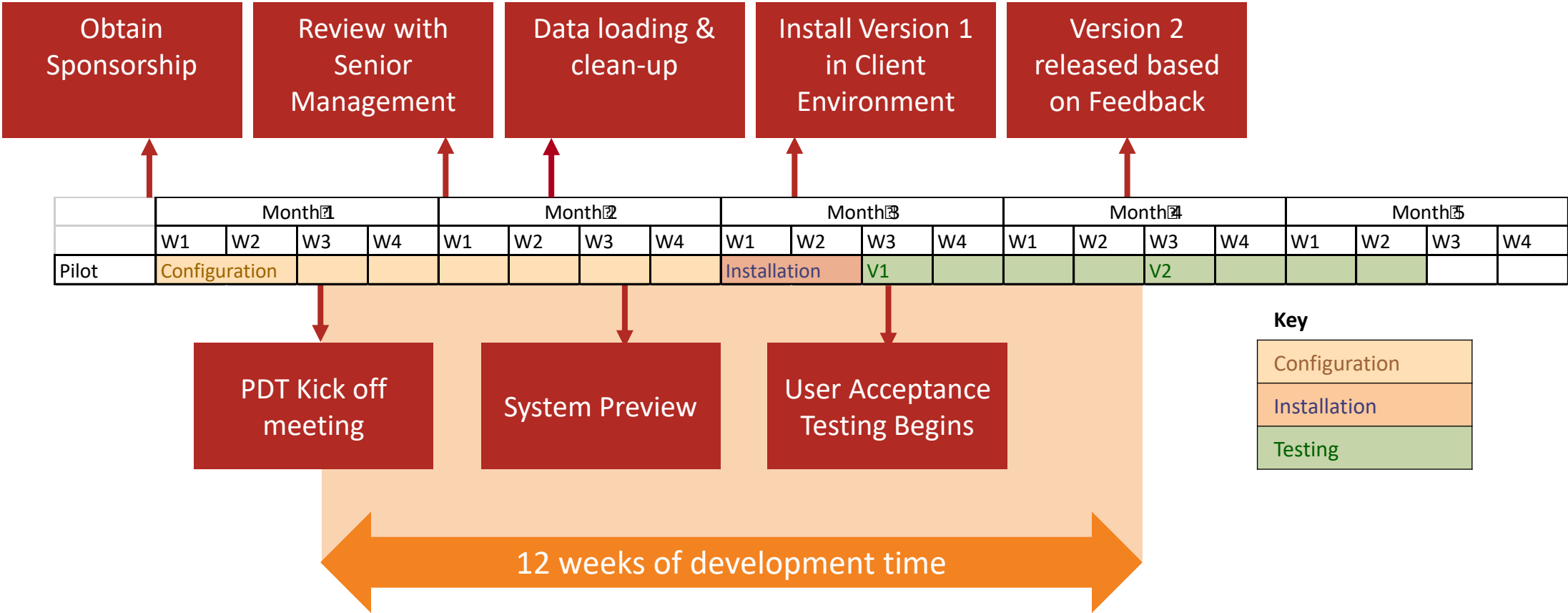


Search: Map,
Documents & Data



Visualise: Reports,
Metrics &
Dashboards

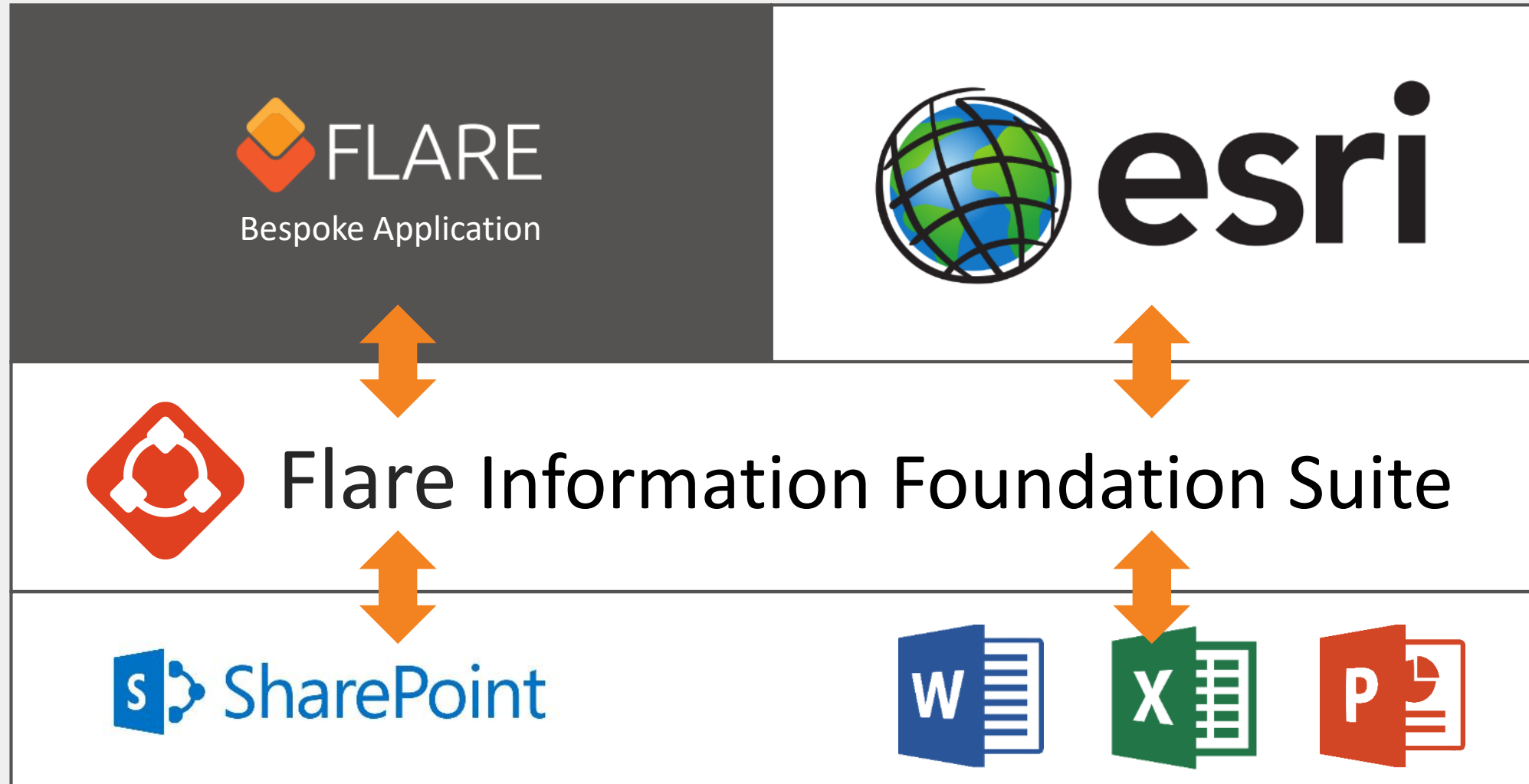
Client specified a short delivery time frame



User Acceptance Testing : Success Criteria

Security	<ul style="list-style-type: none">• Single sign on• Handles all predefined security requirements
Ease of use	<ul style="list-style-type: none">• Minimal training required, easy navigation• Intuitive controls, Drag and Drop publishing
Project Tracking	<ul style="list-style-type: none">• Understand current state of all opportunities• Review legacy decisions
Sophisticated search	<ul style="list-style-type: none">• Easy to find documents I need• Relevant results
Reporting	<ul style="list-style-type: none">• Generate pre-defined report• Export to Excel as required
Flexibility	<ul style="list-style-type: none">• Appropriate functionality per role• Expandable if required

Opportunity Assurance - Overall architecture



Opportunity Assurance User Interface (1)

FLARE Subsurface Assurance Home Help Settings

New Search: Clear filters Reports 25/25 Map Chart

<input checked="" type="checkbox"/>	Country	BU	Opportunity	Field	Review date	Interaction t.	Risk grid	SMP grid	Exp/Dev
<input checked="" type="checkbox"/>	Egypt	Asia	Egypt 12		10-Mar-14	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	Palestine	Asia	Gaza		10-Mar-14	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	India	Asia	India L40		15-May-12	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	UK	Europe	Irish Sea		08-Jul-14	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	UK	Europe	Leander	Leander	11-Oct-12	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	Morocco	Africa	Morocco	Morocco	17-Aug-12	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	Norway	Europe	Nansen	Nansen	20-Jun-12	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	UK	Europe	Oberon	Oberon	24-Feb-12	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	UK	Europe	Osliris	Osliris	03-Mar-13	Dev	■■■■■	■■■■■	Development
<input checked="" type="checkbox"/>	Ireland	Europe	Porpolse	Porpolse	14-Feb-14	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	Australia	Oceania	Queensland		20-Oct-11	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	Norway	Europe	Scott	Scott	26-Mar-12	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	UK	Europe	Shiant	Shiant	15-Mar-10	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	Spain	Europe	Spain 45		20-Jun-12	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	Sudan	Africa	Sudan		24-Feb-12	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	USA	N. America	Swift	Swift	19-May-10	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	Trinidad	S. America	T&T		08-Apr-14	PI	■■■■■		Exploration
<input checked="" type="checkbox"/>	Greenland	Europe	West Greenland		04-Jun-14	Other	■■■■■		Exploration
<input checked="" type="checkbox"/>	India	Asia	West India		04-Nov-11	Other	■■■■■		Exploration

Summary **Lifecycle** Content (100) Templates (3) SMP heatmap Actions (0/1)

Back...

		Acquire/Explore														Exp. Post Drill Analysis			
		Early Engagement					Pre Acquisition Review					Funds Approval	Plan for Exploration/ Pre-Drill Review				Funds Approval		
		Present...	Additional Material	Risk Summary	Prospect Summary	Action Items Follow Up	Present...	Additional Material	Risk Summary	Prospect Summary	Action Items Follow Up	Approval Expense AFE	Present...	Additional Material	Risk Summary		Prospect Summary	Action Items Follow Up	Exp./Well Expense AFE
Apollo 24-Feb-12	0/1	1	1	2	1	1	1	1		2									
Barents 05-Apr-12		1	2	3	4		1	1					1						1
Basra 07-Apr-14		1	1		1	4				1	1		1			4	4		1
Black Sea 12/34 08-Oct-10																			
Bolivia North 05-Apr-12		1		4	1								1	1	1	1	1		

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Opportunity Assurance User Interface (2)

FLARE Subsurface Assurance Home Help Settings

New Search: Clear filters Reports

	Country	BU	Opportunity	Field	Review date
<input type="checkbox"/>	Iraq	Asia	Sort Ascending		07-Apr-14
<input type="checkbox"/>	Egypt	Asia	Sort Descending		10-Mar-14
<input type="checkbox"/>	Palestine	Asia	Columns		10-Mar-14
<input type="checkbox"/>	India	Asia	Filters		15-May-12
<input type="checkbox"/>	India	Asia	West India		04-Nov-11

☐ Africa
☒ Asia
☐ Europe
☐ N. America
☐ Oceania
☐ S. America

Summary Lifecycle Content (44) Templates (3) SMP heatmap Actions (0/0)

	Acquire/Explore			
	Early Engage...	Pre Acq... Review	Funds Approval	Plan for Exploration Pre-Drill Review
Basra 07-Apr-14		2		9
Egypt 10-Mar-14				
Gaza 10-Mar-14	9			
India L46 15-May-12	6	5		
West India 04-Nov-11		4	1	

Taxonomy – Geological Time

Age of reservoir

Geological Time	Age of reservoir
Cenozoic	
Mesozoic	
Cretaceous	
Upper Cretaceous	
Lower Cretaceous	
Albian Aptian	
Jurassic	
Triassic	
Paleozoic	

Selected: Triassic X

Taxonomy – Depositional Env.

Depositional environment

Depositional environment	Age of reservoir
Aquatic environment	
Marine environment	
Marine shelf	
Marine slope	
Turbidite system	
Fluvial	
Fluvial genetic unit	
Lacustrine	
Non-marine environment	
Terrestrial environment	
Alluvial fan	
Desert	
Fluvial	
Lacustrine	
Transitional	
Paralic	

Selected:

Taxonomy – Trap Style

Trap style:

Trap style	Age of reservoir
3-Way/Fault (Footwall)	
3-Way/Fault (Hanging wall)	
3-Way/Salt	
3-Way/Salt Weld	
4-Way Dip	
Other	
Stratigraphic	
Structural	
Thrust Related	
Unconformity	

Save Cancel

Trap (1) Seal (1) Source (2)

Opportunity Assurance Documents in SharePoint

Obviously the interface relies on GOOD metadata

The image illustrates the integration of Opportunity Assurance Documents into SharePoint. It features three main components:

- Windows File Explorer:** Shows a folder named 'Basic files' containing several Microsoft Office documents (Excel Worksheet, PowerPoint Presentation, Project Document, Word Document).
- SharePoint Opportunity Manager:** A web interface for managing opportunity assurance documentation. It displays a list of documents categorized by region (Europe, ROTW, India L46) and includes a detailed view of the 'India L46' opportunity, showing various documents and their metadata.
- Data Table:** A table summarizing the data, with columns for project details and document counts. A green arrow points from the File Explorer to this table, and a purple arrow points from the table to the SharePoint interface.

	Present...	Additional Material	Risk Summary	Prospect Summary	Items Follow Up	Present...	Additional Material	Prospect Summary	Items Follow Up	Expense APE	Present...	Additional Material	Risk Summary	Prospect Summary	Items Follow Up	Expense APE	Post Drill Analysis
Basra 07-Apr-14																	
Egypt 12 10-Mar-14																	
Gaza 10-Mar-14		1	5														
India L46 15-May-12			2														
West India 04-Nov-11						1	1	1	1	1							1

Project results

- ◆ Able to assess opportunities faster, more consistently and review the history
 - ◆ **Security:** Logging in recognised users and filtered opportunities appropriately
 - ◆ **Publish:** Easy to tag and route content, whilst adhering to the business process and the naming standards
 - ◆ **Search:** Supported by taxonomy, able to compare similar opportunities, search cross region/country, compare and rank risk.
 - ◆ **Visualise:** Able to more rigorously understand the status of all of their opportunities.
 - Clear audit trails and the ability to look back on decisions and supporting documentation
- ◆ UAT results in a high level success rating
 - Easy to use, very little training required
 - Delivered a lot of functionality within the short timeframe
- ◆ During UAT users identified and suggested several other applications and problems that could be addressed using a similar approach

Lessons Learned (Client perspective)

Senior management support, clear project roles and engaged users

Critical to have a close partnership between the Business, IT and the vendor building the solution

Trust in the vendors that providing the solutions

Project managed by IT, business don't have time or appetite to closely manage the project process

Manage the scope, the business will try to grow it

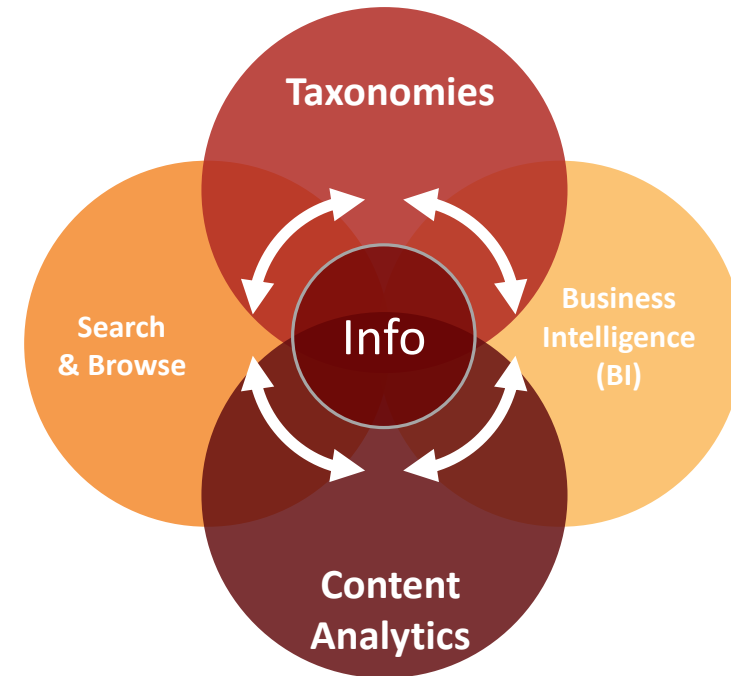
Mock-ups really help everyone picture the solution

Acceptance testing best done by the business users and managers

Future developments

Now, with the right foundations in place it's feasible to:

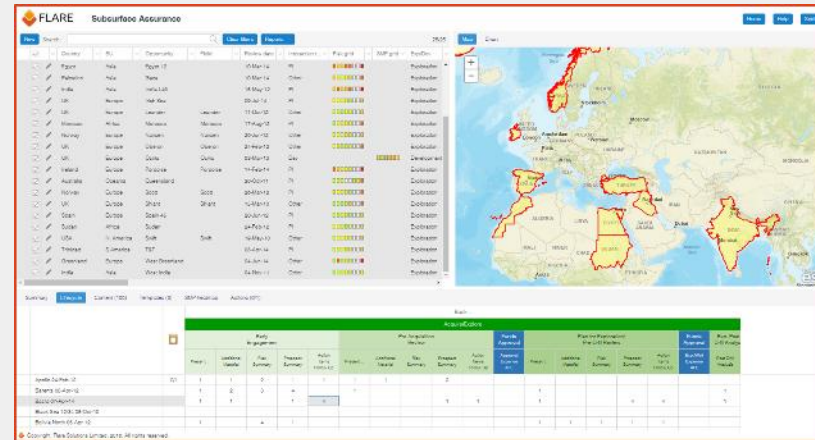
- ◆ Improve integration with external information sources, e.g. IHS.
- ◆ Increase integration with Technical Data, e.g. Petrel interpretations, Reservoir simulations.
- ◆ Leverage Machine Learning, Content Analytics and Data Analytics
 - (Parameterised Opportunities)



We combine **Taxonomies** and **Master Data** (*what we already know*)...
... with automated **Content Analytics** and **Machine Learning** (*what we can discover*)...
... to leverage your information assets

Summary

A lot can be achieved
in a short time frame
if you:



Build on a solid foundation



Leverage standards



Connect!

Thanks for listening



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