

# IT Architecture Assessment

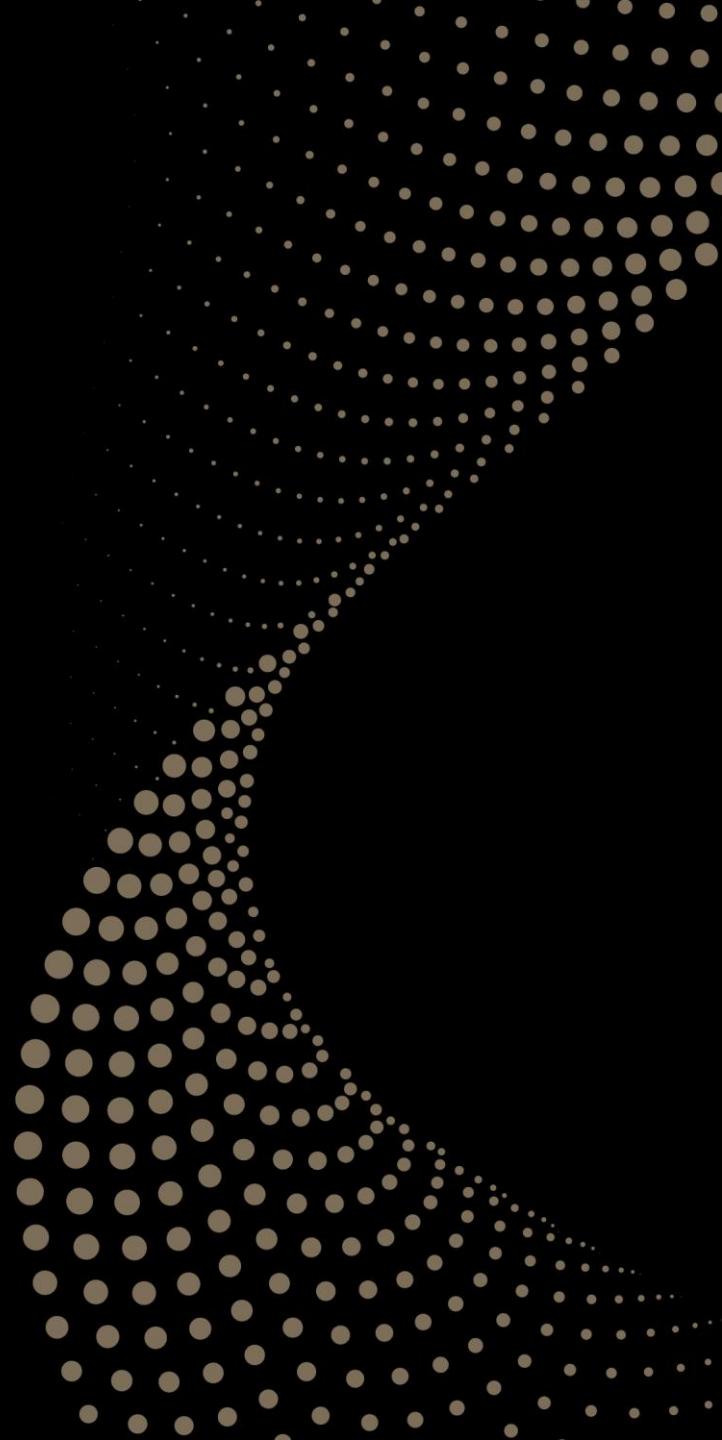
5 April 2025

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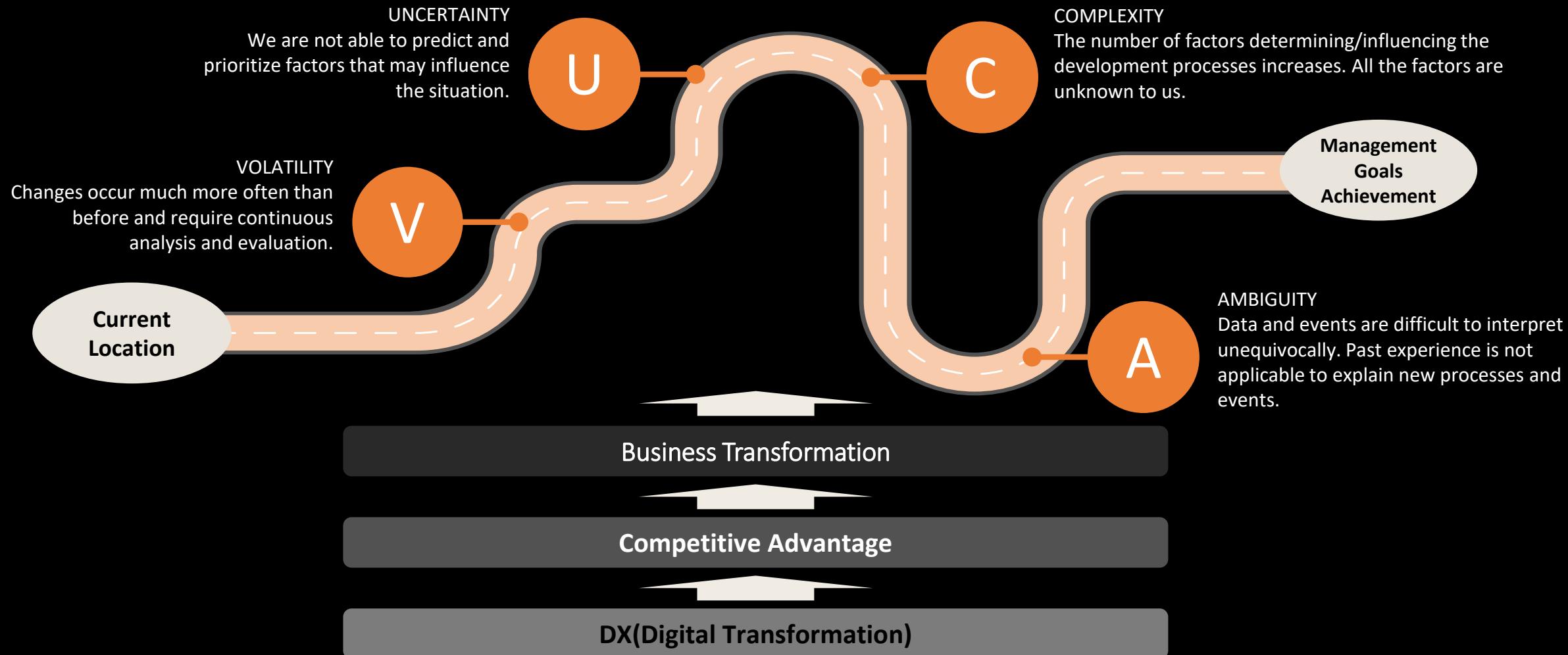
Appendix (Case Study)

# 1. Digital Transformation



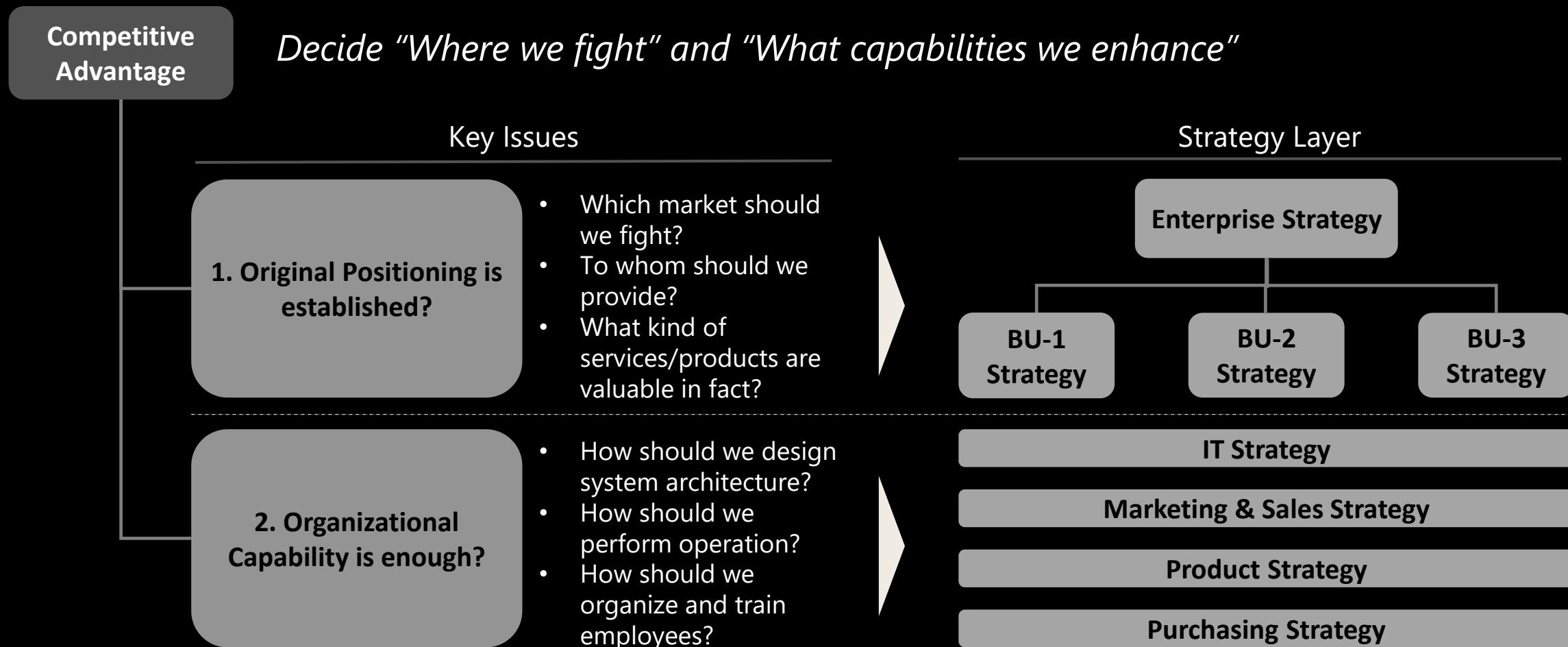
# What is DX?

DX (Digital Transformation) generate “Competitive Advantage” and lead “Business Transformation” with digital solutions. DX activities include many required activities for management goals achievement.



# What is Competitive Advantage?

- Competitive Advantage generates continuous profits, and divided into **2 parts**, "Original Positioning" and "Organizational Capability."

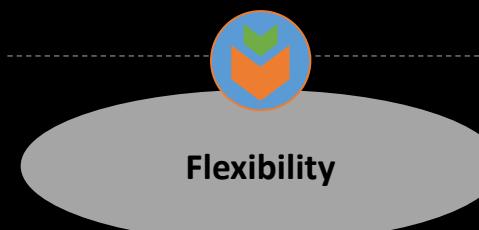


# Common Pitfalls without understanding Enterprise/BU strategies

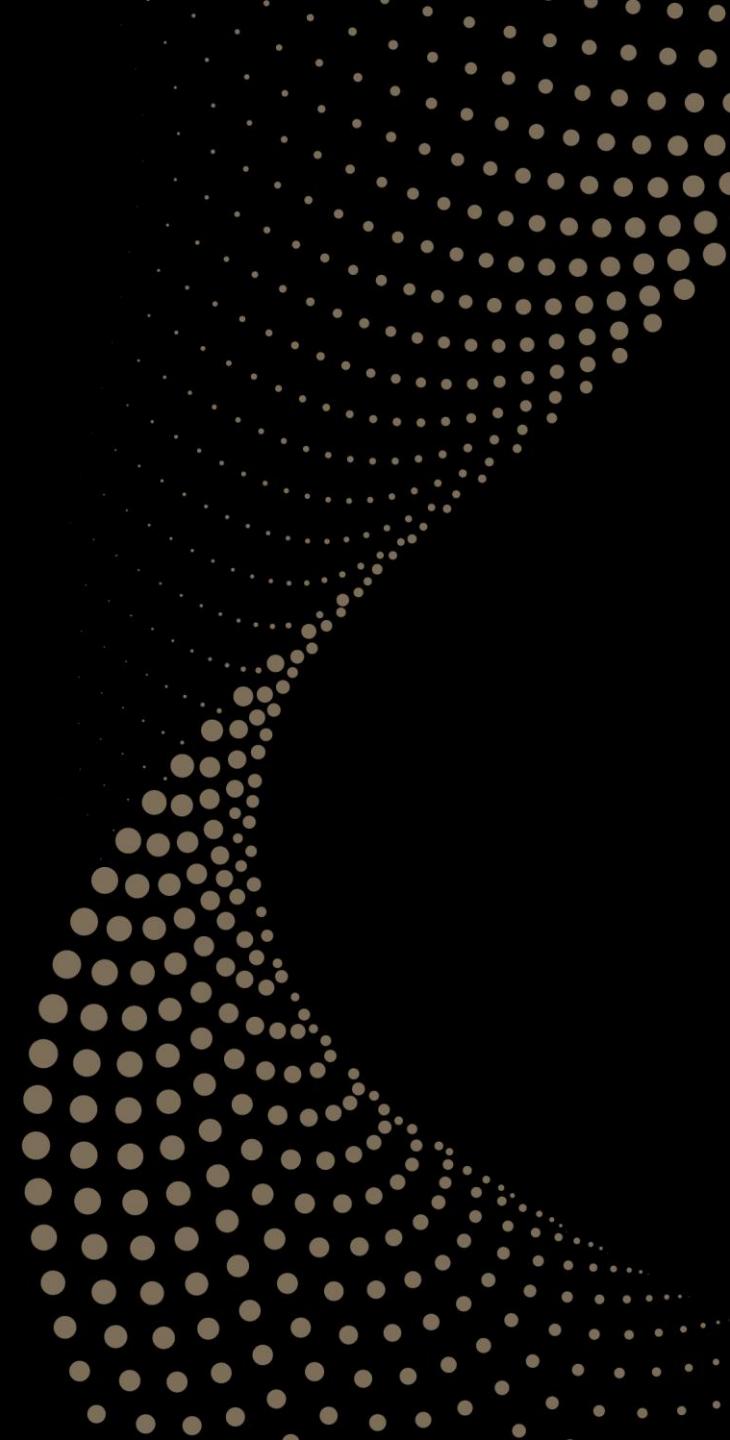
- DX achievement by addressing common pitfalls.

Common Pitfalls	Effort without Results	Blind against customers	Ad-hoc Initiatives	Not Aligned with Business
	What we can do			
	<p>Customers often face to <b>invisible outcomes</b> because most of initiatives have too long journey and mere shells of KPI, which is not effective for everyone.</p> 	<p>Customers often have <b>deviation</b> among customer needs, delivered services, and corporate capabilities, which is <b>not focus on customer values</b>.</p> 	<p>Initiatives are <b>ad-hoc and partial</b> because companies often focus on <b>short-sighted</b> goal and have no big pictures and dynamic storyline to achieve goals.</p> 	<p>Business goals, IT investments, and operations are not aligned because companies often have <b>big walls among business, IT, and user sectors</b>.</p> 

DX  
Key Issues



## | 2. Solution Concept



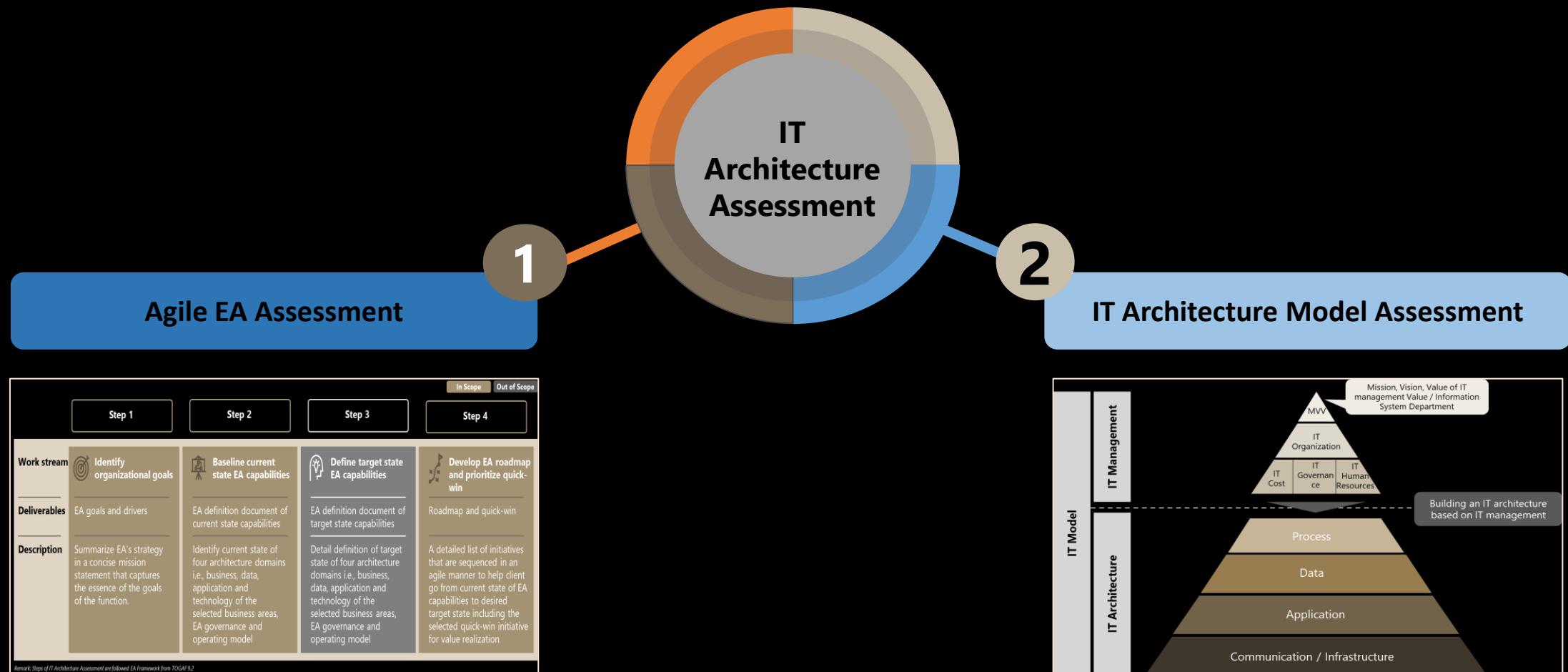
# IT Planning Solutions × DX

IT Planning Solutions strongly lead DX achievement. Agile EA is a core solution for DX achievement and fulfills **4 DX Key Success Factors** in age of VUCA and is also utilized for major initiatives.



# There Are Two IT Architecture Assessment Frameworks Which Can be Utilized Here

- There are **2 available assessment frameworks** which we developed upon the past project experiences to capture all key features of current state of IT Architecture and recommend the actions/initiatives on their existing concerns and problems.



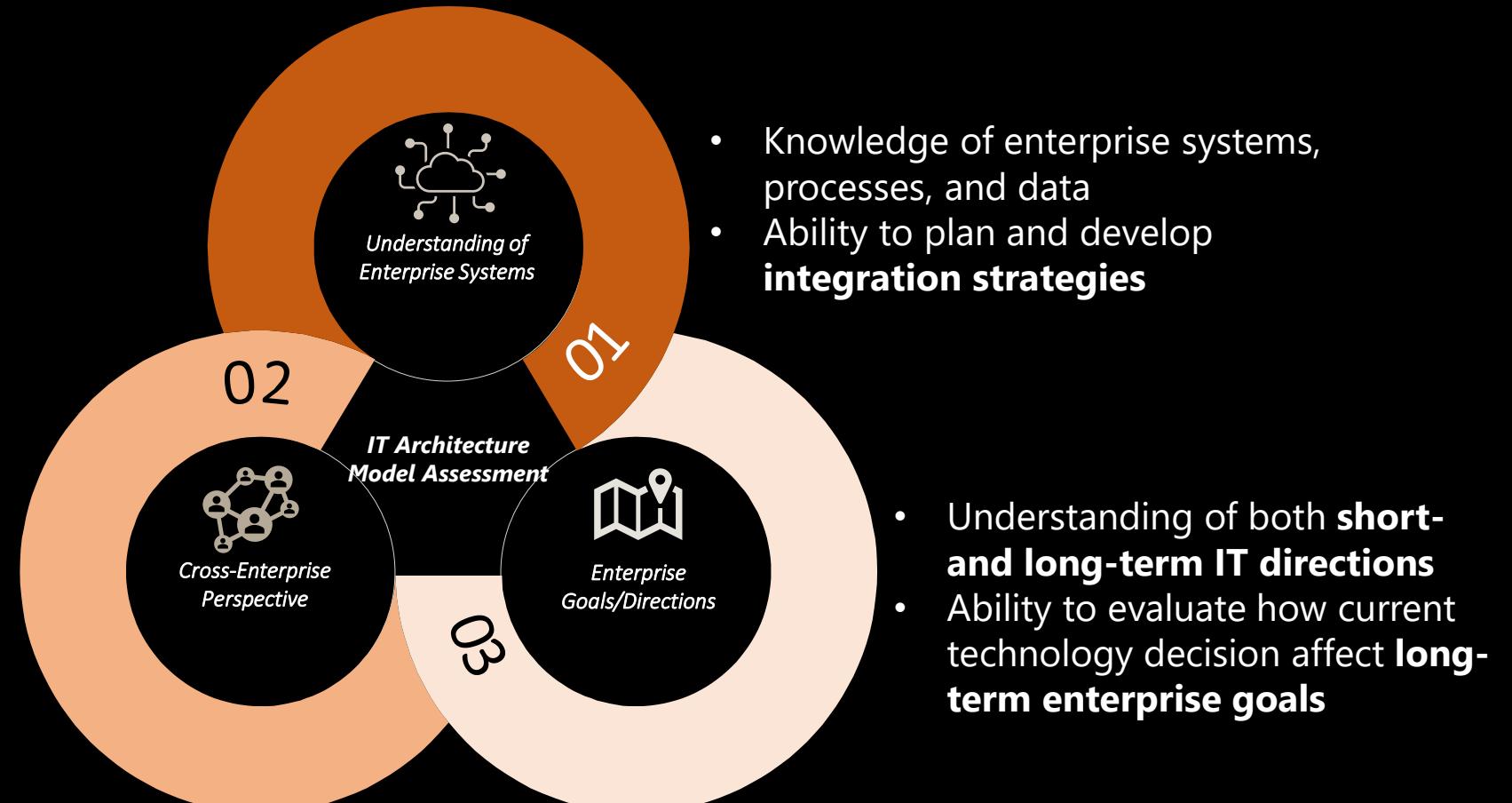
# Difference Between Agile EA Assessment and IT Architecture Model Assessment

- In summary, there are some differences from the assessment using both approach as follows;

Topic	Agile EA Assessment (IT Architecture Assessment#1)	IT Architecture Model Assessment (IT Architecture Assessment#2)
Method designs for	Who targets to have a <b>Starter Package of EA Development</b> and a <b>high-level of EA Roadmap</b> .	Who targets to have a <b>Quick IT Architecture Assessment</b> with a <b>minimum of budget</b> .
Description	The assessment approach will basically follow the steps and activities from Agile EA Assessment framework which will include the development of artifacts and deliverables of each architecture domain of the <b>identified business areas and IT systems</b> based on TOGAF v9.2 (standard framework)	The assessment will be done following the assessment areas in the IT Architecture Model Assessment. The activities are based on information gathered from documentation and interview, then <b>develop findings and recommendations</b> .
Business Scope	All identified <b>business areas</b>	Same business scope
IT Scope	All relevant systems and applications with the identified business areas	Same IT scope
Approach/Task	Follow TOGAF framework & Agile EA Solution	Follow IT Architecture Model Assessment Framework
Deliverables	<ul style="list-style-type: none"><li>Strategy Backlog (4 backlogs)</li><li>Design Backlog (19 backlogs)<ul style="list-style-type: none"><li>Business Architecture (BA)</li><li>Data Architecture (DA)</li><li>Application Architecture (AA)</li><li>Technology Architecture (TA)</li></ul></li></ul> <p>Total: 23 backlogs</p>	<ul style="list-style-type: none"><li>Assessment Report<ul style="list-style-type: none"><li>Root causes analysis</li><li>Recommendations</li><li>Initiative Roadmap</li></ul></li></ul>
Project Durations	1.5 to 2 months	1 to 1.5 months
# of Project Members	1 Project Manager 4 Team Members	1 Project Manager 2 Team Members
Sprint Duration	Customizable (2 weeks to 4 weeks)	N/A
Business Areas/ Capabilities	Customizable	3 business areas

# (Ref.) Why is IT Architecture Model Assessment required?

- Comparative advantage of IT Architecture Model Assessment is to **understand current status of enterprise architecture** and develop **integrated business and IT strategy** into a solid **IT Architecture Roadmap** as Final Assessment Report.



Source: Gartner analysis

# 3. Framework

- 3.1 Agile EA Assessment Framework
- 3.2 IT Architecture model Assessment Framework

# Agile EA IT Architecture Assessment Framework (1/3)

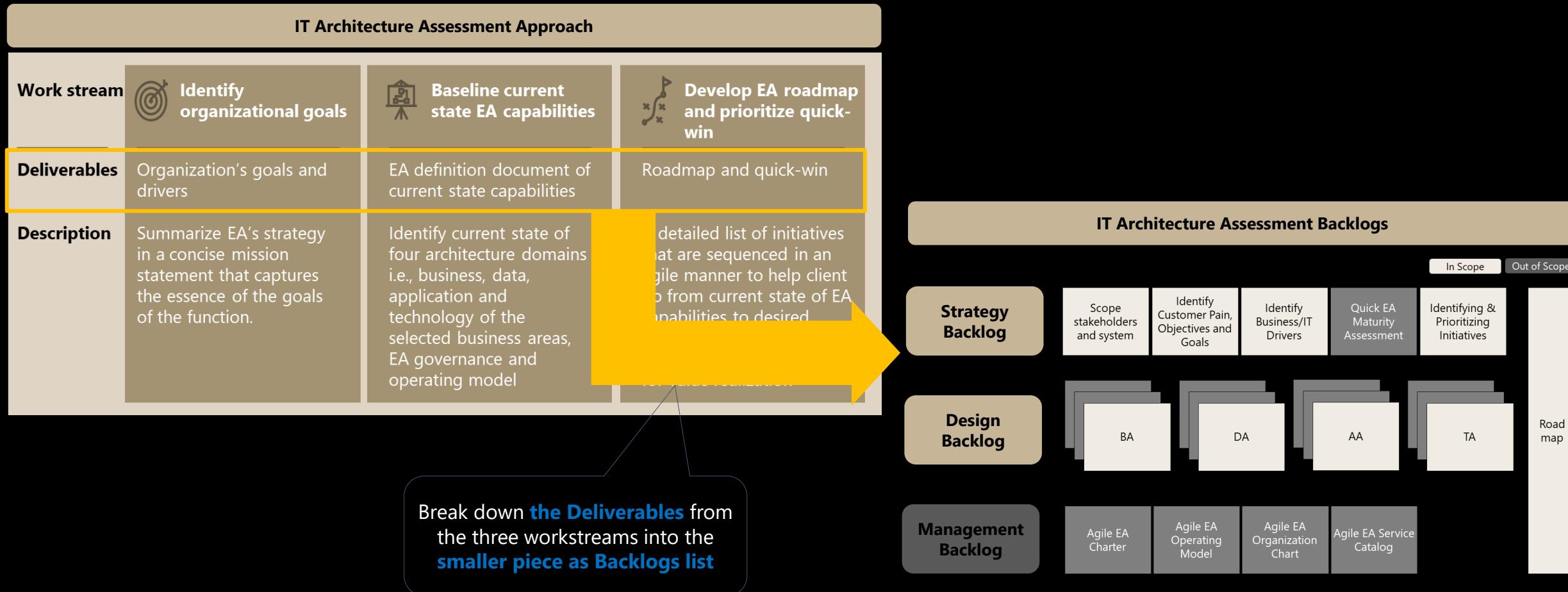
- In IT Architecture Assessment, We applied the Agile Enterprise Architecture (EA) framework from TOGAF 9.2 standard framework as the core model to assess client's IT Architecture Assessment in three following components:

	Step 1	Step 2	Step 3	Step 4	In Scope	Out of Scope
<b>Work stream</b>	 Identify organizational goals	 Baseline current state EA capabilities	 Define target state EA capabilities	 Develop EA roadmap and prioritize quick-win		
<b>Deliverables</b>	EA goals and drivers	EA definition document of <b>current state capabilities</b>	EA definition document of <b>target state capabilities</b>	Roadmap and quick-win		
<b>Description</b>	Summarize EA's strategy in a concise mission statement that captures the essence of the goals of the function.	Identify current state of four architecture domains i.e., <b>business, data, application and technology of the selected business areas, EA governance and operating model</b>	Detail definition of target state of four architecture domains i.e., business, data, application and technology of the selected business areas, EA governance and operating model	A detailed list of initiatives that are sequenced in an agile manner to help client go from current state of EA capabilities to desired target state including the selected <b>quick-win initiative for value realization</b>		

Remark: Steps of IT Architecture Assessment are followed EA Framework from TOGAF 9.2

# Agile EA IT Architecture Assessment Framework (2/3)

- In order to accelerate the IT Architecture Assessment, we not only applied the Agile approach, but also segmented the deliverables of Traditional EA Approach into smaller pieces. This will provide a more progressive and iterative delivery by evolving the customer focus in developing the IT Architecture.



# Agile EA IT Architecture Assessment Framework (3/3)

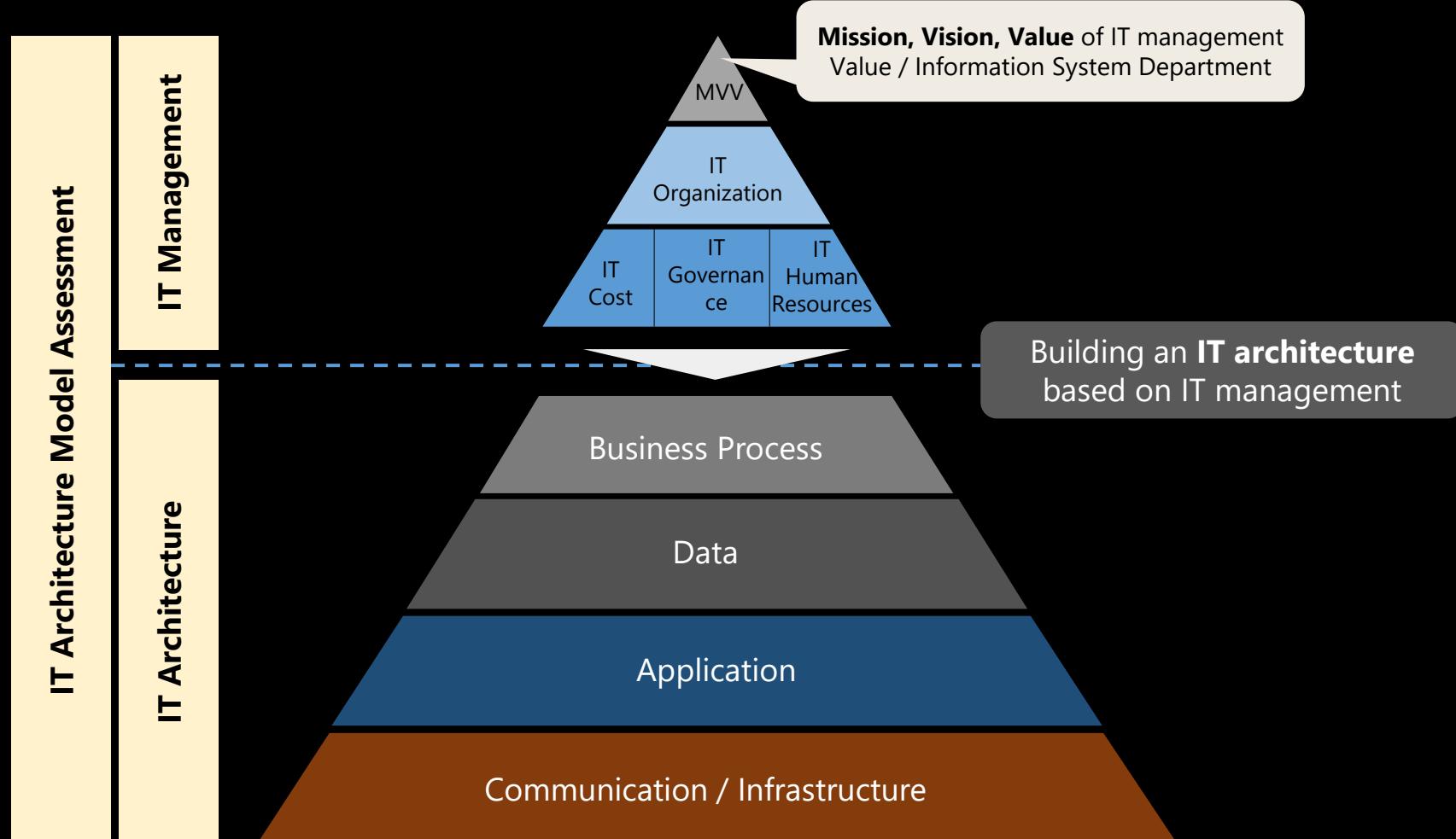
• Below table shows the artifacts and deliverables which this framework will provide a further visualization of IT Architecture in business, data, application and technology domain.

Category	IT Architecture Assessment Backlogs <i>(Total = 23 backlogs (4 Strategic + 19 Design Backlog))</i>	
	Business Architecture (BA) <i>(6 backlogs)</i>	Data Architecture (DA) <i>(3 backlogs)</i>
Strategy Backlogs <i>(4 backlogs)</i>	<ul style="list-style-type: none"> <li>• Stakeholder Map matrix</li> <li>• Driver/Goal/Objective Catalog</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed Initiative Charter</li> <li>• EA Roadmap</li> </ul>
Design Backlogs <i>(19 backlogs)</i>	<ul style="list-style-type: none"> <li>• Organization/Actor Catalog</li> <li>• Location Catalog</li> <li>• Process/Event/Control/ Product Catalog</li> <li>• Business Interaction Matrix</li> <li>• Capability/Organization Matrix</li> <li>• Business Capability Map</li> </ul>	<ul style="list-style-type: none"> <li>• Data Entity/Data Component Catalog</li> <li>• Data Entity/Business Function Matrix</li> <li>• Application/Data Matrix</li> </ul>
	Application Architecture (AA) <i>(6 backlogs)</i>	Technology Architecture (TA) <i>(4 backlogs)</i>
	<ul style="list-style-type: none"> <li>• Application Portfolio Catalog</li> <li>• Interface Catalog</li> <li>• Application/Function Matrix</li> <li>• Application Interaction Matrix</li> <li>• Application Communication Diagram</li> <li>• Application and User Location Diagram</li> </ul>	<ul style="list-style-type: none"> <li>• Technology Portfolio Catalog</li> <li>• Application/Technology Matrix</li> <li>• Environments and Locations Diagram</li> <li>• Networked Computing/ Hardware Diagram</li> </ul>

Remark: Artifacts are selected from TOGAF 9.2

# IT Architecture Model Assessment Framework (1/3)

- Utilizing our **IT Architecture Model Assessment framework** for IT assessment, we'll quickly consider the future image of IT that is consistent with management / business strategy



# IT Architecture Model Assessment Framework (2/3)

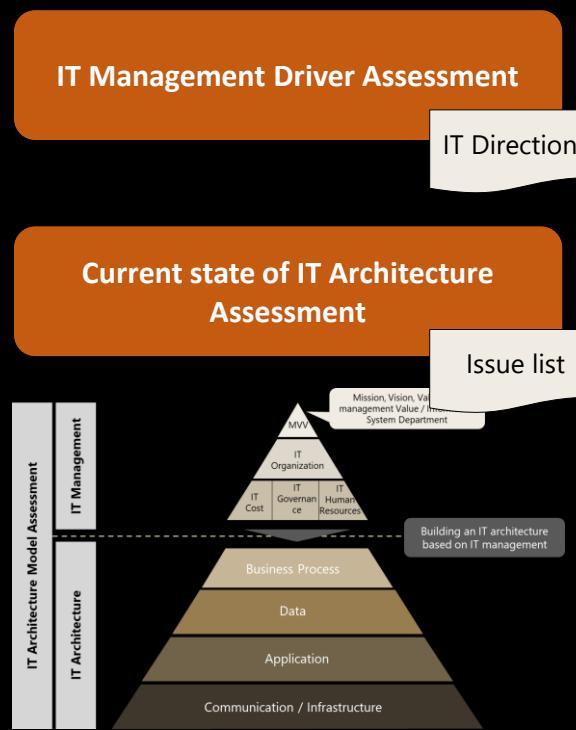
- We will identify IT existing issue & **Mid/Long Term Management** target & theme through existing materials or interview

IT Architecture Model Assessment Elements		Sample Discussion Points
Mid/Long-Term Management Plan	<ul style="list-style-type: none"> <li>Qualitative Target</li> <li>Quantitative Target</li> </ul>	<ul style="list-style-type: none"> <li>Business plan, business strategy and IT strategy alignment, IT roadmap and list of initiatives</li> <li>Sources of growth, value drivers (internal and external)</li> <li>Company image</li> <li>Study these elements from existing documents</li> </ul>
Management Theme	<ul style="list-style-type: none"> <li>Focusing Business (Product x Market)</li> <li>Focusing Program</li> </ul>	
IT Management Components	IT Management Value (Role of IT)	<ul style="list-style-type: none"> <li>Improving business value through IT</li> <li>Business process transformation by IT</li> </ul>
	MVV in the Information System Department	<ul style="list-style-type: none"> <li>Mission</li> <li>Vision</li> <li>Values</li> </ul>
	IT Organization	<ul style="list-style-type: none"> <li>Organizational structure, division of roles</li> <li>The number of personnel</li> </ul>
	IT Human Resources	<ul style="list-style-type: none"> <li>Skills</li> <li>Human resources image</li> </ul>
	IT Governance	<ul style="list-style-type: none"> <li>System / rules</li> <li>Information security</li> </ul>
	IT Cost	<ul style="list-style-type: none"> <li>IT spending, IT spending ratio</li> <li>IT investment criteria</li> </ul>
	Business Process	<ul style="list-style-type: none"> <li>Core business process</li> <li>Back-office/Support business process</li> </ul>
	Data	<ul style="list-style-type: none"> <li>Management data (KPI)</li> <li>Transaction</li> <li>Master</li> </ul>
	Application	<ul style="list-style-type: none"> <li>Core business application</li> <li>Back-office business application</li> <li>Common platform (e.g., WF, DWH, Etc.)</li> </ul>
	Communication	<ul style="list-style-type: none"> <li>Email, portal, information sharing infrastructure</li> <li>TV conference, web conference</li> </ul>
	Infrastructure	<ul style="list-style-type: none"> <li>Data Center, Personal computer, Network</li> <li>Personal Computer security, Network security</li> </ul>

# IT Architecture Model Assessment Framework (3/3)

- IT Architecture Model Assessment is the effective framework that could develop more visualization of those potential issues and concern points of current IT Architecture and able to identify the **improvement area to achieve the IT Management Directions**.

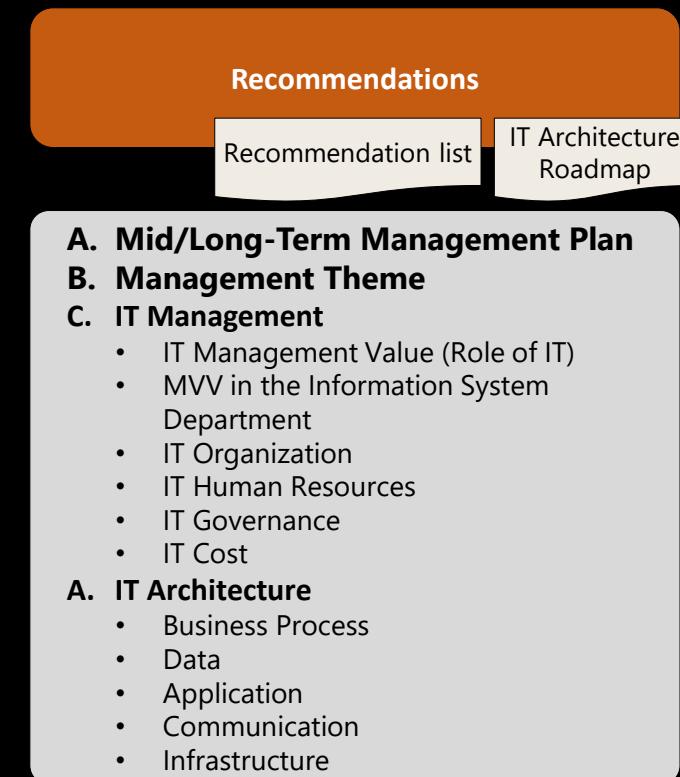
## INPUTS



## GAP Analysis

- Gap list
- Improvement area

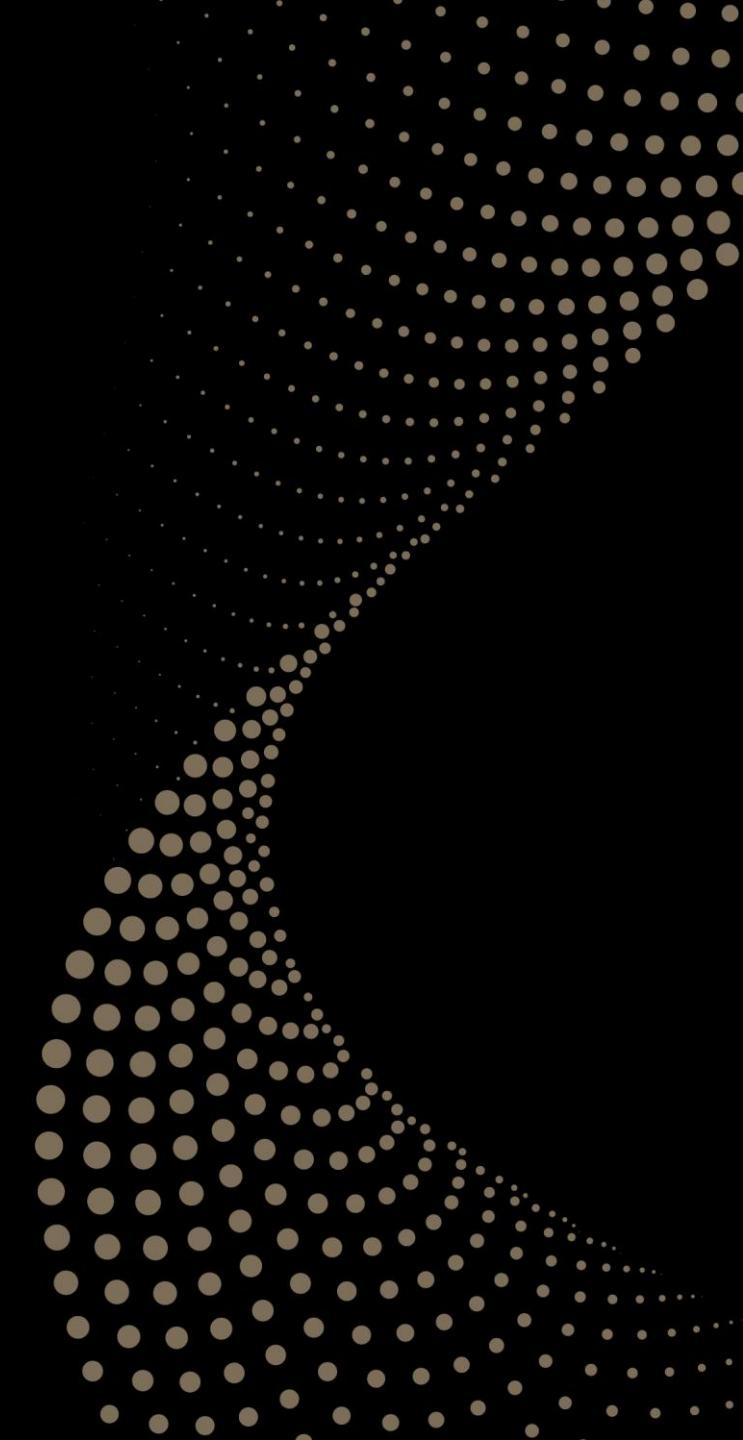
## OUTPUTS



# 4. Approach

- 4.1 Agile EA Assessment Approach
- 4.2 IT Architecture model Assessment Approach

## 4.1 Agile EA Assessment Approach

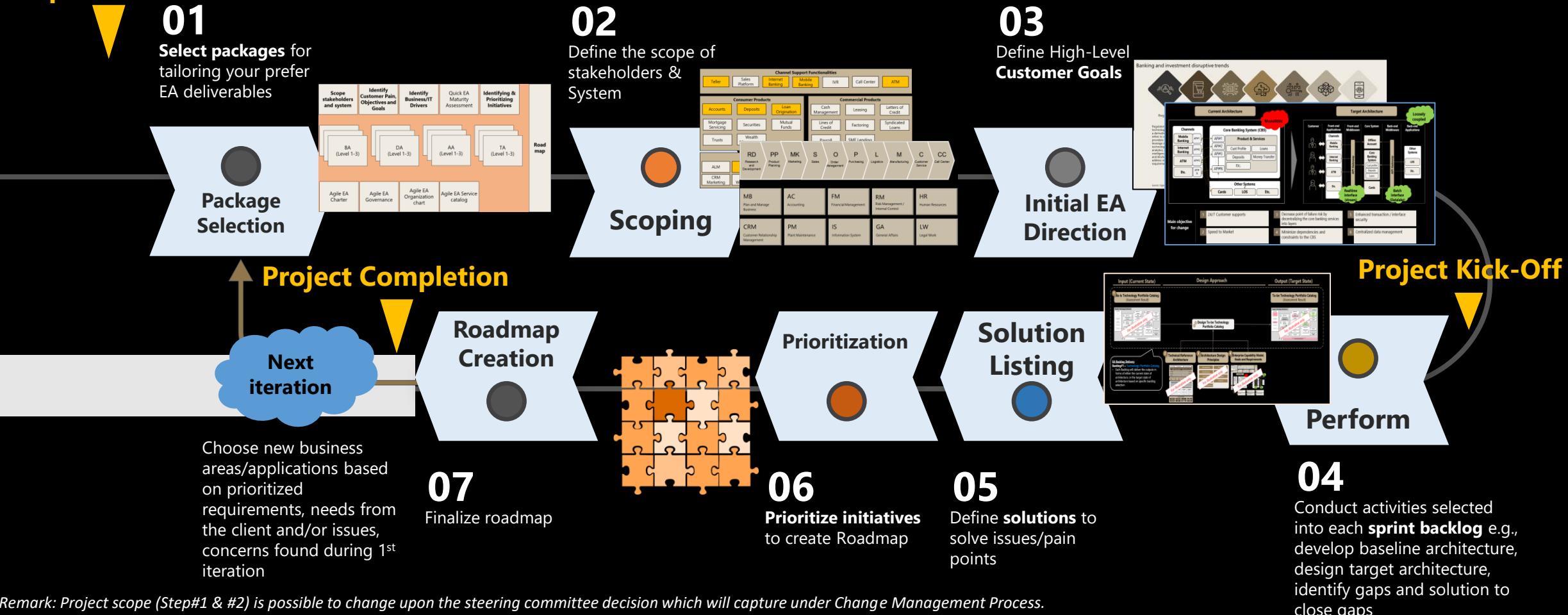


# Agile EA IT Architecture Assessment Approach

Overview

- By applying agile iteration concept into the approach, it's allowed the project to conduct scope prioritization and activity selection (backlog list) in order to save time and effort and, moreover, provide time-to-market and flexibility to the project.

## Proposal State



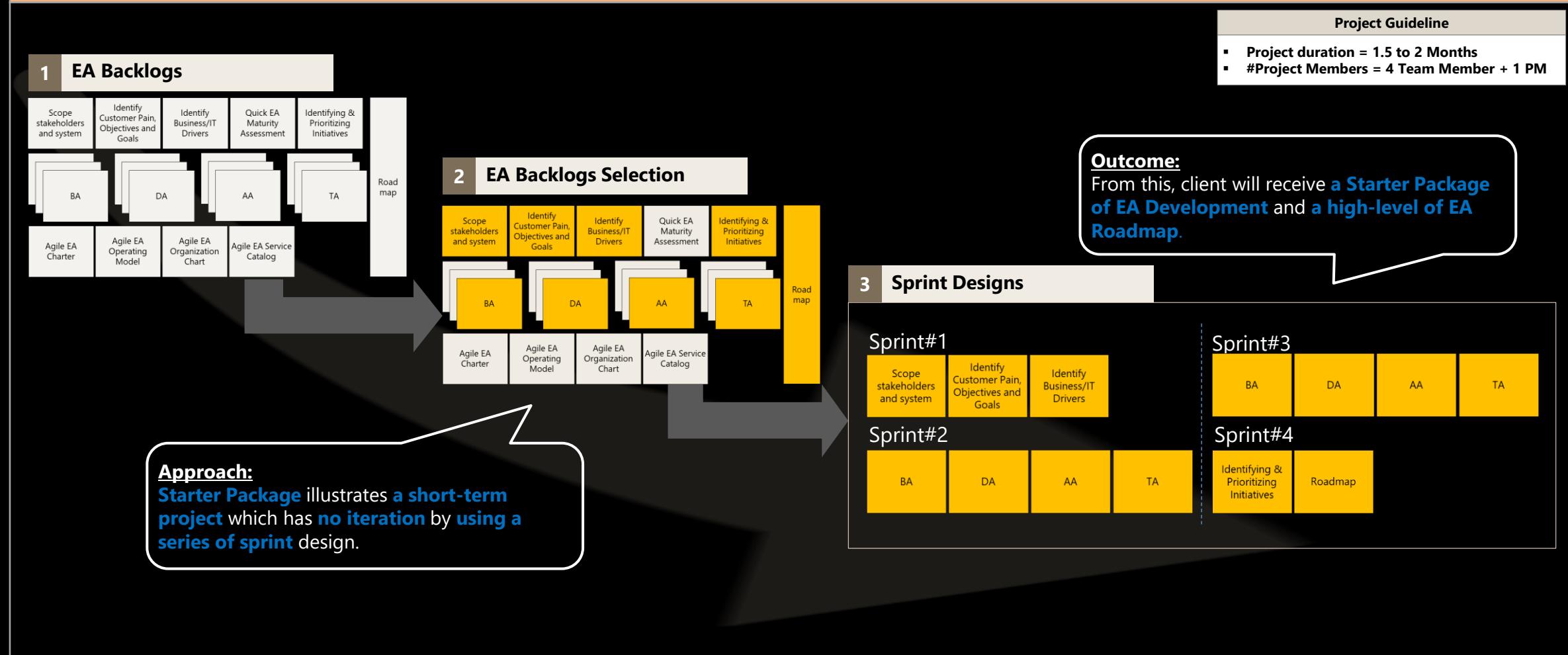
# Agile EA IT Architecture Assessment Approach

## Step#1 – Package Selection

- Our Agile EA Delivery service provides a flexibility for clients to select backlogs and sprint designs to develop the Enterprise Architecture.

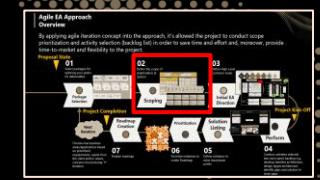


### Agile EA IT Architecture Assessment Solution

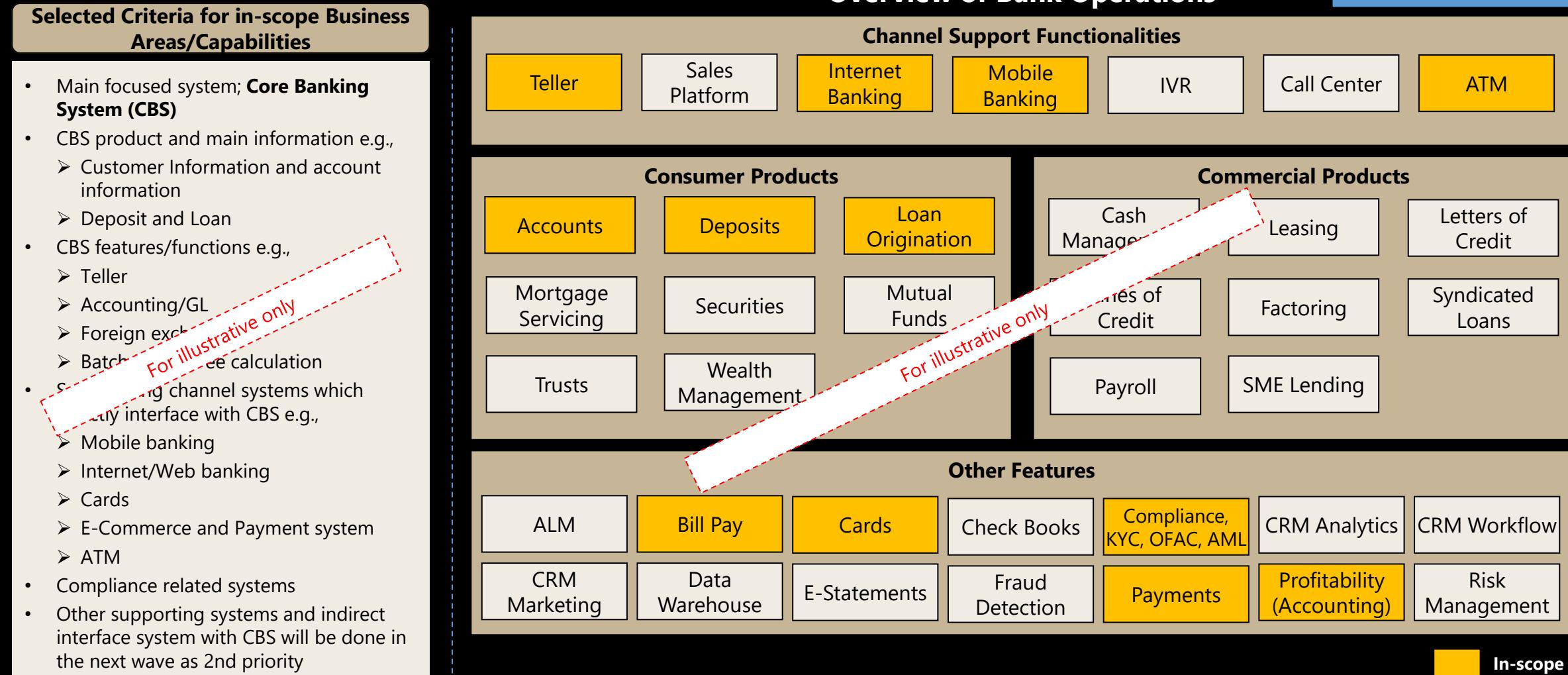


# Agile EA IT Architecture Assessment Approach

## Step#2 – Scoping

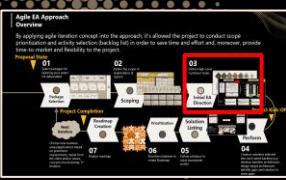


Considering the area of concerns, and relevant channel applications as **priority**, this EA project has been **highlighted the scope** as yellow below.

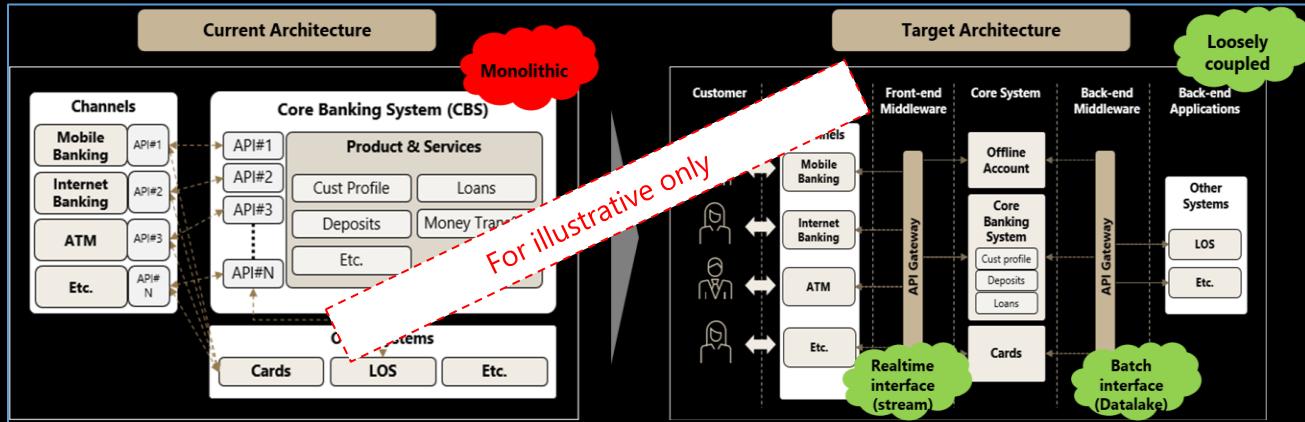


# Agile EA IT Architecture Assessment Approach

## Step#3 – Initial EA Direction

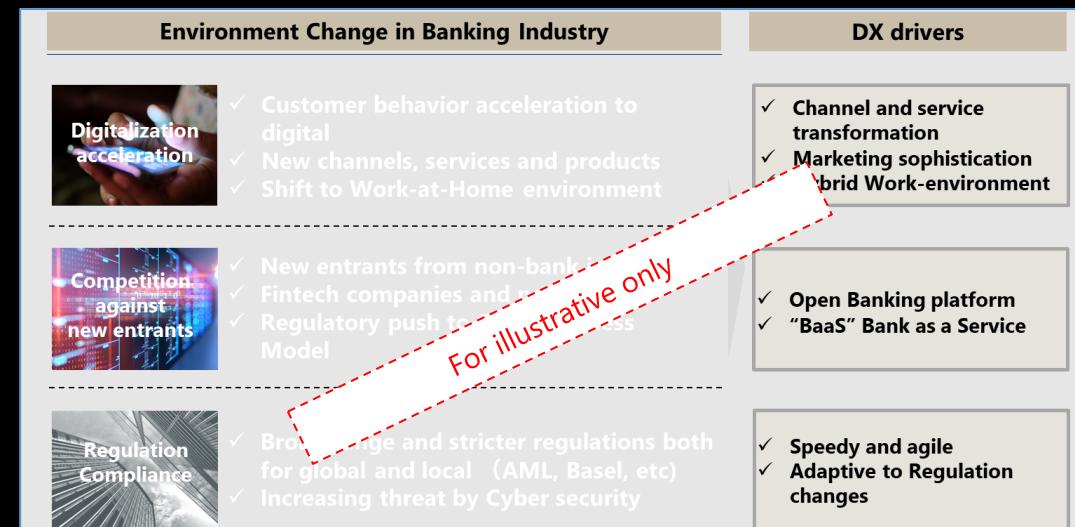


Business problems both related to **IT and non-IT** will be identified as one of organizational requirements for designs together with **enterprise capability** model and **organizational directions**



Organizational business problems, requirements from executive

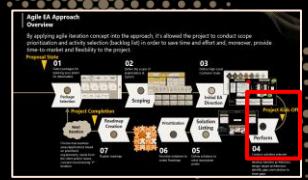
Organizational drivers and common industry trends



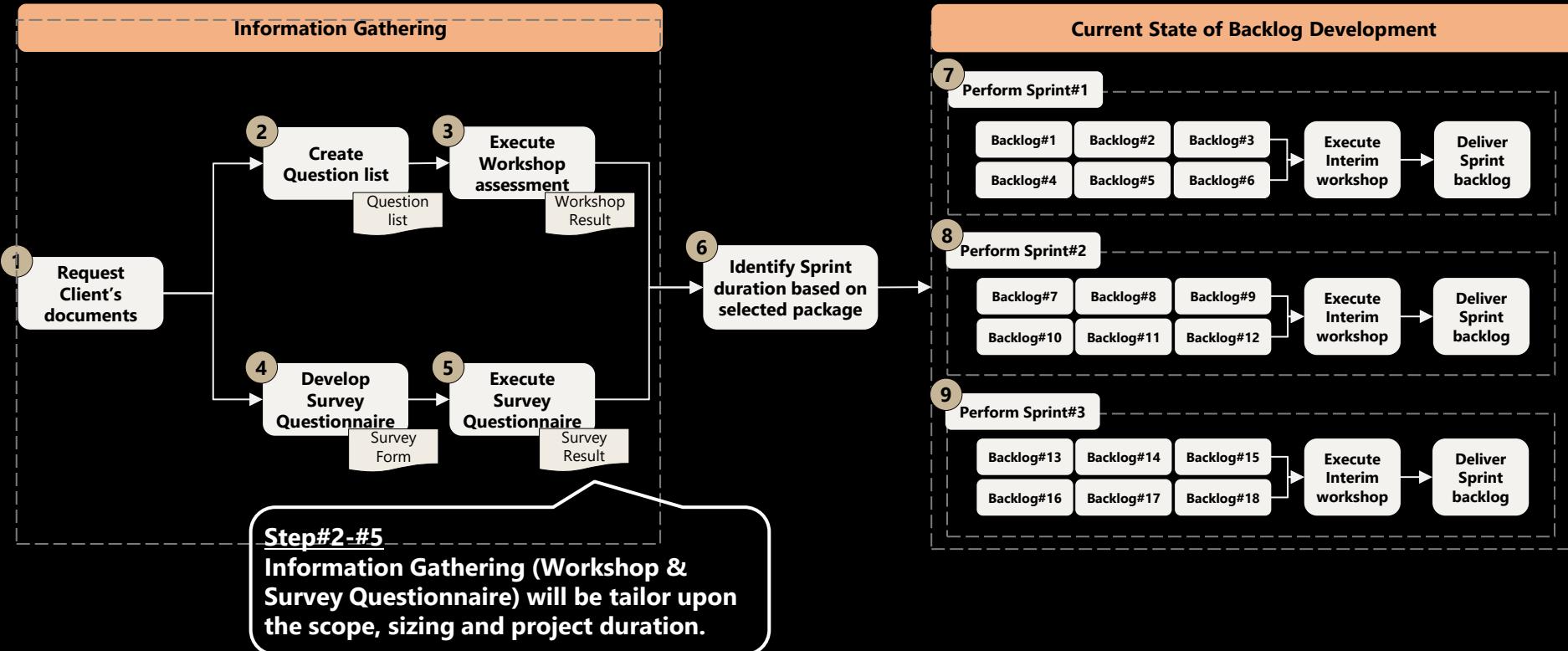
# Agile EA IT Architecture Assessment Approach

## Step#4 – Perform

- Based on the EA Backlog selection in each sprint, our team will perform the sprint delivery by executing the current state of architecture discussion and analysis.



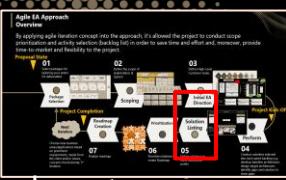
### Step#4



Remark: Sample of Artifacts could refer to [Appendix Slide](#)

# Agile EA IT Architecture Assessment Approach

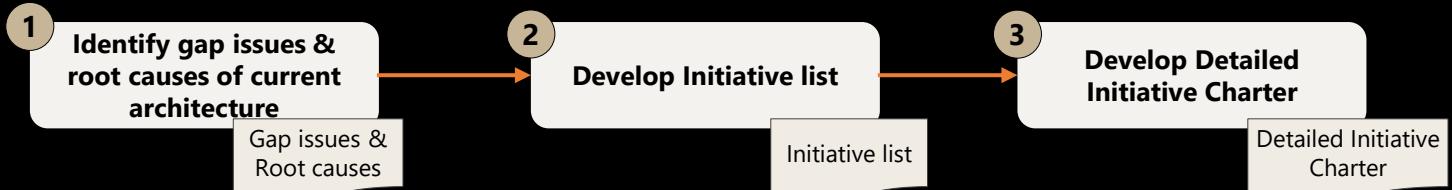
## Step#5 – Solution Listing



- Solution listing is to identify the initiative that can be mapped with the to-be capabilities and close those related gap issues and root causes.

Process Flow

### Step#5



#### Sample of Initiative list

Initiative no.	Description
I001	<ul style="list-style-type: none"><li>Create the role and qualification to support those areas: Application Support, Governance, Asset Management and Vendor Management</li></ul>
I002	<ul style="list-style-type: none"><li>Assign/Hire IT resource with capability to support those areas: Application Support, Governance, Asset mgt and Vendor mgt.</li></ul>
I003	<ul style="list-style-type: none"><li>Develop Communication policy</li></ul>
I004	<ul style="list-style-type: none"><li>Develop Document management policy</li></ul>
I005	<ul style="list-style-type: none"><li>Develop WFH policy</li></ul>
I006	<ul style="list-style-type: none"><li>Develop Business Continuous Pl...</li></ul>
I007	<ul style="list-style-type: none"><li>Develop Network Security</li></ul>
I008	<ul style="list-style-type: none"><li>Develop System Po...</li></ul>
I009	<ul style="list-style-type: none"><li>Develop Ide...</li></ul>
I010	<ul style="list-style-type: none"><li>IT Help...</li></ul>
I011	<ul style="list-style-type: none"><li>Direction in order to plan the budget and resource in advance to...</li></ul>
I012	<ul style="list-style-type: none"><li>Build Internal IT Knowledge Management</li></ul>
I013	<ul style="list-style-type: none"><li>Enhanced IT Operation Service</li></ul>
I014	<ul style="list-style-type: none"><li>Review vendor Contract regularly</li></ul>
I015	<ul style="list-style-type: none"><li>Vendor management and evaluation</li></ul>
I016	<ul style="list-style-type: none"><li>IT asset monitoring</li></ul>
I017	<ul style="list-style-type: none"><li>Security monitoring</li></ul>
I018	<ul style="list-style-type: none"><li>Assign resource to support this Monitor and IT Audit function</li></ul>

For illustrative only

#### Sample of Detailed Initiative Charter

Capability Description	Owner (s)
<ul style="list-style-type: none"><li>The capability of stakeholder's developments...</li></ul>	<ul style="list-style-type: none"><li>EA team lead</li></ul>
Current Functions	Challen...
<ul style="list-style-type: none"><li>Conduct internal training and outsourcing...</li></ul>	<ul style="list-style-type: none"><li>... and align knowledge based on standard capability of EA</li></ul>
Estimated Timeline and Budgets	Target Functions
<ul style="list-style-type: none"><li>Q1 2022 to Q4 2022, 10 MTHB</li></ul>	<ul style="list-style-type: none"><li>Identify key stakeholders to handle this knowledge management for learning &amp; development...</li></ul>

For illustrative only

# Agile EA IT Architecture Assessment Approach

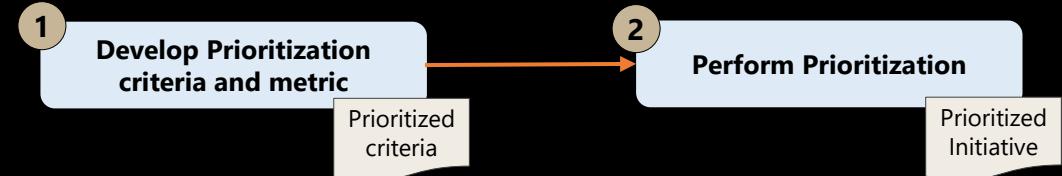
## Step#6 – Prioritization



- Prioritization Criteria is the step to prioritize the defined initiatives with the agreed standard metric and criteria.

Process Flow

### Step#6



#### Sample of Prioritization Metric and Criteria

Prioritization Criteria			Impact Criteria											
High Impact	Impact to Business	Implementation	Level	Interrupt Operation	Impact to Customer	Related to Audit/Compliance	Improve Efficiency	Effect 1 Dept. or Multiple Dept.						
			High	Yes	-	-	-	-						
			High	-	Yes	-	-	-						
			Medium	-	-	-	Yes	Multiple						
			Low	-	-	-	Yes	1						
Do first (Target within 1 Year)			For illustrative only											
Low Impact	Impact to Business	Implementation	Level	Cost		Skill of Staff to implement	Duration of implement							
			Hard	> 1 million THB		-	-							
			Hard	< 1 million THB		Required a lot of skill staffs	-							
			Medium	100k – 1 million THB		Required medium skill of staff	-							
			Medium	100k – 1 million THB		No required	>3 months							
Low Impact	Impact to Business	Implementation	Easy	100k – 1 million THB		No required	<3 months							
			Easy	No cost or < 100k THB		No required	<3 months							
Do Next (Target Within 1 Year)			For illustrative only											
Do later (Target Within 2 – 3 Years)			For illustrative only											

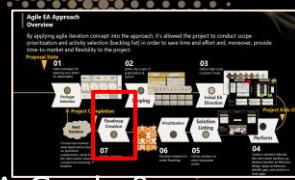
#### Sample of Prioritized Initiatives

High Impact	001	016	003	010
	002		014	
		015		
	017		004	008
		018	005	009
			011	
Low Impact				
Hard				
Easy to Implement				
Easy				

# Agile EA IT Architecture Assessment Approach

## Step#7 – Roadmap Creation

- EA Roadmap of this project will be activity that can be scheduled by quarter based on Initiative list, Current EA Activity and EA Goals & Drivers



### Input of EA Roadmap

**EA Goals & Drivers**  
(Workshop Result)

- Corporate EA Strategy
- EA Direction of an organization

From step#3 Initial EA direction

**Current EA Activity**  
(Workshop Result)

- Ongoing EA Activity
- Future EA Activity that has already been planned

From step#4 Perform

**Initiative List**  
(Assessment Result)

- Prioritized Initiative
- Dependency among Initiative
- Duration of Initiative

From step#5 Solution listing & step#6 Prioritization

### Output of EA Roadmap

2022				2023				2024			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
I003: Implement Microsoft Office 365				I010: Improve Helpdesk formation				I012: Build Internal IT Knowledge Management			
I001: Create the role to support : <ul style="list-style-type: none"><li>• Application Support,</li><li>• Governance,</li><li>• Asset Management and</li><li>• Vendor Management</li></ul>	I002: Assign/Hire IT resource with capability to support those areas: <ul style="list-style-type: none"><li>• Application Support,</li><li>• Governance,</li><li>• Asset Management</li><li>• Vendor Management</li></ul>	I003: Develop Communication policy	I004: Develop Document management policy	I005: Develop vendor management continuous policy	I006: Develop the IT Direction	I007: Develop Network Security Policies	I008: Develop System Policies	I009: Develop Identity & User Management	I010: Assign resource to support this Monitor and IT Audit function		
		I014: Review vendor Contract regularly	I015: Vendor management and evaluation	I016: IT asset monitoring	I017: Security monitoring						

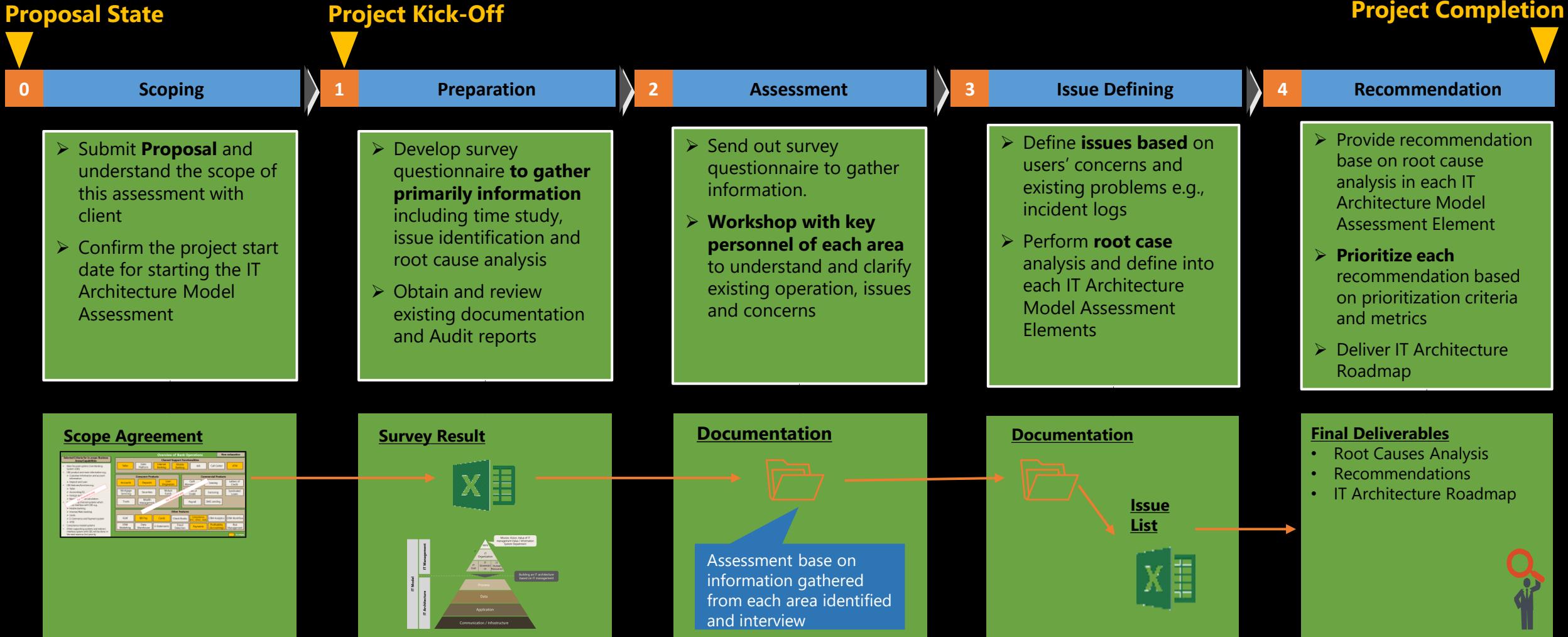
For illustrative only

## 4.2 IT Architecture Model Assessment Approach

# IT Architecture Model Assessment Approach

Overview

- The IT Architecture Model Assessment Approach is designed for client who is looking for a quick assessment with a minimum of budget to understand their current **issues, challenges and improvement area of IT Architecture**.



# IT Architecture Model Assessment Approach

## Step#0 – Scoping

- Scope of IT architecture model assessment is upon the area that client requires team to assess issues, challenges, and improvement area by recommending appropriate initiatives.

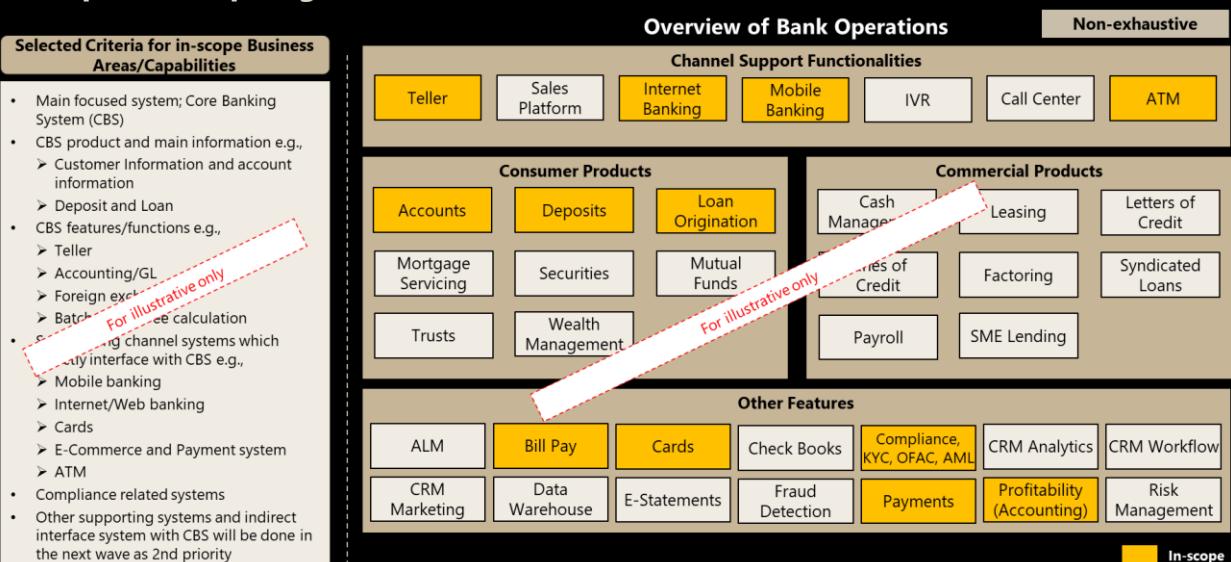


Process Flow

## Step#0



### Sample of Scope Agreement

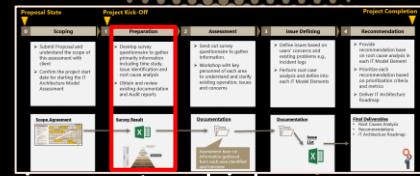


Remark: Scope of the Assessment will reflect to the project duration, resources, planning which will be agreed upon the proposal submission.

# IT Architecture Model Assessment Approach

## Step#1 – Preparation

- Before performing the assessment, We team will establish and tailor the survey questionnaire to match with client requirements which purposes to capture all key elements of IT Architecture Model Assessment.



## Step#1



### Sample of Survey Questionnaire

Evaluation Target	Evaluation Item	Item number	Question	Description	Evaluation Target	Evaluation Item	Item number	Question	Description	Evaluation Target	Evaluation Item	Item number	Question	Description	Evaluation Area	Evaluation Target	Evaluation Item	Item number	Question	Description
IT security / policy	3.1.4	Please specify security standards e.g., PCISS, VISA, MasterCard including encryption requirements			Application/Architecture	Infrastructure (Application)	2.1.1	Please provide the Functional Architecture Mapping and System Architecture design to cover the whole functional and technical design of this product. Additionally, please provide your future plan to evolve architecture of product.	- Functional Architecture Mapping is essential for identifying the functional requirements and translating them into modules, which can be developed either in-house or with third party products.	4. If organization	IT organization structure	4.1.1	Please provide organization chart of your company	An organization chart is a diagram that displays the structure of the company with the information of total number of employees, positions of all employees and relationships between them						
IT security / policy	3.1.5	Please explain on how does your organization protect security parameters to subordinates (both internal and external)		Business of security awareness are as follows:	2.1.2	Please provide Application-Architecture Diagram per main component of your application architecture.	2.1.3	Stakeholders e.g., vendor, customer, shareholder, and audience.	- Application architecture diagram is a diagram of a system used to abstract the overall outline of the software System and the application components, middleware systems, user interface, and other components.	4.1.2	IT organization structure	4.1.2	Please provide the defined roles and responsibilities for all departments and individuals represented in the organization chart.	N/A						
IT security / policy	3.1.6	Please share a security incident log in past 12 months		Stakeholders e.g., vendor, customer, shareholder, and audience.	2.1.4	Please provide brief below information for your application product.	2.1.5	See 1.2.1 Sample System Diagram	- Document language: Operating system, DB, migration tools, Development tools, DBN or Intergration and peers; per each system is used and details interfaces, from/to users, detailed interfaces, real-time / batch.	4.1.3	IT organizational culture	4.1.3	Are there any alternative working arrangements for IT staff members due to COVID-19 e.g., work from home, alternative hours, etc.? And if so, please answer the following questions:	Work culture - a family-like type of businesses that are not hierarchical in nature						
IT security / policy	3.1.7	Do you have a security committee? If yes, please share the last minute of security committee meeting record. If no, please share the last minute of security meeting which include security context (e.g., steering committee).		Business of security awareness are as follows:	2.1.6	Please describe how your solution support business data volume, database capacity e.g. of purge and archived data, database maintenance, database usage footprint of data,...	2.1.7	IT security / policy	- Explain methodology, tools or technique which to support business data growth in future or previous solution has been performed in the past.	4.1.4	IT organizational culture	4.1.4	Please describe the IT asset management (ITAM) policies.	ITAM policies are valued regardless of their level and environments are supportive.						
IT risk management policy and compliance	3.2.1	Please describe the details of company-wide standard policies, procedures, and guidelines for IT risk management. If yes, please provide the documents.		Business of security awareness are as follows:	2.1.8	Please describe how your solution support business data volume, database capacity e.g. of purge and archived data, database maintenance, database usage footprint of data,...	2.1.9	IT security / policy	- Please explain express of hardware (e.g. Servers, PC, Network, Document, Environment).	4.1.5	IT organizational culture	4.1.5	How flexible is IT staff in terms of working hours and locations?	IT staff are highly engaged and comfortable providing honest and open feedback.						
BCP	3.2.2	Please describe the details of company-wide standard policies, procedures, and guidelines for BCP. If yes, please provide the documents.		On-Premise	2.1.10	Please provide inventory of Software, platform and applications within the organization.	2.1.11	IT security / policy	- Explain methodology, tools or technique which to support business data growth in future or previous solution has been performed in the past.	4.2.1	Key person responsibility by management	4.2.1	Please refer to the form "4.2.1 List of IT Employees" and fill up all information.	Having a strong leadership model to pass competencies and values from one generation to another.						
BCP	3.2.3	Please describe the person in charge and roles and responsibilities from relevant parties who will participate in BCP leading IT function and business units.		Hardware	2.1.12	Please describe the design for high availability / resilience in your system.	2.1.13	IT security / policy	- Explain methodology, tools or technique which to support business data growth in future or previous solution has been performed in the past.	4.2.2	Personnel IT-related skills and expertise	4.2.2	Please refer to the form "4.2.2 Skills Inventory" and fill up all information.	Employee engagement is high to ensure excellent customer service.						
BCP	3.2.4	Please describe the person in charge and roles and responsibilities from relevant parties who will participate in BCP leading IT function and business units.		Cloud Solution	2.1.14	Is there any limitation for backup technology or process related to this backup requirement? Please explain your proposed backup mechanism.	2.1.15	IT security / policy	- Security configuration policy and management interface with relevant key files and directories.	4.2.3	Learning and development	4.2.3	Please explain the policy to improve skills of IT staff.	This could refer to the IT management policy related to the development of people and talent in your organization such as training programs, professional development, and additional training arrangements to keep up with technology trends, etc.						
BCP	3.2.5	Please describe the person in charge and roles and responsibilities from relevant parties who will participate in BCP leading IT function and business units.		On-Premise	2.1.16	Is there any limitation for backup technology or process related to this backup requirement? Please explain your proposed backup mechanism.	2.1.17	IT security / policy	- Security configuration policy and management interface with relevant key files and directories.	4.2.4	Skill gaps	4.2.4	Do you have any existing skills place in your organization? And if so, please specify those skills.	A skills gap occurs when your current staff's skill set does not meet the required skills they actually need to perform a job effectively.						
BCP	3.2.6	Please describe the person in charge and roles and responsibilities from relevant parties who will participate in BCP leading IT function and business units.		Cloud Solution	2.1.18	Is there any limitation for backup technology or process related to this backup requirement? Please explain your proposed backup mechanism.	2.1.19	IT security / policy	- Explanation of cloud technology apply with application portfolio with relevant, approach, tool, service provider, using Cloud Service Provider Type (Public, Private, Hybrid).											
BCP	3.2.7	Please describe the person in charge and roles and responsibilities from relevant parties who will participate in BCP leading IT function and business units.		On-Premise	2.1.20	Is there any limitation for backup technology or process related to this backup requirement? Please explain your proposed backup mechanism.	2.1.21	IT security / policy	- Cloud Service Provider (AWS, Azure, GCS, Huawei, ...)											
BCP	3.2.8	Please describe the person in charge and roles and responsibilities from relevant parties who will participate in BCP leading IT function and business units.		Cloud Solution	2.1.22	Is there any limitation for backup technology or process related to this backup requirement? Please explain your proposed backup mechanism.	2.1.23	IT security / policy	- Cloud Service and Components (Server, Storage, Network, Firewall)											

For illustrative only

# IT Architecture Model Assessment Approach

## Step#2 – Assessment

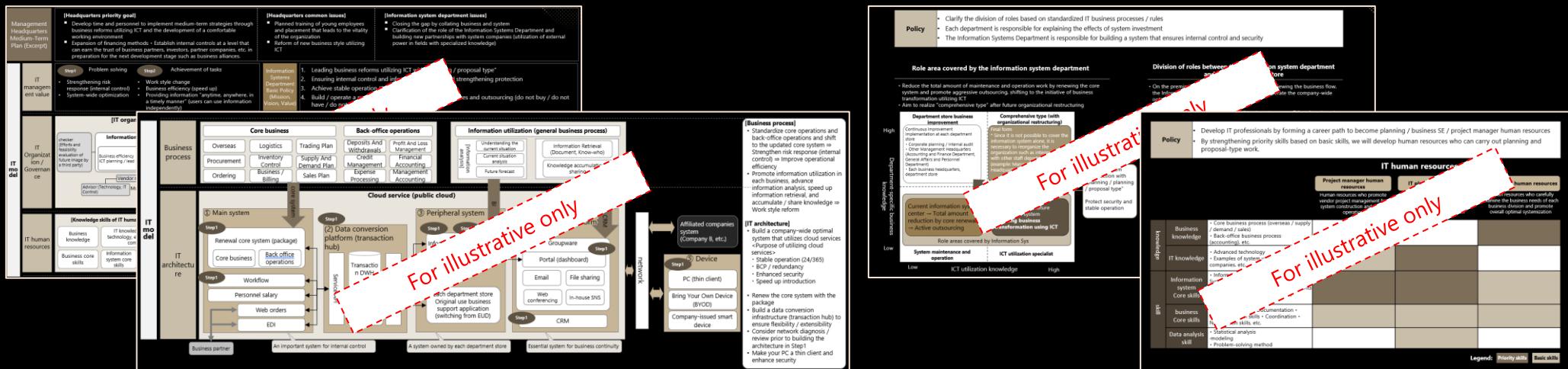
- After completing the survey questionnaire, We team will analyze the survey result and create and execute workshop question list to understand and clarify those client's concern points and problems.



### Process Flow



### Sample of IT Architecture Model Assessment Examination Result



Remark: Sample Deliverables could be referred to [Appendix Slide](#)

# IT Architecture Model Assessment Approach

## Step#3 – Issue Defining

- Based on the Assessment result, team will define client's issues, problems and drill-down to the root causes in each element of IT Architecture Model Assessment.



## Sample of Issue list

No.	Fact Finding	Issue Category	Issues Description
Fact01	Currently some functionality is not matched with business requirement such as logistic planning and optimization function. So users need to use Excel to do logistic planning manually outside the system	Application (Core systems)	<b>ISSUE001:</b> Logistic planning and optimization function in Core system is not fully utilized and not matched with business requirement
Fact02	In HR system, there are still a lot of manual and paper based and no efficiency in application of leaves, leave records, booking rooms and company's car and work-load of HR for time attendance records, and OT processing for both HQ and all sites.	Application (Core systems)	<b>ISSUE002:</b> HR system is not fully supporting the electronic document and automated workflow.
Fact03	Most staffs uses their own personal account such as Google meet, Zoom for online meeting. But only some department has one official MS Team account for sharing inside their department.	Communication Tools	<b>ISSUE003:</b> No standard or guideline for virtual meeting
Fact04	Staff level are not allowed to access email via mobile device. Only DGM/GM level up can access email via mobile	Communication Tools	<b>ISSUE004:</b> Email Protocol is an old protocol to support in mobile device
Fact05	No tool to support staffs for sending the large file to external parties.	Communication Tools	<b>ISSUE005:</b> No file sharing tool to support staffs
Fact06	Using documentation system as a storage, but still manual and paper based operation. No tracking, monitoring, tracking and indexing for contracts, agreements, quotations.	Communication Tools	<b>ISSUE006:</b> No proper Document Management system to control the document flow, authority, access control
Fact07	Users reported that internet is slow in HQ site. And Lack of facility to support staffs during WFH	Infrastructure	<b>ISSUE007:</b> Internet is slow in HQ site <b>ISSUE008:</b> Lack of facility to support staffs during WFH
Fact08	The network vulnerability has been detected. The global IP address can be identified, and it is facing the risk to be attacked.	Infrastructure	<b>ISSUE009:</b> Lack of IT Security policy
Fact09	No back-up line in factory site/ No Wifi in yard in factory site	Infrastructure	<b>ISSUE010:</b> No Wifi in yard in factory site <b>ISSUE011:</b> No back-up line in factory site
Fact10	For Data Server, Version of OS in Server is already end of support.	Infrastructure	<b>ISSUE012:</b> Version of OS in Server is end of support
Fact11	Rent AD-Server but do not utilize it	Infrastructure	<b>ISSUE013:</b> Not utilized AD server
Fact12	Server of Systems will be end of support next year (2022). This is required an action to extend it.	Infrastructure	<b>ISSUE014:</b> Version of OS in Server is end of support

For illustrative only

# IT Architecture Model Assessment Approach

## Step#4 – Recommendation (1/3)

- From the root causes analysis, team will deliver the detailed recommendation charter, recommendation prioritization, IT Architecture Roadmap as final deliverables.



## Sample of Assessment Report

### Technology and Security Infrastructure & Technology Platform – Integration Technology Platform Design

According to the current design of integration architecture, challenges & risks and the future considerations are identified and provided with key assessment areas including integrability, extensibility and compatibility.

**Challenges & Risks**

- No further instruction

**Risks**

Integration architecture implementation
 

- There is no tools nor middleware used for centralized management and controlling API for both internal and external
- In the future growth of partners and services, it might be difficult to manage both new APIs and the existing APIs

**Current Integration Design**

**API Gateway Implementation Consideration**

*For illustrative only*

### AS-IS IT Assessment

A. Current Application Landscape
 

- Core System
- Communication Tools

B. Current Infrastructure/ Server Landscape

C. Current IT Project Plan

D. As-is IT Formation
 

- Analyst IT outsourcing contract
- Helpdesk procedure

E. Current IT Asset Management

F. Assess Information Security

G. Current Business Continuity Planning/ Back-up activities

<b>17</b>	<b>Fact Finding</b>
<b>20</b>	<b>Issues</b>
<b>24</b>	<b>Action/ Recommendation</b>

*For illustrative only*

## Sample of Detailed Recommendation Charter

Process	Issues	Impact Level	Root Cause								
Procurement Plan/ Sourcing Strategy	<ul style="list-style-type: none"> <li>ISSUE01: Lack of Procurement planning for required materials/ services</li> </ul>	High	<ul style="list-style-type: none"> <li>Lack of communication from Maintenance and Inventory team to Procurement</li> <li>No proper procedure to prepare Procurement plan master plan</li> <li>Lack of incorporated system to support planning i.e. System is not support for long lead time re-order purchasing.</li> </ul>								
Supplier Management	<ul style="list-style-type: none"> <li>ISSUE02: Vendor Master information is not completed and not up-to-date</li> </ul>	High	<ul style="list-style-type: none"> <li>Not sufficient vendor information to re-order inventory items</li> <li>No linkage between inventory items and supplied vendors</li> <li>No proper system to vendor information and no system support</li> </ul>								
RFQ	<ul style="list-style-type: none"> <li>ISSUE03: Lack of</li> </ul>	High	<ul style="list-style-type: none"> <li>As in system is too high-level and many manual RFQ steps is not</li> </ul>								
Contract Mgt. / Price Agreement / CWI	<b>Issue Description</b> <ul style="list-style-type: none"> <li>There is no proper integrated procurement plan at organization level that related to maintenance plan and inventory management plan</li> <li>Procurement team only know once the PR already submitted to them, which they have less time to prepare sourcing</li> </ul>										
Purchase Order (PO)	<b>Root Cause Analysis</b> <ul style="list-style-type: none"> <li>No proper procedure to prepare the Procurement plan that analyze from Maintenance Master plan, historical usage</li> <li>No proper communication among Procurement, Inventory and Maintenance team to forecast material usage and identify procurement needs in advance. (3-5 years)</li> <li>Lack of incorporated system to support planning</li> </ul> <b>Related to..</b> <table border="1"> <tr> <th>Process</th><th>System</th><th>Policy</th><th>People</th></tr> <tr> <td>Yes</td><td>Yes</td><td>-</td><td>-</td></tr> </table>			Process	System	Policy	People	Yes	Yes	-	-
Process	System	Policy	People								
Yes	Yes	-	-								
<b>Recommendation</b> <ul style="list-style-type: none"> <li>Setup new procedure to create Procurement Plan based on Maintenance Master plan and historical usage material and stock level in Inventory</li> <li>Develop Sourcing Strategy based on Procurement Plan</li> </ul>											
<b>Impacts</b> <ul style="list-style-type: none"> <li>The process of "Sourcing or RFQ" takes longer time to prepare because of the number of PR and number of vendor</li> <li>No proper planning can let vendor discounts and eliminates "one-off" buying</li> </ul>											
<b>Recommend Owner :</b> Procurement team											

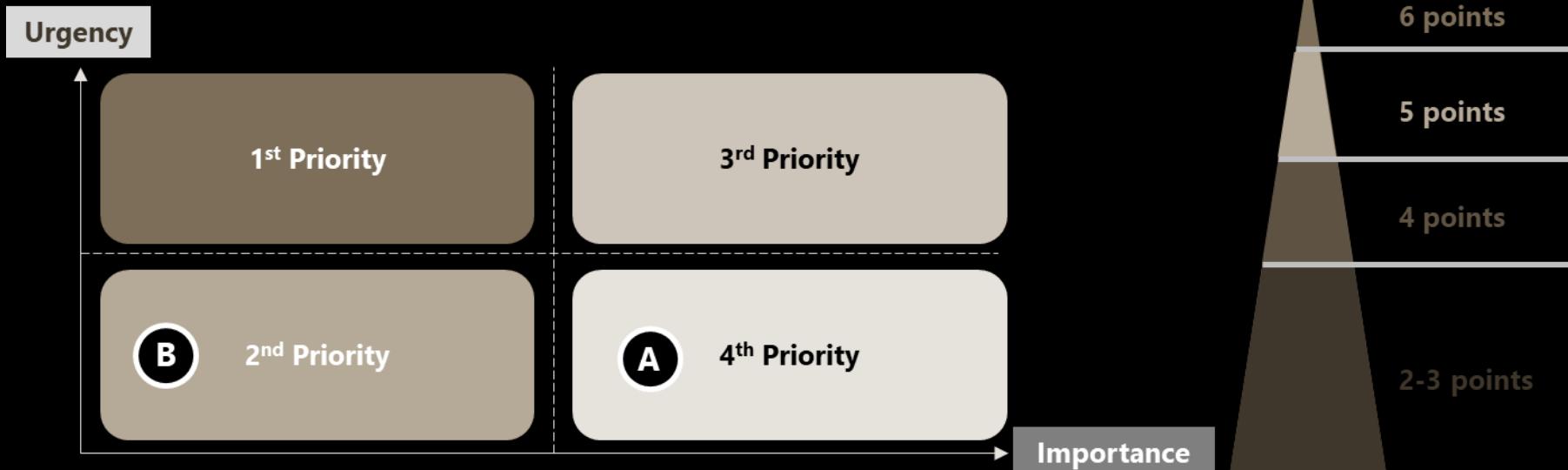
# IT Architecture Model Assessment Approach

## Step#4 – Recommendation (2/3)

- From the root causes analysis, team will deliver the detailed recommendation charter, recommendation prioritization, IT Architecture Roadmap as final deliverables.



### Sample of Recommendation Prioritization



Examples)

**(A)** Procurement Process Automation

Criteria	Point
Urgency	2
Importance	1
Total	3

**(B)** Data Visualization

Criteria	Point
Urgency	3
Importance	2
Total	5

Urgency	Definition	Point	Importance	Definition	Point
High	Need to complete within 6 months	3	High	Be beneficial to whole company	3
Medium	Need to complete within a year	2	Medium	Be beneficial to multiple divisions	2
Low	Can wait more than a year	1	Low	Be beneficial to a single division	1

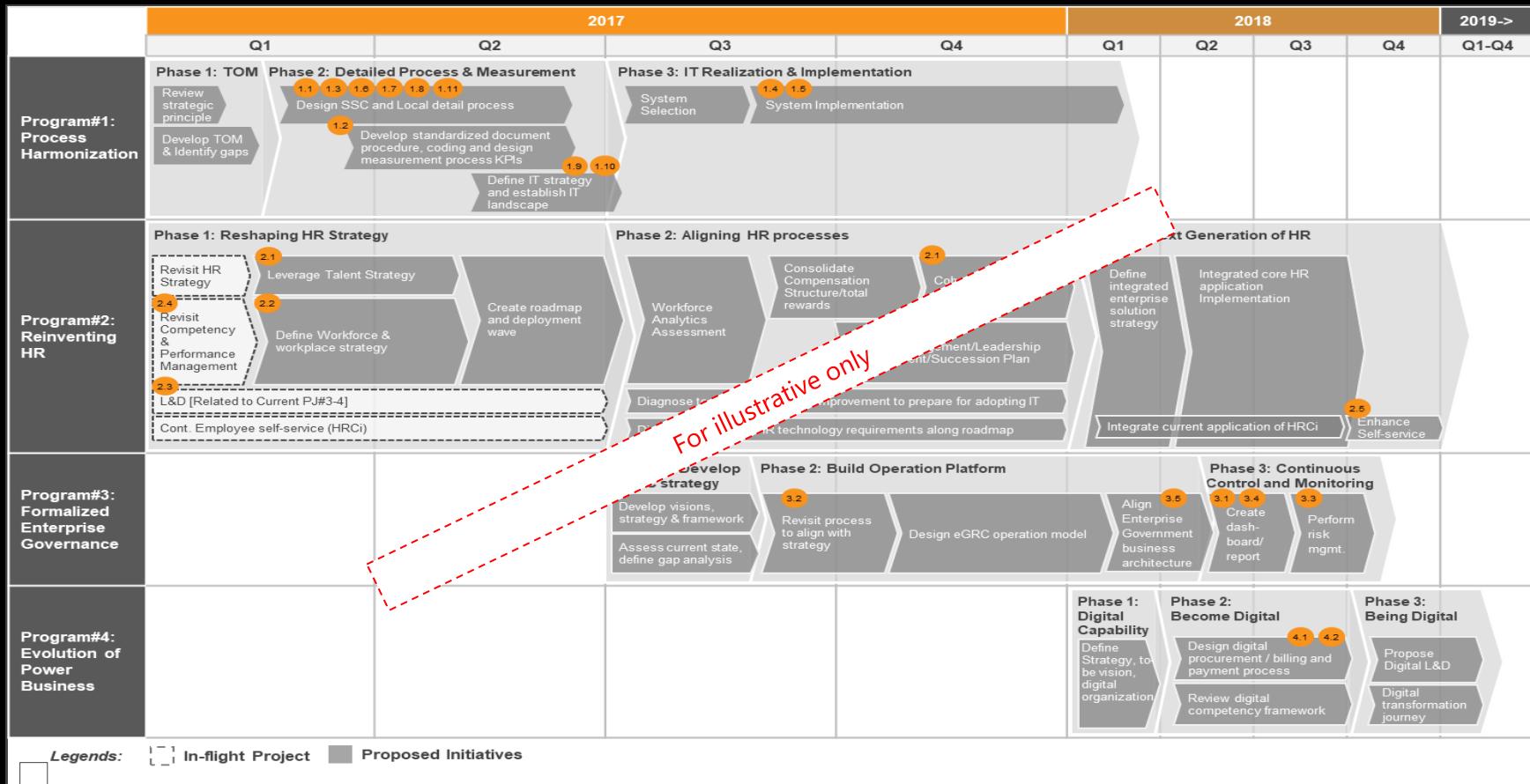
# IT Architecture Model Assessment Approach

## Step#4 – Recommendation (3/3)

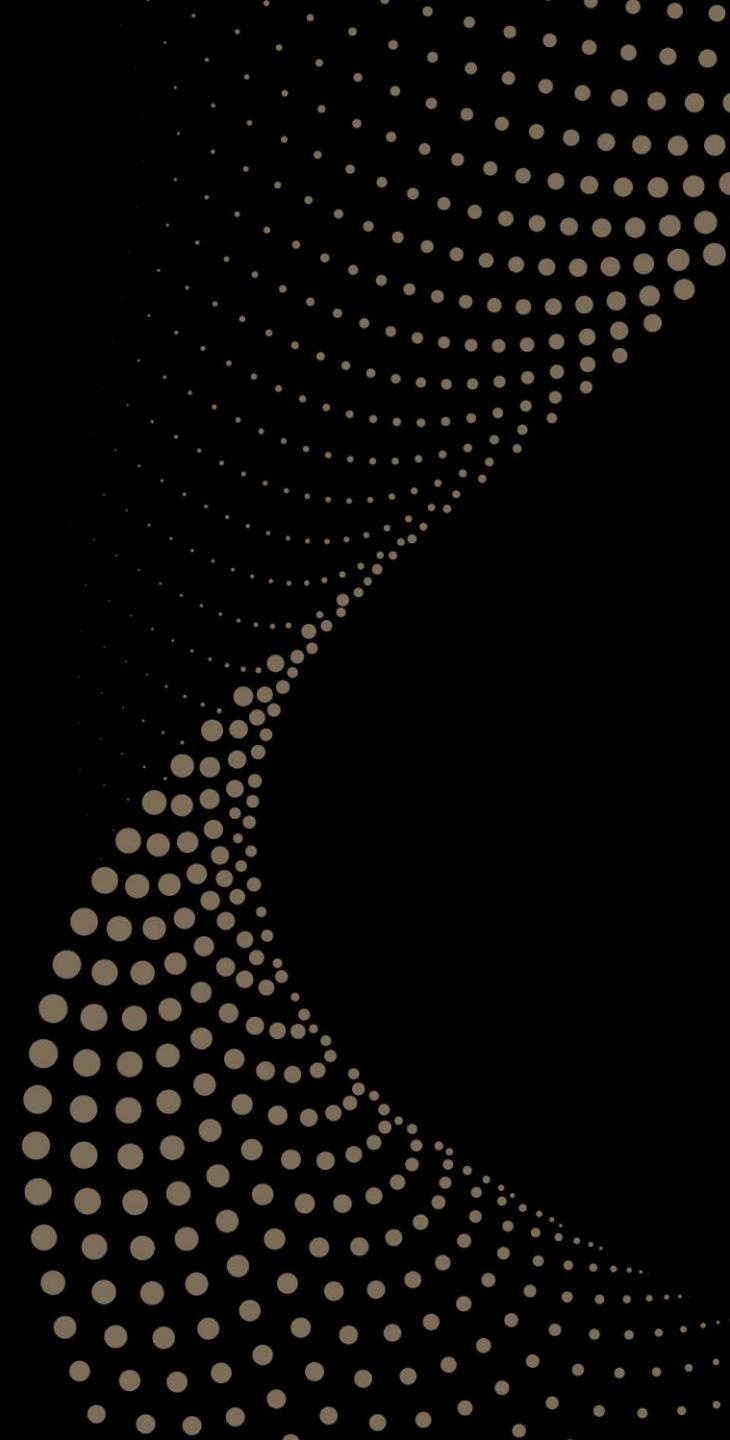
- From the root causes analysis, team will deliver the detailed recommendation charter, recommendation prioritization, IT Architecture Roadmap as final deliverables.



## Sample of IT Architecture Roadmap



## | B. Case Study



# Application Landscape : After this project

A. Batch Job produce files from source system

Source of Data  
Convert into share drive

Data source

EUC

BASEL

MHCB

MAPS

WINC

Files System

Each products area data

Common area data

Additional data source (i.e. manual Adj., maintain CCF, .. (Manual/Auto), ..)

Daily data (for intraday)

Staging DB

Load source files into staging DB

Product area data i.e. IM-EX, LOAN ADJ, etc.

Common area data i.e. CUST, CCY, CCF, etc.

Adj. & Imp. Data

Intraday data

B. Data Transformation by contract

Transforming Data per product  
(Calculation by Product/Sub-Product)

1

- B-1. Acceptance
- B-2. Loan (with new logic Supply Chain Finance)
- B-3. Bills Bought/Inward Bills Discounted
- B-4. Forex
- B-5. Security
- B-6. Commitment
- B-7. Overdraft (O/D)
  - O/D Outstanding
  - O/D Facility
- B-8. Guarantee
  - Guarantee Trades
  - Guarantee
- B-9. Derivative
  - Derivative
  - FX option (New product)
- B-11. Intraday data Calculation Update SLL base data
- B-10. Others
  - Adjustment data
  - New product data

Transform data by Products X Contract

2

Exposure calculation  
By contract

SLL Base Data  
Exposure by Customer (All product)

Additional columns  
Intraday data

Additional records  
Adjustment (All product)  
Others (New product)

C. Data Calculation & Validation by customer

3

Transforming data per customer, grouping and other data/

C-1. Calculate Credit Control Limit

Master Capital Fund  
Master Shareholder

Credit Control Limit

C-2. Map customer G-CIF to C-CIF

G-CIF  
Master Counter Guarantee

CCIF\_MAP (Linkage data)

Pre-SLL Data By Customer

Total Exposure  
Bank guarantee exposure

C-3. Reconcile with EUC BS PL

BS\_PL  
Master Shareholder  
Master Capital Fund

D. Data for reporting

4

Provide SLL data for report or analysis

Data should consistent when drill down to contract basis.

Related Lending Data (By Group)

SLL Grouping Data by Customer Relationship (By Group + Customer)

SLL Data (By Customer)

E. BI/Report tool

5

SL to extract reports

Main Reports

SLL

SLL Grouping

Top Exposure

Top Exposure Summary

Related Lending

Intraday

Supplementary Reports

Credit Control Limit Sim.

Commitment Adjustment

Loan Adjustment

Bank Guarantee

(3) UI for extracting reports.

6

Web UI : Master code TBL / Report generate UI

(4) Job start UI

(5) Data Adjustment / Adding UI (SLL Data)

(1) Master Data create/modify/delete : Total 21 Master TBL

(2) Create 21 Audit log item by item per TBL when changes any

Workflow :

(c) Workflow : To approve SLL data/master data for generating report. (Create 21 finalized master TBL when approved)

(c)-1 New Workflow for Data Adjustment

### 3. Scope of Change

#### 3-1. Functional Requirements (FRs) & Non-functional Requirement(NFRs) ( Related : Findings)

SLL structure design (i.e. TBL, Modeling, Key, business logic and application framework) for 3 years ago not conducive to enhancement more complexity of business scenarios and various of data patterns. To be revised system structure impact almost all area (FRs, NFRs) with require more time to design as well as testing to ensure all figures.

Initial Scope of SLL project  
Mainly business requirements

**25 Items**

Estimated MDs based on our assumptions

**177 MDs**

Original Proposal scope & business assessment approach

- Interview with business users and IT engineers
- Explore and understand system architecture design from documents
- Gathered information of application design from existing technical design and operation manual documents

##### Master Data Framework

Master data framework not cover all data type and found issues about database design not consistency impact **workflow not work properly**.

##### Common Function/Framework issues (Functional related)

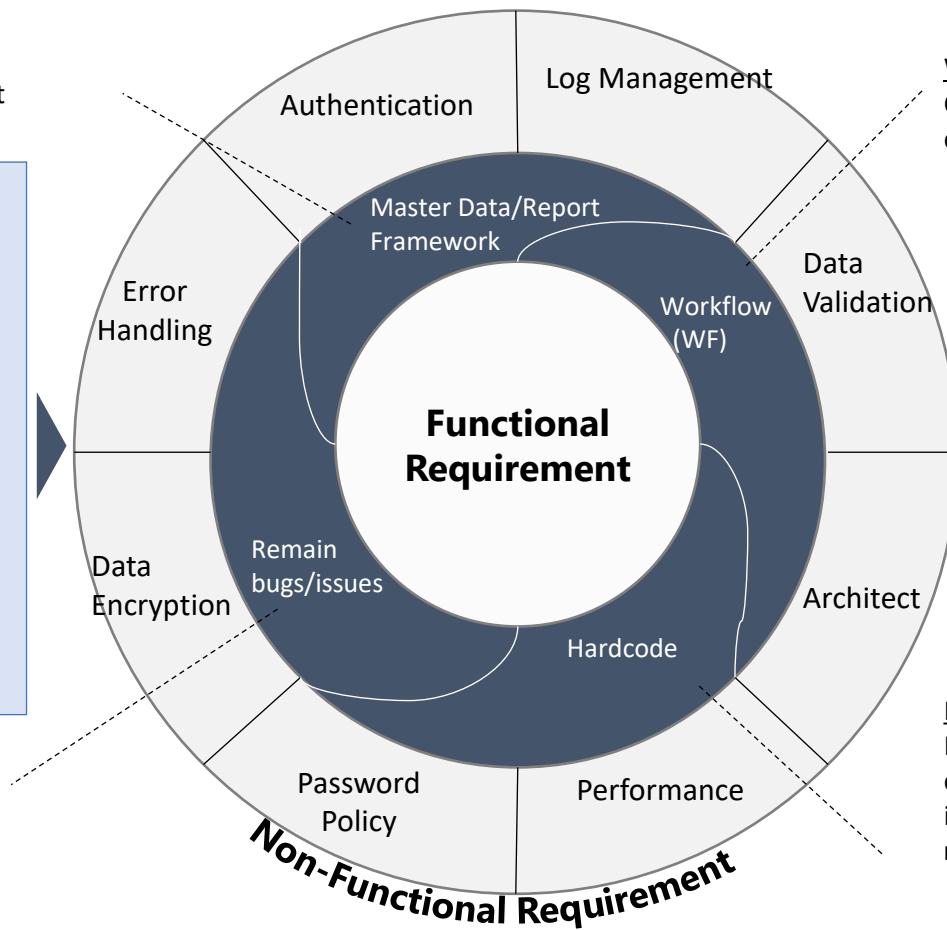
Core application framework enhancement covers (a) WF (b) Master data UI (c) Audit log (d) Report extract **require to modify** due to main rational following.

- **Data modeling in-consistency** (e.g., 3 different length for same column, No PK)
- **Application Design Methodology** not conducive to enhance
  - Un-structure source code (e.g. customer relationship)
  - Design pattern not align with up-to-date best practice
  - Various coding style in same business logic

Based on preliminary inspection, almost all objects need to be modified. Therefore, it requires **more efforts to ensure data/figures are correct in SIT (End-to-end)**

##### Remain bug/issues (other requirements list)

Un-structure design logic on **high important and complexity module** (i.e. Customer Relationship)



##### Workflow(WF)

Current workflow design not comprehensive all business cases. Clarify and fix are required prior to start development.

##### Re-plan workloads estimation

Based on current SLL state, our initial assumptions have huge gaps. Modification require to affect **pillar of SLL system** (core application design framework), which **impact to all functions**. Thus, more **Senior System Analysis (SA)** require to assign for detail **impact assessment, design coverage solution** and analysis/conduct for **comprehensive test scenario/cases** including regression test.

##### Hardcode & Dead Code

Found many hard code & dead code in current source code both (FE, BE, C# batch program) i.e., Master setting, Credit Control Factor, etc. **need to be re-design** and cleaned up for support future enhancement

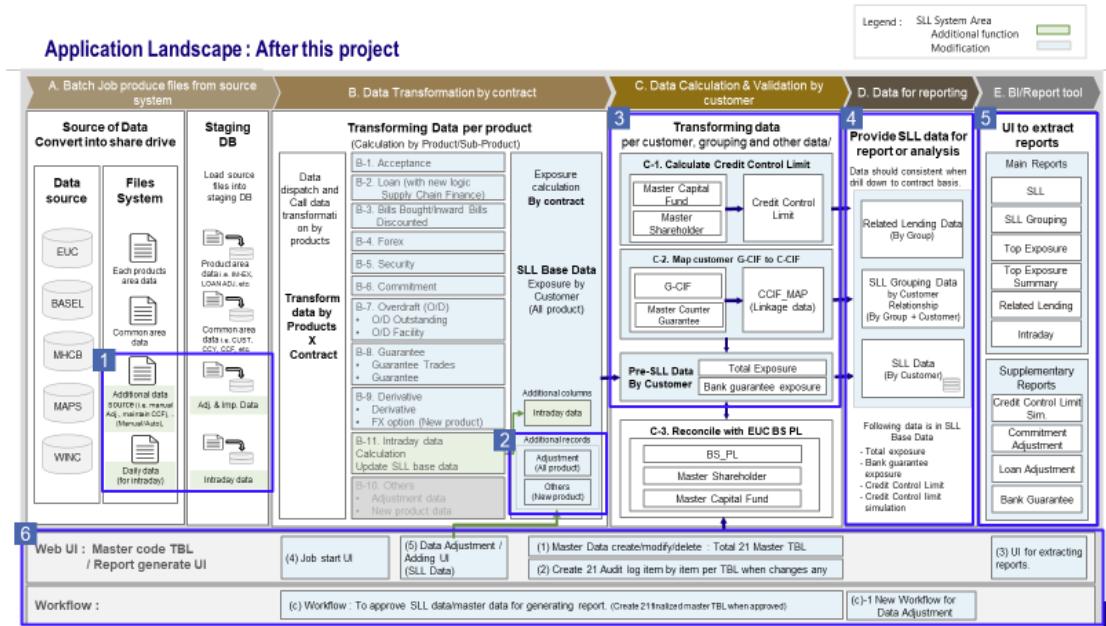
# 3. Scope of Change

## 3-2. Quality Assurance Scope Change

Based on information after explore detail requirement, we reconsider solution area to align with project objective and policy.

Additional function and modification area expand with also common functions (UI/Report framework and Workflow) which require to spend more effort on end-to-end testing in every use cases as assure the quality.

	Root causes	Impact area
Functional	Not Well-Designed Application	Increased modification modules and test efforts 1 2 3 4 5 6
	Monolithic & Tightly Coupled Structure	Limited to how to assign resources as need to follow current system design / structure 3 4 5 6
	In-completed Common functions	Assumed to develop efficiently but not properly work so require to fix/modify common function. That impact almost all modules. 6
Non-Functional	Insufficient Non-functional Testing	Non-functions which required Some enforcement cause many modules

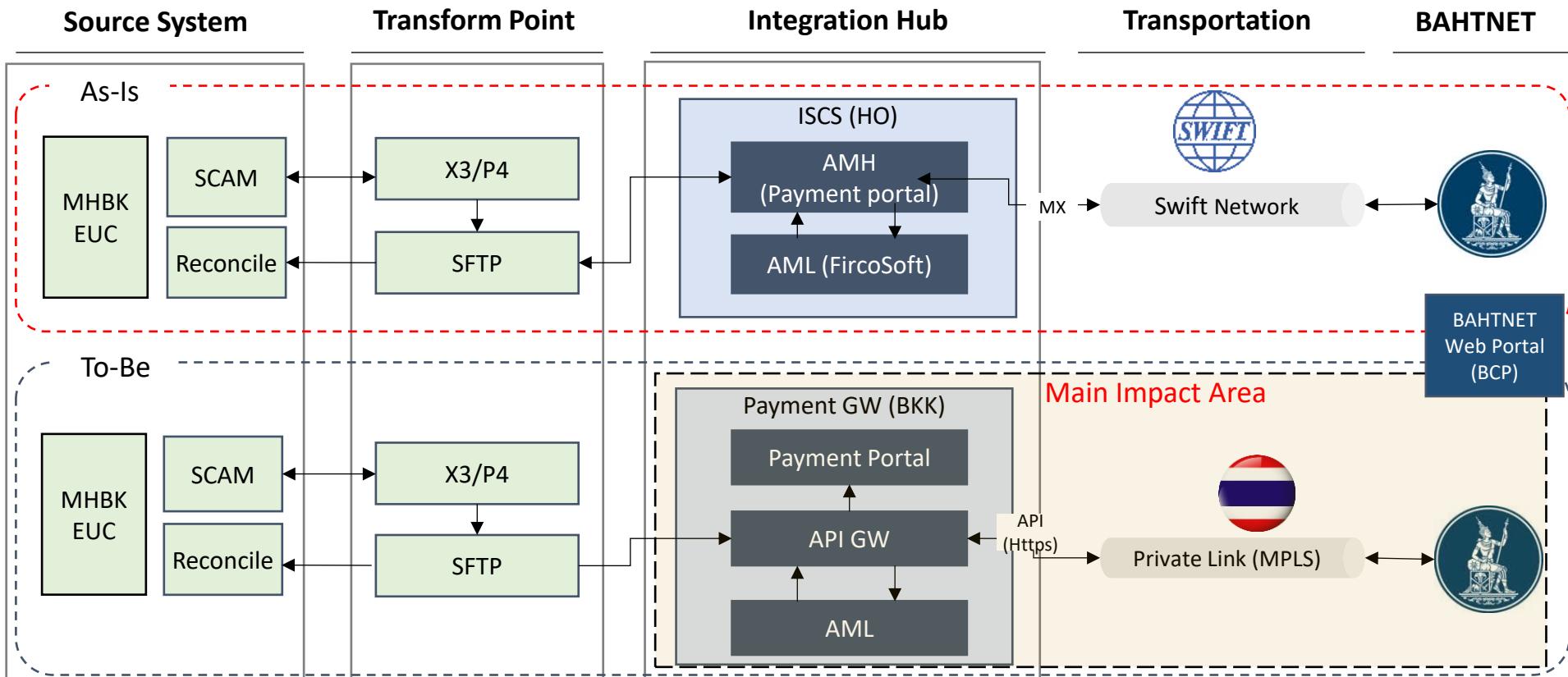


Efforts impact by Design and Quality assurance tasks

- Due to Non-Functional impact on Functional requirement items, therefore we must spend **more efforts of SA** to carefully analyze **coverage detail design and dependency** with **quality assurance** by plan effort for end-to-end test scenario/cases and extend period of SIT in order to cover all dependency of Non-Functional and Functional items
- Target area of test UT, SIT need to be ensured comprehensive to all impaction
- Functional area which no impact(has dependency) also need to be tested to ensure quality risk might cause from enhancement/fixing (=Regression testing)

# Require support task from ITD/BU/ITA/ITS

Previously BAHTNET flow rely on HO system (ISCS), BAHTNET NextGen implementation should be analyzed solution align with HO direction, process and policy



- |  |  |   |   |   |
|--|--|---|---|---|
| <b>(a) EUC</b>   | <b>(b) Transaction Management</b>  | <b>(c) Integration Management</b>   | <b>(d) Network/Protocol</b>   | <b>(e) BN Provider</b>  |
| <ul style="list-style-type: none"> <li>Keep using Scam</li> <li>Not expect to impact EUC</li> <li>Reconcile process remain the same</li> </ul> | <ul style="list-style-type: none"> <li>Keep same format of files transfer IB/OB</li> <li>Manage payment transaction via X3</li> <li>Which files need to keep send/put file to ISCS for processing</li> </ul> | <ul style="list-style-type: none"> <li>PIC to maintain AML (FircoSoft) config./import list</li> <li>Check whether to replace AMH or new payment portal system</li> <li>Impact to other HO system i.e. CPH, Gbase, etc.</li> <li>External system i.e. AMLO, BOT, HO</li> </ul> | <ul style="list-style-type: none"> <li>Check whether ISP under BOT listed</li> <li>Network bandwidth require minimum/recommend</li> <li>Commit network latency or load balance</li> <li>Backup MPLS approach</li> </ul> | <ul style="list-style-type: none"> <li>BCP still keep manual operation same as current</li> <li>Test approach and scenarios</li> <li>BNNG web admin portal for config./BCP</li> </ul> |

Confirmation Point	Main PIC
<b>(a) EUC</b>	
Keep using Scam as screening transaction for both IB/OB EUC	OPD
Process of reconciliation To-Be	OPD
<b>(b) Transaction Management</b>	
List of files OB/IB by ISCS	OPD
List of files ISCS send to others HO system	OPD
Process to change of integrate ISCS to local branch system	ITD/OPD
<b>(c) Integration Management</b>	
Process/Information provided to current AML system	ACPL
Clarify current AML operations	ACPL
<b>(d) Network/Protocol</b>	
BOT Security Requirement	ITS
List of MPLS ISP currently use	ITA
Network latency require by BOT	ITA
MPLS main and backup line bandwidth	ITA
<b>(e) BN Provider</b>	
BCP process change	ITD
BOT web portal Configuration change due to BNNG	ITD

# Service for IT Architecture Assessment (1/2)

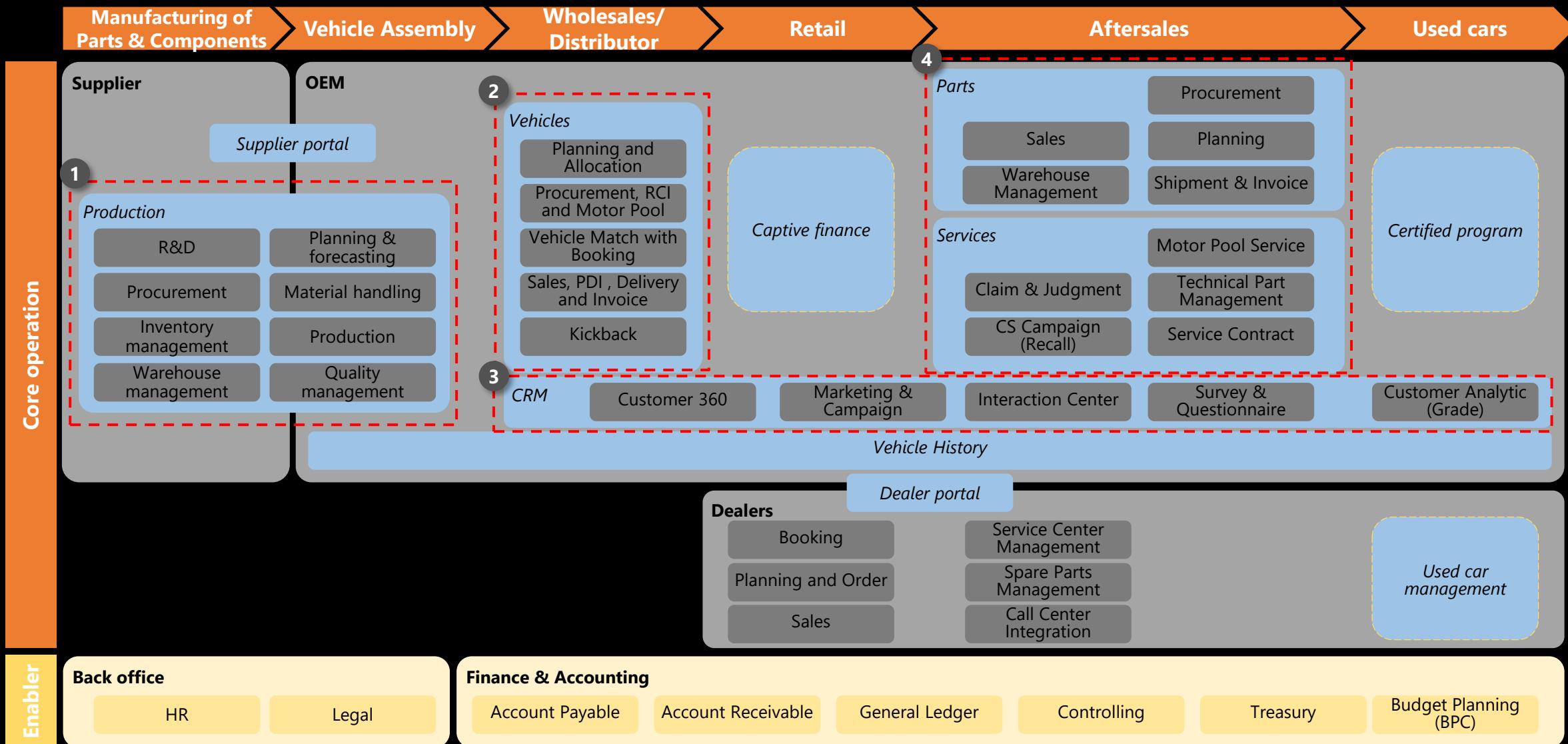
<p><b>Case Study:</b></p>  <p><b>IT Assessment Project Leading Logistic Company from Japan</b></p> <ul style="list-style-type: none"> <li>Aims to identify gaps and root causes, in order to determine the appropriate action items mainly from IT Formation</li> </ul>	<p><b>Client Overview:</b></p> <p>A logistics company who support their customer from inbound logistics to outbound logistics from “JIT parts delivery” to “high-standard carrier car transport” and “after-sales parts center operations” in the automobile industry</p>
<p><b>Major Issues</b></p> <ul style="list-style-type: none"> <li>Consider a replacement of their group ware and we proposed to replace to “Microsoft 365”(=M365)</li> <li>The support scope of M365 vendor is duplicated with current vendor so client is considering the Best IT formation <ul style="list-style-type: none"> <li>Current vendor is supporting all over IT area (PC・NW・QA Support). However, they <b>didn't provide a clear visualization on what they are doing</b>, what is their exact scope</li> <li>Client concerns if they can survive under digital era or not since there are many <b>old IT assets</b>, and current vendor <b>does not propose for improvement</b> proactively</li> </ul> </li> <li>It is important to clarify current IT situation &amp; issues before proceeding each action</li> </ul>	<p><b>Key Achievements</b></p> <ul style="list-style-type: none"> <li>Assessed Current IT Situation &amp; Issues and Define Root cause &amp; Actions in each dimension as following; <ul style="list-style-type: none"> <li>Current Application Landscape, Infrastructure/Server Landscape, Current IT Project Plan, Current IT Formation, Current IT Asset Management, Asset Information Security, and Current Business Continuity Planning</li> </ul> </li> <li><b>Identified and Prioritized Initiatives</b> the relative of importance and ease of implementation in each action, in order to develop IT Improvement Roadmap</li> </ul>
<p><b>Challenge</b></p> <ul style="list-style-type: none"> <li>Challenge in IT Assessment to conduct interview workshops and analyze current situation and issues within 4 weeks and establish the <b>Action Roadmap within 1 week</b>.</li> </ul>	<p><b>Results</b></p> <ul style="list-style-type: none"> <li>Clarified Current IT Assessment and found out the fact that there are <b>17 fact finding, 20 issues, and 24 actions/recommendations</b> to improve their IT department to become the <b>Best IT formation</b></li> <li>Clarified the <b>scope of work for the current vendor</b></li> <li>Developed <b>Future IT Formation</b> and Recommend to setup <b>IT Helpdesk Formation/Team</b> with the role and responsibility in order to support all client's users in the future</li> </ul>

# Service for IT Architecture Assessment (2/2)

<b>Case Study:</b> 	<b>Application for Business Process Assessment and Recommendation</b> <b>Leading Power Plant in Thailand</b> <ul style="list-style-type: none"><li>Aims to identify gaps and root casus, in order to determine the appropriate recommendations for optimization</li></ul>	<b>Client Overview:</b> A public company supports business clients in generating the <b>electricity and distribute to private power producer</b> in electricity industry in Thailand
<b>Major Issues</b> <ul style="list-style-type: none"><li>Consider to improve their current processes and identify the improvement area</li><li>Most systems are still operating on a <b>silo basis</b> and are not fully utilizing the existing data by client's IT team</li><li>Data Collection by client are <b>captured on spreadsheets</b> and can't be effectively used for the future analytics</li><li>Client's current IT system landscape wasn't implemented/developed in the way to support digital transformation</li></ul>	<b>Key Achievements</b> <ul style="list-style-type: none"><li>Assessed Current issues and recommendations of four following areas;<ul style="list-style-type: none"><li>Procurement</li><li>Inventory</li><li>Maintenance</li><li>Common area</li></ul></li><li><b>Identified and Prioritized</b> Initiatives the relative of importance and ease of implementation in each action, in order to develop Initiative Roadmap as recommendations</li></ul>	
<b>Challenge</b> <ul style="list-style-type: none"><li>Challenge in Process Assessment to conduct interview workshops, analyze current situation and issues, establish the recommended initiative roadmap and actions based on the root cause within 4 weeks</li></ul>	<b>Results</b> <ul style="list-style-type: none"><li>Recommended <b>5 highlighted initiatives</b> to implement first based on the impact to business and ease to implementation as following:<ul style="list-style-type: none"><li>Establish maintenance <b>inventory and procurement plan</b></li><li><b>Vendor master maintenance</b></li><li><b>New change request</b></li><li>Setup <b>monitoring dashboard</b> for end-to-end <b>Procurement and SLA</b></li></ul></li><li>From the above list, it could be <b>return as company's benefits more than 100 MTHB with the investment costs of only 25 MTHB.</b></li></ul>	

# Automotive Industry Value Chain

•The area for **assessment can be selected as priority**, the number of areas selected will reflect to the effort used for the assessment



# Sample Assessment Report

**Technology and Security**  
**Infrastructure & Technology Platform – Integration Technology Platform Design**

According to the current design of integration architecture, challenges & risks and the future considerations are identified and provided with key assessment areas including integrability, extensibility and compatibility.

**Challenges & Risks**

**Challenges**

- No further instruction

**Risks**

Integration architecture implementation

- There is no tools nor middleware used for centralized management and controlling API for both internal and external
- In the future growth of partners and services, it might be difficult to manage both new APIs and the existing APIs

**Current Integration Design**

**API Gateway Implementation Consideration**

**For illustrative only**

**AS-IS IT Assessment**

- A. Current Application Landscape
  - Core System
  - Communication Tools
- B. Current Infrastructure/ Server Landscape
- C. Current IT Project Plan
- D. As-Is IT Formation
  - Analyst IT outsourcing contract
  - Helpdesk procedure
- E. Current IT Asset Management
- F. Assess Information Security
- G. Current Business Continuity Planning/ Back-up activities

**For illustrative only**



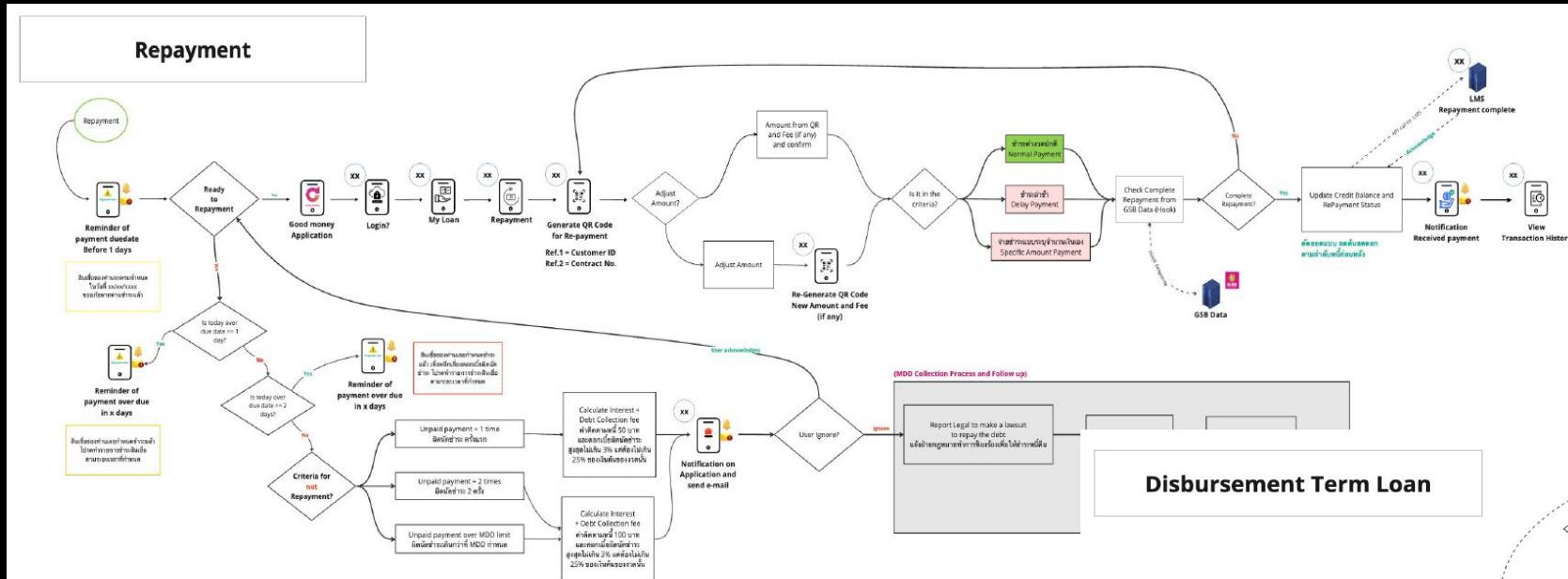
Root Cause	Action Direction
<b>Insufficient IT Resource (XXX)</b>	<ul style="list-style-type: none"><li>• Define role that support on core IT functions i.e. Asset Mgt, Vendor mgt. and Governance</li></ul>
<b>Lack of IT policy</b>	<ul style="list-style-type: none"><li>• Develop IT policy to align with AppX implementation</li></ul>
<b>Lack of vendor quality</b>	<ul style="list-style-type: none"><li>• Revisit scope in vendor contract</li><li>• Assess the quality of vendors</li></ul>
<b>Lack of budget and alignment</b>	<ul style="list-style-type: none"><li>• Develop the IT Direction to guide the budget/ resource planning</li><li>• Setup Helpdesk policy</li><li>• Helpdesk procedure</li><li>• Helpdesk Performance metric</li></ul>
<b>Insufficient Monitor and IT Audit function</b>	<ul style="list-style-type: none"><li>• Create the Monitor and IT Audit function to<ul style="list-style-type: none"><li>◦ Review vendor Contract</li><li>◦ Vendor mgt. and evaluation</li><li>◦ IT asset monitoring</li><li>◦ Security monitoring</li></ul></li></ul>
<b>IT Security Risk &amp; Issue from HQ</b>	<ul style="list-style-type: none"><li>• XXX and XXX is finding the root cause and resolve soon.</li><li>• Revisit the design of XXX to evaluate the quality of design</li></ul>

# Sample Assessment Report

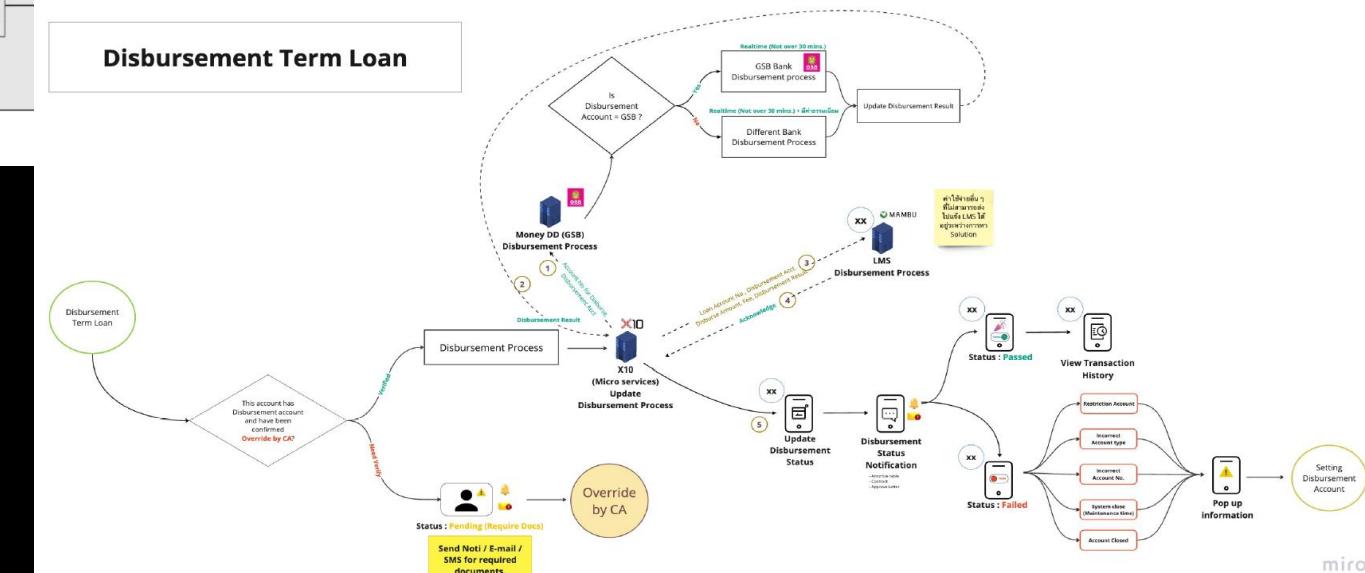
Process	Issues	Impact Level	Root Cause								
Procurement Plan/ Sourcing Strategy	<ul style="list-style-type: none"> <li>ISSUE01: Lack of Procurement planning for required materials/ services</li> </ul>	High	<ul style="list-style-type: none"> <li>Lack of communication from Maintenance and Inventory team to Procurement</li> <li>No proper procedure to prepare Procurement plan master plan</li> <li>Lack of incorporated system to support planning i.e. System is not support for long lead time material purchase</li> </ul>								
Supplier Management	<ul style="list-style-type: none"> <li>ISSUE02: Vendor Master information is not completed and not up-to-date</li> </ul>	High	<ul style="list-style-type: none"> <li>Not sufficient vendor master info to re-order invent</li> <li>No linkage between vendor master items and supplied items</li> <li>No proper system to manage vendor information and no s</li> </ul>								
RFQ	<ul style="list-style-type: none"> <li>ISSUE03: Lack of Visibility on Procurement Status (esp. RFQ status)</li> </ul>	High	<p>For illustrative only</p> <ul style="list-style-type: none"> <li>In system is too high-level and many manual tracking inside system.</li> <li>In each manual step, no visibility to track and no visibility to track each step of procurement</li> </ul>								
Contract Mgt. / Price Agreement / CWI	<ul style="list-style-type: none"> <li>ISSUE04: No official owner for Contract Management</li> </ul>	High	<ul style="list-style-type: none"> <li>No official assignment to manage contract and mon</li> <li>No support system to do contract management and</li> </ul>								
Purchase Order (PO)	<ul style="list-style-type: none"> <li>ISSUE05: Non-PO (Direct Purchase) that lack of budget control</li> </ul>	High	<ul style="list-style-type: none"> <li>Long time waiting in normal procurement process w demand of RO</li> <li>Shorten approval process than normal RFQ/PO proc</li> </ul>								
<div style="background-color: black; color: white; padding: 5px; text-align: center;"> <b>Issue Description</b> <ul style="list-style-type: none"> <li>There is no proper integrated procurement plan at organization level that related to maintenance plan and inventory management plan</li> <li>Procurement team only know once the PR already submitted to them, which they have less time to prepare sourcing</li> </ul> </div>											
<div style="background-color: black; color: white; padding: 5px; text-align: center;"> <b>Root Cause Analysis</b> <ul style="list-style-type: none"> <li>No proper procedure to prepare the Procurement plan that analyze from Maintenance Master plan, historical usage</li> <li>No proper communication among Procurement, Inventory and Maintenance team to forecast material usage and identify procurement needs in advance. (3-5 years)</li> <li>Lack of incorporated system to support planning</li> </ul> </div>											
<div style="background-color: black; color: white; padding: 5px; text-align: center;"> <b>Recommendation</b> <ul style="list-style-type: none"> <li>Setup new procedure to create Procurement Plan based on Maintenance Master plan and historical usage material and stock level in Inventory</li> <li>Develop Sourcing Strategy based on Procurement Plan</li> </ul> </div>											
<div style="background-color: black; color: white; padding: 5px; text-align: center;"> <b>Related to..</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Process</th><th>System</th><th>Policy</th><th>People</th></tr> </thead> <tbody> <tr> <td>Yes</td><td>Yes</td><td>-</td><td>-</td></tr> </tbody> </table> </div>				Process	System	Policy	People	Yes	Yes	-	-
Process	System	Policy	People								
Yes	Yes	-	-								
<div style="background-color: black; color: white; padding: 5px; text-align: center;"> <b>Impacts</b> <ul style="list-style-type: none"> <li>The process of "Sourcing or RFQ" takes longer time to prepare because of lack of proper planning and number of PR</li> <li>No proper planning leads to overstock and vendor cannot negotiate volume discounts and vendor discounts and eliminates "one-off" buying</li> </ul> </div>											
<div style="background-color: black; color: white; padding: 5px; text-align: center;"> <b>Recommend Owner :</b> Procurement team     </div>											

# Lending System Process Flow

In the area of financial lending system, publication system like mobile application provide ease of access by customer and generate huge revenue with reduce operation cost.



## Disbursement Term Loan

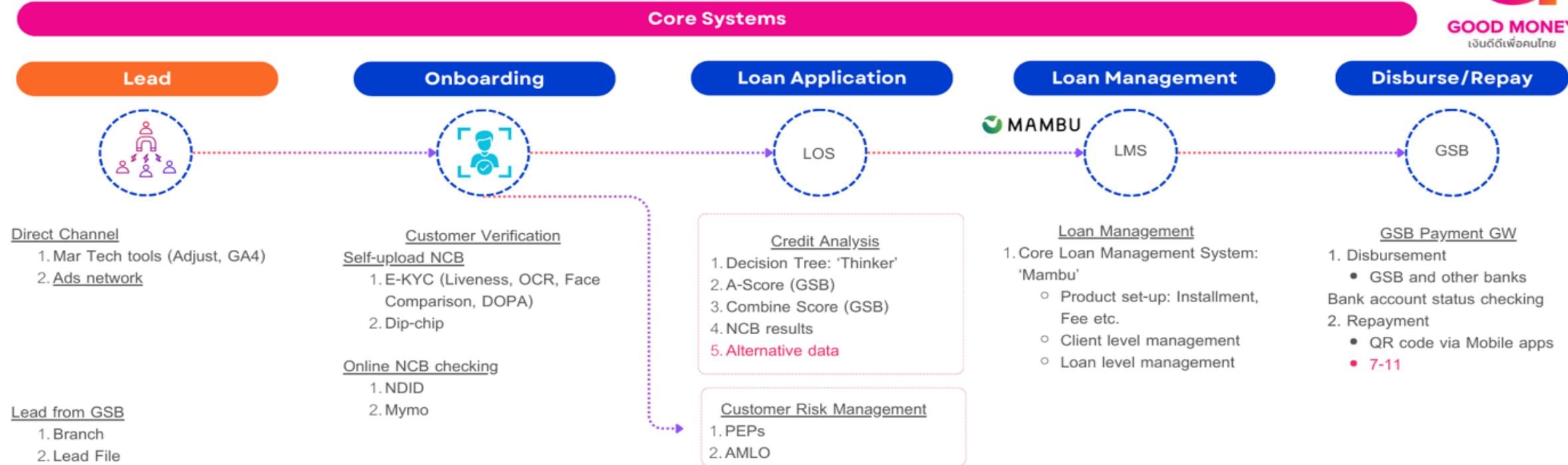


# Lending System Process Mapping

End to end system management from front to back-end process coverage by integration of suitable component.

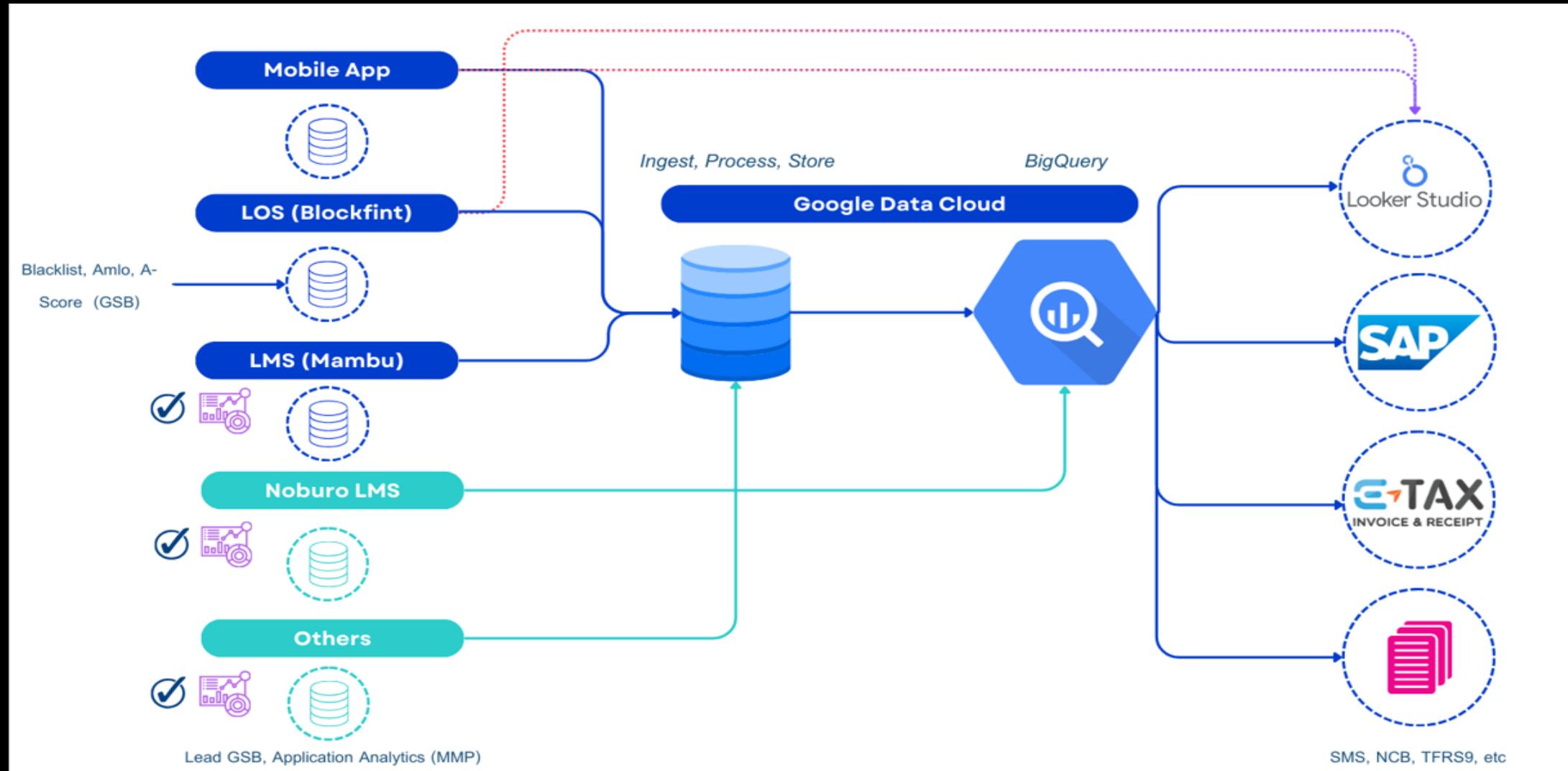


## MDD E2E Process Mapping



# Lending System Report Architecture

Enterprise Architecture establish from many components with seamless integration.



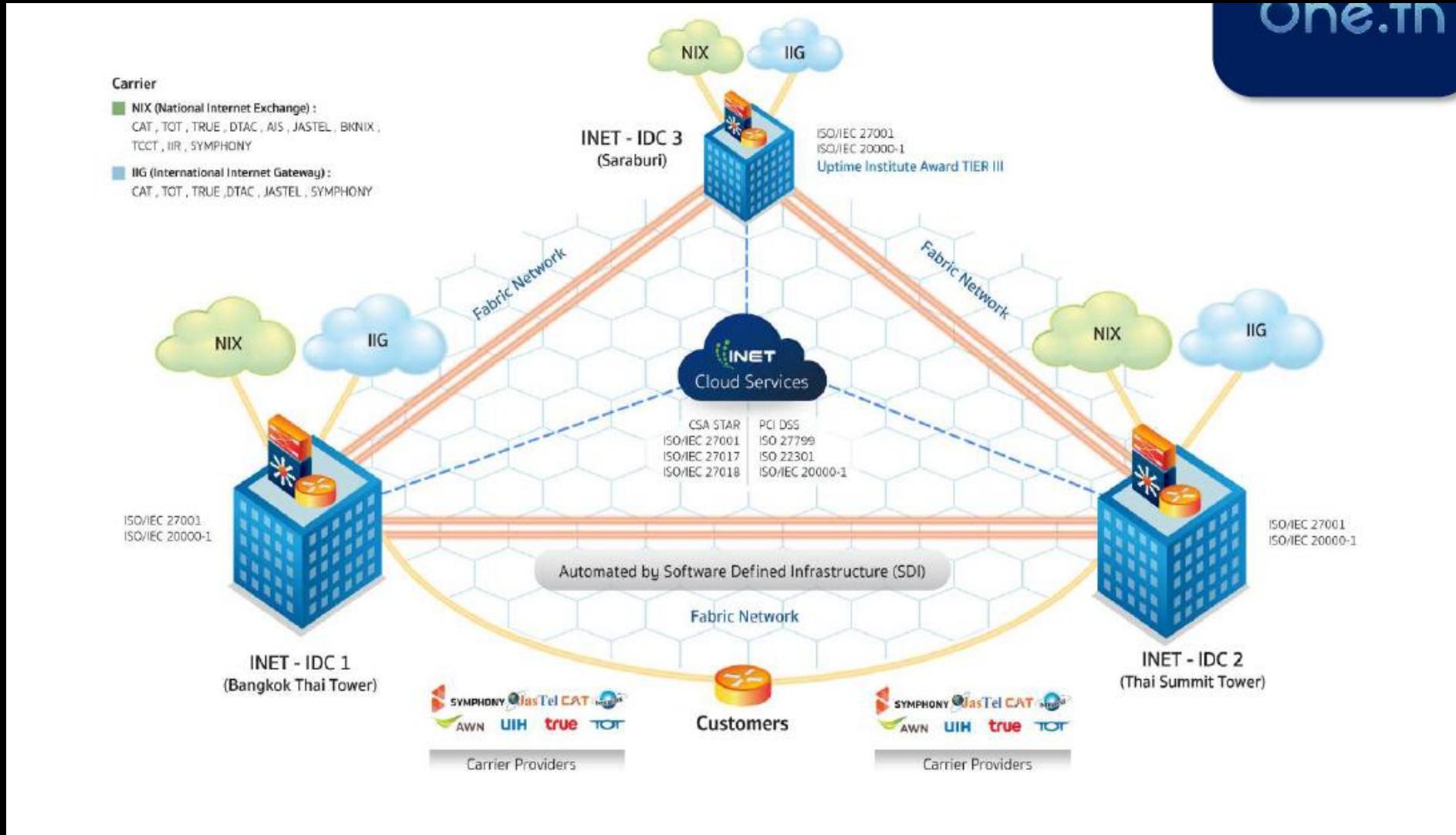
# E-Tax System

E-Tax by service provide is trend of current solution, this approach can reduce cost and time to study knowhow.



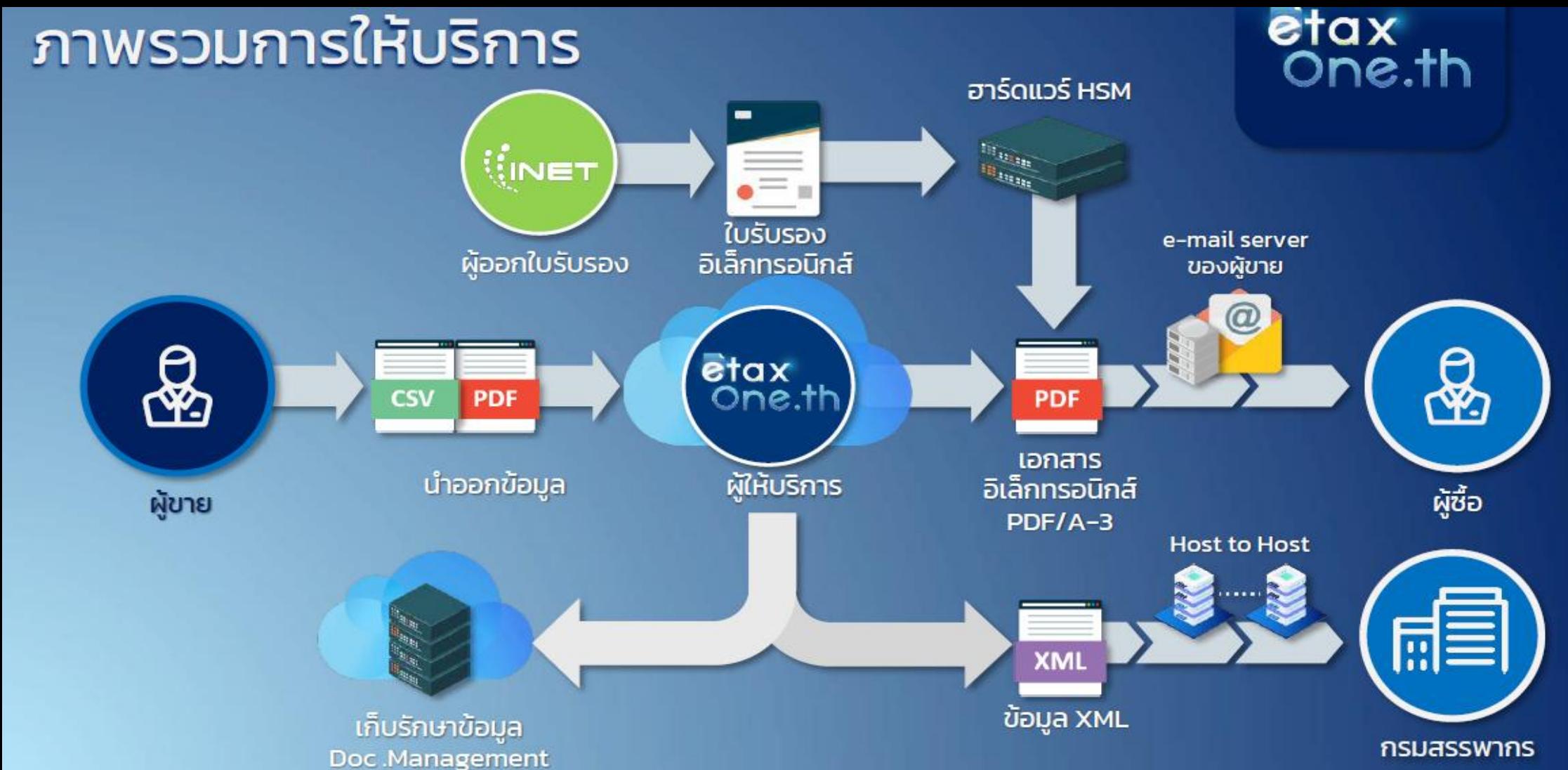
# E-Tax System Architecture

E-Tax infrastructure design for support high performance(scalable) and reliability



# E-Tax System Architecture

E-Tax overall business flow with included security and data protection



# Penetration Test Approach

Financial system require very high security standard which mandatory to perform penetration testing

Sample techniques and potential attacks in identify and exploit phase for IT infrastructure

- Potentially outdated software versions that contain known vulnerabilities
- Sniffing and insecure communication
- Authentication bypass
- Password cracking
- Privilege escalation
- Unauthorized access to file/directory
- Sensitive data leakage
- Parameter tampering
- Buffer overflow
- Administrative interfaces accessible

Techniques and potential attacks in exploit phase for application (based on OWASP Top 10) such as

- Injection
- Broken Authentication and Session Management
- Sensitive data exposure
- Broken access control
- Security misconfiguration
- Cross-Site Scripting (XSS)
- Using components with known vulnerabilities
- Insecure direct Object references
- Cross-Site Request Forgery (CSRF)
- Invalidated redirects and forwards
- Malicious file execution

Our approach/ tool: Deloitte's Security Testing and Assurance Framework

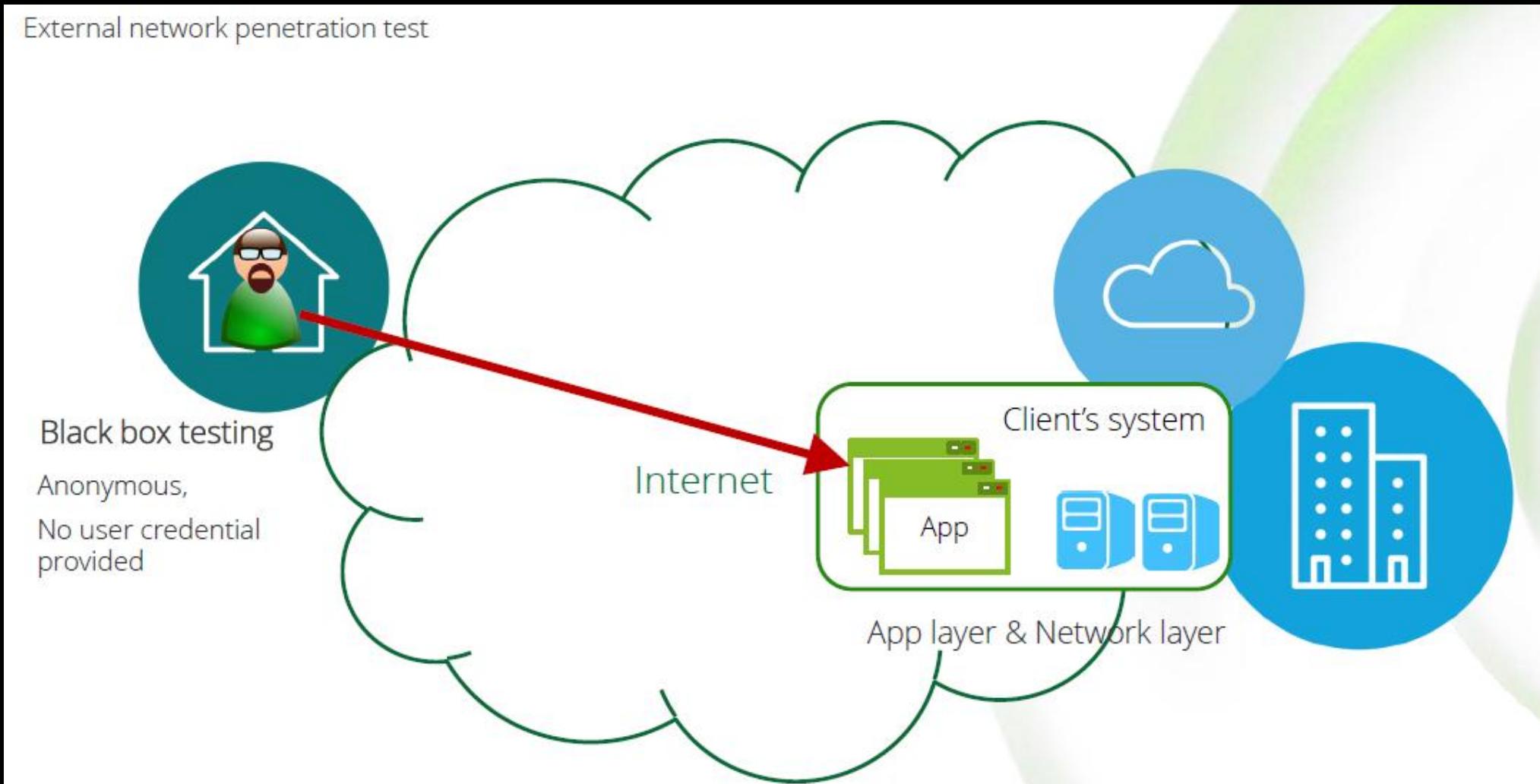
Deloitte's security testing and assurance framework is tested and proven through our numerous security assessment engagements. We will draw on our experience in our security reviews and penetration testing to assist the client in identifying vulnerabilities within the systems.



- Use well established as well as proprietary techniques to map out your network.
- Discover services that are running on your host and devices
- Discover applications that are running on application servers
- Discover application functional/menu
- Crawl all web pages in application
- Gather the vulnerability information of the devices and servers within your network
- Identify if there are the following application vulnerabilities:
  - Authentication
  - Authorisation
  - Session management
  - Data validation
  - Sensitive information disclosure
  - Misconfiguration
  - Business logic
- Demonstrate that the vulnerabilities found can be exploited. e.g.:
  - disclosure of information
  - gain unauthorised access to the application
- This will be performed based on directions provided by the client
- Provide report with risk ratings and recommendations to help you understand the severity of issues identified and prioritize the remediation effort
- Walkthrough the vulnerabilities with your technical team
- Perform retesting to verify that the vulnerabilities have been remediated

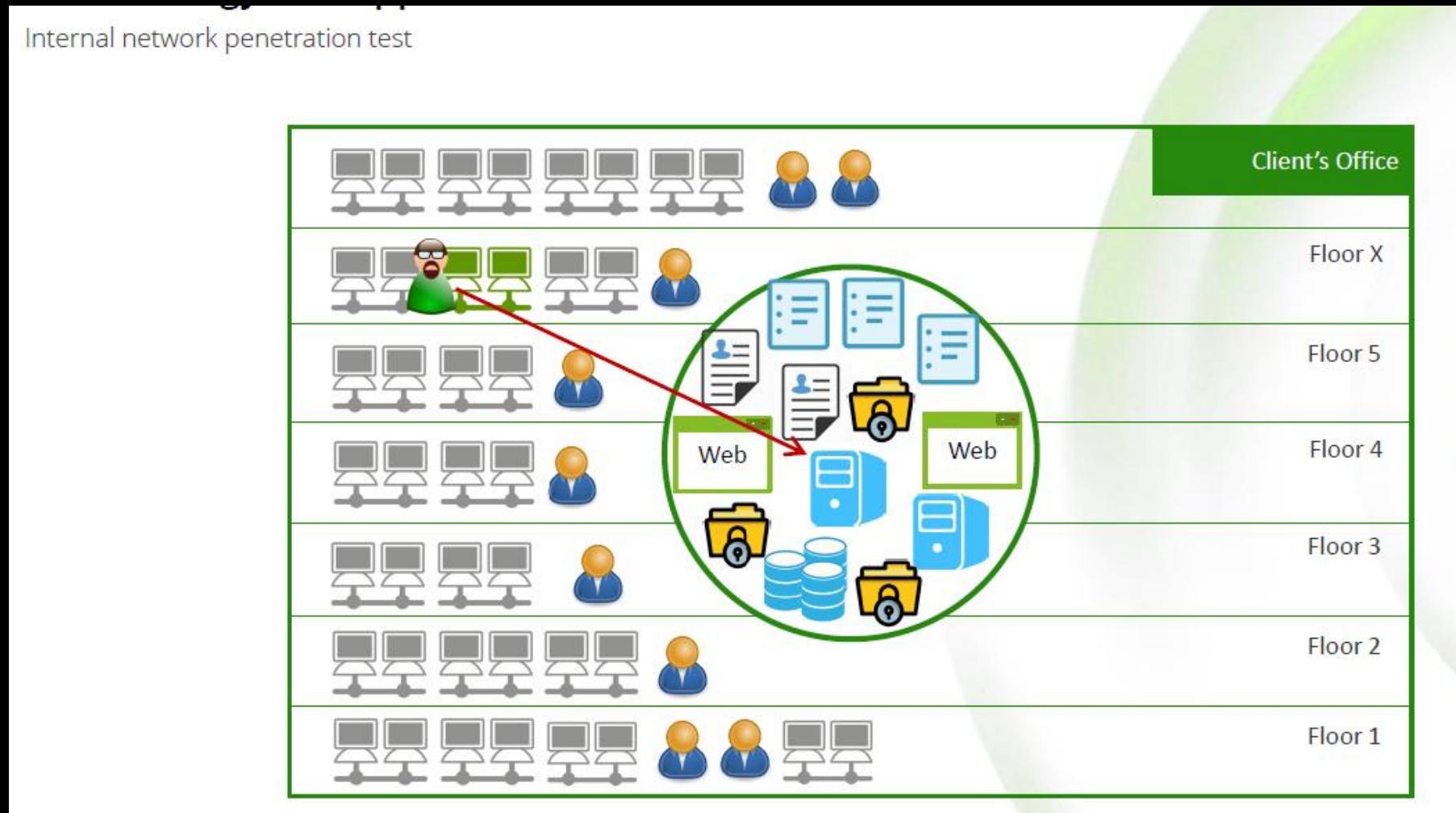
# Penetration Test Approach

Black box testing will test attack from outside organization without know information



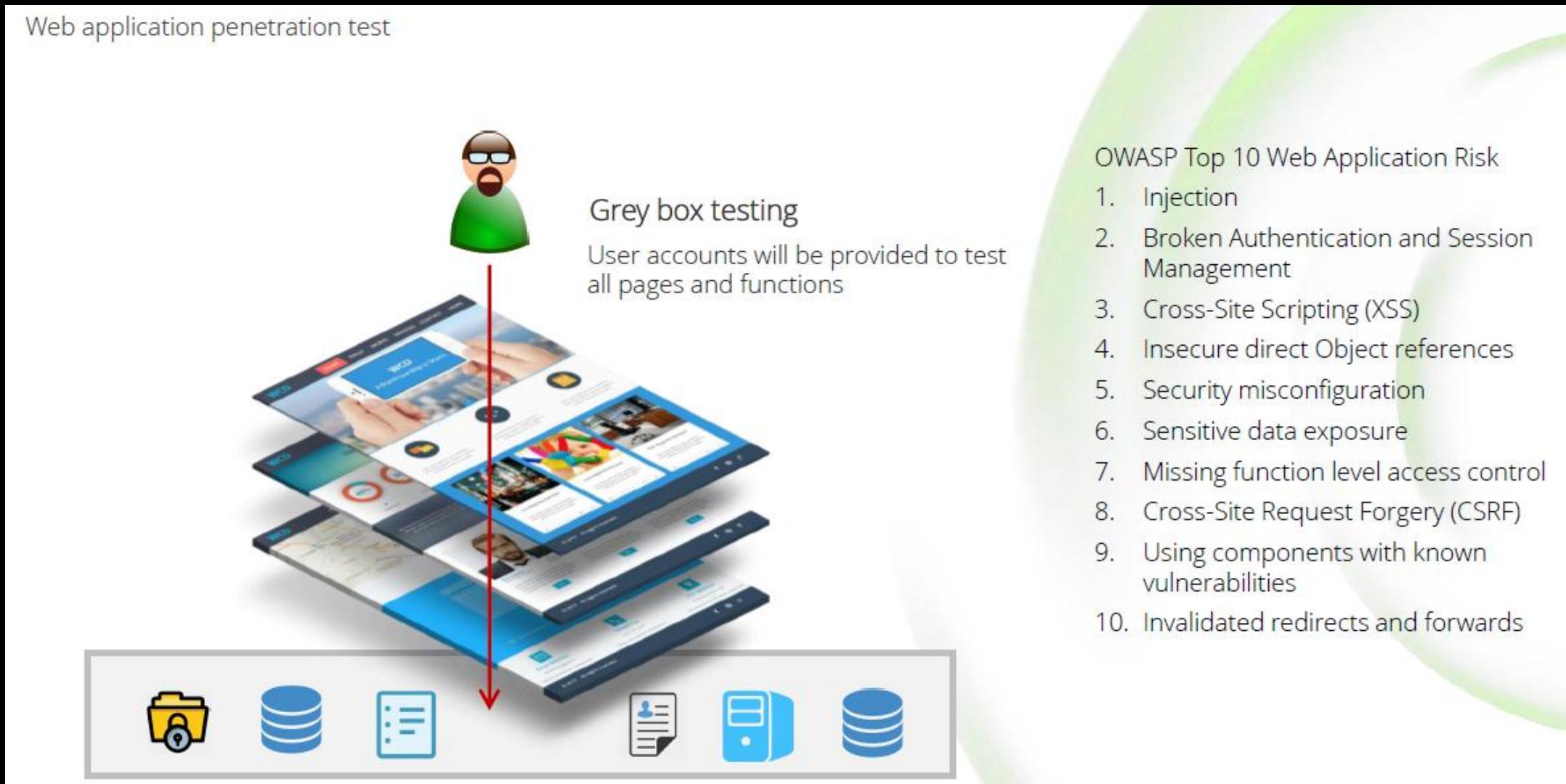
# Penetration Test Approach

Penetration test also require to test attack from inside which is possible case in the real situation



# Penetration Test Approach

Gray box test would be better approach to have both manual and testing script with know some information



# Performance Test

Performance test require to perform on high concurrency and workload

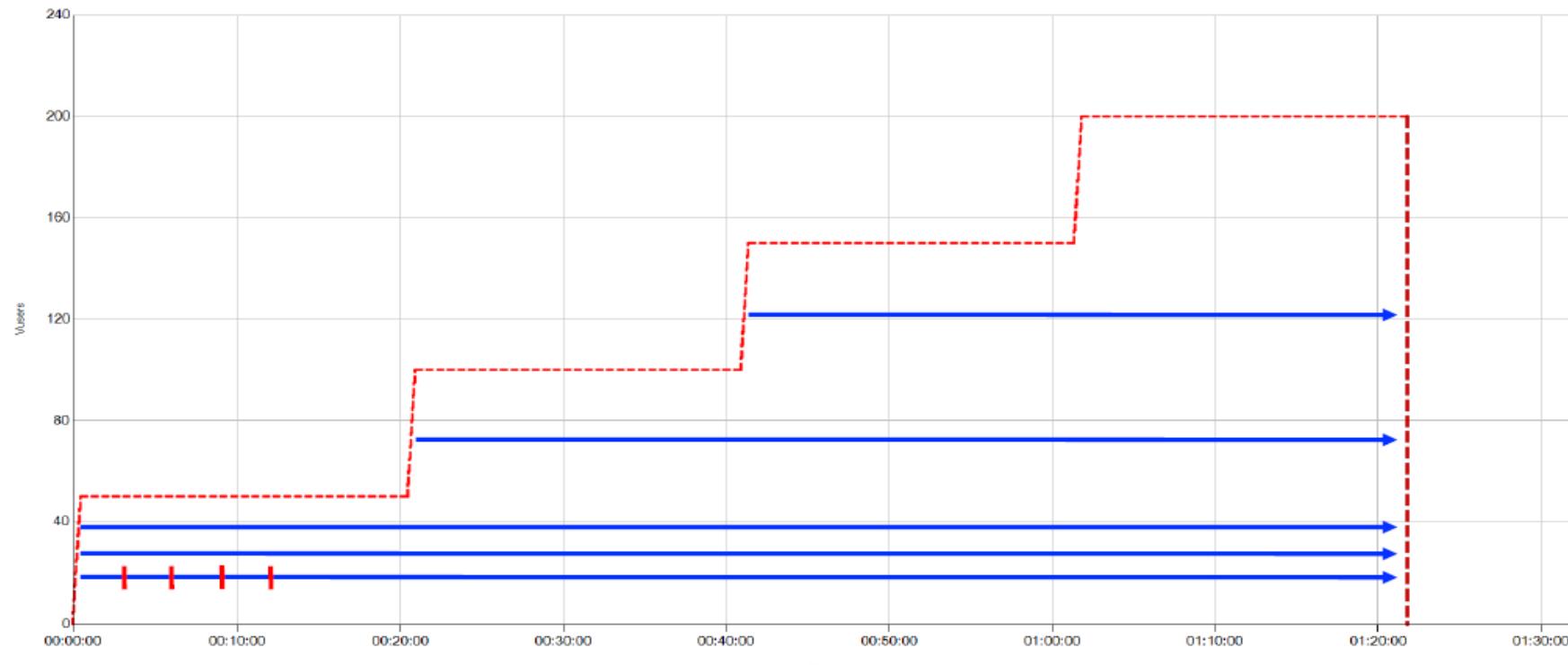
## Performance Test Scenarios

No.	User Journey	Related Systems	Normal Load (txn / day)	Peak Load (txn / day)	Concurrent Users	Weight Percentage	Time per loop (s)
1	Onboarding	Consent, NDID			50	25	300
2	e-KYC	DOPA			20	10	300
3	Loan request	LOS			30	15	600
4	Loan Confirmation	LOS, LMS			20	10	300
5	Disbursement	LMS, GSB			20	10	180
6	Repayment	LMS, GSB			50	25	300
7	Statement inquiry	LMS			10	5	120

# Performance Test

Ramp-up to simulate same as real world

## Performance Test Methodology

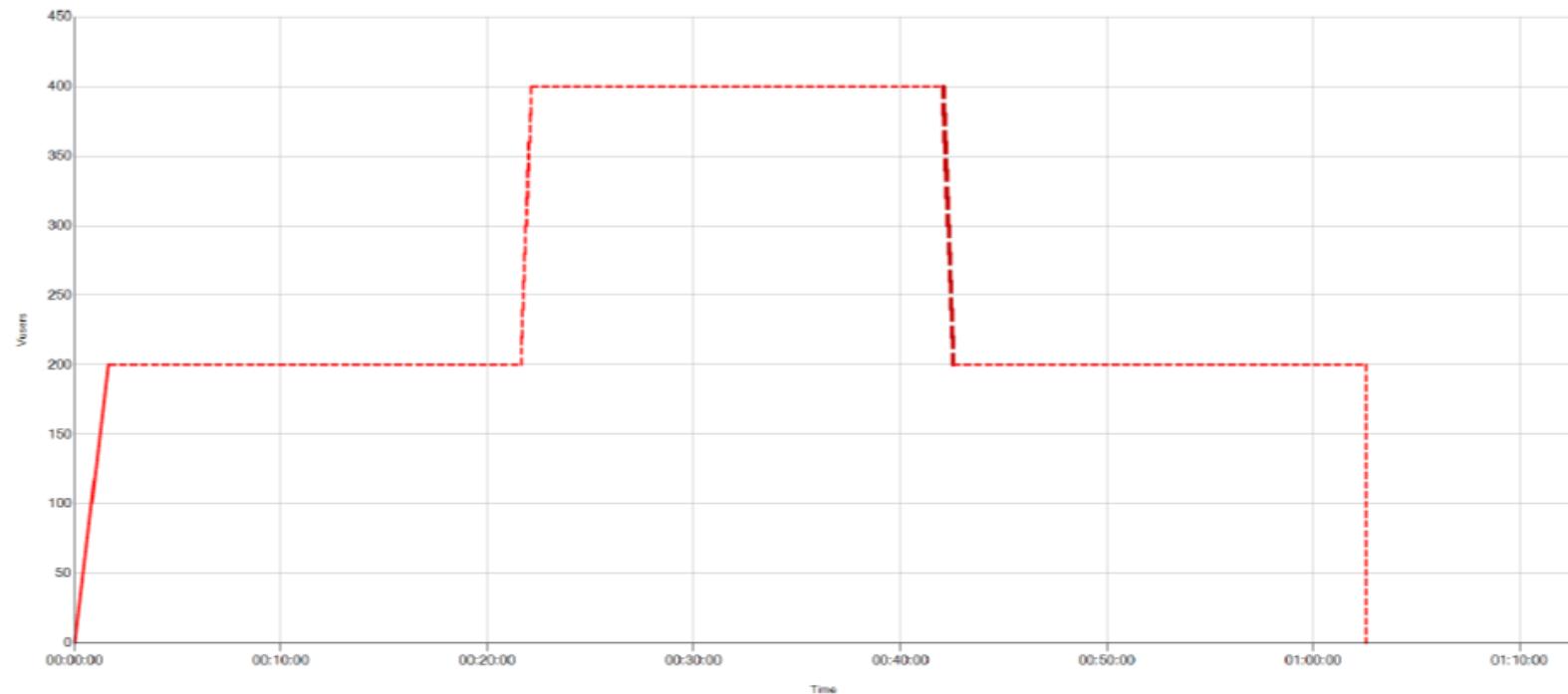


Testing Type	Ramp up	Duration	Bandwidth
Load Test	5 Concurrent User / 3sec	20 mins every phase	Maximum

# Performance Test

Peak load testing scenario

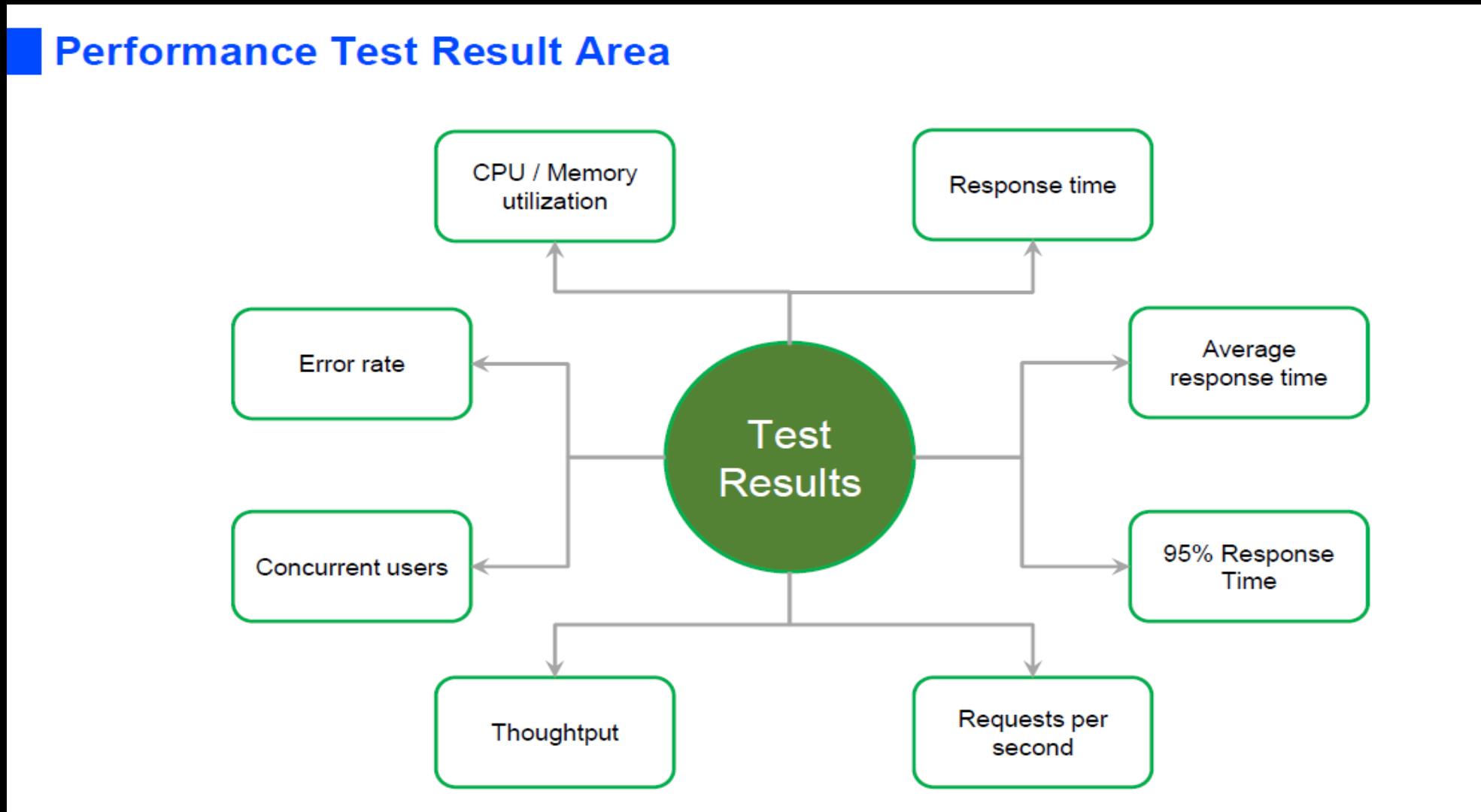
## Performance Test Methodology



Testing Type	Ramp up	Duration	Bandwidth
Normal Workload	2 Concurrent User / 1 second	20 minute	Maximum
Spike Workload	20 Concurrent User / 3 second		

# Performance Test

Performance test result can improve by both Application and Infrastructure tuning for support every situation



# Performance Test

Sample result of Performance test

