Qualifying Questions [Industry]

This is a compilation of discovery questions by industry where DGRs can easily search for materials as part of their pre-call preparation. Purpose is to equip DGRs with industry-related questions to help open up more conversations and steer away from product-specific conversations. Do add on relevant industries/questions. Be concise and ask open-ended questions. Use the outline on the right to select the industry you require.

Financial Services

Banking

Accepts deposits, make loans, issue credit cards. Core Systems, Buy Now Pay Later, KYC/AML/Fraud, Credit Decisions and Loan Applications, Risk Management, Open Finance (APIs).

Persona	Category	Questions	Customer Case Study	How AWS can help
Marketing, Experience team, Retail banking, Digital banking	Customer Experience	How many mobile banking apps are you running and how is their architecture?What are your aspiration from a customer experience standpoint? What are some milestones you want to achieve in the next 3 years?How well do your systems support customer needs?How do you target new customers and understand what your existing customers want? Is there a process in place to ensure products/services recommendations	Capital One: replaced its **contact center with Amazon Connect** and completed a proof-of-concept phase in just three business days. Once the bank put Amazon Connect into production, Capital One trained hundreds of associates in 30 minutes each and achieved 100% adoption for the direct bank and fraud operations in five months, more than 2x as fast as prior migrations of this size.	Use cases/Solutions: **1. Banking Portal:** A website where customers interact with their banking portfolio. This portal contains **click-event capturing and a chat widget** able to answer FAQs with a bot. Conversations can be transferred to a live agent anytime, keeping the context and history. Please

		meet your customer needs?	HSBC: built a **cloud-native messaging platform** on AWS that helps engage customers in a **timely, relevant, and personalized** way. The bank provides customers with **balance alerts, overdraw alerts, and single-click travel insurance options** tailored to their preferences. NAB: uses **Amazon Connect** to create more **self-service opportunities** for its customers and worked with AWS to build a **custom Neutral Text-to Speech voice** using Amazon Polly Brand Voice that reflected the bank ASEAN Focused: Active.Ai adopted AWS to deploy their conversational platform in the cloud and manage as many as 1 million interactions per month. Bank Islam successfully spun up the end-to-end digital bank environment in days	note that you can continue using your current frontend and add the integration with Amazon Kinesis to support click-streaming and Amazon Lex for the chatbot widget. **2. Customer 360 portal**: This website provides a single-pane of glass that **shows all customer interactions and experience** using different channels. It offers a **360-degree customer view** and provides insights about channels, interactions, requests, and sentiment associated with each interaction. This is a representation on how you can integrate this information into your current CRM or own

			to improve the customer experience and allo partners such as Fintechs, and digital marketplaces to plug in directly. Techcombank: Trust Bank: Union Bank: DBS: TNEX Digital Bank:	platform to get **insights about customer behavior** and interaction history. **3. Cloud Contact Cente**r: In the multichannel strategy, Amazon Connect plays an important role since it provides a **seamless experience** across voice and chat for your customers and agents. After call or chat ends, a workflow is triggered to run analytics and machine learning to get **voice-to-text transcription** and **sentiment analysis**. **4. Conversational Chatbots**: This solution deploys an Amazon Lex bot that **supports integrations** made with

				Amazon Connect, Facebook Messenger, and a webpage chat widget. This bot implements the same interaction model used by the Alexa Skill, providing the same experience regardless which bot the customer consumes. In case you want to extend the functionality to WhatsApp, please check this related post that describes the steps for enhancing the customer experience by linking WhatsApp with Amazon Lex. **5. Multichannel marketing communication service**: Amazon Pinpoint **collects metrics** about channel usage per customer and allows to **segment audience** to

				create outbound campaigns over channels like email, SMS, push, or voice. On this post, you can find the guide to add WhatsApp as an Amazon Pinpoint Channel.
	Financial Risk Management	How are you using technology currently for Know Your Customer (KYC)/Anti-Money Laundering(AML)/Fraud Monitoring processes? How do you run your stress tests and risk modeling projects? Is the workload spikey?	Standard Chartered: moved its compute to AWS **tripling its compute capacity** and **reducing its compute costs by 60%**. The bank now uses **70x more compute resources on AWS** than it had on-premises and is taking a cloud-first approach to all software development. Santander: Leveraged AWS as part of their trade life cycle and modernization of grid compute, for **pricing, assessing the credit risk** in their pre-execution phase as well as to re-evaluate risk in overnight trades (e.g. P&L, market risk, counterparty risk) across all	Use Cases/Solutions: **1. Build an Amazon Fraud Detection Model.** Using Amazon Fraud Detector, it is now possible for banks to train the Transaction Fraud Insights model and use the model to generate fraud predictions. These can help to **identify suspicious online payments**, **detect new account fraud**, **prevent trial and loyalty program abuse** as well as **improve account takeover detection**.

			clients. Overall, Santander managed to **improve performance by 5x with half as much hardware** for batch workloads. Bankinter: Used AWS for **credit risk simulation application**, to develop complex algorithms which simulate a variety of scenarios to assess the financial situation of customers. In order to get real results, they needed significant compute capacity to be able to perform **at least 5 million simulations.** This was possible through the flexibility and power of EC2 which segmented processes through a grid of instances and **executed simulations in parallel** on several instances to obtain results within a given time period. As a result, Bankinter's **average processing time reduced from 23 hours to 20 minutes**.	**2.** Design a **cost-effective Elastic HPC (High Performance Computing) Infrastructure / Grid Computing** using Amazon EC2. Flexible grid-computing capabilities allow portfolio managers to **conduct simulations** that 1. identify risks within their portfolio of products, hedging opportunities, and areas for optimization; and 2. model the impact of hypothetical portfolio changes. **3. Develop an e-KYC app** using AWS AI/Ml services like Amazon Rekognition, Comprehend and Amazon Cognito to **validate the digital identities of online customers in seconds** and

			ASEAN Focused: Union Bank: RCBC Bank:	grant them appropriate access to the sites and services they need.
	Data Management - Compliance & Reporting	Have you created an integrated view of your data for regulatory and risk reporting?If you are not already using AWS, is it due to any compliance reasons?	Citi: Citi uses AWS CDK to evolve testing, distribute modular infrastructure components across teams, and implement pipelines with high-level programming languages. This allowed Citi to **scale design, engineering, and deployment of preventative, detective, and responsive controls** to securely migrate workloads to AWS. OakNorth Bank: OakNorth leverages AWS Cloud to **gather and analyze large amounts of data** needed to make good decisions, especially in areas like commercial lending while simultaneously **meeeting security and regulatory requirements**. Using services like Amazon CloudWatch and S3 has allowed them to be **transparent** with	Use Cases/Solutions: **1. Customised Reporting Data Lake** with AWS Lake Formation and AWS Glue helps to **reduce data silos** and duplication of effort in data management. A data lake architecture allows you to **ingest and store different types of data** using both batch and real-time streaming processes, and provides a **suite of analytics tools** to use for ad-hoc querying, data visualization, big-data processing, network analysis, and ML. With centralized access control, customers can gain **timely access to data**

			clients and provide them an incredible level of access. Commonwealth Bank: Commonwealth Bank **met regulatory requirements** by setting desired **configuration, audit, and detection controls** and remediating their resources **across more than 500 accounts** using AWS Config and **conformance packs**. AWS services including AWS Config, AWS Security Hub, and Amazon GuardDuty helped to **automate AWS security checks**, centralize security alerts, and **benchmark compliance** against their regulatory and risk requirements ASEAN Focused: Trust Bank: DBS:	**for regulatory and risk reporting** with **minimal manual overhead**. 2. AWS Compliance Center is an interactive tool that offers a **central location to research cloud-related regulatory requirements** in 54 countries. It aims to help financial services professionals understand regulatory requirements for adopting the cloud in the geographies where they operate, and view AWS compliance programs that may apply to that country. This works alongside the AWS Artifact Tool which provides on-demand access to information on AWS policies,

				processes, and controls, Amazon CloudWatch which helps to **monitor the usage** of resources and applications across the organisation and Amazon CloudTrail which **monitors and records account activity** across your AWS infrastructure, giving you **control over storage, analysis, and remediation actions**. 3. Define and apply **data protection policies** using Amazon CloudWatch Logs which can help with regulations such as HIPAA, GDPR, PCI-DSS, and FedRAMP.
	Data Analytics	How are you using third-party data today? What types of data? For what kind of analysis?	Goldman Sachs: **Goldman Sachs Financial Cloud for Data** was built natively on cloud to a**chieve scale in data management and analytics**	Use Cases/Solutions: **1.** Build a **data lake** on AWS using AWS Lake Formation and a combination of database/storag

			services, allow for their developers to remove undifferentiated work and f**ocus on delivering new and innovative investment solutions**, run distributed server-side analytics and enrich data in **real-time**, as well as **stream and analyze time-series data** (also in real-time) by ingesting relational data using AWS Data Exchange, Amazon Redshift, AWS Glue, and the FINOS Legend open-source platform. JPMorgan Chase: Through the **data mesh** architecture, JPMC is using AWS to **enable data sharing** across the enterprise while giving data owners the control and visibility they need to manage their data effectively. NAB: built a **data lake** on AWS, called Data Hub, to power Discovery Cloud – a laboratory for its data scientists. By building Data Hub	e solutions like Redshift and Amazon S3. Once customers integrate reporting data into a consistent data set, they can also readily **mine that data for insights** using advanced analytics and machine learning which can help to digitally transform and **improve operations** in different areas of their business to **drive innovation**. **2.** Implement a **Data Mesh** using AWS native services, including AWS Lake Formation and AWS Glue. The next evolution of the data lake is a **decentralized, domain-oriented data architecture** to drive governed sharing of data products. A data mesh

			on AWS, NAB is able to provide **full data lineage, access the data real-time via APIs**, and load the data into a wide range of AWS and external services. ASEAN Focused: DBS:	architecture helps **standardize the "data flow" between data producers** (legal entities, business units, trading desks, etc) **and data consumers** (such as risk, finance, and treasury functions) in order to **improve data governance, lineage, and discoverability.** **3**. Amazon FinSpace is a **data management and analytics service** that reduces the time to organize, prepare, and access data needed for financial analysis for FSI in specific, from months to minutes. It **finds the right data from internal data stores** e.g. portfolio management systems as well

				as petabytes of data from third party data feeds e.g. historical securities prices from stock exchanges, **gets permissions to access the data in a compliant way, and prepares it for analysis.**
	FinTech	Do you have a FinTech strategy? How are you managing it?	Stripe: delivered its **PCI-compliant payment platform** entirely on AWS, making it easier for developers to process payments on their web and mobile applications. Goldman Sachs: created a **new transaction banking service** by building an **agile API-based platform** on AWS that integrated over 30 AWS services and launched with **99.9% availability**. Solaris Bank: built a **Banking-as-a-Service platform** on AWS that offers digital bank accounts and cards, lending services, payments, identification	Use Cases/Solutions: **1. Open Finance:** Integrating fintech solutions with legacy systems of banks with an **API-enabled offering** that facilitates the sharing of financial products, data, and services between independent parties to **improve the customer experience** and offer customers greater product choice and control over their finances and data. With AWS services like API Gateway and

			services, and more through 180+ APIs to accelerate the transformation of the financial services industry. Nubank: built its **credit card processing platform** on AWS in just **seven months** and launched a **no-fee credit card**, growing to **3M+ customers**. ASEAN Focused: Mox by Standard Chartered: moved from **initial licensing to market deployment in just 18 months** and **acquired 35,000 customers** in the first month. Customers can be **onboarded** in **under three minutes.**	Amazon ECS, FSIs can scale APIs on demand, pay only for what they consume, and build modern serverless architectures with **minimal capex.**
	Core Banking Modernization	How are you thinking about core modernization? (or mainframe migration)	Capital One: closed its final data centers in 2020. The bank is using or experimenting with nearly every AWS service to **develop, test, build, and run its most critical workloads**, including its **flagship mobile-banking app**. Capital One selected AWS to support every line of business, due to	Use Cases/Solutions: **1.** Build a **modern agile core banking system** using native AWS services and serverless technologies like Amazon QLDB, API Gateway, Amazon S3 and

			its security model, the ability to **provision infrastructure on the fly**, the **elasticity** to handle purchasing demands at peak times, its **high availability,** and its **pace of innovation.** Itaú Unibanco: will move the majority of its IT infrastructure off mainframes and out of its on-premises data centers to the cloud. The bank will also migrate its **core banking platforms, call center solutions, online, and mobile banking applications** to AWS. The bank will leverage AWS analytics, machine learning, serverless, containers, managed database, compute, storage, and security to **gain agility and insights**, **pursue new lines of business**, and ensure **security and regulatory compliance**. ASEAN Focused: Bank of Asia migrated its core	Amazon DynamoDB following the AWS Well-Architected Framework, to **drive innovation** and **better serve customers** by adding new functionalities and releasing features quickly. More on Guidance for Building a Core Banking System on AWS. **2. Simplify migration** from on-premise server and workloads using services like AWS Apllication Migration Service and AWS Database Migration Service. Customers can also leverage AWS Mainframe Modernization, which is a set of **managed tools** providing infrastructure and software for migrating, modernizing,

			banking platform to a new, container-based system running on AWS to provide high availability and fault tolerance. Since migration, IT costs for the platform has decreased by 50% and the company has gained flexibility that allows it to build integrations in one month or less. Trust Bank Thai Credit Retail Bank (TCRB) Timo Bank:	and running mainframe applications.

Capital Markets

Wealth & Asset Management, Trading Systems, Compliance Surveillance, Risk Management, Financial Modelling, Exchanges/Trading Platforms/Clearing Houses, Financial Data.

Category	Questions	Customer Case Study	How AWS can help
Customer Experience	How are you leveraging cloud in your day-to-day operations today to improve internal procedures and serve your customers better?How do wealth and asset managers understand their clients today? Are they able to offer the most relevant, personalized	John Hancock: set out to deploy a highly scalable, cloud-based **contact center solution** to **enhance its customer experience** and also support its agents as part of its expansion. Within **30 days** of project kickoff, they were able to deploy a new Amazon Connect instance that included support for all stated requirements, with agents in the US and APAC regions taking calls and	Use Cases/Solutions: **1. Customer 360 portal**: This website provides a single-pane of glass that **shows all customer interactions and experience** using different channels. It offers a **360-degree customer view** and provides insights about channels, interactions, requests, and sentiment associated with each interaction. This is a representation on how

	products, services, and experiences for them?	supporting end-to-end testing. The solution included an Amazon Lex application to provide **voice-enabled, self-service** capabilities, allowing customers to **perform automated benefits** and **claims status checks**. Mirae Asset: chose to move its web servers and database to AWS and uses Amazon RDS to **store customer data** and Amazon Simple SES to **send marketing emails** to users. By migrating to AWS, Mirae Asset **reduced operating costs by over 50%** and they are able to **release updates and enhancements 300x faster** compared to running physical infrastructure. Fidelity: wanted to **provide customers with market insights without the need to call an agent.** In just **five weeks**, the company built an Alexa skill to enable customers to obtain market updates or quotes by enabling the skill on their devices. Fidelity also created a proof of concept **virtual financial assistant** named Cora using Amazon Sumerian, Amazon Lex, and Amazon	you can integrate this information into your current CRM or own platform to get **insights about customer behavior** and interaction history. **3. Cloud Contact Cente**r: In the multichannel strategy, Amazon Connect plays an important role since it provides a **seamless experience** across voice and chat for your customers and agents. After call or chat ends, a workflow is triggered to run analytics and machine learning to get **voice-to-text transcription** and **sentiment analysis**. **4. Conversational Chatbots**: This solution deploys an Amazon Lex bot that **supports integrations** made with Amazon Connect, Facebook Messenger, and a webpage chat widget. This bot implements the same interaction model used by the Alexa Skill, providing the same experience regardless which bot the customer consumes. In case you want to extend the functionality to WhatsApp, please

		Polly. Cora hosts **multi-user conversations** in a ”virtual chat room” built on AWS.	check this related post that describes the steps for enhancing the customer experience by linking WhatsApp with Amazon Lex.
Risk Management	How is your current infrastructure supporting the need for back-testing models, stress testing, transaction surveillance, anomaly detection, algorithic trading, and forecasting?What types of financial simulations do you run on a regular basis? Are there simulations you would like to run (e.g. for risk management) but can't due to a lack of capacity or budget constraints?	Morningstar: With AWS, Morningstar's platform is now **160x faster** and **reduces calculation time by about 98%**, which enabled the company to **expand from 50,000 assets to over 5 million**, and perform **model validation** and **statistical QA** that was not possible in their old architecture. Coinbase: develops a machine learning-driven system that **recognizes mismatches and anomalies** in sources of user identification to **take action against potential fraud**. AQR Capital: By using Amazon EC2 instances and Spot by AWS Batch, AQR **processed more than 75 years of compute workload** at a very low cost. AQR used different instance types and AZs to drive the **lowest cost to $15 for 500 physical cores**. ASEAN Focused: FE Credit:	Use Cases/Solutions: **1. Grid Computing:** By leveraging the scale of the compute grid on AWS using Amazon EC2 , **scheduling software and auto-scaling groups**, customers are able to **backtest trading models** and **run risk simulations** securely and efficiently. **2.** Build a **risk management ML workflow**: Amazon SageMaker is a **fully managed** ML platform that allows data engineers and business analysts to **quickly and easily build, train, and deploy ML models** which can be used for e.g. to **predict loan status** for potential customers. **3. Price forecasting** using Amazon S3, Redshift/EMR to store data, and Amazon Forecast, a **fully managed time-series forecasting service** based on machine learning to **predict any changes** or to

			determine the right price for customers' products. **4. Fraud detection**: Using Amazon Fraud Detector, it is now possible for customers to train the Transaction Fraud Insights model and use the model to **generate fraud predictions**. These can help to detect and **prevent securities fraud and money laundering activities** in capital markets. **5. Transaction cost analysis:** Customers are able to **inject trade and transaction data feeds** using Amazon SQS and Amazon Kinesis Streams for analysis.
Data Analytics and Machine Learning	How are you currently capturing customer data to gain deeper customer insights?Are you leveraging enhanced analytics and AI/ML to discover alpha or new investment opportunities for your business?	Nasdaq: Nasdaq moves an average of **30 billion rows** into Amazon Redshift **everyday** (with **60 billion on a peak day)**, and uses the service to power its data analytics applications. FINRA: built a data lake on AWS using Amazon S3 and EMR to store and analyze data. FINRA monitors 100% of equities & 100% of options activity and needed an infrastructure that could process **75 billion market**	Use Cases/Solutions: **1. Obtaining real-time market data**: Using the connectivity and networking options available on AWS, customers are able to both distribute and consume real-time market data, enabling **easy scaling** and **deeper analytics and insights** **2. Data lakes** for **post-trade analytics**: Data lakes on AWS enable customers to ingest, process, and store

		events on average each day and **dynamically scale to process 155 billion records on a peak day**. Moody's: built a viable end-to-end machine learning platform in 4 weeks to **predict a rating using only publicly available data.** Betterment: wanted to **optimize its portfolio management algorithms** to ensure it was making **robust** and i**nformed decisions**. Betterment built a data lake on AWS that allows the company to store the results of thousands of simulations used to **test their algorithmic strategies**. Fidelity: needed to accelerate ML by **reducing the overall cycle time for ML module deployments**. Fidelity adopted Amazon SageMaker Feature Store to build features once and reuse them across teams and models to **accelerate ML innovation**. With AWS, Fidelity is able to reduce the time it takes for ML models to be developed, trained, and deployed to production, resulting in a **faster time to market**	market events on an average day and **scale up** to handle hundreds of billions of events on a peak day to **support markets surveillance, billing, reporting, and research** **3.** Build and train **machine learning models** with Amazon SageMaker, Redshift/EMR for **predictive analytics** and **market/trade surveillance** e.g. to identify **new investment signals**. Services like Amazon Forecast for time-series forecasting can also be used to **determine future asset demand and derivative pricing**, to **develop new products** that can help your brokers, dealers and asset managers to **grow your business**. **4. Transaction cost analysis:** Customers are able to **inject trade and transaction data feeds** using Amazon SQS and Amazon Kinesis Streams for analysis.

		AnandRathi: adopted AWS for **big data processing** needs. Critical asset calculations are now performed **50 percent faster** and **asset reports are generated in a few seconds**, down from 15 minutes on premises which helps to retain HNWI with busy schedules.	
Data Management - Compliance & Reporting	What are some of the regulations that require significant reporting efforts for your organization? Is the data you need for regulatory reporting spread across multiple silos?If you are not already using AWS, is it due to any security or compliance reasons?	Nasdaq: needed to provide **greater accessibility to data** for internal groups and regulators. For this, they built a data lake on Amazon S3 and chose Redshift to realize **cost efficiencies** and **fulfill security and regulatory requirements**. Robinhood: needed a **highly scalable** online platform with **built-in security and compliance for mobile trading**. Robinhood used AWS to build the app and supported hundreds of thousands of users at launch, which has **grown to over 10 million users**, with strong built-in security and compliance features. ASEAN Focused: Mcredit:	Use Cases/Solutions: **1. Data lineage and traceability:** Amazon CloudTrail can be used to **log, monitor, and retain account activity/any changes made to data** across the AWS Infrastructure for auditioning needs. **2. Regulatory reporting** e.g. Consolidated Audit Trail (CAT). Redshift **logs information about connections and user activities** in your database. Amazon Aurora MySQL supports **advanced auditing**. The audit trail should be **immutable.** **3. Cyber event recovery**: Using S3 to store **immutable** and **multiple copies of the data**, Amazon Macie to scan data at rest to **identify anomalies** and **check for changes in**

			data, track unauthorized access to data using AWS Audit Manager and Config rules. Finally, customers can use AWS Identity and Access Management (IAM) to better manage **least-privileged access** to the data and the platform, Amazon GuardDuty to continuously **monitor** the environment for **malicious activity** and unauthorized behavior, and AWS Network Firewall to **monitor and protect network and web traffic** within the environment. **4. Transaction and communication surveillance:** FSIs are able to **streamline capacity** with cloud-based solutions that capture a variety of communication data formats. **Archiving** (using S3), **supervision**, and **e-discovery processes** are simplified with machine learning, data analytics and the help of Lambda and Redshift to enable institutions to **focus on innovation, growth, and delivering communications compliance**.

Core Systems Modernization	How are you thinking about core modernization? (or mainframe migration)	Vanguard: chose AWS to help modernize its traditional, heavily virtualized tech stack, big data platforms, monolithic applications, and a PaaS running microservices. By using AWS, Vanguard has been able to **lower compute costs by 30%**, has **30% faster application development,** and **70% less unplanned downtime**. Wellington Management: executed a multi-year strategy to **exit all of its physical data centers** by migrating commercial and custom applications. Nasdaq: AWS and Nasdaq announced a multi-year partnership in 2021 to build the **next generation of cloud-enabled infrastructure** for the world's capital markets. ASEAN Focused: Crossbridge Capital:	Use Cases/Solutions: **1. Simplify migration** from on-premise server and workloads using services like AWS Apllication Migration Service and AWS Database Migration Service. Customers can also leverage AWS Mainframe Modernization, which is a set of **managed tools** providing infrastructure and software for migrating, modernizing, and running mainframe applications. **2. Integrating with ISVs and other Marketplace solutions** to **accelerate performance with speed and security** e.g. Calypso and Murex for Core systems modernization, DataRobot for Data Analytics etc.

Insurance

Category	**Questions**	**Customer Case Study**	**How AWS can help**
Customer Experience Digital Channels	Do you currently offer personalized recommendations to your customers? How do you target new customers?Are your channels able	Unum: Unum began a journey to build an **omnichannel customer engagement platform** using AWS services, including Amazon Connect, Amazon	Use Cases/Solutions: **1. Customer 360 portal**: This website provides a single-pane of glass that **shows all customer interactions and experience** using

	to handle spikes in volumes? e.g. during Covid/other peak periodsWould you say you have a policy platform, or a customer engagement platform? How would you rate the claims experience you are providing your policyholders? What is the process like now?How are you supporting your agents, brokers and advisors?	Pinpoint, and Amazon Lex. Early benefits include an **increase in the use of self-service channels**, **improved economics of the contact center**, and **increased employee satisfaction** with intuitive tools and simplified call center management. Futuready: With AWS, Futuready is able to **reduce customer onboarding time** from **six weeks down to two weeks**, **lower** operations and infrastructure **costs by 35%**, develop its recommendation engine to **tailor its insurance products** to suit each of their customers' needs. FWD: FWD wanted to **simplify the claims process** and create **better customer experiences while reducing prices**. By building a data lake on AWS, FWD was able to automate and expedite claims processing (down to the **same day** in some cases), and release a first-of-its-kind **chatbot** that allows customers to **file claims in minutes.** HDFC Life: HDFC used an AWS data lake with AWS	different channels. It offers a **360-degree customer view** and provides insights about channels, interactions, requests, and sentiment associated with each interaction. This is a representation on how you can integrate this information into your current CRM or own platform to get **insights about customer behavior** and interaction history. **2. Cloud Contact Cente**r: In the multichannel strategy, Amazon Connect plays an important role since it provides a **seamless experience** across voice and chat for your customers and agents. After call or chat ends, a workflow is triggered to run analytics and machine learning to get **voice-to-text transcription** and **sentiment analysis**. **3. Conversational Chatbots**: This solution deploys an Amazon Lex bot that **supports integrations** made with Amazon Connect, Facebook Messenger, and a webpage chat widget. This bot implements the same interaction model used by the Alexa Skill, providing the same

		services to build a **recommendation engine** that could **protect personally identifiable information**. The engine recommends HDFC Life Insurance products, or nudges customers on a **personalized journey**, delivered in email, push notifications, or SMS. Keystone: Keystone set out to develop a **secure self-service portal** for brokers that's easy to use, **saves time via automation**, and r**educes manual errors** during the quotation process. Keystone **registered 700 brokers** in the first 2.5 years and **doubled its quotes generated per day**..	experience regardless which bot the customer consumes. In case you want to extend the functionality to WhatsApp, please check this related post that describes the steps for enhancing the customer experience by linking WhatsApp with Amazon Lex. **4. Multichannel marketing communication service**: Amazon Pinpoint **collects metrics** about channel usage per customer and allows to **segment audience** to **create outbound campaigns** over channels like email, SMS, push, or voice. On this post, you can find the guide to add WhatsApp as an Amazon Pinpoint Channel. **5. Expedite claims processing**: Amazon Textract automatically **extracts text, handwriting, and data from scanned documents** beyond simple optical character recognition (OCR) to identify, understand, and extract data from forms and tables. This can help to **digitize and automate** its **claims process**. Moreover, Amazon

			Comprehend Medical models are able to understand and **extract health data from medical text,** e.g. prescriptions, making it easier for health claims. **6. Agent/broker portals**: Agents and brokers are able to **align with client information** and conduct their day to day tasks through this application built using a combination of Lambda, DynamoDB to store data, AWS Transit Gateway to ensure a **highly secure environment** connected by VPC and Amazon CloudTrail to track access.
Risk Management	Do you have models that take too long to run? What modeling applications do you use?How are you currently handling actuarial, investment, and catastrophe modeling?	Aon: Aon spins up large numbers of Amazon EC2 GPU instances to support PathWise, its financial modeling tool, making it **500 times more cost efficient** for its clients and reducing a 10-day process to 10 minutes. AXA: AXA wanted to provide **better risk assessment** and **real-time risk monitoring** to its marine insurance business customers. It leveraged AWS to build a risk management platform by storing and processing a high volume of geolocation and	Use Cases/Solutions: **1. Grid Computing:** By leveraging the scale of the compute grid on AWS using Amazon EC2, scheduling software and auto-scaling groups, customers are able to **backtest financial models** e.g. actuarial, investment, catastrophe modeling and **run risk simulations** securely and efficiently. **2. Price forecasting** using Amazon Forecast a **fully managed time-series forecasting** service based on machine learning to **predict any changes** or to **determine the right price** for

		weather data with an AI layer on top to score and compare different clients on navigational-based factors e.g. trading patterns. Their **loss ratio improved** (they were able to price risks more accurately), contributed to Solvency II ratio through **better exposure monitoring and loss estimations**; and they **generated additional earned premium** by validating vessel activity against policy clauses.	customers' products based on current market conditions e.g. COVID-19.
Data Analytics and Machine Learning	How are you achieving a single customer view?How do you provide the next best offer/action guidance to your producers?What is your analytics strategy?How are your loss ratios?	AXA: AXA migrated its data lake to AWS to facilitate **improved analytics and digital innovation**. With its data lake built on AWS, AXA can **better analyze sentiment in customer service interactions** to deliver proactive solutions and offers. AXA is able to **build new products** that allow customers to **apply for new policies and make claims** from their **mobile devices.** Sun Life: Sun Life Financial built its Enterprise Data Lake on AWS to enable **personalized and proactive customer service** at scale. With its data lake on AWS, Sun Life runs machine	Use Cases/Solutions: **1. Policy underwriting and claims processing:** Cloud-based data lakes help liberate data from core systems and ingest data from external sources, making it **easier to store, stage, and process unstructured data** such as images and documents related to underwriting and claims together with AI/Ml services like Amazon Textract. **2. Fraud detection:** Claims data stored in data lakes is a rich target for AI/ML models using Amazon SageMaker. These models help mine larger data sets and uncover new signals that lead to **identifying fraud** or other factors that can

		learning models to **identify and mitigate fraud** and automate aspects of the claims process, **saving time and money.** FWD: FWD wanted to **simplify the claims process** and create **better customer experiences** while reducing prices. By building a data lake on AWS, FWD was able to automate and expedite claims processing (down to the **same day** in some cases) nib: nib provides its 1.6 million members with the ability to **submit photos of their claims receipts** via a mobile application. nib integrated Amazon Textract into its pipeline to **reduce manual data entry** and **speed up claims processing**, resulting in an **improved customer experience** while **increasing operational efficiencies**. Sunday: Sunday wanted to apply ML algorithms to offer **highly personalized policies** at lower premiums and needed a cloud infrastructure that was highly scalable, reliable,	help insurers **reduce loss ratios**. **3. Customer insights and Predictive Analytics:** Data lakes make **internal data more accessible** and help insurers to enrich their data with external and unstructured data sources. Running AI/ML models against the broader data leads carriers to **new customer insights** to support **next best action/offer**, better so with data visualization tools like Amazon Quicksight.

		and fast. By using AWS and our development kits to automate deployment, Sunday is able to offer a **wider range of insurance policies** compared with traditional insurers and has seen a **30% MoM increase in revenue** since launching in 2017. Allianz: Allianz Trade launched a ML solution using Amazon SageMaker to **quickly detect any suspicious domains** registered that could be used to exploit its brand or its products. This ML service took less than 7 months to build from ideation to production and can now **identify URL squatting fraud within 24 hours** after the creation of a malicious domain.	
Data Management - Compliance & Reporting	Are there any regulatory changes which concern you?Is the data you need for regulatory reporting spread across multiple silos?If you are not already using AWS, is it due to any security or compliance reasons?	AXA: Being a global entity, AXA needed to ensure the migration of its workloads to the cloud were **secure and compliant**. They set up a global landing zone to accelerate its migration using 11 AWS management and security services. The firm built a CI/CD pipeline to **automate the delivery of the landing zone** to all accounts and built a cloud data lake to	Use Cases/Solutions: 1. Data lineage and traceability: Amazon CloudTrail, Amazon GuardDuty can be used to **log, monitor, and retain account activity**/any changes made to data across the AWS Infrastructure for auditioning needs and **trigger alerts** to the team when anomalies are detected. **2. Regulatory reporting**

		maintain a **global view of usage and risks.** This enabled their local teams to autonomously test, validate, and propose changes to landing zone templates while **centrally monitoring adherence** to detective and preventative controls. Bowtie: Bowtie built its **own security alert system** as the first virtual insurance company in Hong Kong, using Amazon GuardDuty to monitor the logs of multiple AWS components like Amazon VPC, Amazon Route53, and AWS CloudTrail. The system automatically notifies their cloud team when **anomalies** are detected, enabling **quick responses** and ensuring its platform is safe and secure while continuing to launch new services to its customers. Digital Partners (by Munich Re): wanted to ensure it was **satisfying global regulatory requirements** as it expanded its services and built a real-time data ingestion and analytics product. Through AWS Control Tower, Security Hub and	e.g. Consolidated Audit Trail (CAT). Redshift logs information about connections and **user activities** in your database. Amazon Aurora MySQL supports **advanced auditing**. The audit trail should be immutable. **3. Cyber event recovery:** Using S3 to store **immutable** and **multiple copies of the data**, Amazon Macie to scan data at rest to **identify anomalies** and check for changes in data, **track unauthorized access** to data using AWS Audit Manager and Config rules. Finally, customers can use AWS Identity and Access Management (IAM) to better manage **least-privileged access** to the data and the platform, Amazon GuardDuty to continuously monitor the environment for **malicious activity** and unauthorized behavior, and AWS Network Firewall to **monitor and protect network and web traffic** within the environment. **4. Cloud Security Governance:** AWS Contol Tower makes it easier to govern and manage

		following the AWS Well-Architected Framework, they **raised compliance scores to 97%**, migrated their first app in less than 8 weeks, strengthened the security of its cloud environment, and **improved reporting and monitoring capabilities**. Ergo Insurance: needed a secure and cost-effective way to upgrade its IT infrastructure to comply with **stricter cyber hygiene requirements**. Since its migration to AWS, ERGO is able to achieve **99% or higher uptime**. They are also able to save up to 4 hours daily with automated database backups and improve efficiency with seamless data transfers and integrations.	existing **multi-account** environments, especially important for Insurance organizations operating in multiple countries, at scale.
Core Systems Modernization	How long are your product development times? Do you see a need to quicken this process?How are you thinking about core modernization? (or mainframe migration)	Liberty Mutual: Liberty Mutual made a strategic decision to migrate on-premises systems to the cloud and pursue a **serverless-first** approach. By using serverless architecture on AWS, they are releasing **higher-quality solutions** for customers on a **faster timeline**—decreasing application build time from one year down to three months.	Use Cases/Solutions: 1.**Simplify migration** to cloud from on-premises using services like AWS Apllication Migration Service and AWS Database Migration Service. Customers can also leverage AWS Mainframe Modernization, which is a set of managed tools providing infrastructure and software for **migrating, modernizing,**

		Digit: Digit Insurance sought to simplify the insurance process for its customers and **make filing claims much easier**. Running its technology platform on AWS enables **faster API integration** with partners, which **streamlines transactions.** Customers can now file claims by sharing images or videos, and Digit can authenticate these claims by applying AI/ML. Guardian: Guardian first migrated its computing infrastructure to Amazon EC2 to **scale its direct-to-consumer website** where individuals can research and buy insurance products online without an agent. Its success prompted Guardian to migrate additional applications to the cloud and explore how it might use other AWS services to **accelerate its digital transformation**. Bajaj Allianz: Bajaj Allianz chose to migrate its core policy administration system for its travel lines of business onto TCS BaNCS Cloud for	**and running mainframe applications**. **2. Accelerating product development times:** The scalability of AWS e.g. using services like Amazon EC2 and Amazon RDS allows insurers to **increase their speed to market** for new products, enabling them to **target emerging product opportunities** and customer segments. **3. Easier integration** with other systems and applications: Use Amazon API Gateway to create, **publish, maintain, monitor, and secure APIs** around the core. Automated execution of code and configuration helps developer**s implement CI/CD and improve reliability**.

		Insurance, which is hosted on AWS. Deploying TCS BaNCS on AWS enables Bajaj Allianz to **cut infrastructure costs**, use TCS' blockchain solution to **expand the business**, and use AI and analytics for **faster and error-free claims adjudication** and policy servicing. nib:: nib Group migrated its system of record for its corporate health insurance business to AWS. Since 2015, nib has moved 98% of its assets from its 7 data centers into the AWS cloud, which involved moving information about 35,000 customers. By moving its most critical workload to AWS, nib is able to **cut infrastructure costs**, ensure the s**ecurity of customer data**, and be **agile and innovative** which provides value to nib's business and its customers. Pekin Insurance: Pekin Insurance modernized its legacy infrastructure with AWS to **expand its business**, **compete with larger competitors** and emerging cloud-first insurance companies, and run its core systems	

		and software more **cost-effectively** and at scale. Since moving to AWS, Pekin has **improved its availability by 95%**, reduced its code and deployment rollouts from **48 hours to six hours**, and **reduced its time to market** from 8-12 weeks to 2-3 weeks. ASEAN Focused: Ancileo:	

Payments

Category	Questions	Customer Case Study	How AWS can help
Customer Experience	How well do you understand what your existing customers want and how well can you target new customers?Do you currently use SMS, email, mobile push, or voice to deliver messages to your users?How do you make getting in touch easier for your customers?	Affirm: collects and analyzes large volumes of data on **consumer shopping, payment, and purchasing behavior** to responsibly **expand access to credit** and help merchants **drive growth**. Affirm's Adaptive Checkout leveraging machine learning models dynamically **provides personalized payment options** for each transaction, including four interest-free biweekly payments and monthly payments side-by-side. Block: Block wanted to **reduce latency** and now takes **6,000+ calls** with Amazon Connect.	Use Cases/Solutions: **1. Predictive User Engagement:** Provide **personalized experiences** with timely, tailored messsages and **hyper-personalization** using Amazon Pinpoint and Amazon Personalize based on stored profiles and **real-time behavioural patterns.** These services also help to identify new customers and market trends, provide the **next best offer** to a customer for **cross-selling** based on user preferences and customer segmentation. 2. **Customer 360 portal**: This website

		Block also uses Amazon Connect's open platform to integrate with their own switchboard platform. Paytm: used Amazon Personalize to create a **personalization model** that **generates recommendations** for each customer. They **increased its sales and click-through** rates of the Paytm Mall homepage while making it simpler for its customers to find items. The firm can also now **better measure** the activity on its homepage by gathering **more metrics** on its homepage. Venmo: developed and released a **contactless payment solution** for customers in six weeks during COVID-19 leveraging Amazon Aurora. With AWS, Venmo scaled to reach **70 million customers** and unlocked **performance efficiencies**. Boost: Boost acquired a **deeper understanding of its users' end-to-end**	provides a single-pane of glass that **shows all customer interactions and experience** using different channels. It offers a **360-degree customer view** and provides insights about channels, interactions, requests, and sentiment associated with each interaction. This is a representation on how you can integrate this information into your current CRM or own platform to get **insights about customer behavior** and interaction history. 3. **Cloud Contact Center**: In the multichannel strategy, Amazon Connect plays an important role since it provides a **seamless experience** across voice and chat for your customers and agents. After call or chat ends, a workflow is triggered to run analytics and machine learning to get **voice-to-text transcription** and **sentiment analysis**. **4. Conversational Chatbots**: This solution deploys an Amazon Lex bot that **supports integrations** made with

		behavior, increased spend by 17%, improved retention with **50% more active users**, and **reduced churn by 15%** by using AWS data lake to bring together data from various sources into a **central repository.** Paytm: able to **extract user data from images** of complex identity documents with **97% accuracy** using Amazon Textract. This **KYC solution** they deployed in one hour helped them to reduce the time required for the user KYC process from **days to minutes**. Developing the solution in house also led to a **75% reduction in costs**.	Amazon Connect, Facebook Messenger, and a webpage chat widget. This bot implements the same interaction model used by the Alexa Skill, providing the same experience regardless which bot the customer consumes. In case you want to extend the functionality to WhatsApp, please check this related post that describes the steps for enhancing the customer experience by linking WhatsApp with Amazon Lex. **5. Real-time identity verification**/simpler e-KYC processes: Develop an e-KYC app using AWS AI/Ml services like Amazon Rekognition, Comprehend and Amazon Cognito to validate the digital identities of online customers **in seconds** and grant them appropriate access to the sites and services they need.
Risk Management	How is your current infrastructure supporting the need for back-testing models, stress testing, transaction surveillance, anomaly detection, etc?What types of	Nudata: Mastercard acquired NuData Security to **improve its fraud prevention** techniques by using **passive biometrics** to authenticate account holders' identities. By	Use Cases/Solutions: **1. Grid Computing:** By leveraging the scale of the compute grid on AWS, customers are able to **backtest trading models** and **run risk simulations**, which

	financial simulations do you run on a regular basis? Are there simulations you would like to run (e.g. for risk management) but can't due to a lack of capacity or budget constraints? Is the workload "spikey"?How do you ensure you are protecting your customers against fraudulent transactions? Does your team have challenges updating your algorithms to prevent fraud?How are you using technology currently for Know Your Customer (KYC)/Anti-Money Laundering(AML)/Fraud Monitoring processes?	using AWS, NuData is able to collect and analyze hundreds of data points which are then used to **authenticate users and protect customers from fraud**. CreditVidya: uses Amazon Rekognition to complete **electronic "know your customer" processes** by comparing users' uploaded identity cards and selfies to ensure that applicants are uploading their own identity cards.	can reduce the time of these jobs by over 90% **2. Build a risk management ML workflow:** Amazon SageMaker is a fully managed ML platform that allows data engineers and business analysts to **quickly and easily build, train, and deploy ML models** which can be used for e.g. to **predict loan status** for potential customers. **4. Fraud detection and Prevention:** Using Amazon Fraud Detector, it is now possible for customers to train the Transaction Fraud Insights model and use the model to **generate fraud predictions**. **6. Accelerate e-KYC Processing**; Develop an e-KYC app using AWS AI/Ml services like Amazon Rekognition, Comprehend and Amazon Cognito to **validate the digital identities** of online customers in seconds and grant them appropriate access to the sites and services they need.

Data Analytics and Machine Learning	How are you currently capturing customer data to gain deeper customer insights?Are there areas within your organization where you are already applying AI/ML? What challenges and successes have you met? Who owns these solutions?	Affirm: collects and analyzes large volumes of data on **consumer shopping, payment, and purchasing behavior** to responsibly **expand access to credit** and help merchants **drive growth**. Affirm's Adaptive Checkout leveraging machine learning models dynamically **provides personalized payment options** for each transaction. Prior to the 2018 peak holiday shopping season, Affirm built a **scalable, fault tolerant database** system that was able to handle **5x a typical day's scale** with **100% uptime.** Boost: Boost data analysts are now able to **run more analytics reports** with at least **99% accuracy** using AWS to build a data lake which brought together data from various sources into a **central repository**. Boost acquired a deeper understanding of its users' end-to-end behavior, **increased spend by 17%**, improved retention with **50% more active users**, and **reduced**	Use Cases/Solutions: **1. Build and train machine learning models** with Amazon SageMaker, Redshift/EMR for **predictive analytics** e.g. to predict market changes and customer behaviour. **2. Accelerating credit decisioning** using primary & alternative data: AWS Data Lake can help to consolidate data into a central repository easily and quickly to **streamline data processing,** gain deeper understanding of users and conduct **real-time credit decisioning.**

		churn by 15%. Grab: GrabPay chose Amazon Elastic Map Reduce (EMR) Managed Scaling to meet its **large scale distributed data processing** needs while automatically resizing the EMR cluster or best performance at the **lowest possible cost**. They found the performance of EMR to be **10-15% better** compared to their previous platform, and were also able to meet its **cost optimization goals** by using Managed Scaling. Paytm: using Amazon EMR, interactive SQL queries, and ML applications open-source analytics frameworks, the firm can now **better measure the activity** on its homepage by gathering more metrics on its homepage and **cater to customer preferences**. By modernizing their data platform and streamlining their data processing, they are also able to **deliver data to its business**	

		users 30% faster and at **70% the cos**t of its on-premises solution, **spin up big data clusters** and execute most of its core **ETL processing in as little as 10 minutes**, vs 12 hours previously. Afterpay: chose AWS to create a **centralized data platform** that would allow Afterpay to bring together disparate internal sources of data, store the data, and enable querying of the data. It can now **query data in 45 seconds**, down from 45 minutes on-premises, and **execute its ETL processing in 15 minutes**, reduced from 12 hours previously. Ayopop: Ayopop migrated its database to Amazon Aurora. Since migration, it has **saved nearly 25% on database maintenance** and now has the highest rate of successful bill payment transactions in Indonesia at about 99.3%. In contrast, its competitors usuaully have a 25% failure rate.	

Data Management - Compliance & Reporting	What are some of the regulations that require significant reporting efforts for your organization? Is the data you need for regulatory reporting spread across multiple silos?If you are not already using AWS, is it due to any security or compliance reasons?	Wise: uses AWS Backup to quickly create templates and tags for **on-premises backups** written to Storage Gateway, databases backed up to Amazon Elastic File System (Amazon EFS),and Amazon RDS databases. This allows the business to **uniformly back up data** and easily show auditors the information the information needed to **evidence compliance**. Stripe: Payment processor Stripe has been running its **PCI DSS-compliant** payment platform on AWS since 2011. The startup relies on the **security best practices** and **easy auditability** of the AWS platform. Using AWS gives Stripe access to world-class infrastructure that allows it **scale seamlessly** and **increase developer productivity.** 2C2P: has a **higher availability rate of 99.97%** and roughly **two hours of downtime** per year (vs 24 hours initially). They are now able to	Use Cases/Solutions: **1. Data lineage and traceability:** Amazon CloudTrail can be used to **log, monitor, and retain account activity**/any changes made to data across the AWS Infrastructure for auditing needs. **2. Regulatory reporting** e.g. Consolidated Audit Trail (CAT). Redshift logs information about connections and **user activities** in your database. Amazon Aurora MySQL supports **advanced auditing**. The audit trail should be **immutable.** **3. Payment Hardware Security Modules:** Customers often choose to store their payment information on a merchant's website. Security is critical to storing this data and transferring it to and from a merchant's site. **Payment HSM solutions** on AWS enable the **encryption and decryption of sensitive data** to help companies **enhance the security of payment credentials** and **improve payment processing.**

		automate infrastructure scaling using AWS to support demand peaks by **up to 10X** during customer promotions and with AWS security controls, 2C2P can detect which components of their infrastructure are vulnerable. Opn Payments: By moving to AWS, Opn Payments has **simplified its compliance requirements**, **reduced the time to launch a product** from months to three weeks, and **increased its maximum transaction volume tenfold**, to 10,000/minute during peak periods. ASEAN Focused: BlockFi: Coinhako: Kredivo:	**4. Easy access to cloud-related regulatory requirements**: AWS Compliance Center helps customers browse **country-specific resources**, identify local regulatory requirements, and view AWS compliance programs that may apply to that country they operate in **all in one place.**
Core Systems Modernization	How are you thinking about core modernization? (or mainframe migration)How do you account for real-time decision making?	Ayopop: The company's API is used by merchants across the country to collect bill payments through online channels and the Ayopop mobile app. Because of the **high availability** of	Use Cases/Solutions: 1.**Simplify migration** to cloud from on-premises using services like AWS Apllication Migration Service and AWS Database Migration Service. Customers can also leverage AWS

		AWS, Ayopop has the highest rate of successful bill payment transactions in Indonesia vs competitors at about 99.3%. Razorpay: completed a migration to our AWS Mumbai Region with **less than four minutes downtime** and **reduced latency** from 400 milliseconds to ~10 milliseconds. Consequently, the business supported a **150% increase in traffic** with no impact on performance. Wise: closed their data center by migrating backups and databases to AWS which allowed them to **scale quickly to support tenfold annual growth globally**. Western Union: selected AWS as preferred long-term strategic cloud provider to build a **more seamless and reliable experience** for its customers who send money and payments to 200+ countries and territories through its mobile application,	Mainframe Modernization, which is a set of managed tools providing infrastructure and software for **migrating, modernizing, and running mainframe applications** with minimal downtime. **2. Platform modernization**: Support **payment feature upgrades** and development of **new products** quickly. Implement a Digital Payments architecture to achieve the **speed, agility, availability, reliability, security and massive scalability** demanded by Payments applications leveraging AWS database services such as Amazon Aurora and Amazon ElastiCache for Redis **3. API-driven** value added services: give customers **direct access to their end user bank account data** and allow them to make **simple, secure, cost-effective payments** through integrating APIs in your solution using services like Amazon Cognito, Amazon API Gateway.

		website, and agent locations around the globe. Opn Payments: By moving to AWS, Opn Payments has **simplified its compliance requirements,** reduced the time to launch a product from months to three weeks, and **increased its maximum transaction volume tenfold,** to 10,000/minute during peak periods. Venmo: developed and released a **contactless payment solution** for customers in six weeks during COVID-19 leveraging Amazon Aurora. With AWS, Venmo **scaled to reach 70 million customers** and unlocked **performance efficiencies**. Payments processed reached **hundreds per second, query responses stayed under a millisecond**, and **CPU utilization was reduced**. The business is now opportunistically integrating with more AWS managed services to **spend less time**	

		managing infrastructure Yedpay: went all-in on AWS to **improve its security, compliance, and reliability**. It completed a full migration in just one month and experienced **zero downtime**. Yedpay also **lowered its IT costs by 40%,** freeing up resources to be reinvested in other areas of the business, like product development, to accelerate growth.	
Blockchain	How do you keep up with current trends in the industry? Is your company planning to expand into blockchain technology (and how prepared are you)?	SGX: chose to use Amazon Managed Blockchain to **quickly and easily** set up their blockchain network without having to invest in hardware and software provisioning. Bitkub: provides multi-cryptocurrency wallets, user-friendly technical analysis tools, and alternative cash-out options for businesses willing to **improve their payment processing systems** using AWS and our container services for its infrastructure.	Use Cases/Solutions: 1. Create and manage scalable blockchain networks and distributed ledger technology using our **fully managed** Amazon Managed Blockchain service and easily integrate with over 70+ solutions from our partners on AWS Marketplace.

Manufacturing

Examples: Aircraft, automobiles, chemicals, clothing, pharmaceuticals, F&B, consumer electronics, machineries.

Types of Manufacturing:

- Discrete Manufacturing: Series of assembly operations to create products that can be disassembled into original raw materials again. Eg. electronics
- Process Manufacturing: Finished products cannot be unassembled to its original raw materials. Eg. chemical

Jargons

- PLC: Programmable Logic Controller. Industrial computers of varying sizes to control different electro-mechanical processes for use in manufacturing.
- HMI: Human Machine Interface. The hardware or software through which an operator interacts with a controller.
- SCADA: Supervisory Control and Data Acquisition. SCADA is a monitoring software installed on a computer in a monitoring hub at a plant as a central system. Used to monitor progress and control flow/operation throughout the plant.
- Historian: Time series database storing data sent from SCADA. All data stored in Historian. SCADA will only have live data or up to 30 days. Historian stores archival data.
- MES: Manufacturing Execution Systems
- ERP Systems: Accessed by Sales, Marketing, Engineering. ERP and MES can be the same system.

Smart Manufacturing

Business Outcomes: 1/ Improve production and asset optimization, 2/ Quality Management, 3/ Worker Safety & Productivity, 4/ Reduce maintenance costs

Category	Questions	Customer Case Study	How AWS can help
Industrial Data Platform	Tell me more about your manufacturing process?Are you using any legacy on-prem operational tech applications? Eg. Historians, Supervisory Control And Data Acquisition [SCADA], Programmable Logic Controller [PLC] & control layer, Manufacturing Execution	Volkswagen: Parent company of 12 iconic automotive brands, such as Volkswagen, Audi, and Porsche. Moving its 124 factory sites to a single Volkswagen Industrial Cloud running on AWS. BMW Group: Global manufacturer of premium automobiles	AWS IoT Greengrass: Build, manage, deploy IoT software AWS IoT Core: Connect IoT devices to AWS w/o need to provision or manage servers AWS IoT SiteWise: Collect and analyze industrial

	system [MES]Tell me about your Smart Factory or Industry 4.0 initiative. What's working well/not well?	and motorcyclesRunning a centralised Cloud Data Hub built on AWS. Processes and combines anonymized data from vehicle sensors and other sources across the enterprise to make it easily accessible for internal teams creating customer-facing and internal applications.	data at scale and make better, data-driven decisions Amazon S3: For building data lake
Asset Maintenance and Reliability (AMR) / Asset Performance Management (APM)	Are you currently facing any challenges with unplanned downtime on your machineries?What are the applications/systems used for monitoring reliability of your machineries? Any wireless sensors?	GE Gas Power: Manufacturer of power generation equipment. With AWS Monitron, they were able to quickly retrofit assets with sensors and connecting them to real-time analytics in AWS cloud, transitioning from time-based to predictive and prescriptive maintenance. Siemens Energy: Offers products across the energy value chain. Give improved visibility into the systems and equipment across the entirety of a customer's operation using Amazon Lookout for Equipment. Deploy predictive ML models for maintenance without data science knowledge.	AWS Monitron: Hardware with vibration and temperature sensor. Uses ML to detect abnormal conditions in industrial equipment and enable predictive maintenance. Amazon Lookout for Equipment: ML industrial equipment monitoring service that detects abnormal equipment behavior so you can act and avoid unplanned downtime.
Computer Vision for	How is the quality process currently being done?What are your	Baxter: Global medical products company. Use Amazon Lookout for	Amazon Lookout for Vision: ML service that uses computer

Quality Insights	current systems to collect imagery and data related to quality inspection?Do you face high warranty claims from customers?How do you obtain actionable insights and leverage these insights to sense and alert on quality issues?	Vision to automate inspection tasks that can't be addressed by manual inspection alone. Invista: Global producer of chemical intermediates. Use Amazon Lookout for Vision to automate visual inspections across production lines. Faster responses to issues resulting in proactive interventions improving production efficiency and allow technicians to take earlier corrective action.	vision to spot defects in manufactured products at scale. Warehouse & Logistics: Solve for automating inventory inspection and identify missing materials Production & Assembly: Identify leaks, missing components, scratches eg. defect types per batch of production, defect type measurements, defect locations, etc. Packaging: Identify defects eg. measurement of a specific package, location of the package, etc.

Supply Chain Management

Business Outcomes: 1/ Increase asset utilization, 2/ Lower inventory carrying costs, 3/ Prevent stockouts and meet service level commitments

Category	**Questions**	**Customer Case Study**	**How AWS can help**
Demand Forecasting & Planning	How are you currently running your demand forecasting models? Software or Excel?How accurate are these models and do you face any challenges using them?	Foxconn: World's largest electronics manufacturer and technology solutions provider. Use Amazon Forecast to generate more order forecasts, helping to	Amazon Forecast: Time-series forecasting service that automatically selects the right ML model for your data

		increase accuracy while minimizing wasted labour costs. Shimamura Music: Japan's largest musical instrument retail store. Using Amazon Forecast, their non-engineering team in the logistics department was able to build an in-house demand forecasting ordering system that improves shortage rates and increase business efficiency.	
Warehouse Operations & Automation	How are you currently planning your warehouse floorspace for high utilization?What are some challenges you face with maintaining accurate inventory count?How are transportation/freight schedules aligned with warehouse processes?		Amazon Appflow: Integration service that enables you to transfer and transform data between ERP/CRM/SaaS applications to S3 and Redshift AWS IoT Core: Connect IoT devices to AWS w/o need to provision or manage servers Amazon Redshift: Data warehouse for big data processing
Fulfillment & Distribution Operations	How are you currently tracking delivery service time if they meet client	Lalamove: Provides on-demand delivery	AWS IoT Core: Connect IoT devices to AWS w/o need to provision or

	expectations?Are you able to predict slow deliveries and take prescriptive actions to resolve?	service across 22 markets globally. Speeds Up Driver Onboarding with Amazon Textract for OCR, ensuring a high supply of delivery drivers to match deliveries.	manage servers Amazon SageMaker: Build, train, and deploy machine learning (ML) models
SAP on AWS	Are you currently working on any SAP projects, or do you have any SAP projects on your roadmap?Tell me about your current SAP implementation – what applications are you running? Are there additional applications or functionality you're considering?What is your SAP HANA roadmap? Do you have a hardware refresh pending?	Lockheed Martin: U.S. aerospace, defense, security, and advanced technologies company. Runs its SAP Suite on HANA on AWS for the increased agility in spinning test systems up or down to adjust to the changing dynamics of internal projects.	

Sustainability

Business Outcomes: 1/ Reduce energy spend and Opex, 2/ Achieve Sustainability Goals, 3/ Receive Government Grants

Category	**Questions**	**Customer Case Study**	**How AWS can help**
Smart and Sustainable Buildings on AWS	How are you currently monitoring energy usage and savings potential in your plants? What is your current building management system software? Are you able to see an integrated view of operations across your building portfolio?What are the company's sustainability goals being set?Are there	Cognizant: A global real estate investment trust (REIT) with over 12,000 rentals used Cognizant Smart Buildings to integrate multiple assets and systems resulting in improved operational efficiency of facility	

	any regulations being set for your industry?	management and marketability of the properties.	

Engineering & Design

Business Outcomes: 1/ Accelerated time to market, 2/ Optimized development costs, 3/ Improved collaboration

Category	Questions	Customer Case Study	How AWS can help
Computer-Aided Engineering (CAE)	What types of software are you using to simulate performance to improve product designs?What types of simulation are you currently running? For process modelling?Are you facing any challenges in meeting timelines to develop/test more products?How are your product development/R&D teams able to collaborate?	Western Digital (WD): Global manufacturer and designer for hard disk drives (HDD). Use EC2 spot instances to run millions of simulations of different materials and configurations to improve their hard disk performance.	AWS Batch: Efficiently run hundreds of thousands of batch and ML computing jobs while optimizing compute resources AWS ParallelCluster: Easy to deploy and manage High Performance Computing (HPC) applications on AWS

Smart Products & Services

- Have you considered integrating IoT and analytics into your product offering?
- What type of insights into your product would be most valuable to your customer?
- What type of insights into how customer are using your product would be most valuable to you?
- How is data integrated into your aftermarket/service workflows today?

General

- Do you have manufacturing plants in Singapore? Or are you remotely monitoring manufacturing plants in other countries from Singapore?
    - Any challenges you're facing when managing the plant? Or what objectives are you planning to achieve in the near future?
    - Is Automation of Production workflow (including preventive maintenance, defection detection, factory worker safety monitoring) for manufacturing plant be one of the priority of the transformation road map?
- Are you facing any supply chain disruption issue in term of raw materials and end product delivery? Are you working with any solutions provider to address the challenges and how is that going?

- What ERP systems are you currently using? Is it on-prem or on cloud? When is for refreshment?
- Do you have any Data Management system for your Manufacturing Machines?
- Do you have any IoT assets in the field or are you connecting new IoT assets online?
- How do you monitor for equipment failures? Are you looking at real time remote monitoring for your equipments?

Retail

Types of Retail: Department Store, Specialty Store, Supermarkets, Convenience Stores, Discount Stores, Hypermarkets

Category	Questions	Customer Case Study	How AWS can help
E-Commerce	How many different products do you carry? What kind of transaction volume?Does the site scale for peak times? How are you monitoring your equipment for failures?Have your customer faced any user experience problems before? E.g. Long check out times, website crashes etcHow are you using analytics from the data collected from the website? Does your organization use a recommendation system today?Does your website include any live streaming for selling? Is 3D/Augmented Reality products part of your e-Commerce strategy?Is the site	Zalora: Region's largest online fashion retailer. Migrated SAP S4 Hana to AWS for greater reliability and flexibility. Scale infrastructure to meet growth in users. 11Street: South Korea's largest ecommerce site. Introduced a live commerce feature that blends entertainment with instant purchasing for	Website Performance & Security: Speed up content delivery using CloudFront and improve security using WAF and ShieldPersonalization: Personalized recommendations can improve brand loyalty, grow sales, and enhance the shopping experience. Amazon Personalize uses ML to tailor recommendations based on user behavior, preferences, and interaction history;Visual Search: Customers can search by uploading an image instead of typing. Using Amazon OpenSearch and SageMaker.Retail Live-streaming: Help shoppers discover new products, get comfortable with their purchase, and be entertained in an interactive community of shoppers. Using Amazon Interactive Video Service (IVS).Immersive Retail: Using AR for customers to preview products. Increase sales and reduce returns.

	secure? Faced any denial-of-service attacks?	sales events and new product launches.	
Physical Stores	How are you currently tracking inventory count for each outlet?How do your instore team members do their work when it comes to returns, inventory management, in-store replenishment?What's on the roadmap? Facilitating better omni-channel experiences? Pickup/Ship from store?How is the current customer experience? Do you know your customers' path to purchase and where they dwell? Is the checkout and payment process streamlined?		Consumer Payments Computer Vision for automated checkout/Queue management
Customer Engagement	Do you currently take customer calls today at your stores?What CRM tools do your agents use today? Can agents obtain personalized information about the caller?Do you have issues meeting peak demand, for example long waiting periods at peak?Can you analyze customer sentiment, agent performance etc. in an automated way?Do you have		

	disaster recovery/business continuity plans in place for your contact center?Is your brand(s) currently using email, text, push, or voice recordings to reach customers? Do you currently have a single 360 view of all channels being used to engage your retail customers – if not, is this something that you'd like to have?Is personalization a part of your customer experience strategy? If so, how are you currently – and how do you plan to – deliver this to your customers?		
Supply Chain & Inventory	How are you handling omni-channel transactions? All connected to the same backend system?Is your existing DOM easy to extend or configure to keep up with business demands?How are you doing your forecasting currently and what tools do you use? How has the accuracy of the forecasting models been? Using any Machine Learning?What ERP software are you using currently? SAP?		

Gaming

Game Developers

Responsible for game's storyline, visuals, gameplay.

- What type of games are you developing?
    - Offline Games: Games runs on player's own machines
    - Single Player: Game runs on player's own machines. New levels unlocked will be downloaded from servers.
    - Turn-Based: Players connected online but no need for real-time.
    - Real-Time Session: All players in the same room will be connected to the same server in real-time.
        - Do you face any challenges with your matchmaking servers to group players?
    - Persistent Games: Game runs 24/7 and players will join the same virtual world
- Where are you in the development cycle?
    - Build
        - What applications do you use in designing, developing, rendering, and publishing games?
            - Game Engines: Unreal, Unity, etc
            - Apps for 3D Modelling: Maya, Autodesk, Blender, etc
        - How has it been to manage different workstations for different locations (eg. for rendering, version control, pipelines)
    - Run
        - What infrastructure are you using to host game servers and to maintain back-end (eg. leaderboards, player data, in-game messaging)
    - Grow
        - How are you currently using analytics to drive game design and development decisions? Eg. player retention and engagement
        - Are you facing any challenges in regulating content on your gaming platform?

Game Publisher

Companies that back developers in funding, go-to-market, distribution, technology. Revenue share with developers.

- What is the monetization model? One-time purchase, Subscriptions, Free-to-Play, Play-to-Earn?
- Are you also developing your own games?
- Do you manage the game studio infrastructure?
- What infrastructure are you currently using to run?
- What's your game analytics strategy?

From Antoine

General

- I am familiar with your release of [game]...are there any additional **games in development** we can help you with?
- What **platforms** are you targeting with this release (Ex. Switch, xBox, Playstation, iOS, Android)?
- What is your **rollout strategy** for releasing the next [game, content, feature]? (Ex. Alpha, Beta, Major or Soft Launch / Regional Launch, Global)
    - Are there particular **regions** you're targeting?
- Our services are engine agnostic, but to better help make implementation recommendations, what **engine** do you currently use? (Ex. Unity, Unreal, Godot, Native iOS / Android, Lumberyard)
- Is your multiplayer game "session based?" Listen For: Session/match based, persistent/open-world

Game Server [Hosting]

- What is the **type of game** - Can you tell me more about the genre and play style? (Ex. MOBA, Battle Royale, Turn-Based, level-based puzzle, Turn-based multiplayer, single-player)?
- Because [game name] is [MOBA , battle royal, MMO]...it sounds like you have several **session-based** features. What are you currently using for hosting these experiences?
    - Could lead into...Containers, GameLift, EC2, On-prem
    - Anticipate: The customer could be using Multiplay. Prepare an answer for this.
- Because [game name] is [Turn-based multi-player, single-player, level-based puzzle]...it sounds like you have **stateless** features. How are you currently storing and handling session state?
    - Could lead into...serverless, EC2 (older workloads), DynamoDB, Playfab, GameSparks, On-prem
    - Anticipate: The customer could be using Multiplay. Prepare an answer for this.

CI/CD Pipeline [GPIC]

These questions are for gathering statistics about the customer's build processes and pipeline (continuous integration, continuous deployment) in order to better direct them to helpful resources and understand their need for GPIC.

- How do you **currently work together** as at team? Remote? In-office?
- When you commit code, what processes and tools do you use as part of your **version control**? (Ex. Perforce, Standard Git, PlasticSCM)
    - What do you like about it?
    - What don't you like about it?
- How do you currently **deploy builds** of the game? (Ex. Jenkins, IncrediBuild, local builds)
    - What do you like about it?
    - What don't you like about it?
- Are you doing any **cloud builds**?

- Do you find these processes work for you? Are there areas you feel you **could be more agile** or would to change?
- *Dive Deep*: How fast does it take to get an internal build out? Is it a multi-step process with different release manager levels - what's the complexity? What about external builds (Alpha, Beta, Production)?

Game Features [Backend]

These questions aim to gather information on third-party tools and services used by the customer to develop in-game features to better assess what they like, what works for them, and what is not working for them - and help them understand where we can help. On early or short calls, prioritize understanding the features and in-game use cases as well as what player success looks like above technical specifics.

- What are you currently using to **authenticate** players as part of the game (Features: User sign-up, authorized requests to access cloud resources)?
    - Anticipate: Many are using Playfab or GameSparks. Expect tension here if you have these answers and prepare.
    - If none: Opportunities for Cognito, custom auth
- How and where do you **store player data** such as player progress, purchases, levels and experience information relevant to your gameplay features?
    - Anticipate: Many are using Playfab or GameSparks. Expect tension here if you have these answers and prepare.
    - If none: Opportunities for Aurora, RDS, DynamoDB, API Gateway
- With regards to these features, what do you like and what don't you like about what you currently have? What could be better?
- *Dive Deep*: Are you working on building any features where you want **careful control** over these layers, for example leaderboards or eSports tournament and season features that you do not want tied down to a "black-box" service?
    - Could Lead to...Database discussion, encryption, use cases where Playfab / GameSparks are not ideal
- *Dive Deep*: (Non-Technical) What does player success look like for you with regards to the player **downloading content like asset packs or DLC**? What does this content usually look like? (Technical) Do you have binaries or data blobs that you need served close to players for download? For example, asset packs, DLC, web-served games etc?
    - Make sure to understand the *type* of content and exactly what needs to be downloaded as this could result in a more complex workload that involves both CDNs and databases
    - Opportunities for: Cloudfront, S3

Analytics

These questions gather information about the workload the user currently has for analytics and what their goals are for future workloads. On early calls it may not make sense to ask follow-ups to save time for other discussion - make sure to get the high level information (current metrics uses, challenges, tools).

- What **metrics** are you currently gathering about you players?

    - Data Sources: What **types of data** do you currently store and ingest? (Server logs, error logs, retention metrics, purchasing metrics, marketing/advertising metrics, revenue)
    - Ingestion: Is your data arriving all in the same **format**? If so what format? If not, what kinds of formats - what's primary? (JSON, CSV, AVRO, PARQUET)
    - Data Processes: Do you perform any transformations on this data to make it ready to be used by other services, for example convert it from JSON to another format? Do you compress your data?
    - Storage: Where is it currently stored (On-prem, S3, databases)?
- Are you using **any AWS services** already or **third party services** for your analytics?
    - Ingestion: What do you use on the client-side that produces data
        - Anticipate: Custom analytics, an AWS workload, Unity Analytics, DeltaDNA, Facebook...or possibly no analytics / ignored analytics
    - Analysis & Visualization: How do you currently analyze and visualize the data?
        - Anticipate: Tableau, Looker, DeltaDNA, Kabana, ElasticSearch, Facebook
        - Opportunities for: Athena, RedShift, QuickSight
    - Talent: Who do you have dedicated to analytics?
        - Anticipate: Small teams, business stakeholders, a few data scientists but not infrastructure engineers dedicated to Analytics
        - Alternative: You may also hear with LT customers, "not enough people" or "we had an engineer integrate [x] but do not have the time to really spend on it, yet know its important"
- What **challenges** do you have with analytics?
    - Do you have data you wish you could join - is there any siloed data (Marketing, purchase behaviors) that isn't being assessed in the same place as player metrics (Ex. Retention metrics)?
- What does **the future look** like for you here - what do you wish you could do, but currently don't or can't?
    - Anticipate: AI/ML - More player engagement, A/B Testing, making things simpler, building "intelligent" features

Developer Access, Security, and Governance

These questions aim to gather information on how MMLT developers manage access to their resources.

- Who currently owns the keys to the kingdom, AWS or otherwise? How many kingdoms?
    - Understand if they have **multiple AWS accounts** and if they struggle with tying them together
- How do you **manage access** to your resources, AWS or otherwise?
    - Understand if they have established governance policies, people, and procedures
    - Understand if they are putting in best practices such as MFA on root, not using the root account for development, and creating roles/users, applying principle of least privilege
- What **challenges** do you face with managing access to your resources? What challenges do you face with access to data access in general?

- *If appropriate*: What is your biggest concern with security of your resources?

Media & Entertainment

Content Production

- What editing software do you use? (Adobe, Resolve, etc.)
- Tell me about your current production workflow (i.e., products used, number of editors, remote collaboration).
- How many edit workstations do you have?
- What type of content are you editing? (long form: film, TV/episodic; short form: trailers, promos, social, etc.)
- Is your content for VOD (video on-demand) or for live streaming?

Media Supply Chain & Archival

- How do you deliver your files to your distribution partners today?
- How many partners or receive sites do you deliver content to today? Do you see this growing/changing much in the coming 12-24 months?
- Do you ever have issues with file corruption or assets missing from the transfer process?
- How long does it take to onboard a new delivery partner for file transfer?

Broadcast

- How big is your expected audience?
- Do you have specific requirements for your video encoding?
- Do you offer fan/audience participation during live shows (e.g., voting, chat, trivia)?
- Do you have any use cases where you deliver updates to your customers that are tracking a game/match in a web or mobile application? Is it important the updates are delivered in as close to real-time as possible?

Direct-to-Consumer & Streaming

- What is your video business model? eg. Transactional (TVOD), Subscription (SVOD), Free Ad Supported (FAST), Ad supported VOD (AVOD)
- Do you intend to have interactivity (such as polling, chats) be part of the video service?
- What are your intended/desired distribution points?
- How big is the content library? How much will refresh monthly? Where do you store it today?
- How do you handle content security today? What does that cover?

Data Science & Analytics

- How easy is it to search and discover specific content in the library today? How do you do that?
- How do you currently handle subtitling and translation for media assets?
- How do you handle content moderation today? How do you identify content that is inappropriate for your region or for a given ratings level such as nudity, language, violence, and cultural hate sentiments?

Supply Chain

Demand Planning

- Do you have a Supply & Operations Planning (S&OP) process today?
- How do you create your forecast today? How do you visualize and track inventory today?
- Are you demand constrained or supply constrained in your operations?
- How is your forecast accuracy currently? How is it measured and would you want to improve it?

Supply Chain Resiliency & Warehouse Management

- Are you more impacted by demand fluctuations, supply disruptions, or capacity issues?
- Do you have tools to identify the risks in your supply chain?
- How are you tracking your assets movement today? What level of details do you capture in your inventory tracking (e.g., lot codes, serial number, shelf life, etc.)?
- Are you looking to synchronize across multiple facilities to better leverage inventory, or serve customers with shorter windows and coordinated services?
- Do you have robotics and automation in your warehouses? What types of material handling automation are you using?
- What ERP(s) do you currently utilize?

Healthcare

Patient Experience/Contact Center

- Are you able to incorporate Bots and AI to triage and automate inquiries in a natural way to help with things like scheduling appointments?
- How is the current integration between appointment systems and patient's Electronic Health Record database?
- How is the current patient experience from discovery of services to discharge? What are some patient feedback received? Do they face long waiting times in certain portion of the process?

Finance & Operations

- What types of health document does your business deal with on a regular basis? (eg. notes, discharge notes, claims, medical charts, clinical trial documentation, lab reports)
    - How do you currently process them? How many do you process each year?
- Which aspect of document processing is the most time-consuming or manual for your team?

Health Data Lake

- How do you see your current analytics capabilities?
- What areas of your business are you exploring the use of machine learning? What are you main blockers?
- What is your data archiving/data lifecycle management strategy?

Advertising & Marketing

Advertising Intelligence

- What historical (sales, site visits) and streaming data (customer clicks, RTB Bids, in-app behavior) sources do you use today to making advertising bidding decisions?
- What are some of the challenges you are facing in terms of listening and responding to real-time signals?
- Do you think you currently have adequate data science and data platform engineering resources?

360 Customer Data Platform

- How are you managing customer identity across devices, channels (web, social, call center, connected devices, email, in-store, e-commerce) and touch points (marketing, sales, support and product) ?
- How do you develop a unified customer profile to build direct and meaningful customer relationships?
- What are some of the challenges you are facing in terms of managing and updating millions of customers profiles and relationships?
- How is your company currently leveraging customer behavioral patterns?

Advertising Platforms

- How are you currently using analytics to reduce your company's real-time bidding (RTB) costs?
- How are you using Machine learning (ML) today to reduce AdTech bid stream volume and costs? What are the challenges you are facing?
- Are there specific ML use-cases such as traffic filtering, bid prediction, intelligent demand selection, and others that you want to pursue or improve?

Telco

Provides mobile phone connectivity, data accessibility (4G/5G), cable and broadband internet service providers.

- How are you currently ensuring your subscribers experience the best customer service?
- What are your business goals around customer engagement? How do you handle the contact center experience?
- Have you heard of or tried using any post-analytic capabilities to understand the voice of your customer?
- What are your self-service challenges?
- How is your agent productivity?
- What do you do to handle peak streaming loads?
- Business customers among banks, insurance, and industry have increasing requirements to scale their content globally, and to secure their operations. How are you addressing these requirements today?