Development of Long-Term Training Plans using matched Competency Assessment and Discipline Training Roadmaps - DTRs

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What's Next?
SIS Global Forum 2017
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People, Process and Technology Industry Challenges

Key challenges in HR Training and Development

- Rapidly developing innovative technologies
- Increased complexity of software and workflows
- Staff motivation and retention

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Project Overview

The DTRs training plan is built to reflect the career path for KOC Exploration Group employee (Grades 12 – 17).

It is aimed to be the master source for individual training and development plan.

Objective: Design a Long-Term (10 Years) Training Development

Plan for the Exploration Group Team members, based on **five Job Family** classification:

1. Geology
2. Geophysics
3. Petrophysics
4. Petroleum Engineering
5. Reservoir Engineering

JOB PROFILES IN EXPLORATION GROUP

Total:
22 JPs

Activity Area	Job Profile	Code Profile
Geology (9)	Exploration Geologist	GE01
	Sequence Stratigrapher	GE02
	Sedimentologist	GE03
	Geochemist	GE04
	Basin Modeler	GE05
	Biostratigrapher	GE06
	Structural Geologist	GE07
	Operations Geologist	GE08
	Reservoir Geologist (Geomodeller)	GE09
Geophysics (7)	Seismic Operations Geophysicist	GF01
	Seismic Acquisitions Geophysicist	GF02
	Data Processing Geophysicist	GF03
	Seismic Interpreter	GF04
	Non-Seismic Interpreter	GF05
	Seismic Inversion Geophysicist	GF06
	Petrophysics / Rock Physics Geophysicist	GF07
Petrophysics (2)	Exploration Petrophysicist	PF01
	Field Studies Petrophysicist	PF02
Reservoir Engineering	Reservoir Engineer	RE01
	Reservoir Simulation Engineer	RE02
Petroleum Engineering	Petroleum Engineer	PE01
	Operations Petroleum Engineer	PE02

Project Phases

Phase One

- Develop the Discipline Training Roadmaps for the 5 major Disciplines within the Exploration Group. Joint effort between KOC Exploration and NExT

Phase Two

- Competency Assessments and development of long-term and short-term training plans for 100 staff within the Exploration Group. Performed by NExT SMEs.

Phase Three

- Competency Assessments and development of training plans for 69 staff within the Exploration Group. Performed by KOC SMEs with NExT consultant.

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Elements of Training Management System

Job Profile

1. Defines Competencies needed for Jobtype
2. Defines levels required
3. Defines progression of levels
4. Used to define actual training

Competency Assessment

1. Establishes “baseline” level
2. Defines gaps
3. Allows refinement of Training Plans

Discipline Training Roadmap

1. Contains all training elements for jobtype
2. Can be used to build long-term training plans
3. Is a “master” resource

Individual Training Plan

1. Defines training chronology and priority
2. Specifies course/vendor
3. Used to monitor progress

Created in this Project

Alignment with Existing Policies and Strategies

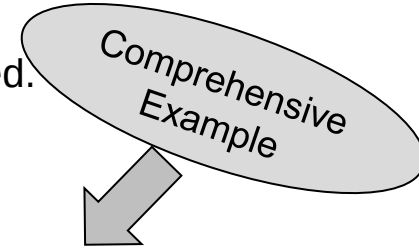
NExT		KOC	
Competency	**Sub-competency**	**Competency**	**Sub-competency**
Petroleum Systems	Trapping mechanisms	**GEOCHEMISTRY**	
	Source rock and hydrocarbon generation		**Organic Geochemistry**
	Fluid migration		**Inorganic Geochemistry, Development & Production chemistry**
	Organic and Inorganic geochemistry		
	Preservation and Timing		
Basin, Play, and Prospect Analysis	Play characterization workflows	**BASIN, PLAY AND PROSPECT ANALYSIS**	**Basin and Play Fairway Analysis**
	Prospect evaluation workflows		**Basin Modeling**
	Play Fairway Analysis		**Prospect Evaluation (OIP, reserves and risk assessment)**
	Petroleum Systems Modeling 1D/2D/3D		
Siliclastic Sedimentology	General siliclastic sedimentology	**SEDIMENTOLOGY**	**Clastic Depositional Systems**
	Alluvial fans		
	Fluvial		
	Lacustrine		
	Aeolian		
	Deltaic		
	Coastal and shallow marine		
	Deepwater		
	Shale		
	Siliciclastic diagenesis		

Level	Level of knowledge and ability to use it
1	No Knowledge
2	Understands basic principles with no application to very limited application
3	Has practical experience of using skill in doing 'real' work under guidance
4	Applies skill to some routines or frequently performed tasks without guidance
5	Carries out all routine including some complex tasks within the career path independently

Current KOC training matrices were remapped with NExT matrices to form new customized matrices for each discipline

KOC Competencies Matrix vs. DTRs Plan

- Comprehensive study of KOC - "Competencies Matrix" has been conducted.
- DTRs plan has been developed and mapped against KOC “Competencies Matrix” for all Disciplines in Exploration Group.



KOC - “Competencies Matrix “		VS	DTRs	
Competency	**Sub-competency**		**Competency**	**Sub-competency**
SEDIMENTOLOGY	Clastic Depositional Systems		**SILICLASTIC SEDIMENTOLOGY**	General siliclastic sedimentology
				Alluvial fans
				Fluvial
				Lacustrine
				Aeolian
				Deltaic
				Coastal and shallow marine
				Deepwater
				Shale
				Siliciclastic diagenesis

Example Job Profile (partial)

Major Competency Units

Sub-Competency Elements within Units

Approximate Timeframe for Progression

KOC Exploration
Job Profile

Exploration Geologist

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Competency	Sub-Competency (Target Level Elements)	Key	2 years					4 years					6 years					8 years					10 years				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Petroleum Systems	Trapping mechanisms	C		2					2						3						4						5
	Source rock and hydrocarbon generation	C		2						3						4						5					5
	Fluid migration		1						2					2						3					3		
	Organic and Inorganic Geochemistry			2						3					3						4					4	
	Preservation and Timing	C	1						2						3						4						5
Basin, Play, and Prospect Analysis	Play characterization workflows	C		2						3						4					5						5
	Prospect evaluation workflows	C		2						3						4					4						5
	Play Fairway Analysis	C		2					2							3					4						5
	Petroleum Systems Modeling 1D/2D/3D			2						3						3					4					4	

Element Descriptor:
C = Core Element = Red
Support Element = Green

KOC Standard Levels

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How to Use the Training Roadmaps

- The **Job Profile** defines what types, levels or training are required for each jobtype.
- The **DTRs plan** is the resource to populate the individual training plan.
- **Competency Assessment** can be used to establish the baseline level and better define gaps. It is *optional*; i.e. the Training Plan can be created from the Profile and DTR without an assessment, assuming all training is for specific job profile is mandatory.
- The **DTRs plan** will invariably contain every type of training. It is not expected that the individual training plan contains all of these. They must be based on priority and time available.

Example Training Plan Creation: Exploration Geologist

STEP ONE

Composite Job Profile and Description

KOC Exploration
Job Profile

Exploration Geologist

Competency	Sub-Competency (Target Level Elements)	Key	2 years					4 years					6 years					8 years					10 years				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Basin Modeling / Petroleum Systems	Trapping mechanisms	C		2					2						3						4						5
	Source rock and hydrocarbon generation	C		2						3						4						5					5
	Fluid migration		1						2					2						3					3		
	Organic and Inorganic Geochemistry			2						3					3						4					4	
	Preservation and Timing	C	1						2						3						4						5
	Petroleum Systems Modeling 1D/2D/3D			2						3						3					4					4	
Play and Prospect Analysis	Play characterization workflows	C		2						3						4					5						5
	Prospect evaluation workflows	C		2						3						4					4						5
	Play Fairway Analysis	C		2					2							3					4						5
Siliclastic Sedimentology	General siliclastic sedimentology	C		2						3						4					5						5
	Siliciclastic diagenesis			2						3					3						4					4	
Carbonate Sedimentology	General carbonate sedimentology	C		2						3						4					4						5
	Carbonate diagenesis			2						3					3						4					4	
Stratigraphy	Clastic continental sequence stratigraphy	C		2						3						4					4						5
	Clastic marine sequence stratigraphy	C		2						3						4					4						5
	Carbonate sequence stratigraphy	C		2						3						4					4						5
	Seismic Stratigraphy		1						2						3					3						4	
Structure and Tectonics	Structural styles	C		2						3						4					4						5
	Fault analysis	C		2						3					3						4						5
	Fold analysis	C		2						3					3						4						5
	Uncomformities and pinchouts	C		2						3					3						4						5
	Fracture analysis	C		2						3						4					4						5
	Plate tectonics			2					2						3					3					3		

STEP TWO

Gap Analysis

KOC Exploration
Gap Analysis

Exploration Geologist

Competency	Sub-Competency (Target Level Elements)	Key	2 to 4 years					4 to 6 years					6 to 8 years					8 to 10 years				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Basin Modeling / Petroleum Systems	Trapping mechanisms	C																				
	Source rock and hydrocarbon generation	C																				
	Fluid migration																					
	Organic and Inorganic Geochemistry																					
	Preservation and Timing	C																				
	Petroleum Systems Modeling 1D/2D/3D																					
Play and Prospect Analysis	Play characterization workflows	C																				
	Prospect evaluation workflows	C																				
	Play Fairway Analysis	C																				
Siliclastic Sedimentology	General siliclastic sedimentology	C																				
	Siliciclastic diagenesis																					
Carbonate Sedimentology	General carbonate sedimentology	C																				
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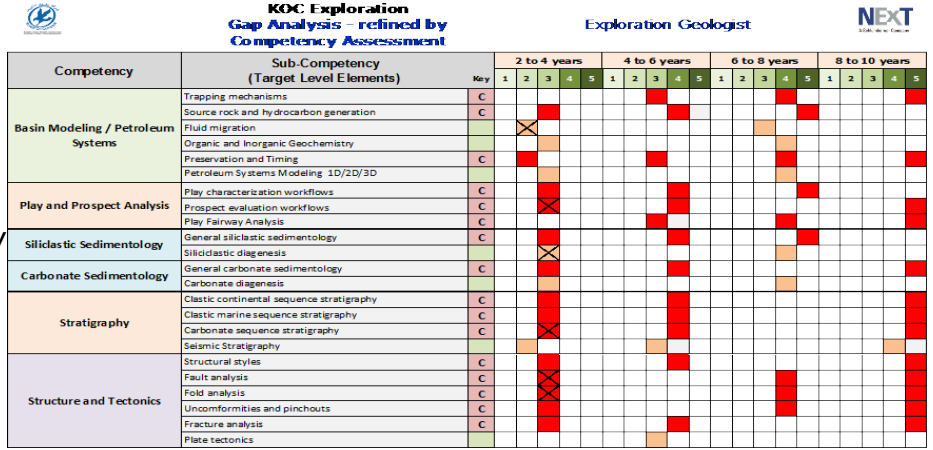
Stratigraphy	Clastic continental sequence stratigraphy	C																				
	Clastic marine sequence stratigraphy	C																				
	Carbonate sequence stratigraphy	C																				
	Seismic Stratigraphy																					
Structure and Tectonics	Structural styles	C																				
	Fault analysis	C																				
	Fold analysis	C																				
	Uncomformities and pinchouts	C																				
	Fracture analysis	C																				
	Plate tectonics																					

Example Training Plan Creation: Exploration Geologist

STEP THREE

OPTIONAL Competency Assessment

Note : partial example only



KOC Exploration
Gap Analysis – refined by Competency Assessment

Exploration Geologist

NExT

Competency	Sub-Competency (Target Level Elements)	Key	2 to 4 years					4 to 6 years					6 to 8 years					8 to 10 years				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Basin Modeling / Petroleum Systems	Trapping mechanisms	C																				
	Source rock and hydrocarbon generation	C																				
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Structure and Tectonics	Structural styles	C																				
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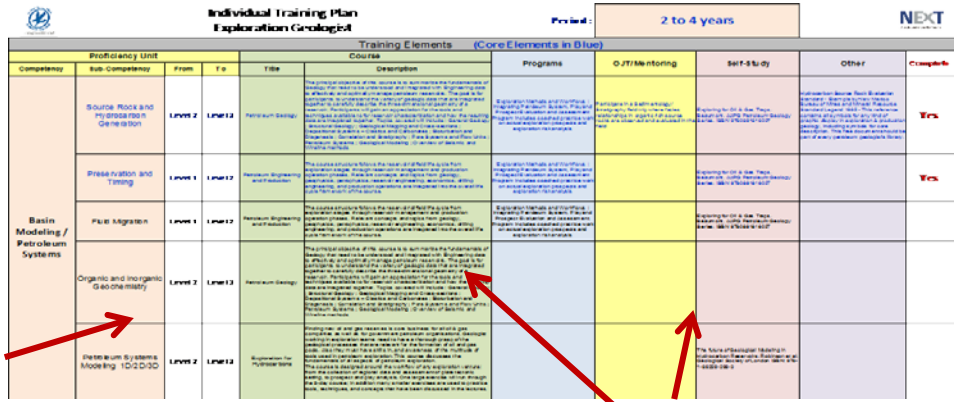
	Fold analysis	C																				
	Uncomformities and pinchouts	C																				
	Fracture analysis	C																				
	Plate tectonics																					



Individual Training Plan
Exploration Geologist

Period: 2 to 4 years

NExT

Training Elements (Core Elements in Blue)

Proficiency Unit				Course		Programs	OJT/Mentoring	Self-Study	Other	Complete
Competency	Sub-Competency	From	To	Title	Description					
Basin Modeling / Petroleum Systems	Source Rock and Hydrocarbon Generation	Level 2	Level 2	Petroleum Geology						Yes
	Preservation and Timing	Level 1	Level 2	Petroleum Engineering and Production						Yes
	Fluid Migration	Level 1	Level 2	Petroleum Engineering and Production						
	Organic and Inorganic Geochemistry	Level 2	Level 3	Petroleum Geology						
	Petroleum Systems Modeling 1D/2D/3D	Level 2	Level 2	Exploration for Hydrocarbons						

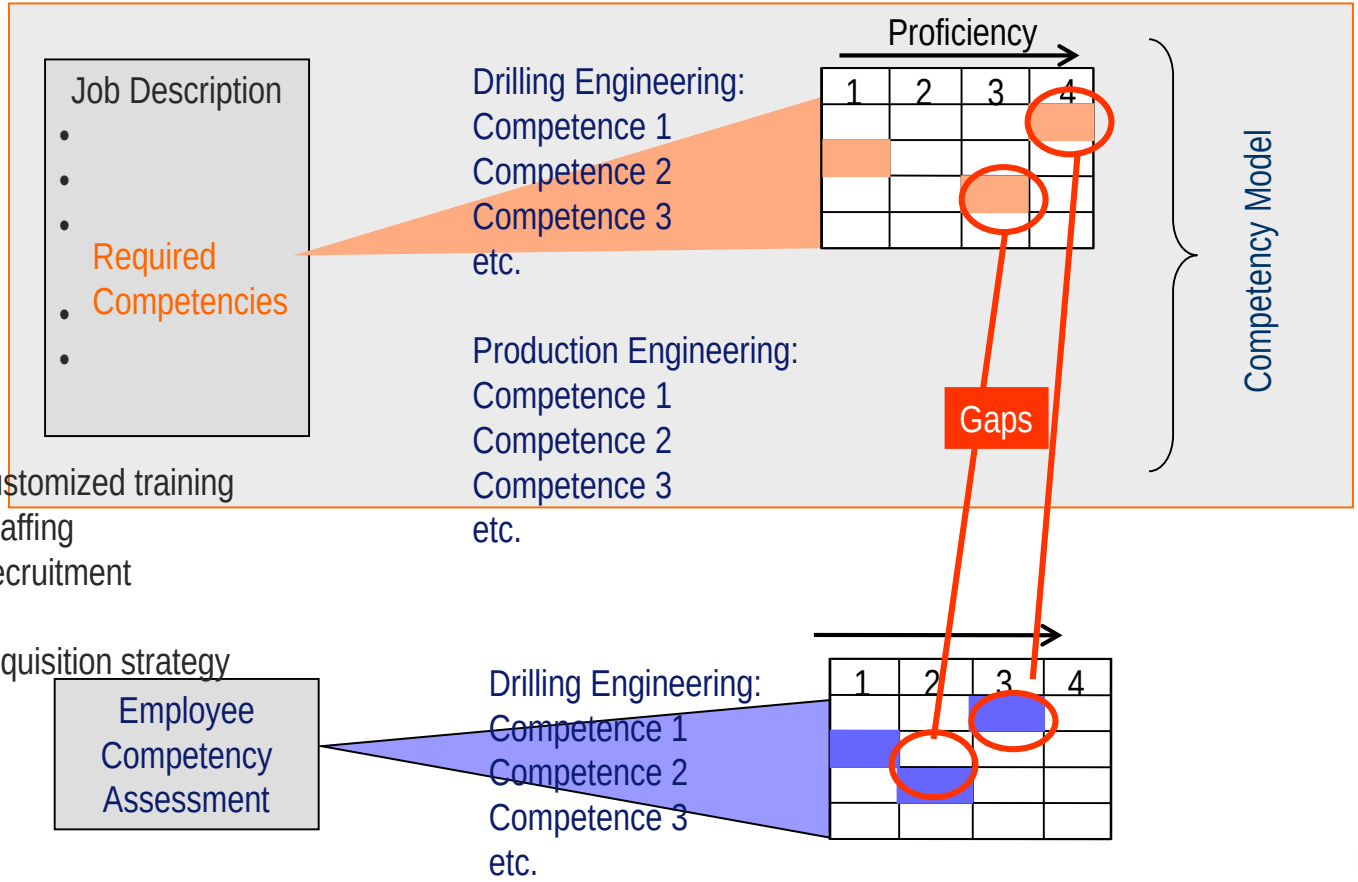
Level Progression

Types of Training

STEP FOUR

Individual Training Plan

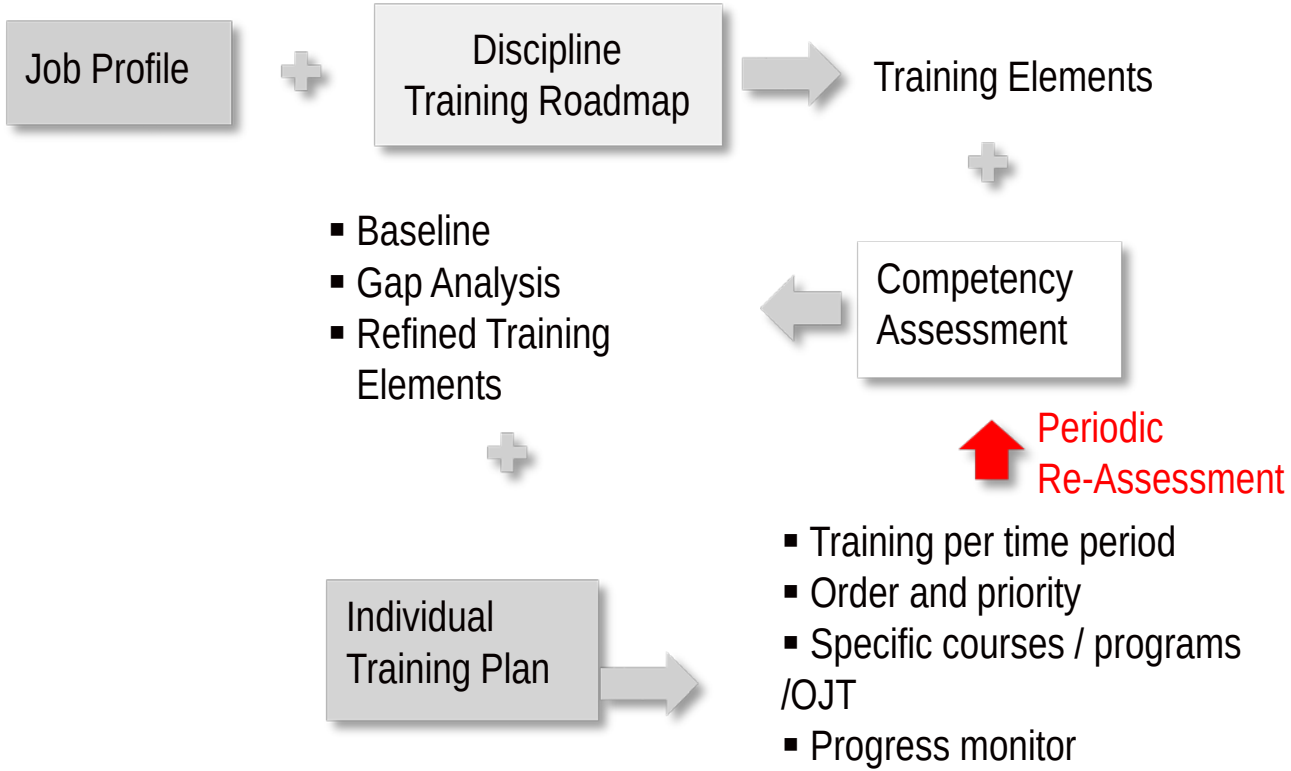
Competency Management



Competency Gaps:

- Individual → Customized training
- Team → Staffing
- Segment → Recruitment strategy
- Company → Acquisition strategy

The way forward

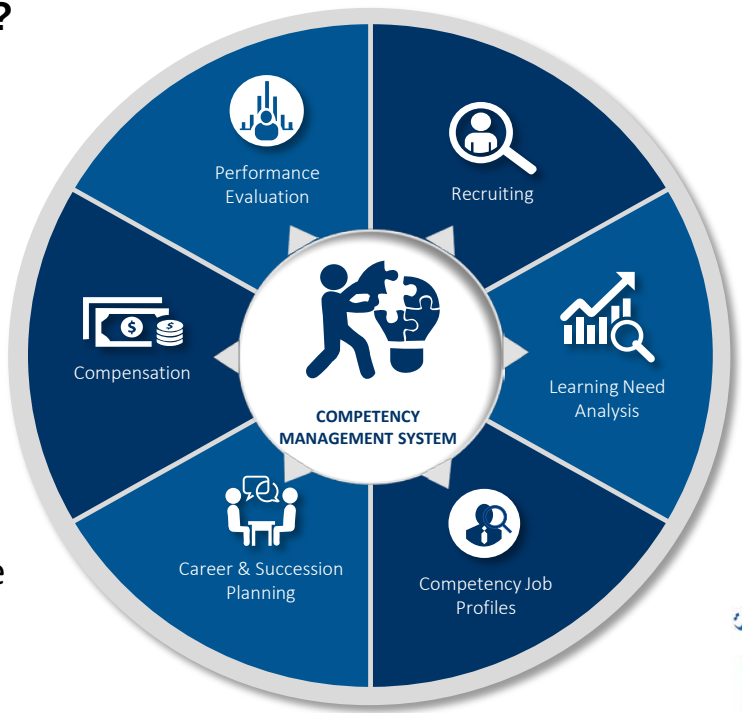


Phase 2 – Competency Assessment Part One

What is Competency Assessment?

A **systematic** and consistent process for determining the knowledge and skill levels of individuals and groups by identifying their strengths and competency gaps, for the purpose of individual and organizational development

Competencies with technologies provide a common platform for Talent Management



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Development of Individual Training Plans

- 100 persons assessed in 5 disciplines
- Gap Analysis (left) generated PDP (right)

KOC Exploration
Gap Analysis

Exploration Geologist

NExT

Unit	Element		2 to 4 years					4 to 6 years					6 to 8 years					8 to 10 years				
			1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Petroleum Systems	Trapping mechanisms	C								■						■						■
	Source rock and hydrocarbon generation	C			■						■						■					
	Fluid migration			■											■							
	Organic geochemistry				■											■						
	Preservation and Timing			■											■							
Basin, Play, and Prospect Analysis	Play characterization workflows	C			■						■						■					
	Prospect evaluation workflows	C			■						■											■
	Play Fairway Analysis									■												
	Petroleum Systems Modeling 1D/2D/3D				■												■					
Siliclastic Sedimentology	General siliclastic sedimentology	C			■						■						■					
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	Aeolian																					
	Deltaic																					
	Coastal and shallow marine																					
	Deepwater																					
	Shale																					
	Siliciclastic diagenesis				■											■						

Individual Training Plan
Exploration Geologist

Period : 2 to 4 years

NExT

Training Elements (Core Elements in Blue)

Proficiency Unit				Course		Programs	OJT/Mentoring	Self-Study	Other	Complete
Competency	Sub-Competency	From	To	Title	Description					
Basin Modeling / Petroleum Systems	Source Rock and Hydrocarbon Generation	Level 2	Level 3	Petroleum Geology	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yes
	Preservation and Timing	Level 1	Level 2	Petroleum Engineering and Production	[illegible]	[illegible]		[illegible]		Yes
	Fluid Migration	Level 1	Level 2	Petroleum Engineering and Production	[illegible]	[illegible]		[illegible]		
	Organic and Inorganic Geochemistry	Level 2	Level 3	Petroleum Geology	[illegible]					
	Petroleum Systems Modeling 1D/2D/3D	Level 2	Level 3	Exploration for Hydrocarbons	[illegible]			[illegible]		

- PDP is related to Job Grade – 2 year phases

- Assessment verifications done by NExT discipline experts
- Assessor training performed for KOC senior staff

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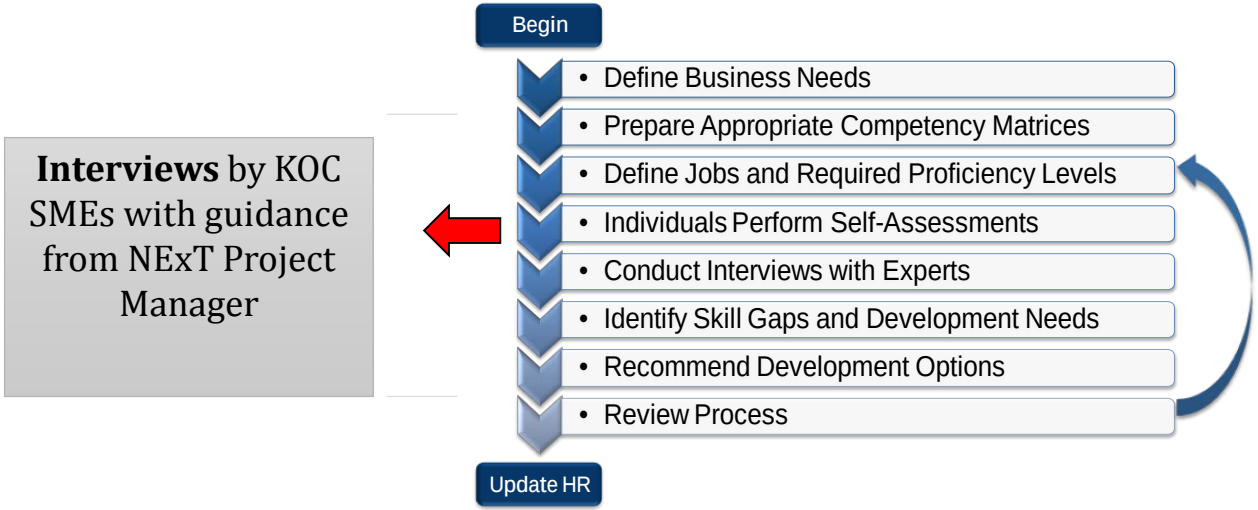
Phase 3 – Competency Assessment (*Part Two*)

- 69 persons assessed in 5 disciplines
- Most of this group are more senior staff

- Assessment verifications done by KOC discipline experts
- Transfer of knowledge allows KOC to perform future assessments



Conclusions

- Objective of Project was to create a high-standard competency management system for KOC Exploration Group
- Combination of expertise from KOC and NExT
- DTR forms the basis of KOC 10 year training plans
- Transfer of technology allows KOC to continue development

"An example of how collaboration between two companies can lead to superior results"