

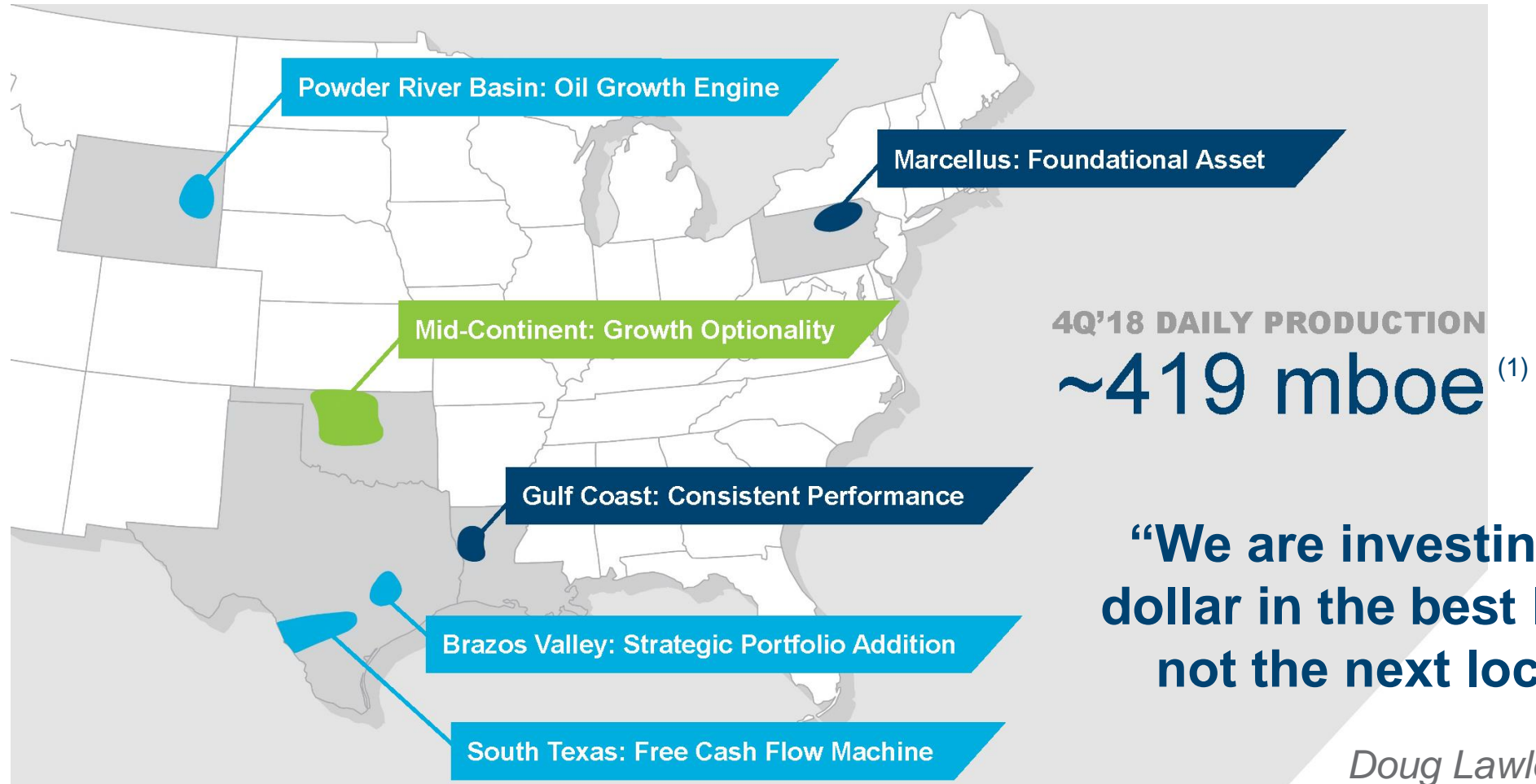
# Innovation to Implementation: E&P Evaluations from Theory into Practice

Kelli Witte, Gina Lawson - Chesapeake Energy  
Kandy Lukats, Sasha Gumprecht - 3GiG  
PNEC 2019



# CHK BRAND STRATEGY

Innovation, Efficiency, Cost Discipline



*Doug Lawler, NAPE 2018*

(1) Adjusted for asset sales



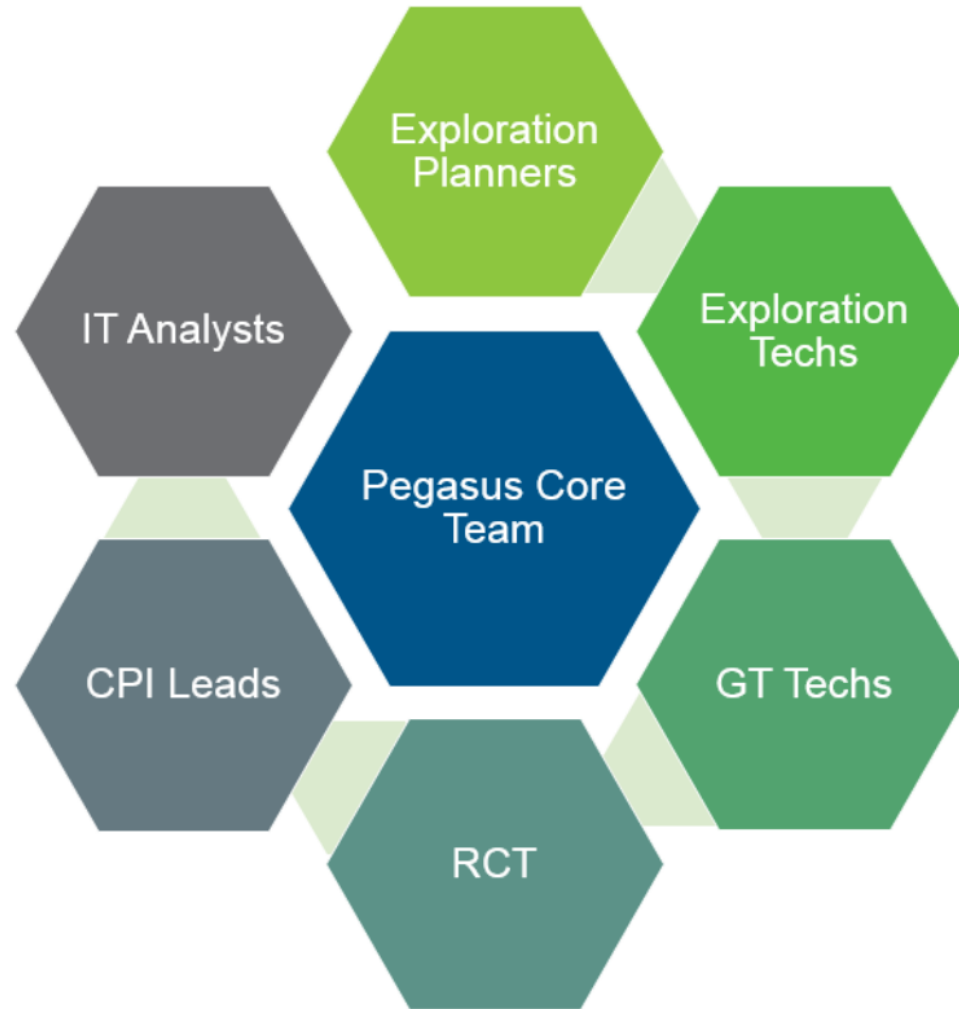


# ABOUT THE CHK TEAM

Grassroots Effort: Spending Company Money Wisely



**Kelli Witte**  
Supervisor  
Geoscience Technology



**Gina Lawson**  
Manager  
Geoscience Technology

# BUSINESS NEEDS

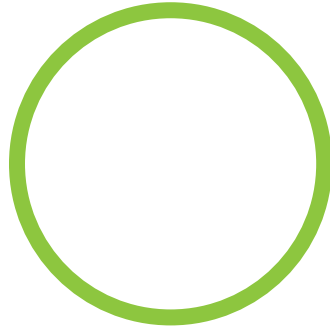
Creating Structure of Unstructured Information about the Way we Work

20%

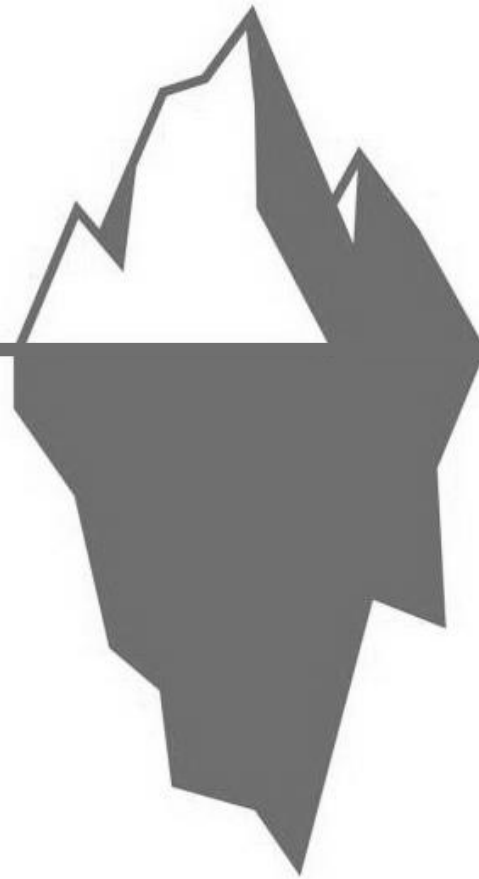


Structured

80%



Unstructured



# BUSINESS NEEDS

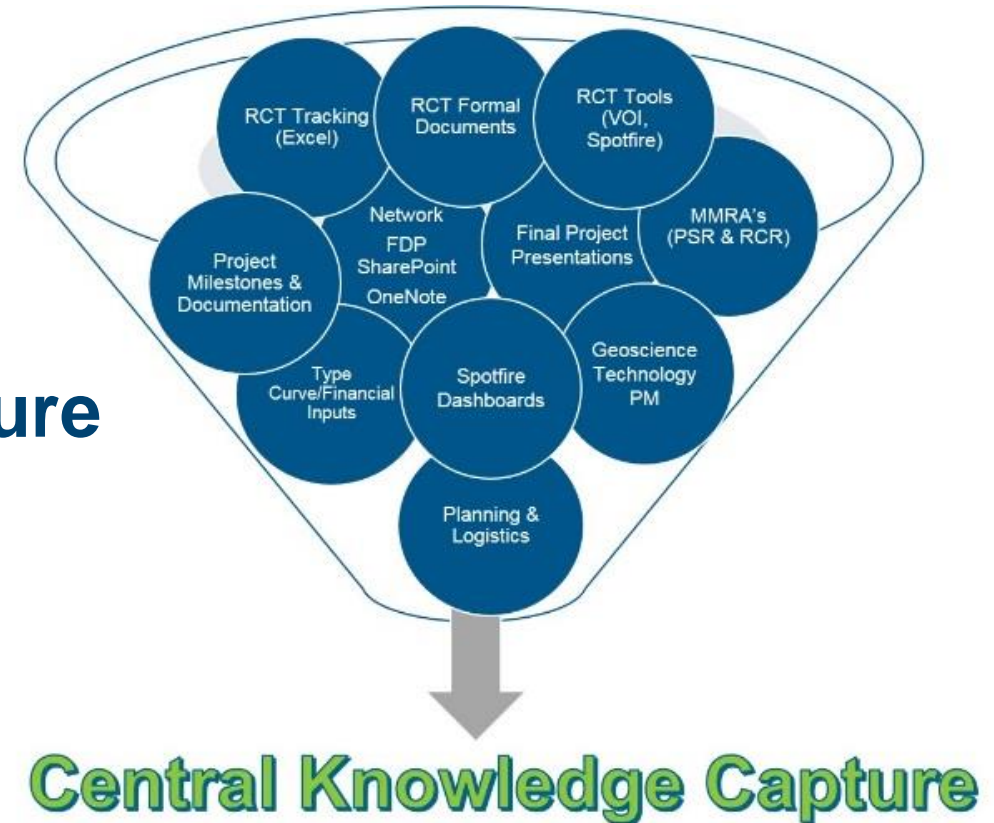
Treating Data like an Asset

## Design → Flexible, Centralized Database

- ‘Single source of truth’
- Reduce redundant work
- Tie together disciplines, data

## Align → Corporate Data Leadership Culture

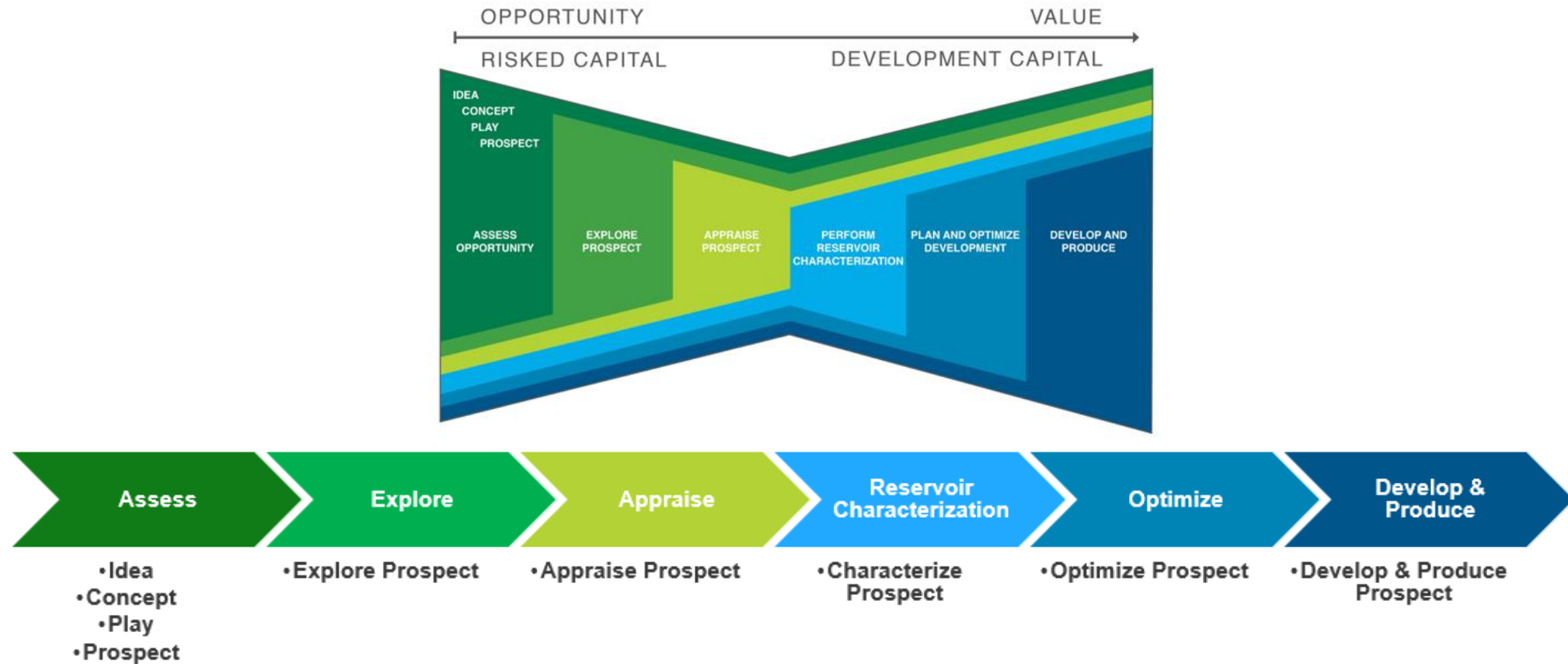
- Drive efficiency
- Eliminate non-value added activities
- Leverage data like an asset



# BUSINESS NEEDS

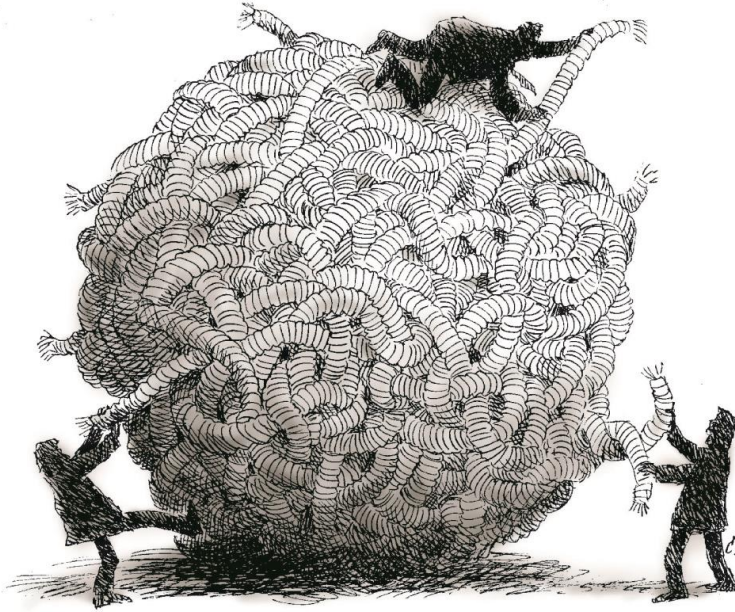
Tracking the Status of Value Generation in the Business – Real Time

## FDP Phases → Pegasus Phases



# SOLUTION NEEDS

Ensuring the Right Approach, Technology & Team



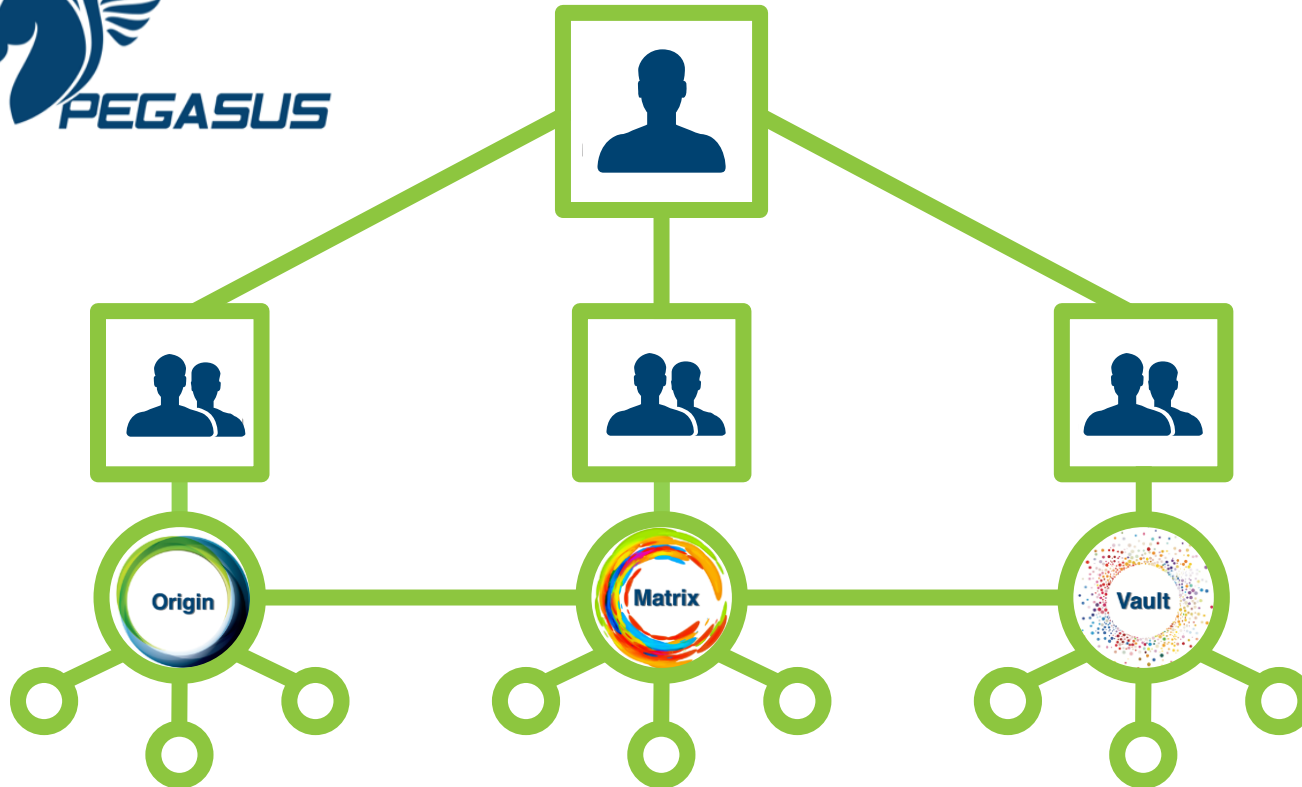
- Failed Attempts
- Tool Fatigue

- Centralized
- Change with Culture



# APPROACH: THE METHODOLOGY

How Did We Start



**1** **LEADERSHIP**  
Management Needs

**2** **TEAMS**  
WIFO

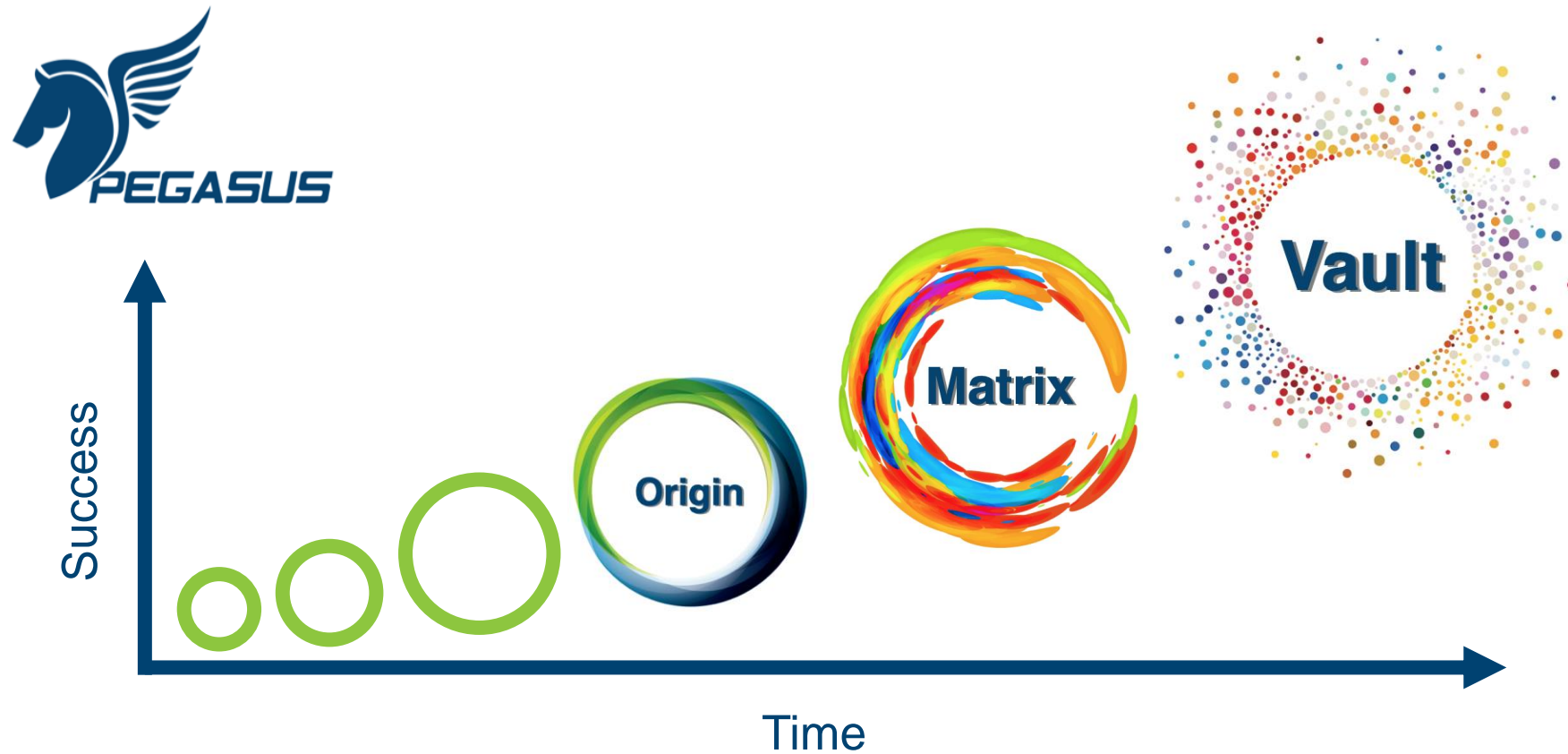
**3** **INDIVIDUALS**  
WIFM





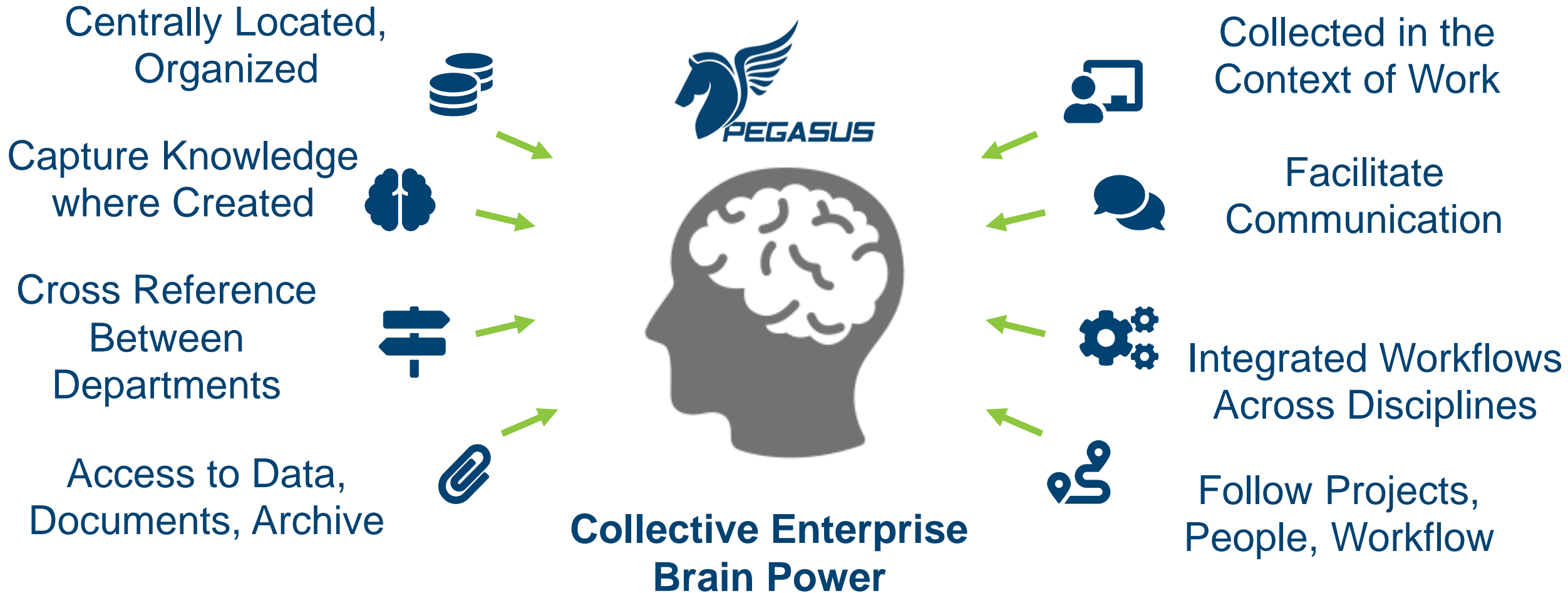
## APPROACH: THE METHODOLOGY

## Building on Success: Snowball Effect



# APPROACH: THE TECHNOLOGY

## Pegasus & Platform



# PEGASUS: ORIGIN

## Project, Play & Prospect Inventory Management Application



- Evergreen management of Project, Play & Prospect Inventory
- Tracking of key interpretation project & data requests
- Detailed risk & resource estimates integrated with analytics
- Peer, risk & management review approvals & recommendations

Filter	Single or Multiple	Pre-Scoping	Version #	Data Request	Data Request	Send	All Data Request	Data Item Priority	Data Item
	Single	Pre-Scoping	1	High	Perin Shelf Carbonates 2 Project - DR 1	Yes	Yes	High	Basic
	Single	Pre-Scoping	2	High	Perin Shelf Carbonates 2 Project - DR 2	Yes	Yes	High	Basic
	Single	Pre-Scoping	3	Med	Demo Project Project - DR 3	Yes	Yes	Med	Basic
	Single	Pre-Scoping	3	Med	Demo Project Project - DR 3	Yes	Yes	Low	Basic
	Single	Pre-Scoping	3	Med	Demo Project Project - DR 3	Yes	Yes	Med	Basic
	Single	Pre-Scoping	4	High	Demo Project #1 Project - DR 4	Yes	Yes		Basic
	Single	Pre-Scoping	5	High	Demo Project #1 Project - DR 5	Yes	Yes		Basic
	Single	Pre-Scoping	6	High	Demo Project #1 Project - DR 6	Yes	Yes		Basic
	Single	Pre-Scoping	7	High	Demo Project #1 Project - DR 7	Yes	Yes	Med	Data
	Single	Pre-Scoping	7	High	Demo Project #1 Project - DR 7	Yes	Yes	Low	Basic
	Single	Pre-Scoping	7	High	Demo Project #1 Project - DR 7	Yes	Yes	High	Basic
	Single	Pre-Scoping	9	Med	Demo Project #1 Project - DR 9	Yes	Yes		Basic
	Single	Pre-Scoping	10	High	Demo Project #1 Project - DR 10	Yes	Yes		Basic
	Single	Pre-Scoping	11	High	Demo Project #1 Project - DR 11	Yes	Yes		Basic
	Single	Pre-Scoping	12	Med	Demo Project #1 Project - DR 12	Yes	Yes		Basic
	Single	Pre-Scoping	13	High	Demo Project #1 Project - DR 13	Yes	Yes		Basic
	Single	Pre-Scoping	14	High	Demo Project #1 Project - DR 14	Yes	Yes		Basic
	Single	Pre-Scoping	15	High	Demo Project #1 Project - DR 15	Yes	Yes		Basic
	Single	Pre-Scoping	16	High	Demo Project #1 Project - DR 16	Yes	Yes		Basic
	Single	Pre-Scoping	17	High	Demo Project #1 Project - DR 17	Yes	Yes		Basic

Filter	Data Class	Prospect	Status	Stage	Reservoir Age	USCRS #	Play Segment
	Sensitive	DLAH	Active	Prospect			Afghanistan
		Kandy Test	Active	Prospect			
		Kandy Test	Active	Prospect			
		Kandy Test	Active	Prospect			
	Internal	KB Stage 1	Active	Prospect			
		KB stage 2	Active	Appraisal & Delineation			
	Sensitive	SEL TRIST PROSPECT	Active	Prospect			
	Internal	Kelly Rule Test	Active	Appraisal & Delineation			
	Internal	test	Active	Prospect			
	Internal	Do Something	Active	Appraisal & Delineation			
	Internal	Name test 3	On Hold	Prospect			
	Sensitive	Kandy Test	Active	Prospect			
	Internal	hbgfb	Active	Prospect			
	Internal	ngtgbgb	Active	Prospect			M Pliocene
	Sensitive	Do Something Prospect	Active	Appraisal & Delineation			
	Internal	sdgdy	Active	Prospect			M Pliocene



# PEGASUS: MATRIX

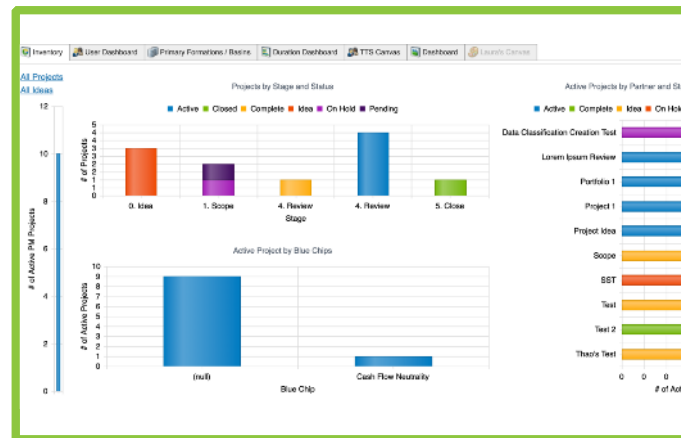
## Project Management & Inventory tool for Subsurface Technology Projects



- Team meetings & milestones captured
- Deliverables & decisions documented
- Decision impacts on business tracked
- Continuous Feedback loop with stakeholders
- Priorities visible. Aligns with goals of all stakeholders



Partner	Project	Status	Stage	Est. Start Date	Ac
3GIG Test Partner	Data Classification Creation Test	Pending	Scope	5/16/2018	
3GIG Test Partner	Lorem Ipsum Review	Active	Project Review	2/14/2018	
3GIG Test Partner	Portfolio 1	Active	Project Review	5/1/2018	
3GIG Test Partner	Project 1	Active	Project Review	2/15/2018	
3GIG Test Partner	Project Health Test	Closed	Close	2/25/2018	
3GIG Test Partner	Project Idea	Active	Project Review	3/8/2018	
3GIG Test Partner	Scope	Idea	Idea	4/29/2018	
3GIG Test Partner	SST	On Hold	Scope	1/18/2018	
3GIG Test Partner	Test	Idea	Idea	3/25/2018	
3GIG Test Partner	Test 2	Complete	Project Review	5/7/2018	
Geoscience Technology	Thao's Test	Idea	Idea		



Project Team	
<b>Project Champion:</b>	Kelly Bendien
<b>GT Manager:</b>	Sasha Gumprecht
<b>GT Lead:</b>	Jen Jordan
<b>SME/Advisor:</b>	Kevin Gross
<b>Business Lead:</b>	Sasha Gumprecht
Key Project Details	
<b>Data Classification:</b>	Sensitive
<b>Blue Chip:</b>	Impact on Business:
<b>Primary Formation:</b>	Primary Basin:
<b>Estimated Start:</b>	03/08/2018
<b>Estimated End:</b>	03/10/2018
<b>Scale:</b>	Resources:
<b>Schedule:</b>	Scope:
1 - On Target	
1 - On Target	
Close Form	
Key Technical or Business Conclusions Reached:	





# PEGASUS: VAULT

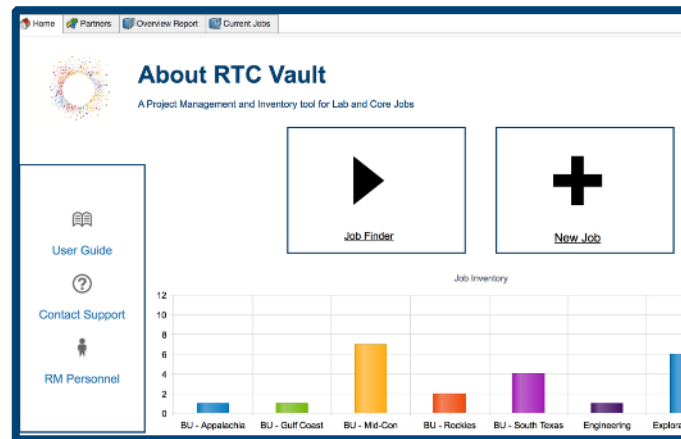
## Project Management & Inventory Tool for Core Lab Jobs



- Capacity management
- Tracking core lab work in relation to key exploration & development projects
- Work is tracked by Partner, Job Type & Test Type
- Quick & easy overview of lab activities
- Process tracked: Set-up, Testing in Progress, Data Distributed

Job	Partner	Priority	Contact	Job Status	Job Stage
18-0807	Exploration - L48	Medium	ewilliams	Draft	1. Set Up
18-0806	BU - Rockies	High	Don Harville	Draft	1. Set Up
18-0805	Geoscience Technology		Brad Dankenbring	Draft	1. Set Up
18-0804	3GIG Test Division	Medium	Johnny Barton	Draft	1. Set Up
18-0803	3GIG Test Division	Low	kbray	Draft	1. Set Up
18-0802	Exploration - L48	Medium	Kyle Bradford	Draft	1. Set Up
18-0801A	3GIG Test Division	Low	kbray	Draft	1. Set Up
18-0801A	3GIG Test Division	Medium	kbray	Draft	1. Set Up
18-0801	3GIG Test Division	High	kbray	In Progress	2. Testing in Progress
18-0706	3GIG Test Division	Medium	admin	Draft	1. Set Up
18-0706	3GIG Test Division	Medium	admin	Draft	1. Set Up
18-0705	3GIG Test Division	Medium	Sasha Gumprecht	Draft	1. Set Up
18-0704	3GIG Test Division	High	Kandy Lukats	Data Distributed/Closed	4. Data Distributed
18-0703	BU - Mid-Con			Draft	1. Set Up
18-0702	BU - Mid-Con			Draft	1. Set Up
18-0611	BU - Mid-Con	Low	Jen Jordan	Draft	1. Set Up
18-0611	BU - Mid-Con	Low	Jen Jordan	Draft	1. Set Up

CHESAPEAKE ENERGY			
18-0801 Kathryn's Tool Tip Test Summary Report September 04, 2018 Current Stage: Testing in Progress Current Status: In Progress			
Key Job Details			
Primary Contact:	Kbray	Job Priority:	High
Multi-Well Job Name:	Kathryn's Tool Tip Test	Date Sample Received:	
Sample Type:	Core Core	Quantity:	1000
Primary Formation:		Primary Basin:	Roma Tough
Core Analysis Service:		Geochemistry Service:	
Rock Mechanics Service:		Other Service:	
Wells:	API Number:	State:	County:
Hardy Federal 247 38-728h	490328224	Wyoming	Converse
All Job Files			



All Services		Service Subtotal		Core Analysis		Geochemistry		Rock Mechanics		RM Equipment Assignments	
Filter: None applied											
	Critical	Partner	Job		Type Name	Test Type	Test Type				
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	⚙️	Rock Mechanics Service	Triaxial	Compressive Test				
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	⚙️	Rock Mechanics Service						
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	⚙️	Rock Mechanics Service	Ultrasonic Wave	Velocity Test				
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	⚙️	Rock Mechanics Service	Poromechanics	Test				
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	⚙️	Rock Mechanics Service	Standard mechanical	characterization				
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	🔬	Core Analysis Service	Core					
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	🔬	Core Analysis Service	Core					
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	🧪	Geochemistry Service	Geochemistry					
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	🧪	Geochemistry Service	Geochemistry					
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	🧪	Geochemistry Service	Geochemistry					
★	Yes	BU - Mid-Con	18-0609 Miss Line Project	⚙️	Rock Mechanics Service	Geochemistry					
★	Yes	BU - Mid-Con	18-0611 Utica Mechanical	🔬	Core Analysis Service						
		BU - Mid-Con	18-0611 Utica Mechanical	🔬	Core Analysis Service						
		BU - Mid-Con	18-0611 Utica Mechanical	🧪	Geochemistry Service						
		BU - Mid-Con	18-0611 Utica Mechanical	⚙️	Rock Mechanics Service						
★	Yes	3GIG Test Division	10-0101a	🧪	Geochemistry Service	Geochemistry					
★	Yes	3GIG Test Division	10-0101a	🔬	Core Analysis Service	Core					



# BENEFITS & RESULTS

Reinforcing the CHK Way

1

**Winning in '4D':  
Leadership, Team,  
Individual & Time**

2

**Results from Better  
Productivity &  
Proactively Managing  
Business**

3

**Proven  
'WIFM' &  
'WIFO'**



# CRITICAL SUCCESS FACTORS

Technology Around a Shared Culture



Adaptable technology



Build on success



Design from top down & bottom up

**Leadership buy in from the start**

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