

ARCHITECTING DIGITAL TRANSFORMATION

Elevating Business Value of Digital through
Business Capabilities

PETRONAS - Nurhana Mohd Basri

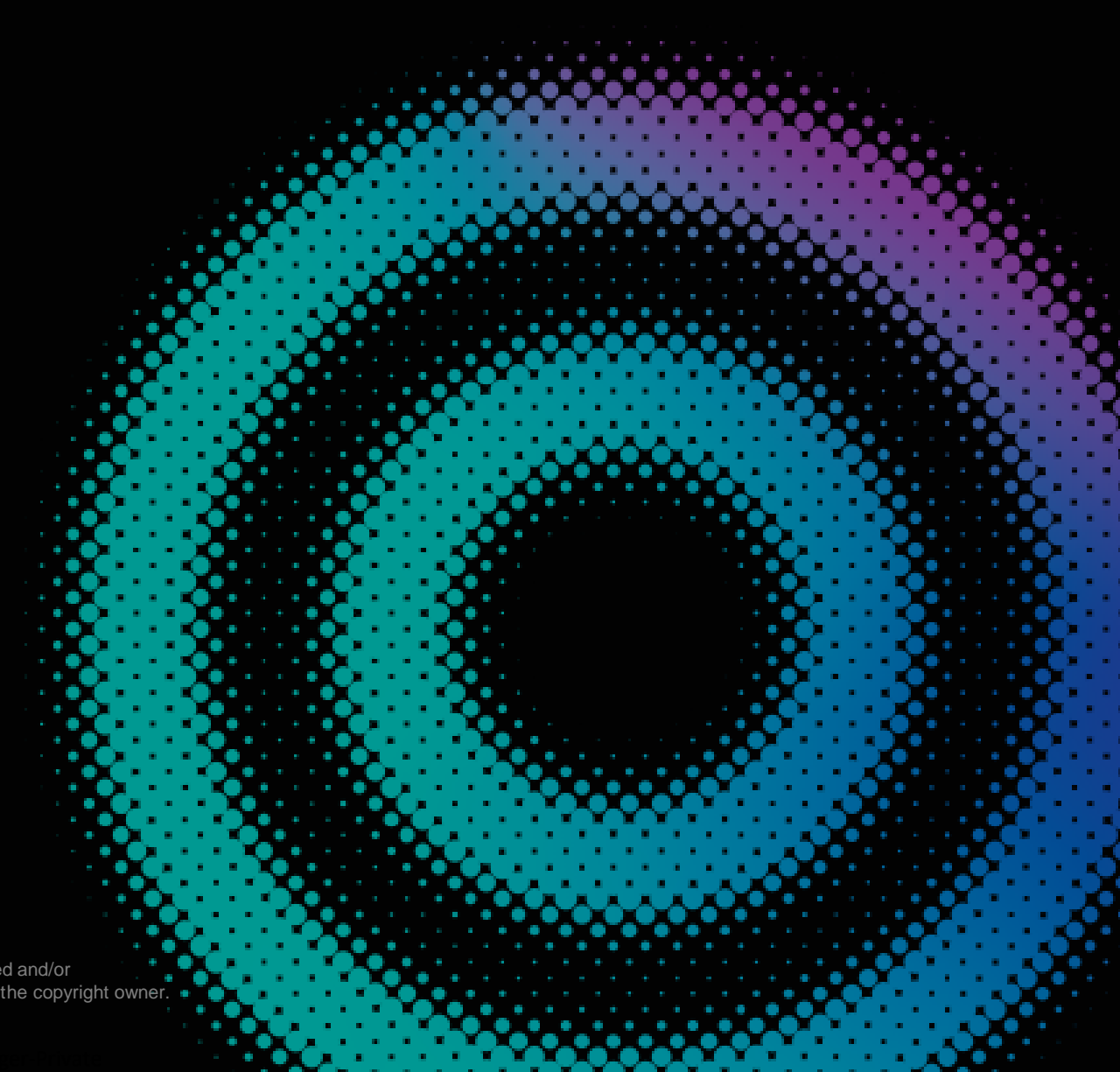
Arief Budiman Hermani & Selahattin Aksoy

Schlumberger Digital Forum

20-22 September 2022

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OUTLINE

ARCHITECTING DIGITAL TRANSFORMATION



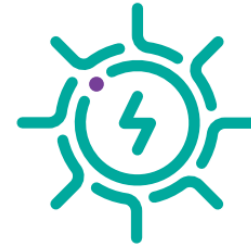
START

Why . How . What



ARCHITECTURE

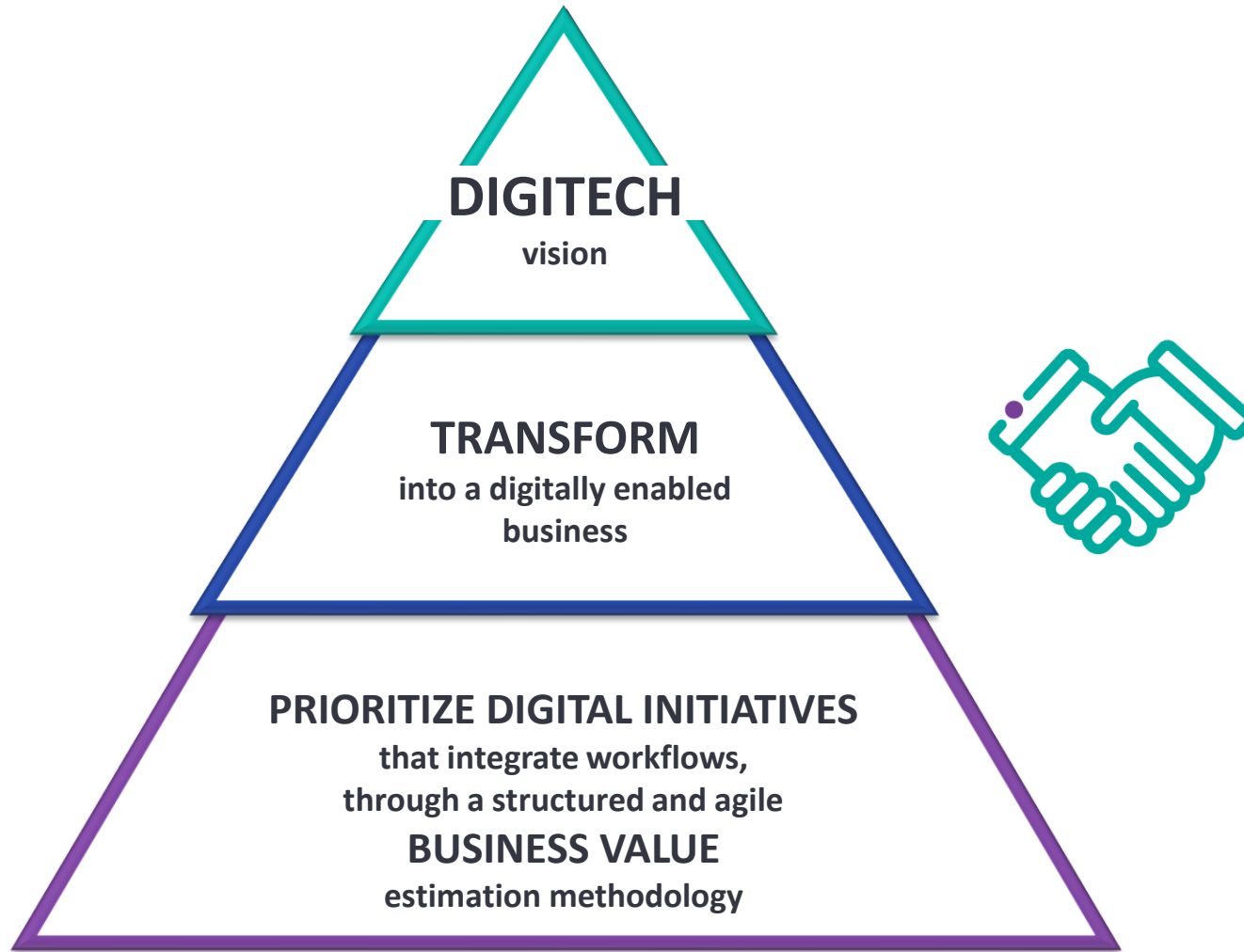
Model . Map



VALUE

Value . Next

The “WHY”... Starting Point

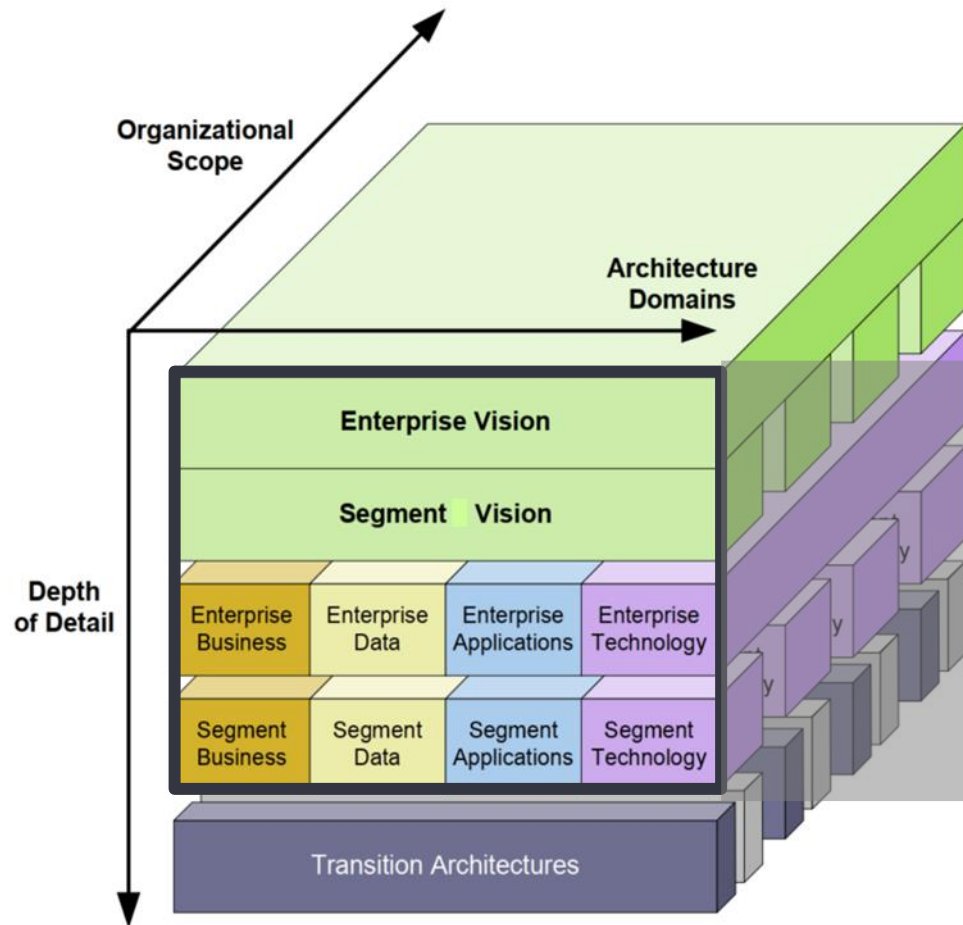


NEW WAY OF WORKING

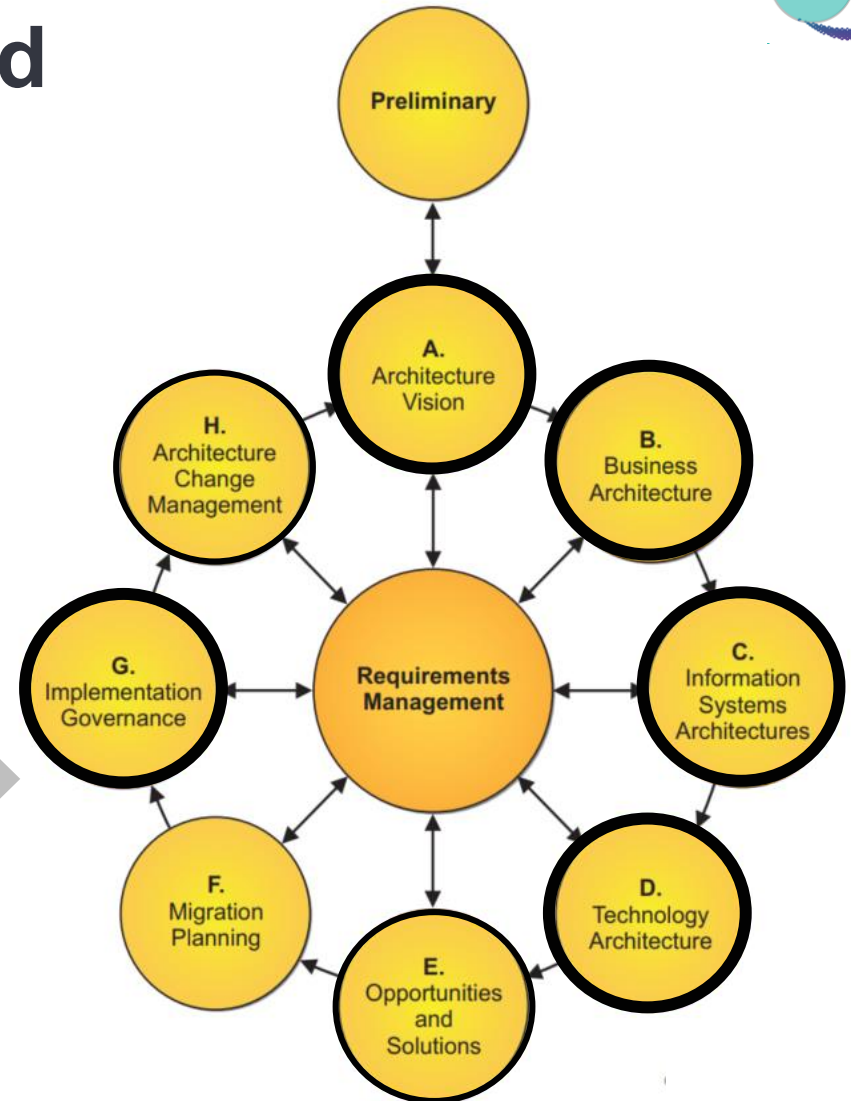
Business Architecture Model

*lay on it the technology dimension and use the model in
an innovative manner*

The "HOW"... Architecture Standard



TOGAF Architecture Content Aggregation
... EA Model



TOGAF Architecture Development Model (ADM)
.... ITERATIVE Approach

The “WHAT”... Business Capability Model

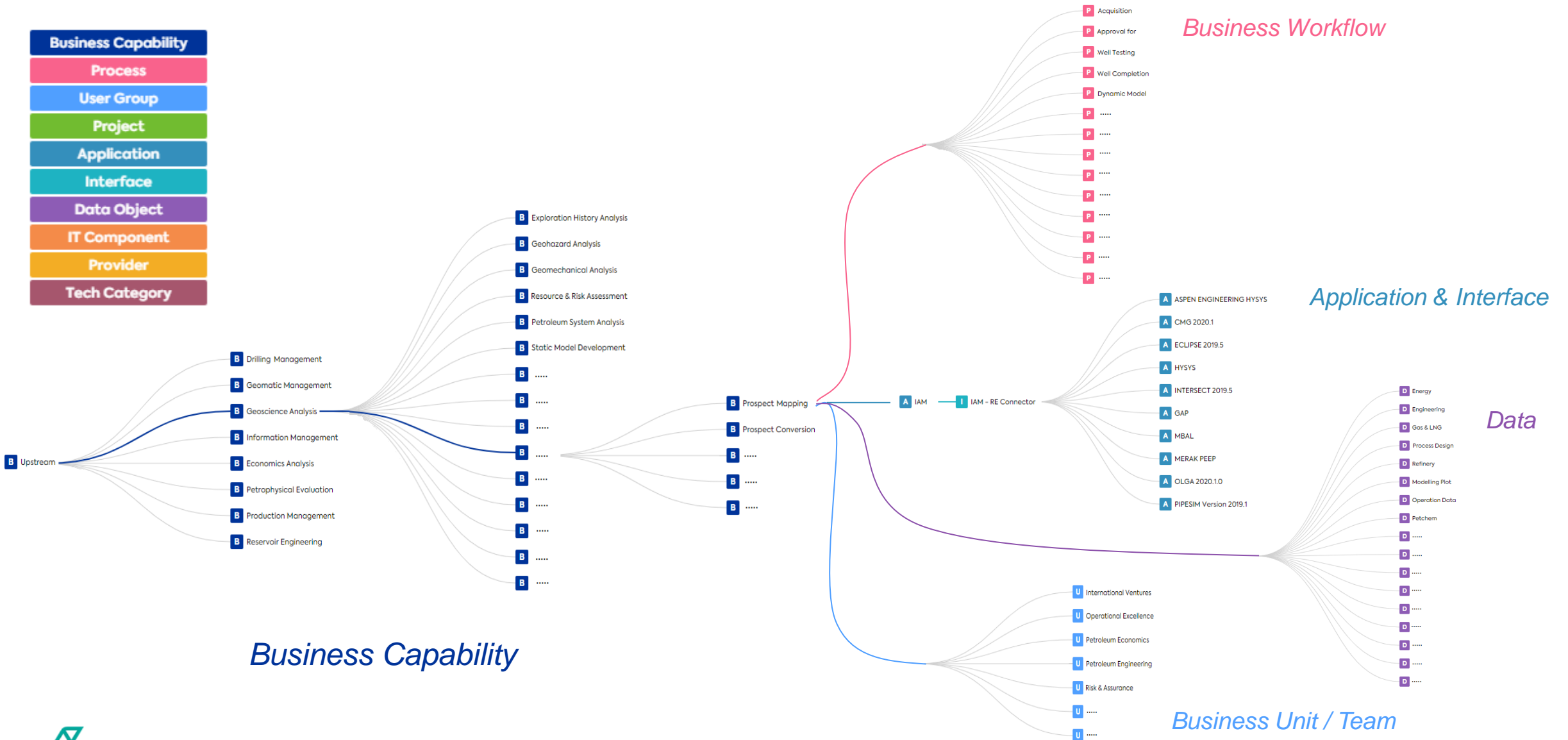
CAPABILITY...
“Ability to do something”

Business capabilities represents abilities that an enterprise has at its disposal to run its businesses



The "MODEL"... Interconnected Architecture Map

- Business Capability
- Process
- User Group
- Project
- Application
- Interface
- Data Object
- IT Component
- Provider
- Tech Category



Business Capability

Business Workflow

Application & Interface

Data

Business Unit / Team





The “VALUE”..... Project Business Value Estimation

Project : RE Vision 2025

Objectives : Improve workflow efficiency & Upgrade to cloud SaaS technology with embedded AI & ML

BUSINESS CAPABILITY	Business Criticality (0-5)	Current State				Future State			Business Value ²			
		Applications	Vendor	Technology	Functional Fit (0-5)	Applications	Vendor	Functional Fit (0-5)	User Count	% Time spent on capability	Efficiency Gain (%)	USD Value ³ (\$) over 3 years
RESERVOIR ENGINEERING												
Coupled Modelling	3				3.9			4.3	20			\$ 2,205,000
3D Geomechanical Coupling	5	TopReservoir Software	Paris RE Shop	OnPrem .Net + Oracle DB	5	PetrolRE Modeler	Houston Reservoir Soft	5	20	50%	10%	\$ 900,000
Geochemistry Coupling	5	TopReservoir Software	Paris RE Shop	OnPrem .Net + Oracle DB	2	PetrolRE Modeler	Houston Reservoir Soft	4	5	15%	35%	\$ 945,000
Reservoir Coupling (simulator)	2	TopReservoir Software	Paris RE Shop	OnPrem .Net + Oracle DB	4	PetrolRE Modeler	Houston Reservoir Soft	4	15	20%	10%	\$ 360,000
Reservoir to Network Coupling	3	TopReservoir Software	Paris RE Shop	OnPrem .Net + Oracle DB	5	PetrolRE Modeler	Houston Reservoir Soft	4	10	20%	0	\$ -
Enhanced Recovery and Storage	5				2.1			3.6	7			\$ 4,095,000
Chemical and Microbial EOR	4	CMI Software	CMI Group	SaaS	5	CMI Software	CMI Group	5	5	25%	5%	\$ 225,000
CO2 and Gas Storage	5	Excel			1	PetrolRE Modeler	Houston Reservoir Soft	3	7	35%	50%	\$ 3,150,000
EOR Data Acquisition	5	Excel			1	PetrolRE Modeler	Houston Reservoir Soft	3	7	5%	80%	\$ 720,000
Overall Functional Fit¹					2.79				3.86	\$ 6,300,000		

NOTE : 1) Functional fit is factoring in business criticality scoring for every business capability.
 2) Other potential benefits: enhanced rig time, Facility shutdown avoidance, Improved Production, etc.
 3) Simple model above excludes deployment, software differential costs and any physical device installations.
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The “NEXT” Potential EA program extension



Full Architecture Map

*includes business outcomes & performance metrics
measuring business value and its relationship to long-term
business targets*



Digital Maturity Assessment

*uncover value from identified potential area for business
capability efficiency improvement*



Auto Generated Dashboards

View information from different persona perspective



Platform Integration

*Integration the EA platform to existing systems of records
such as process modeler, data taxonomy portal,
infrastructure components database*



Automated identity management

*Compute authorization profile and assign access in target
systems based on organizational assignment*

THANK YOU

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