aws partner network

APN Partner Deal Acceleration Program –
Project Plan

[SAMRX Datalake] – [MIND] – [Date]

Submitted By
MothersonSumi INfotech & Designs Ltd. (MIND)
MMM-DD-YYYY

Partner Credentials on AWS

VERSION	DATE	AUTHOR	CHANGES
1.0	21-03-2020	PRACHI GULIHAR	INITIAL DRAFT OF SOW

REVISION HISTORY

1 TABLE OF CONTENTS

1 PROJECT OVERVIEW

1.1 EXECUTIVE SUMMARY

MothersonSumi INfotech & Designs Ltd. (MIND) is a part of Joint venture between **Samvardhana Motherson Group** (SMG) of India and **Sumitomo Wiring Systems** of Japan (SWS).

MIND is a provider of end-to-end software and engineering design solutions to companies around the globe. MIND started as an IT arm of the group in the year 2000 to support the IT needs of Samvardhana Motherson Group and Sumitomo Wiring Systems worldwide. MIND has further ventured into European and American Market to customers who are non-SWS and SMG to expand our services.

MIND's headquarters and development centers are in Noida (near New Delhi), India. MIND is a CMMi Level 5, an ISO 9001:2008 and ISO 27001 certified company. Since its inception in 2000, MIND has emerged as a strong world class IT Company with projects across the globe. MIND has multi-lingual software development capabilities including Japanese and German.

MIND is a Microsoft Gold Certified Partner, AWS, Azure & Google Cloud Service Provider, Oracle GOLD OPN partner and partner with other big IT brands.

Samvardhana Motherson Hamakyorex Engineered Logistics Limited (SAMRX), a joint venture company between Samvardhana Motherson International Ltd. (SAMIL), India and Hamakyorex Co. Ltd., Japan.

SAMRX aims to revolutionize the transportation of finished vehicles in India by developing a modern, technology enabled and equitable socially conscious solution for the OEM customers. Building on the expertise of Hamakyorex and Motherson Group, SAMRX will work towards considerably scaling business operations over a period of next 3 years

SAMRX wanted to create a datalake which could be used to do analysis and gain business insight. They want solution should be cost effective.

~~Good to have~~

1.2 BUSINESS ~~CUSTOMER~~ REQUIREMENT
~~Good to have~~

SAMRX uses currently 20 self-owned trucks and 42 drivers for the transportation of finished vehicles in India by developing a modern, technology enabled and equitable socially conscious solution for the OEM customers. The company plans to scale up its fleet of trucks to 50 by next quarter and have plan of over 1,500 and employ 3,200 drivers by FY 2023. Moreover, number of sensors are also going to be increase. Since Volume, Velocity and Variety of data will increase over the time there is a need to have an efficient & cost-effective solution for analyzing of various sensor data to gain business insights from data available for improving efficiency and cost-optimization.

Customer needs cost-effective solution that will reduce the complexity associated with the process of analyzing the data received every day as Cassandra being used as database gets being choked for frequent read operations.

Customer desires highly robust and cost-effective solution capable of ~~delivery~~ delivering a quality end user experience regardless of the demands on the platform. The platform will use best in breed ~~Amazon~~ AWS services to achieve this goal.

Below are the requirements:

- ✓ The data migrated from Cassandra is intact.

- ✓ The solution must be able to dump the daily sensor data in Cassandra into the datalake.

- ✓ The solution must efficiently extract the header information, footer information and line level information from the invoice

~~Good to have~~

1.3 PAIN POINTS IN THE CURRENT ENVIRONMENT

Challenges faced by the ~~end customer~~ *CUSTOMER* in the current environment include

- ✓ Currently the customers use Cassandra database to do analysis which is read inefficient.

- ✓ Data visualization directly from Cassandra is cumbersome.

- ✓ An automated solution will save a lot of man hours and cost for the customer

~~1.4~~ 1.1 ~~PROJECT SPONSOR(S) / STAKEHOLDER(S) / PROJECT TEAM~~

~~[Identify and list the customer's Executive Sponsor and Project Stakeholders, including Title and Description (describe their role and responsibilities in the organization). The Executive Sponsor is the individual with overall accountability for the project. The Sponsor is primarily concerned with ensuring that the project delivers the agreed business benefits. Project stakeholders are entities that have an interest in a given project, and usually represent a business group or organization]~~

~~**Partner Executive Sponsor**~~

~~Name~~	~~Title~~	~~Description~~	~~Email / Contact Info~~
~~John Doe~~	~~SVP Finance~~	~~Head of Financial Services~~	

~~**Project Stakeholders**~~

~~Name~~	~~Title~~	~~Stakeholder for~~	~~Email / Contact Info~~
~~Ivan Doctorow~~	~~Sr. Manager, QA~~	~~IT – Testing / QA~~	
~~Jane Smith~~	~~Director, PMO~~	~~Program Management Office~~	
~~Dan Jacobs~~	~~VP, IT Operations~~	~~IT Operations – Networking~~	

1.4 PROJECT SUCCESS CRITERIASUCCESS CRITERIA

1.5 .

- ✓ Data in the source database (Cassandra) is migrated to datalake and is intact

- ✓ Reduction in efforts and cost

a. Help customer implement use of managed services to replace some always running EC2 instances. Example: Transcoding application

b. Understand and help the customer on implementing best practices on automation of DevOps process.

1.5 PRE-REQUISITES

- ✓ Architecture diagram, documentation, inventory, and performance details of the existing environment will be made available

- ✓ Access to Cassandra is made available.

- ✓ AWS Administrator/necessary access to AWS Partner to start and work on the project

- ✓ Customer to provide support on which tables are required for datalake.

- ✓ Assign an executive to work collaboratively with joint accountability of the program

1.6 DEPENDENCIES

Sample:

- ✓ Network bandwidth requirement for end user connectivity to AWS
- ✓ Dependencies from Cassandra running on EC2 is accessible.

1.7 ASSUMPTIONSAssumptions

- ✓ Current data volume is approx. 7 GB of initial Data & 500-600 MB of daily data that needs to be ingested into Data Lake.
- ✓ Assuming that for incremental data on daily basis it's been only getting new inserted records as otherwise for frequent update/delete operations it can give performance issues later.
- ✓ Tables need to have one datetime column for daily incremental data transfer otherwise won't be able to fetch incremental data on daily basis.
- ✓ We are creating partitions based on inputs received from development team as considering most of reporting queries would be based upon Date Time & Vehicle Number. So, we are designing Date Time as Primary Partition & Vehicle Number as Secondary (nested one) for most of tables .

1.8 In-SCOPE

Scope-1: Data migrated from Cassandra to S3

- ✓ One-time migration of initial data of given tables to Amazon S3 by running Spark Jobs on EMR Cluster having one master and four core nodes. We will use Spark Cassandra Connector for fetching data from Cassandra DB. Use

- ✓ In the Spark job itself will convert the data format to Parquet as being columnar storage it will give huge cost benefit later when querying the data stored in data lake. Parquet is designed for efficient as well as performant flat columnar storage format of data compared to row-based files like CSV or TSV files.

- ✓ We will Partition the data on most frequent fields as it will further give huge performance & cost benefit.

- ✓ Will Configure AWS Lambda to invoke EMR Cluster having one master and two core nodes to run Spark Jobs for Incremental Data Transfer on daily basis.

- ✓ The entire workflow is setup using AWS Step function.

Sample:

Scope-2: Use Athena to analyze the datalake

- ✓ Set up glue crawler to run one time for creating tables from datalake.
- ✓ Update crawler to run on daily basis to update those tables.
- ✓ Configure AWS Athena to query data from these tables.

1.9 OUT OF SCOPEUT OF SCOPE

- ✓ Usability of the datalake is out of scope as of now.

1.10 RISKS AND MITIGATION

[Risks are often related to timeline of PoC execution, viability of technology and SLAs. Try and foresee what risks could crop up during the implementation of the migration/PoC]

Sample

Risk	Mitigation
New table to be added in datalake	Correct table name along with required partition column has to be added to the Config file in S3
Emr may stop running	The Emr may stop due huge size of incoming data for which emr instance size can be changed.
Single AZ setup	Educate and sensitize the customer highlighting the potential of business impact; customer owns the risk
Change of architecture	While moving from PoC to production there can be change of the architecture which may lead to change in cost
Stringent timelines, any delay will have a cascading effect	Requested artefacts should be provided within 2 business days. Also, a dedicated PM from customer would be required for governance activities
Performance bottlenecks impacting overall SLA	Performance testing to be done by *customer* during the implementation phase with production-like data in a separate environment. Observations to be shared with development team for required course corrections.
Lack of support from business, existing partner	Manage project timelines through regular governance agreed mutually by partner and customer at the time of project initiation. Escalate in timely fashion in case of any issues/risks
Lack of testing assets and tools to validate the implementations	customer to provide the input & output for comparison testing from their existing application
Technical issues while executing the migration to AWS	AWS Business support plan will be purchased

1.11 ~~RESPONSIBILITY~~RACI MATRIX

Tasks/Activities	Responsible	Accountable	Consulted	Informed
Project initiation & Kick-off	MIND	SAMRX	AWS	SAMRX
Infra setup and configuration - Foundation	MIND	SAMRX	AWS	SAMRX
Discovery	MIND	MIND	AWS/ SAMRX	AWS/ SAMRX
Design	MIND	MIND	AWS/ SAMRX	AWS/ SAMRX
Implementation	MIND	MIND	AWS/ SAMRX	AWS/ SAMRX
Code Build	MIND	MIND	AWS/ SAMRX	AWS/ SAMRX
Code Review	MATE	SAMRX	AWS	AWS
Validation	MIND	SAMRX	MIND	AWS
Sign-off	MATE	SAMRX	AWS/ MIND	AWS/ MIND

1.10

Steps	Project Initiation	Sr. Cloud Engineer	Cloud Engineer	Database Engineer	Project Manager	Solution Architect	CUSTOMER
1	Infra Deployment	A	A/R	I/R	A	C	I
2	Application Deployment	I	C	I	I	C	A/R
3	Execution	I	A/R	R	I	C	A
4	Testing & Support	I	R	R	I	I	A/R

*C – Consulted, I – Informed, A – Accountable and R – Responsible

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2 SOLUTION ARCHITECTURE / ARCHITECTURAL OLUTION ARCHITECTURE DIAGRAMDIAGRAM

2.1 ARCHITECTURE ON AWS

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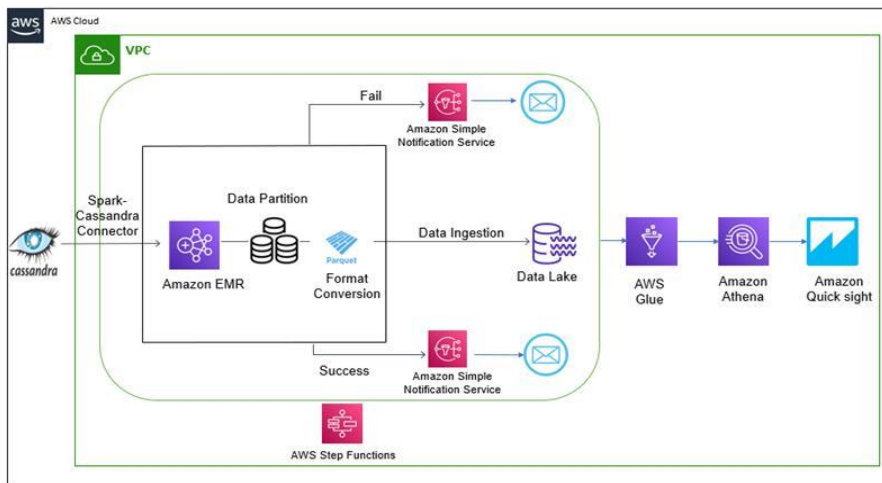
The application-1 and application-2 will have its DR at ____ AWS region with RPO and RTO of 6 hours and 8 hours. Application configuration or any change in application to be taken care by prospect and database will be backed-up and restored at DR location to be done by AWS PARTNER Team from ____ AWS region to ____ AWS region.

For DR Activity, applications to be configured and managed by CUSTOMER , Database regular backup every half-an-hour will be taken on S3 at DC Site and to be restored at DR site, at the time of DR invoke.

2.2   OVERVIEW OF THE ARCHITECTURE

- ✓ One-time migration of initial data of given tables to Amazon S3 by running Spark Jobs on EMR Cluster. We will use Spark Cassandra Connector for fetching data from Cassandra DB.

- ✓ In the Spark job itself will convert the data format to Parquet as being columnar storage it will give huge cost benefit later when querying the data stored in data lake. Parquet is designed for efficient as well as performant flat columnar storage format of data compared to row-based files like CSV or TSV files.

- ✓ We will Partition the data on most frequent fields as it will further give huge performance & cost benefit.

- ✓ Will Configure AWS Lambda to invoke EMR Cluster having one master and two core nodes to run Spark Jobs for Incremental Data Transfer on daily basis.

- ✓ The entire workflow until now is defined using AWS step function. In any case of success or failure email is sent using AWS SNS.
- ✓ After creating Data Lake, we can perform following additional steps if needed
- ✓ Glue Crawler to create schema for the respective data lake and schedule on daily basis.

- ✓ Configure Athena to query parquet data in S3.

3   PROJECT EXECUTION / SUMMARY OF MILESTONES & DELIVERABLES

Scope-1 Schedule						
Activity	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6
Working on textract console	🟩					
Building Pre-Processing Lambda		🟩				
Building of Post-Processing Lambda			🟩	🟩		
Building of lambda function which saved data to DynamoDB					🟩	
Building of the Front-end					🟩	🟩
Scope-2 Schedule						
Activity		Wk8		Wk9		

Build A2I solution for the invoices that whose data were not properly extracted			
Build Lambda to parse A2I output			

Scope-3 Schedule	
Activity	**Wk10**
Creating a solution for different kinds of invoice templates.	

*Wk = Week

3.1 ~~EXPECTED~~ EXPECTED AWS ~~COST~~ COST ~~BREAKDOWN~~ BREAKDOWN ~~BY~~ BY ~~SERVICES~~SERVICES

The monthly estimate for this project can be reviewed by following the below link:

~~https://calculator.s3.amazonaws.com/index.html~~

Above link doesn't have A2I costing (Not available in AWS Calculator)

Amazon A2I workflow pricing with custom models

For each object where human review is completed, you pay the following Amazon A2I review charges.

Number of reviewed objects	Price per object
First 50K objects reviewed per month	$0.08 per object

Considering 5% of Invoice would probably need human review(

4 3.2 ACCEPTANCE

[To conclude a project, define acceptance process here. For example:

Upon completion of a Phase, PROVIDER will submit the associated tangible Deliverables, to ~~Customer~~CUSTOMER accompanied by an Acceptance Form in the form set forth in Appendix B to this SOW. Upon such submission, ~~Customer~~CUSTOMER will review, evaluate and/or test, as the case may be, the applicable Deliverable(s) within eight (8) business days (the "Acceptance Period") to determine whether or not each Deliverable(s) satisfies the acceptance criteria for the particular Deliverable in all material respects. If the Deliverable satisfies its acceptance criteria in all material respects, ~~Customer~~CUSTOMER will furnish a written acceptance confirmation to PROVIDER via the Acceptance Form prior to the end of the Acceptance Period. For a Deliverable that is not accepted due to a non-conformity or defect, ~~Customer~~CUSTOMER will indicate the detailed reasons for such rejection on the Acceptance Form and return the Acceptance Form together with the associated tangible rejected Deliverables, if any, to PROVIDER (a "Rejection Notice") within the Acceptance Period. Upon receipt of a Rejection Notice, PROVIDER will promptly correct any defects or non-conformities to the extent required so that each Deliverable satisfies the requirements of this SOW and its acceptance criteria in all material respects. Thereafter, PROVIDER will resubmit a modified Deliverable to ~~Customer~~CUSTOMER ,

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accompanied by the Acceptance Form and the process set forth above will be repeated. *However,* ~~Customer~~*CUSTOMER will limit its review, evaluation and/or test of each resubmitted Deliverable to determining whether or not PROVIDER has corrected the defects or non-conformities identified in the Rejection Notice and to the effects or impact which PROVIDER's corrections or modifications have on other Deliverables or other portions of the same Deliverable.* *If* ~~Customer~~*CUSTOMER fails to provide PROVIDER with the above described Rejection Notice prior to the end of the applicable Acceptance Period, then the corresponding Deliverable(s) are deemed accepted.]*

Typical deliverables at the end of the engagement are Standard Operating Procedures, Build document. However, what the customer desires for acceptance needs to be discussed and agreed upon before beginning of the engagement

~~Sample:~~

~~At high level, the below are the deliverables:~~

~~Partner will do the remediation based on findings mentioned above and also perform one more audit after the remediation have been done.~~

- ~~Application architecture document~~
- ~~AWS architecture document (Post remediation)~~
- ~~AWS architecture document (Future state)~~
- ~~Key rotation policy document~~
- ~~Security SOP document~~
- ~~CI/CD best practices document~~

54 RESOURCES & COST ESTIMATES

[List all billable and non-billable resources involved in the project]

~~Note: This section is required to be included should you choose to use another project plan template.~~APN partner are required to ensure Project Plan and the Work Break Down list is comprehensively charted out. Each task should be broken down in to as much details as possible and efforts listed down should be justifiable.

Partner Technical Team

1. Title - Name
2. Title - Name

Resource	Rate (USD) / Hour
Solution Architects	
Engineers	
Other (Please specify)	

Project Plan and Work Break Down List		
Infrastructure Creation and Implementation		
Common Infrastructure & Activities		
Roles	**Sub task**	**Effort required (person days)**
Technical Architect	Discuss the Application and Infrastructure Architecture. Understand Dependencies and Integration points	
	Create Document, Reviews from Customer, Corrections and Document sign off	
Sr. Cloud Engineer	AWS Account Creation / Setup or Gain access if existing A/c and IAM (Roles, Policies, Groups and Users) Access Setup	
	Setup of Cloud Trail & Billing with their S3 Buckets	
	Setup Network components like VPC, OpenVPN, Subnets, Routing Tables, NAT, Bastion/RDP GW etc. as per the architecture	
	Setup of NACL's & Security Groups and configuration of security rules as per the document.	
	Setup of S3 Buckets	
	Setup of Base AMI's (App / Layer wise) with latest OS patches & software's required by the applications.	
	Total	
Kubernetes Architecture		
Roles	**Sub task**	**Effort required**

Roles	Sub task	(person days)
Sr. Cloud Engineer	Setup and configuration of the Kubernetes cluster	
Sr. Cloud Engineer	Setup and configuration of the Worker Nodes	
Sr. Cloud Engineer	Configuration of AutoScaler on Kubernetes cluster	
Sr. Cloud Engineer	Setup and configuration of Load Balancer Ingress Controller	
Sr. Cloud Engineer	Setup of Cluster Level monitoring using Open Source tools	
Sr. Cloud Engineer	Setup of ElasticCache service	
Sr. Cloud Engineer	Setup Client Build Environment with Fileshare	
Sr. Cloud Engineer	Setup HashiCorp Vault and configure KMS	
Sr. Cloud Engineer	Setup ALB and WAF then configure it to route requests to servers	
Sr. Cloud Engineer	Setup RDS with MySQL	

Roles	Sub task	Effort required (person days)
Sr. Cloud Engineer	Support to customer on application setup. (Deployment server in case of Web/App/Api)	
-	Total	
-	**Data Migration (for all 7 customers)**	-
Roles	**Sub task**	**Effort required (person days)**
Sr. Cloud Engineer	Migrate Data from Cloud SQL to RDS	
Sr. Cloud Engineer	Migrate Data from Cloud storage to S3	
-	Total	
-	**CI/ CD**	-
Roles	**Sub task**	**Effort required (person days)**
Sr. Cloud Engineer	Setup and configure Jenkins server for the application deployment	
Sr. Cloud Engineer	Setup Jobs for various services	
Sr. Cloud Engineer	Take care of roll back in case of failures	
Sr. Cloud Engineer	Test the entire solution end to end	
Sr. Cloud Engineer	Walk through of the entire branching and workflow of DevOps setup	
Sr. Cloud Engineer	Corrections on feedback	
-	Total	
-	-	-
-	**For v5/6 Architecture (For all 7 customers)**	-
Roles	**Sub task**	**Effort required (person days)**
Sr. Cloud Engineer	Setup of EC2 instances according to architecture	

Roles	Sub task	Effort required (person days)
Sr. Cloud Engineer	Setup ALB and configure it to route requests to servers	
Sr. Cloud Engineer	Setup RDS with MySQL	
Sr. Cloud Engineer	Support to customer on application setup. (Deployment server in case of Web/App/Api)	
Sr. Cloud Engineer	Cloud Watch Alerts and Setup of Standard / Custom Metrics - ASG Metrics	
	Cloud Watch Dashboards Setup	
Sr. Cloud Engineer	Configure GuardDuty and AWS Config	
Sr. Cloud Engineer	Handover & Documentation.	
	Total	

Data Migration (For all 7 customers)		
Roles	**Sub task**	**Effort required (person days)**
Sr. Cloud Engineer	Migrate Data from Onpremise/Cloud to RDS	
Sr. Cloud Engineer	Migrate Data from Onpremise/Cloud storage to S3	
	Total	
Project Management		
Roles	**Sub task**	**Effort required (person days)**
Project Management	Project will conduct governance with Technical Team and Customer Stakeholders	
	Total	

Project Phase	Solution Architects	Engineers	Other (Please specify)	Total Hours
Total Hours				
Total Cost				

Cost Contribution distribution between Partner, ~~Customer~~*CUSTOMER*, AWS:

Party	Contribution (USD)	% Contribution of Total
~~Customer~~*CUSTOMER*		
Partner		

AWS		

4.1 PROJECT SPONSOR(S) / STAKEHOLDER(S) / PROJECT TEAM

[Identify and list the ~~customer~~CUSTOMER 's Executive Sponsor and Project Stakeholders, including Title and Description (describe their role and responsibilities in the organization). The Executive Sponsor is the individual with overall accountability for the project. The Sponsor is primarily concerned with ensuring that the project delivers the agreed business benefits.— Project stakeholders are entities that have an interest in a given project, and usually represent a business group or organization]

Partner Executive Sponsor

Name	Title	Description	Email / Contact Info
John Doe	SVP Finance	Head of Financial Services	

Project Stakeholders

Name	Title	Stakeholder for	Email / Contact Info
Ivan Doctorow	Sr. Manager, QA	IT – Testing / QA	
Jane Smith	Director, PMO	Program Management Office	
Dan Jacobs	VP, IT Operations	IT Operations – Networking	

Partner Project Team

Name	Title	Role	Email / Contact Info
Steve Jones	Delivery Manager	Project Manager	
Philip McDaniels	Sr. Solutions Architect	Architect; Technical Lead	

Project Escalation Contacts

Name	Title	Role	Email / Contact Info
Steve Jones	Delivery Manager	Project Manager	

APPENDIX A – TECHNICAL PROJECT PLAN FOR MIGRATION PROJECT

Migration Project Plan must demonstrate a consistent methodology and process applied through multiple migration phases as exemplified below. Though specific details may vary from project to project, a solid migration framework with major phases and work areas must be clearly identified and exercised consistently across all the projects.

The migration work scope and deliverables below are for guidance and demonstration purposes. Refer to AWS Migration Consulting Competency Checklist for details. Actual project details may include other work items not limited to the following areas.

Phase	Work Area and Deliverables
Assess	Migration Readiness Assessment (MRA) - MRA determines ~~Customer~~*CUSTOMER* 's readiness based on AWS Cloud Adoption Framework comprised of Business, People, Governance, Platform, Security, and Operations perspectives. Deliverables should include an assessment report with suggested actions and Statement of Work for executing the Mobilize phase next. Total Cost of Ownership (TCO)– The purpose of TCO analysis at assess phase is to perform rapid discovery and create TCO report. Deliverables should include a detailed business case with focus on TCO modelling, business value assessment and detailed migration cost.
Mobilize	The purpose of Mobilize phase is to validate foundational migration capability and business case and plan migration project next. Mobilize may consist of the following work streams: ▪ Mobilize phase execution and migration planning ▪ Portfolio discovery and analysis ▪ Operations model assessment and design ▪ Landing Zone design ▪ Initial implementation Security specification ▪ Migration pilot implementation as per Appendix B ▪ Migration team/organization establishment, Team RACI, training plan, and training activities ▪ Detailed Business Case justification supported by Total Cost of Ownership (TCO) calculations Deliverables should reflect the results of each of the work streams.
Migrate & Modernize	Migrate - The migration project may consist of the following work areas on a per application basis: ▪ Design: migration pattern, application architecture, operations, cutover plan and process, reusable templates, migration tooling, and validation test plan ▪ Migration: servers, databases, data, infrastructure services, followed by basic validation test ▪ Integration: connectivity, application interfaces, operations (backup/restore, ...) ▪ Validation: functional, performance, reliability, security, compliance ▪ Cutover: meeting RTO and RPO with rollback plan Modernize – Modernization may be performed as part of migration work or post migration. The modernization project may consist of following areas on a per application basis:

	- Assessment:– Figure out motivation driver to modernize an application. Assess the amount of effort, time and cost to modernize. Assess the cost savings with modernization options (replatform, refactor, repurchase etc.) - Design: Migration pattern, target application architecture and AWS Services, operations, cutover plan and process, migration tooling and validation test plan. - Development: Develop or modify application to use AWS managed platform. - Validation: functional, performance, reliability, security, compliance - Cutover: meeting RTO and RPO with rollback plan Optimize - It may involve one or more of the following work areas. - Cost optimization (e.g., right-sizing services, resource reservation, leveraging spot instance, monitoring and analyzing service usage and cost) - Application optimization (e.g., performance, functional, design) - Process optimization (e.g., development process automation) - Operational optimization (e.g., operations support systems, infrastructure as code)) Deliverables should reflect the results of each of the work areas.
Completion	Reach the project closure with the ~~customer~~*CUSTOMER*. Deliverables should include ~~customer~~*CUSTOMER* 's acceptance letter and training materials.

APPENDIX B – PILOT MIGRATIONS IN MOBILIZE PHASE

The Application Migrations work stream defines an agile approach to migrate applications to AWS during the Mobilize Phase. This work stream helps ~~customer~~*CUSTOMER* s get hands-on experience in migrating different types of applications to AWS using standard migration tools and process, working together with AWS and/or Partner migration experts. It also helps bring some of the outputs from other work streams, such as Security, Risk & Compliance, Operational Integration, and Landing Zone together through live-migrations. Although the number of applications migrated in this work stream is normally no more than 10, it is largely indicative of how the majority of applications can be migrated as detailed discovery and analysis is completed for the rest of the portfolio.

General Guidelines for selecting applications for Pilot
Applications that are web-based (accessed via web browsers), 2 or 3 tiered (web-app-database); running a supported operating system on virtual or physical hardware; have no dependency (or are loosely coupled) on other applications in data center/on-prem; have little (less than 1 Mbps) connectivity needs back to data center or ~~customer~~*CUSTOMER* has Direct Connect; no shared data storage (SAN/NAS) with other applications; runs on AWS RDS supported databases ; Database size less than 20GB; not to exceed 20 server instances; preferably, stateless-architecture (can be deployed in a clustered mode using load balancer); preferably, at least 50% test automation for expedited testing/certification; preferably, well understood and documented architecture; acceptable (less than 2 hours) downtime.

In addition to above guidelines, there are other factors to be considered based on ~~customer~~*CUSTOMER* 's process, application criticality, commitment, SME availability.

General Examples of applications preferred for Pilot Migrations:
Online properties/Marketing sites
Intranet applications built on n-tiered architecture
Content Management Systems
Web Applications
Marketing, Sales and Service applications

General Examples of applications not recommended for Pilot Migrations:
ERPs and CRMs– SAP, PeopleSoft, Oracle ERP, Microsoft Dynamics, Seibel
Financial Reporting Systems
Data Warehouse
Information Lifecycle Management, ETL, B2B data exchanges,
EAI and middleware
Citrix-based workloads

Outcome
~~Customer~~*CUSTOMER* resources trained in migration tools, AWS services, monitoring, and best-practices
~~Customer~~*CUSTOMER* ramped-up on scalable migration factory framework