OCHRE'S CLOUD MIGRATION STRATEGY

Leaf Consulting – AWS ECIP 2022 | Team 17

Leo Shi

Tanya Satelitto

Prathyush Rao

Rui Yi

Ochre's core concerns are related to their lagging infrastructure

LEAF CONSULTING

Major Bottlenecks

Web App

Inability to meet demand
9% of daily requests to server return errors

Other Concerns

Clunky admin portal
Requires manual data entry of inventory, supplier etc., data

Current IT team are **are ill-equipped** for cloud migration

Implications

Poor Customer Engagement

Inability to convert **traffic to sales**

Data collected is **not analysed**
reduces opportunity to build the brand

These core concerns are preventing Ochre's ability to meet their goals

Ochre's Goals	Potential Roadblock
Implement cloud migration	The current IT team will be ill-equipped to handle the new features without guidance • Can't develop a dynamic organisation
Expand customer base by embracing innovation	Current web app doesn't promote a good image of the brand • Customers can't empower themselves
Become a leading sustainable fashion label	Current procedures and infrastructure is not scalable • Problem when going International

Ochre should migrate its workload to the **cloud** and specifically utilise **AWS Elastic Beanstalk** and **Amazon Personalise** to prepare for the **Ochre x Local Event** and years to come

Ochre's inadequate infrastructure can be solved with the cloud

The cloud allows users to access storage, computing services and databases over the internet

1 Overall Benefits

Cost Saving
*PAYG system saves on average **15%** of all IT costs*

Security
***94%** of businesses saw improvements in security*

Increased Collaboration
***47%** more productive and **40%** more flexible*

2 Specifically to Ochre

Sustainable Practice
*Energy usage would decrease by **87%***

Future-Readying for US Expansion
Allows for access of data across the globe

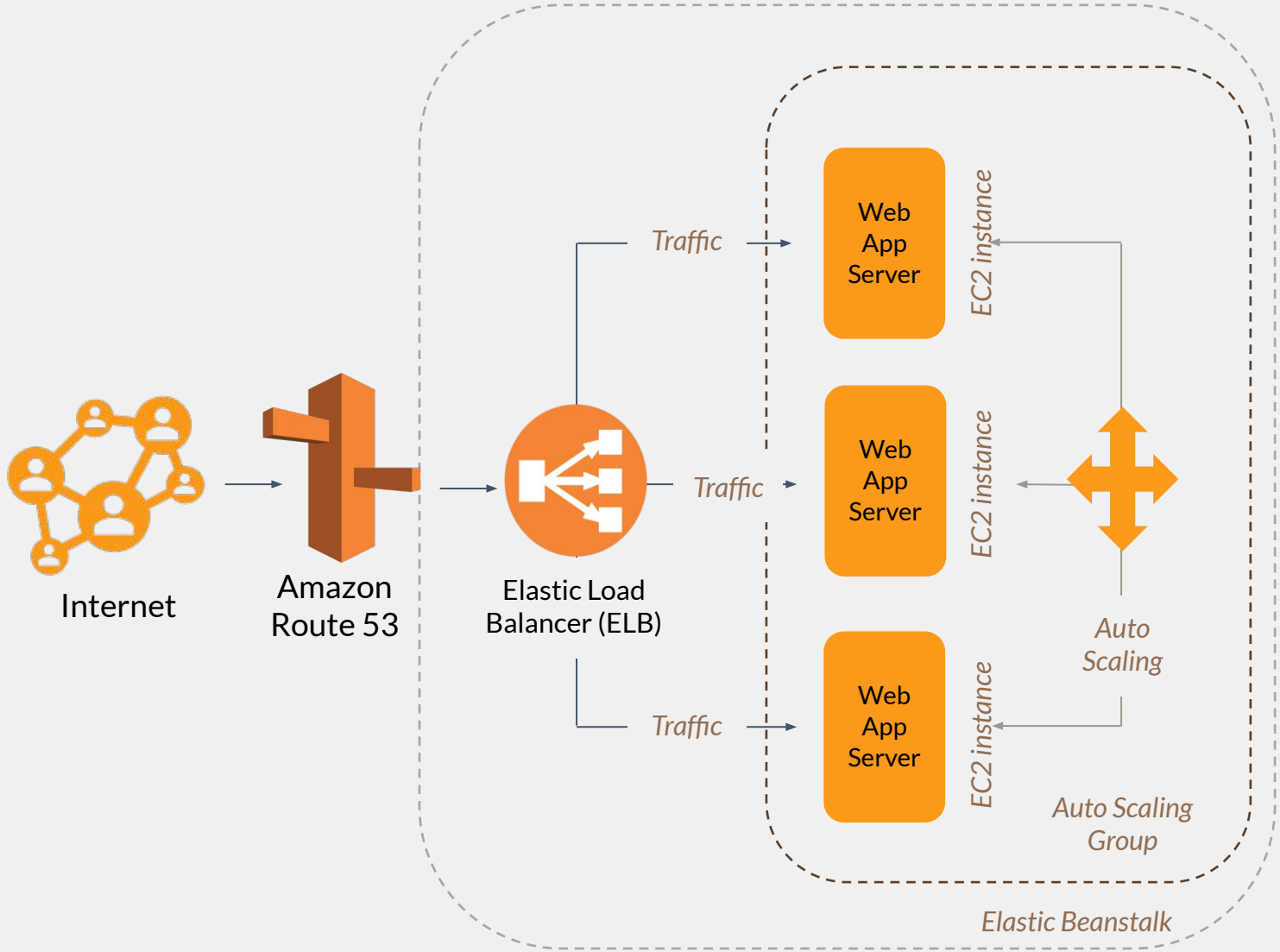
AWS Elastic Beanstalk addresses Ochre's challenges in an easy and cost-efficient way...

LEAF CONSULTING

1 **Auto-scaling capabilities**
Allows the company to meet demand spikes on their web app and be Ochre x Local ready

2 **Fast and simple**
Ochre's current IT team are able to immediately implement the solution without need for extensive and time consuming upskilling

3 **Low cost and flexible**
No additional costs, a PAYG structure and the availability of On Demand pricing results in minimized costs



...With room for more cost saving measures and a record of success

LEAF CONSULTING

Additional Cost Saving Practices

Utilise Spot instances
Spot instances can reduce costs by up to 90% of On Demand prices

Match capacity with demand
AWS Cost Explorer Resource Optimisation, AWS Instance Scheduler, AWS Operations Conductor

Optimise costs by analysing usage
S3 Analytics, S3 Intelligent Tiering, Load Balancers Check

Case Studies in Success with Elastic Beanstalk

GeoNet

Able to handle 3x usual load - distribute 100m+ notifications in a month

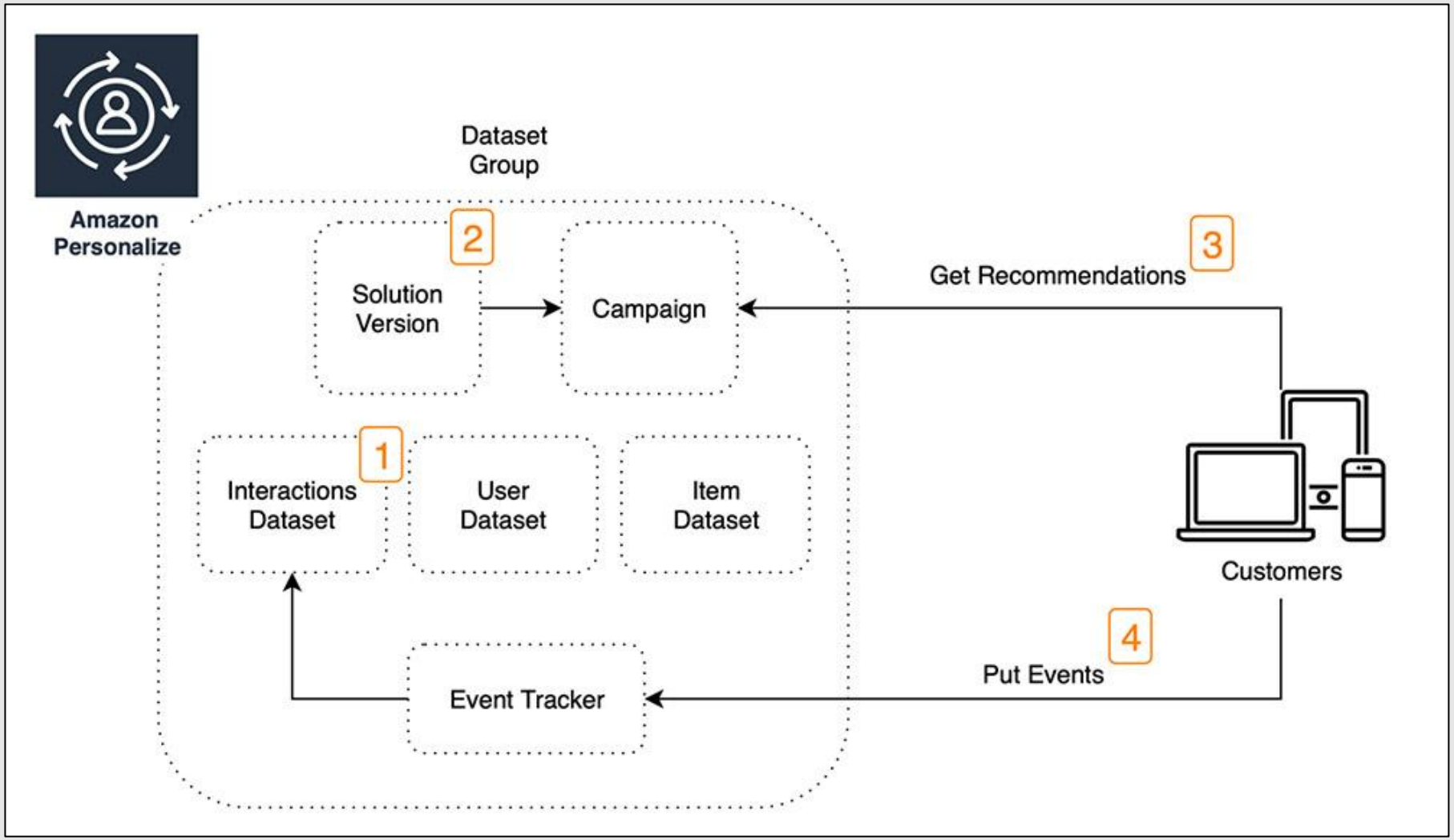
rachio

Used Elastic Beanstalk to get their e-commerce site up and running quickly

CrowdChat™

Able to scale platform to handle traffic spikes during large events

Amazon Personalise addresses Ochre's goal of expanding customer base by embracing innovation



Increase customer engagement by leveraging data

Context-aware querying for real time recommendations

Amazon Personalise improves upon Ochre's customer engagement

1

Product recommendations based upon clickstream

Enables Ochre to deliver truly personalised customer experiences by recommending products of interest, increasing product sales

2

Segmentation of outbound messaging

Personalised promotional mailings average 112% higher click through rates compared to traditional messages, improving conversion for Ochre

3

Flexible pricing and training options

Charged based on number of users in dataset processed by Amazon Personalise, up to 100 training hours provided during trial process

Case Studies

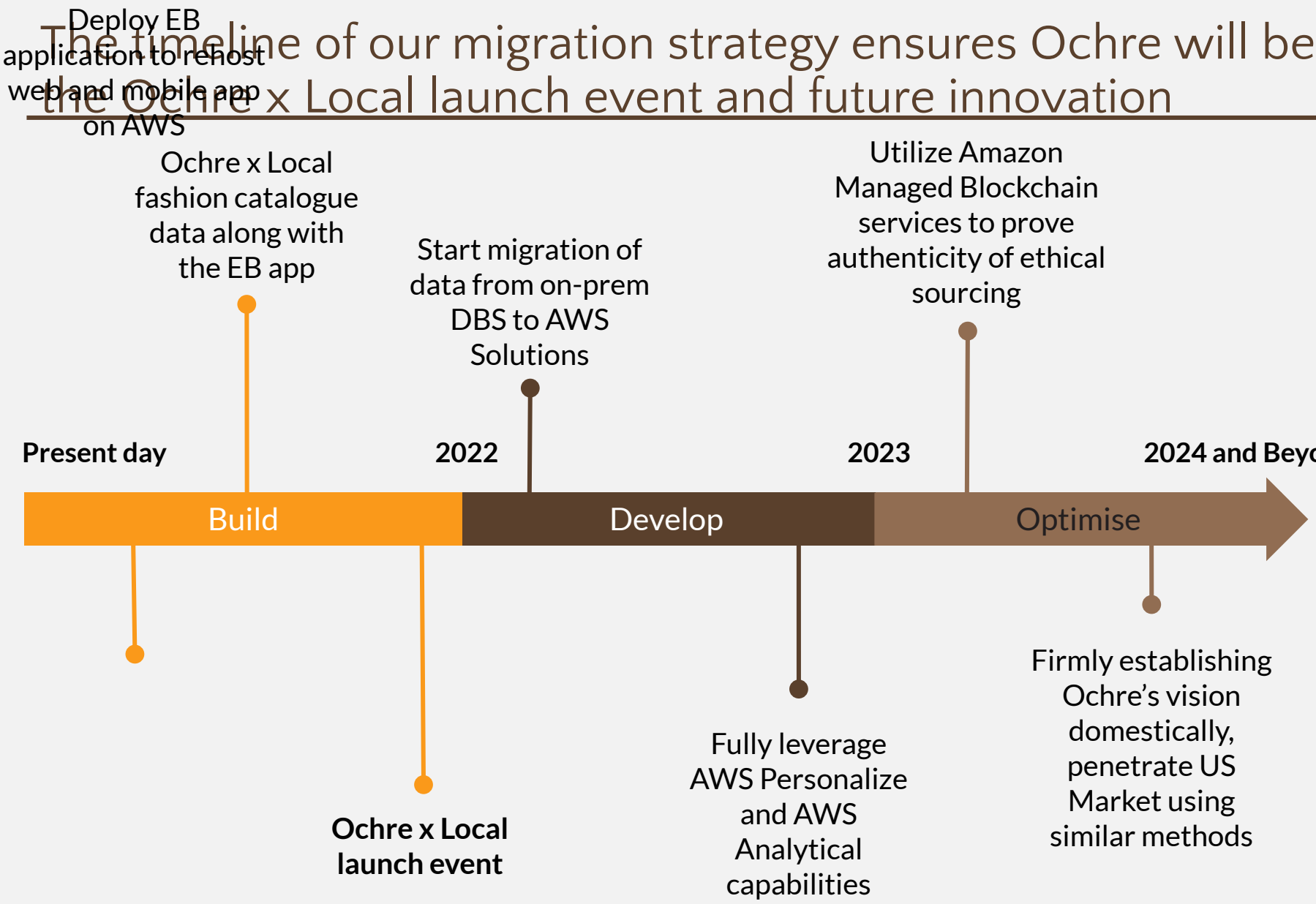
LOTTE Mart

5x increase in response to recommended products resulting in increased revenue per month.

Pomelo.

Shift from batch to 1:1 recommendations increasing clicks by 6x, generating 10-15% increase in revenue

The timeline of our migration strategy ensures Ochre will be prepared for the Ochre x Local launch event and future innovation



AWS Migration Acceleration Program's proven services to help accelerate efforts for enterprises

Use AMB technology to 'track and trace' to automate authenticity, production, and quality control

Nestle used AMB to prove the authenticity of coffee beans from its origin

Ochre should consider the following support options when transitioning to Amazon cloud strategies

"You can't do today's job with yesterday's methods and be in business tomorrow"

AWS Training

The AWS training team can help tailor the approach and recommend team structures to best suit the business

234% ROI from AWS Training and certification as quantified by Forrester Research

DevAx academy program ensures AWS work directly with the team to upskill their internal dev community

APN Partners

AWS and AWS partners support to create a seamless transition into cloud

34 different partners in just in Queensland alone to help jumpstart cloud efforts

Leverage MSPs during the pivot to focus 100% of efforts into cloud transformation

Support

AWS Startup programs to bootstrap initiatives that help transition and leverage cloud capabilities

$100k AWS Activate provides incentives in credits to start-ups

AWS Premium Support to help with all technical deficiencies

Conclusion

Issues	Solution	Impact
Challenges with meeting web app demand	Use AWS Elastic Beanstalk to scale and meet spikes in traffic	Scale up and down according to demand, providing a more seamless experience when interacting with Ochre ahead of their Ochre x Local launch date
Inability to convert traffic to sales	Tailor the experience to the end customer to increase conversion via Amazon Personalise	Improving customer experience through hyper personalisation and consideration of customer context
Small IT team unskilled in cloud migration	Support and services with APN, AWS Training, DevAx academy to transform talent	Talent transformation to help its long-terms solutions and create the next gen workforce

Q&A

any questions?

Appendix Network

Main

1. Title Slide
2. Problem Analysis
3. Ochre's Goals and Roadblocks
4. Why Should Ochre Migrate to Cloud?
5. AWS Elastic Beanstalk: Introduction
6. AWS Elastic Beanstalk: Infrastructure
7. Amazon Personalise: Introduction
8. Amazon Personalise: Benefits
9. Migration Strategy Timeline
10. Key Considerations and Workforce Upscaling
11. Impact Summary

Appendix

1. Ochre's Context and Current Situation
2. Monolithic vs Microservices
3. Ochre's current NGINX infrastructure

4 - 5. Ochre's Goals

6. Elastic Beanstalk vs Other AWS Solutions
7. Amazon Personalise Alternatives

8 - 10. Elastic Beanstalk

11. Project risks and mitigation
12. Security and latency reduction services

13 - 15. AWS WAF

16. Sustainability goals

17 - 18. Amazon Managed Blockchain

19. AWS data encryption options
20. Data storage solutions
21. Risk and Mitigation

Ochre is an Australian sustainable fashion label with global ambition

Australian sustainable fashion label:

33 stores
across the ANZ region

114 employees
across Australia

- Plans to go global with an expansion into the US market

Organisational Mantras

- **Reuse, recycle, reinvigorate**
- **Ethical and transparent supply chains**
- **Empower local designers**

Ochre's Goals

Empower individuals to be **effective agents for climate action**

Create a **dynamic organization** that **fosters innovation**

Continue to **grow globally** to ensure **sustainability of the planet**

Timeline

Q4 2022
Cloud ready for **Ochre x Local Launch** event on 15th Nov 2022

2023
- Incorporate innovation via emerging tech
- 30% growth for 2023 benchmark

2024
- 100% carbon neutral by 2025
- End to end supply chain ethical responsibility and transparency

2025+

Implement cloud migration → **Expand the customer base** → **Become a global leader**

Monolithic vs Microservices

Monolithic Application

Deployed on a set of identical servers behind a load balancer

The traditional way of building applications

- Built as a single and indivisible unit

Strengths

- Less cross-cutting concerns
- Easier debugging and testing
- Simple to deploy and develop

Weaknesses

- Scaling up can become too complicated to understand
  - can only scale up the whole application
- Hard to implement changes

Microservices

Consists of a large number of services, each with multiple runtime instances

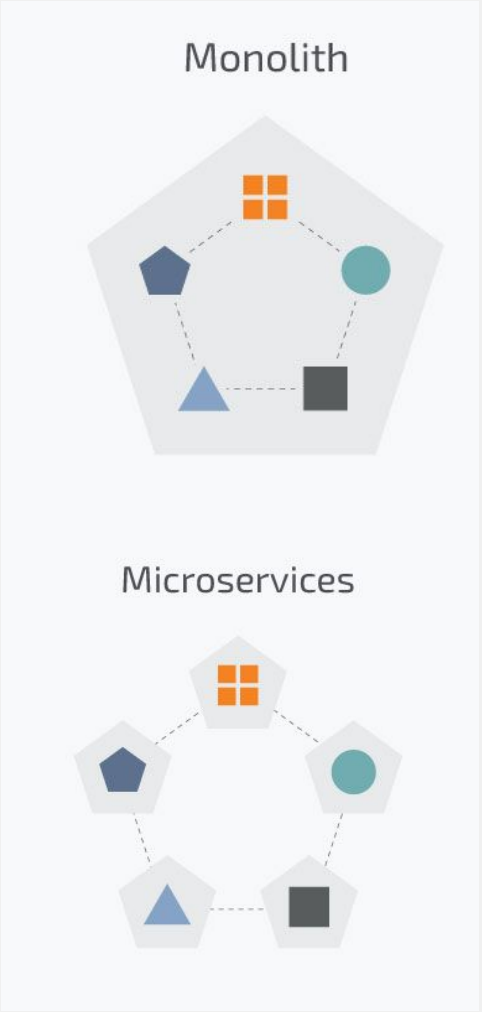
A collection of smaller independent units

Strengths

- Independent components
- Easier understanding stemming from the ability to split applications
- Better scalability

Weaknesses

- Extra initial complexity
- Testing required to analyse cross compatibility
- More complicated system distribution



Ochre's current on-prem NGINX infrastructure

LEAF CONSULTING

Current Setup

1. Online store runs on NGINX servers that house its monolithic NodeJS web application
2. MySQL database - with periodic backups stored on tapes, usually managed by a third party at their on-prem site

Why would Ochre choose a Monolithic System?

A monolithic system's strengths are very attractive to new users

- Easier debugging and testing
- Simple to deploy and develop
  - More convenient for their small and naive IT team

The on-prem infrastructure made sense for their initially small company

- Easy for Ochre to manage if things were to go wrong

Why is this a problem now?

The major weakness with monolithic systems is scalability issues

- have to scale the whole system, instead of singular components
- Microservices allow for fluctuating demands

Why Ochre should migrate to the cloud

- Empowers the company to be able to grow exponentially

Goal 2: Expand customer base by embracing innovation

LEAF CONSULTING

Examples of other Fashion Labels who have innovated procedures using the cloud

Neiman Marcus increases new application speed to market by 50%

Neiman Marcus, a well-known name in luxury retail, built a serverless architecture using AWS Amplify and AWS AppSync to speed up app development time and increase speed-to-market.

Morrisons delivers a self-serve contact center in 8 weeks on Amazon Connect

Morrisons, one of the UK's largest grocery chains, migrated its contact center to Amazon Connect, enabling it to deliver a new customer experience and become operationally self-sufficient.

Zalando tracks business performance in near real-time with AWS

Learn how Zalando, a European online fashion retailer, migrated its SAP systems from an on-premises infrastructure to AWS, and cut IT management time by more than 30%.

Pomelo Fashion enhances shoppers' experience and increases revenue

Global ecommerce service Pomelo Fashion used Amazon Personalize to create a dynamic, customized shopping experience for millions of users, boosting customer engagement and driving sales.

Examples taken off AWS

Goal 3: Become a leading sustainable fashion label

LEAF CONSULTING

Currently Ochre runs its online store on NGINX servers that house its monolithic NodeJS web application

Transferring to the cloud will make it so that Ochre doesn't need to house any infrastructure themselves because AWS wil take care of this

Sustainability Benefits

Energy Efficient
***87%** less power intensive*

Reduce Carbon Emissions
Reduced carbon emissions by 88%

More Server Friendly
77% fewer servers

Sourced with Renewable Energy
AWS plans to be powered by 100% renewable energy by 2025

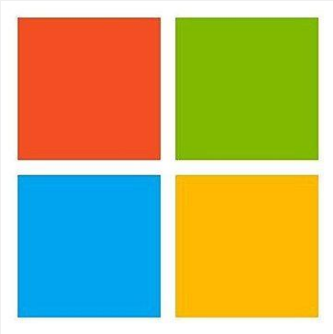
https://www.missioncloud.com/blog/5-reasons-why-the-cloud-is-environmentally-friendly#:~:text=The%20cloud%20is%20revolutionizing%20the,of%20it's%20many%20positive%20attributes.

Elastic Beanstalk vs Other AWS Solutions

LEAF CONSULTING

AWS Elastic Beanstalk	AWS Lightsail	Amazon EC2	Amazon CloudFront
• More of a "platform as a service" that packages other AWS solutions/functions such that you can easily layer your web app on top and run it with some ability to customise/adjust • Makes use of Amazon EC2 instances and connects to other services - more accessible as a result • Core advantages are the easy deployment, integration with other AWS services, low cost and quick deployment	• Able to build low cost, pre-configured apps and websites • Provides simplified management console, typically better for smaller apps • Core difference is that it's not as customisable compared to Elastic Beanstalk (more adjustments can be made on Elastic Beanstalk as Ochre sees fit given they're planning to go global)	• Bare bones service • Allows you to create a server (i.e., instances) in the AWS cloud, PAYG compute capacity in the cloud • EC2 instances are used in Elastic Beanstalk • Steeper learning curve, but more control over the specifics	• Useful for reducing latency and speeding up distribution of web content • Can complement Elastic Beanstalk but not as comprehensive in addressing Ochre's core issues • Runs different functions, CloudFront is used to create/maintain the resources that run in Elastic Beanstalk • Steeper learning curve again due to more functionality/options to control workload

Amazon Personalise Alternatives

Tool	Features	Drawbacks
 **Amazon Sagemaker**	• fully integrated service that allows data scientists and developers to quickly develop machine learning models • Machine learning as a service tool • **Pricing**: free trial, **On-Demand Pricing** that offers no minimum fees and no upfront commitments, and the SageMaker Savings Plans that offer a flexible, **usage-based pricing** model in exchange for a commitment to a consistent amount of usage.	However • focus is on accelerating machine learning as a service that offers built in high performance algorithms, managed notebooks for authoring models. • Amazon Personalise focuses more on offering real time personalisation and recommendation
 **Microsoft Personaliser**	Microsoft personaliser: • Recommendations API tool that helps customers discover items in a catalogue • store user activity to improve recommendations • Pricing: free for 50,000 transactions/month, • first 1M transactions $1.408 per 1000 transactions	However • Amazon Personalise provides access to the Amazon ecosystem where customers gain access to training, partner and support networks • Integration with Elastic Beanstalk

Elastic Beanstalk – Cost Saving Strategies Extended

LEAF CONSULTING

Matching capacity with demand

AWS Cost Explorer Resource Optimisation

- Get reports of EC2 instances that are idle/have low utilisation
- Reduce costs by stopping/downsizing these instances

AWS Instance Scheduler

- Automatically stop instances

AWS Operations Conductor

- Automatically resizes EC2 instances based on recommendations from Cost Explorer

Optimising costs by analysing usage

S3 Analytics

- Analyse storage access patterns
- Makes recommendations on where you can leverage S3 Infrequently Accessed (S3 IA) to reduce costs

S3 Intelligent Tiering

- Automatically analyses and moves objects to the appropriate storage tier

Load Balancers Check

- Use Trusted Advisor Idle to get a report of load balances, delete idle load balancers to reduce costs

Utilising Spot Instances

Amazon EC2 On-Demand vs Spot Instances

- Spot instances can reduce costs by up to 90% of On-Demand
- Typical workloads include web servers
- EC2 Auto Scaling can launch both On-Demand and Spot instances
- Auto Scaling takes care of requesting Spot instances to maintain target capacity

Elastic Beanstalk – Pricing Options & Other Information

- No additional charges for Elastic Beanstalk
- Pay for AWS resources created to store and run the app on an as-needed basis
- Use both On-Demand and Spot instances to meet target capacity and minimise EC2 costs

On-Demand

- Pay for compute capacity by the hour or second
- No longer term commitments or upfront payments
- Increase/decrease compute capacity depending on demands of application
- Recommended for:
  - Applications with short-term, spiky or unpredictable workloads
  - Applications being developed or tested on Amazon EC2 for the first time

Spot Instances

- Can request spare Amazon EC2 capacity for up to 90% off the On-Demand Price
- **Drawback**: price fluctuates depending on customer demand, hence not as reliable/consistent

Elastic Load Balancing

- Automatically distributes incoming traffic across multiple targets and can automatically scale to the vast majority of workloads

Amazon S3

- Object storage server
- Offers scalability, data availability, security and performance
- Can store and protect any amount of data for a range of use cases
- Amazon S3 provides management features to optimise, organise and configure access to data
- Can be used with Amazon EC2

Elastic Beanstalk – GeoNet, Rachio and CrowdChat Case Study Extended

LEAF CONSULTING

GeoNet: NZ geological hazard monitoring system

Challenge: Manual entry required, processes could take very long, unappealing since situations could be urgent, high cost to maintain text messaging services

AWS Solutions & Benefits: uploaded application to AWS Elastic Beanstalk, low latency and rich feature set, trouble free environment, Auto Scaling instances support 3x rise in demand, improved efficiency for GeoNet Project team

Rachio: WiFi based irrigation controller that allows consumers to optimise irrigation schedules

Challenge: needed to go to market quickly, limited resources, needed scalability

AWS Solutions & Benefits: used Elastic Beanstalk to deploy and manage web apps and website, ease of use, product reached market 40% faster due to highly available infrastructure with load balancing, auto-scale possible to meet demand during peak season

CrowdChat: Aggregates conversations online by hashtags for users to find topics of interest

Challenge: scaling challenges, focused on rapid development, pushing code all the time, needed automation to free up time, huge need for storage and move it around quickly

AWS Solutions & Benefits: get to market faster, use Elastic Beanstalk to deploy web app quickly, store more than 250m documents, runts big data workloads and development/testing environments

Elastic Beanstalk – Ebury Case Study

LEAF CONSULTING

Ebury - An Overview

Ebury combines financial services expertise with innovative technology to help businesses better fund and manage their international trade. The firm works closely with its customers to meet their individual requirements, giving them the tools they need to trade internationally with confidence.

The Challenge

- Needed a more flexible, cloud-based architecture to support expansion into new regions.
- Wanted to liberate its infrastructure team from time-consuming system management and provide on-demand scalability.
- Required a highly available infrastructure and the ability to develop new services quickly to meet customer requirements.

The AWS Solution & Benefits

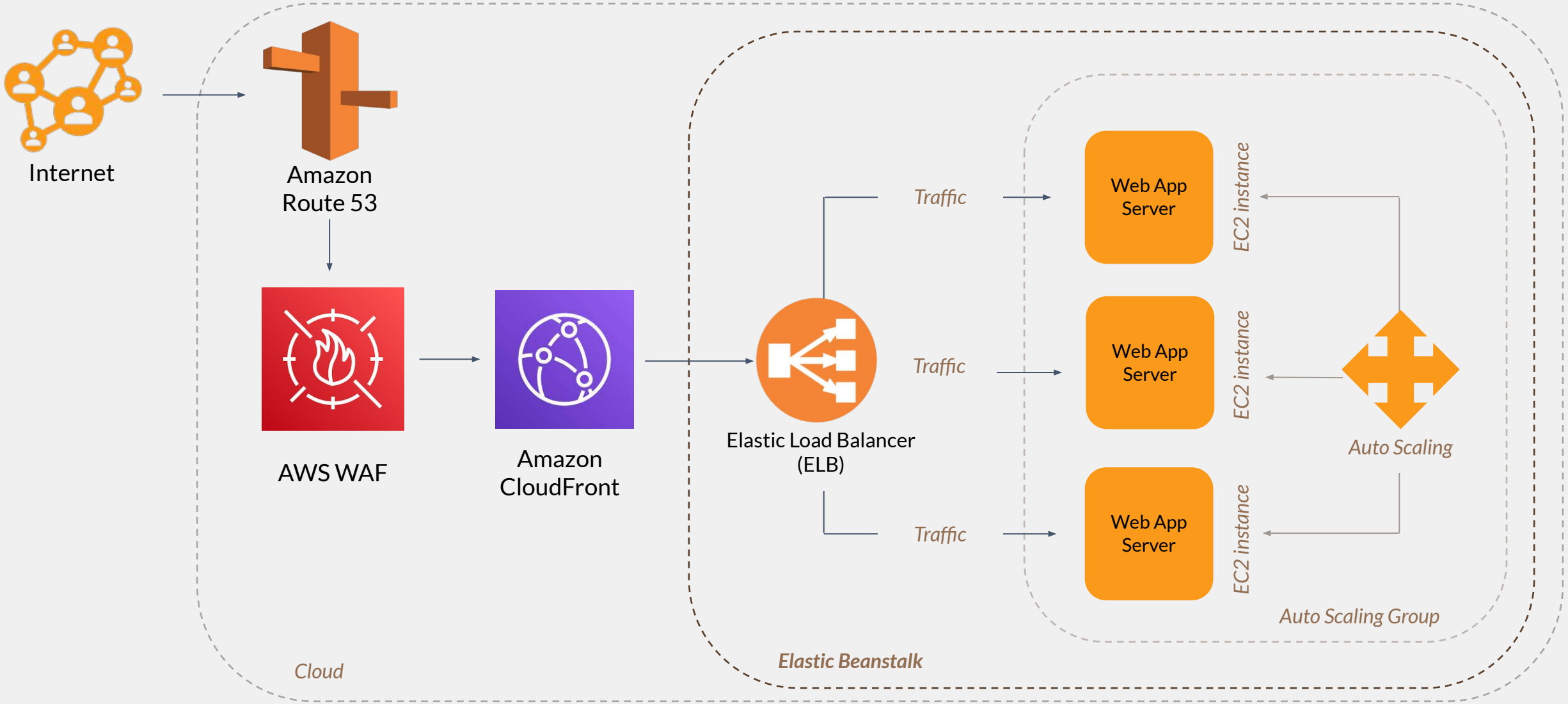
- Migrated from its existing server provider to AWS, using Amazon Elastic Compute Cloud (Amazon EC2) and AWS Elastic Beanstalk among others, it monitors resources through Amazon CloudWatch
- Peace of mind from "phenomenal" uptime, **no outages with AWS**, and **availability has been excellent** compared with its previous supplier
- **Lean IT and happy customers:** With less time spent on system admin, Ebury can scale to **meet the demands of its customer base without increasing the size of its infrastructure team**
- Support for an expanding portfolio: Ebury is able to use AWS to offer software as a service to its clients, **creating new business opportunities.** The firm manages an entire instance of its stack on behalf of one of its customers.

Ebury

Security and latency reduction services

AWS Service	Features	Integration with Elastic Beanstalk
 **Web Application Firewall (WAF)**	• Provides additional protection against web attacks • Allow or block all requests except the ones you specify, based on e.g., IP addresses, values of query strings etc. • Real time metrics, rules you can reuse for multiple web apps	• In an Elastic Beanstalk environment with an Application Load Balancer, WAF can be used as a custom resource to protect instances against attacks • Alternatively, if using CloudFront, can specify one or more CloudFront distributions that you want WAF to inspect
 **CloudFront**	• Speeds up distribution of static and dynamic web content e.g., .html, media files etc. to end users • User is routed to edge location that provides the lowest latency, so content is delivered with the best possible performance	• After creating and deploying Elastic Beanstalk application, can sign up for CloudFront to help distribute content

AWS WAF and Amazon CloudFront Integration with Elastic Beanstalk



AWS Web App Firewall and additional solutions

Ochre could use all three services together to create a comprehensive security solution or opt for just WAF:

AWS WAF	AWS Firewall Manager	AWS Shield
• Provides granular control over protection that is added to your resource, can use this alone • Allows you to control access to your content based on specified conditions • All starts with WAF, can automate and simplifying WAF management via AWS Firewall manager	• If we want to use WAF across accounts or accelerate WAF configuration/automate protection of new resources, can add Firewall Manager • Simplifies administration and maintenance tasks across multiple accounts for variety of protections (including WAF, AWS Shield Advanced)	• Additional features on top of WAF e.g., dedicated support from the Shield Response Team (SRT) and advanced reporting • AWS Shield Standard is automatically included (**at no extra cost)** beyond what you already pay for WAF and other AWS services • AWS Shield Advanced **(at an additional cost)** provides expanded DDoS attack protection for EC2 instances, ELB load balancers, CloudFront distributions and Route 53 hosted zones

AWS WAF Pricing

LEAF CONSULTING

AWS WAF

You will be charged for each web ACL that you create and each rule that you create per web ACL. In addition, you will be charged for the number of web requests processed by the web ACL. Pricing is same across all AWS Regions. Monthly fees are prorated hourly. Pricing for AWS WAF Classic is same as shown in the table below.

Resource Type	Price
Web ACL	$5.00 per month (prorated hourly)
Rule	$1.00 per month (prorated hourly)
Request	$0.60 per 1 million requests

You will be charged for rules inside rule groups that are created by you. In addition, you will be charged $1.00 per month (prorated hourly) for each rule group or each managed rule group that you add to your web ACL.

Sustainability goals

Ochre's Sustainability Goals: To become a leading sustainable fashion label, becoming 100% carbon neutral by 2025 and maintaining end-to-end supply chain ethical responsibility and transparency

Environmental benefits of migrating to AWS cloud

AWS Cloud solutions have helped companies advance towards carbon neutrality:

3.6x more energy efficient

AWS's infrastructure is 3.6 times more energy efficient than the median of U.S. enterprise data centers surveyed due to managing more energy-efficient server population and much higher server utilization.

88% lower carbon footprint

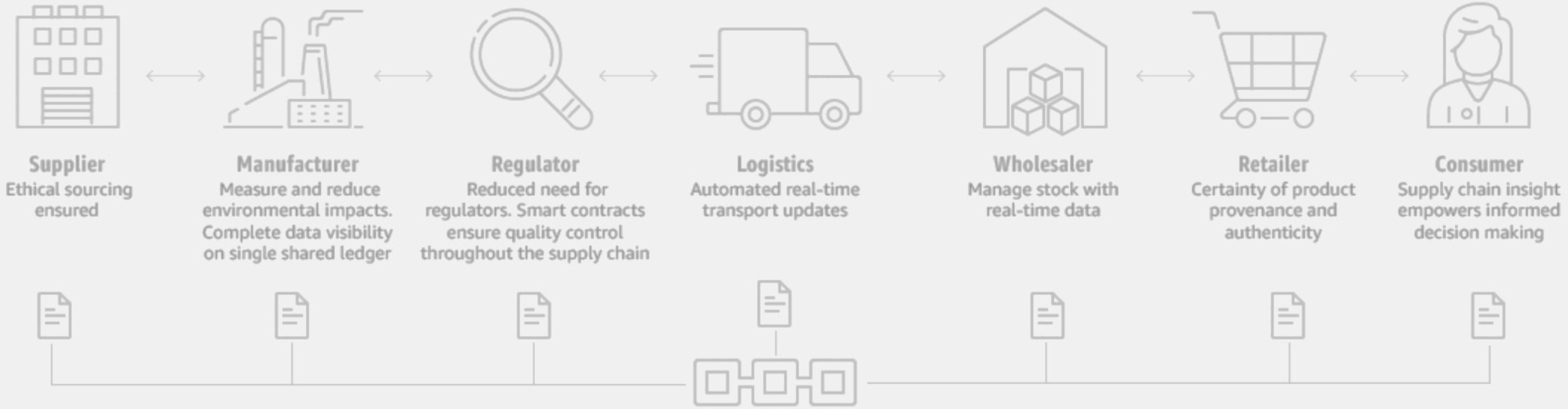
AWS cloud software is able to perform the same task with a lower carbon footprint by factoring in the carbon intensity of consumed electricity and renewable energy purchases to reduce associated carbon emissions

Source: AWS,2019

Amazon managed blockchain helps manage sustainability practices

- To meet sustainability commitments, organizations must measure the impact of the entire supply chain
- But typical challenges like transparency and data reconciliation make it difficult
- Product and facility audits/certification can be vulnerable to tampering
- Blockchain ensure visibility of the entire supply chain and gain insight into the sustainability practices of each participant
- Consumers/Creators can watch the process unfold every step of the way
- With every step, audits and practices can be seen and verified by the consumers themselves

Amazon Managed Blockchain



What is AMB

The blockchain tech allows multiple parties to contribute to a single tamper-proof shared ledger using a peer to peer network so companies may query their location and status at any given time. This is also used as a way to verify product authenticity and ethical supply practices

AMB x Retail

Clothing items have short fast-paced product cycles that pass through several manufacturing sites

Retailers can document and share the sustainable and ethical provenance in every step of the way

Amazon Managed Blockchain (Costs)

A full production network cost

Consider a network with members from multiple AWS accounts, and the member has two large peer nodes (worst case) for high availability and performance and each peer node has 500 GB of storage

Network member cost: (One standard edition member) x (1 hour)	$0.55
Peer node cost: (1 member)x(2 large nodes)x(0.615)	$1.23
Peer node storage cost: (2 peer node)x(500 GB)x(0.1 per month)	$0.139
Data written cost: (100 MB per hour) x(0.1 per GB)	$0.01
Total production network cost	$1.93/ per hour

A full production network cost

You main goal is to track clothing items to the consumer and required two nodes with high availability. Each node has 300 GB storage with 30 million requests being made

Monthly Peer node cost: 2 x (0.136 x 24 hours) x 30 days	$195.84
Monthly Peer node storage cost: (2 peer node)x(300 GB)x(10 per month)	$60
Monthly requests: (30 mil) x ($3 per mil)	$9
Total production network cost	$346

AWS Data Encryption Options

- All AWS services offer the ability to encrypt data in transit and at rest
- Variety of options that can be explored in future, currently, security is not a key issue that Ochre has outlined but is still critical to the cloud migration journey regardless and shouldn't be overlooked

AWS Key Management Services (KMS) integrates with the majority of services to let customers control the lifecycle and permissions on the keys used to encrypt data on the customer's behalf

- Integrated with Amazon Route 53, Amazon S3, Amazon Personalise etc.

Encryption in transit

- Encrypt connection using Secure Sockets Layer (SSL) or
- Client-side encryption (where the object is encrypted before it's sent)

Encryption at rest

- Services available include:
  - Amazon RDS's Data Protection Services
  - Amazon S3's Data Protection Services
  - Encrypting Data and Metadata in Elastic File System

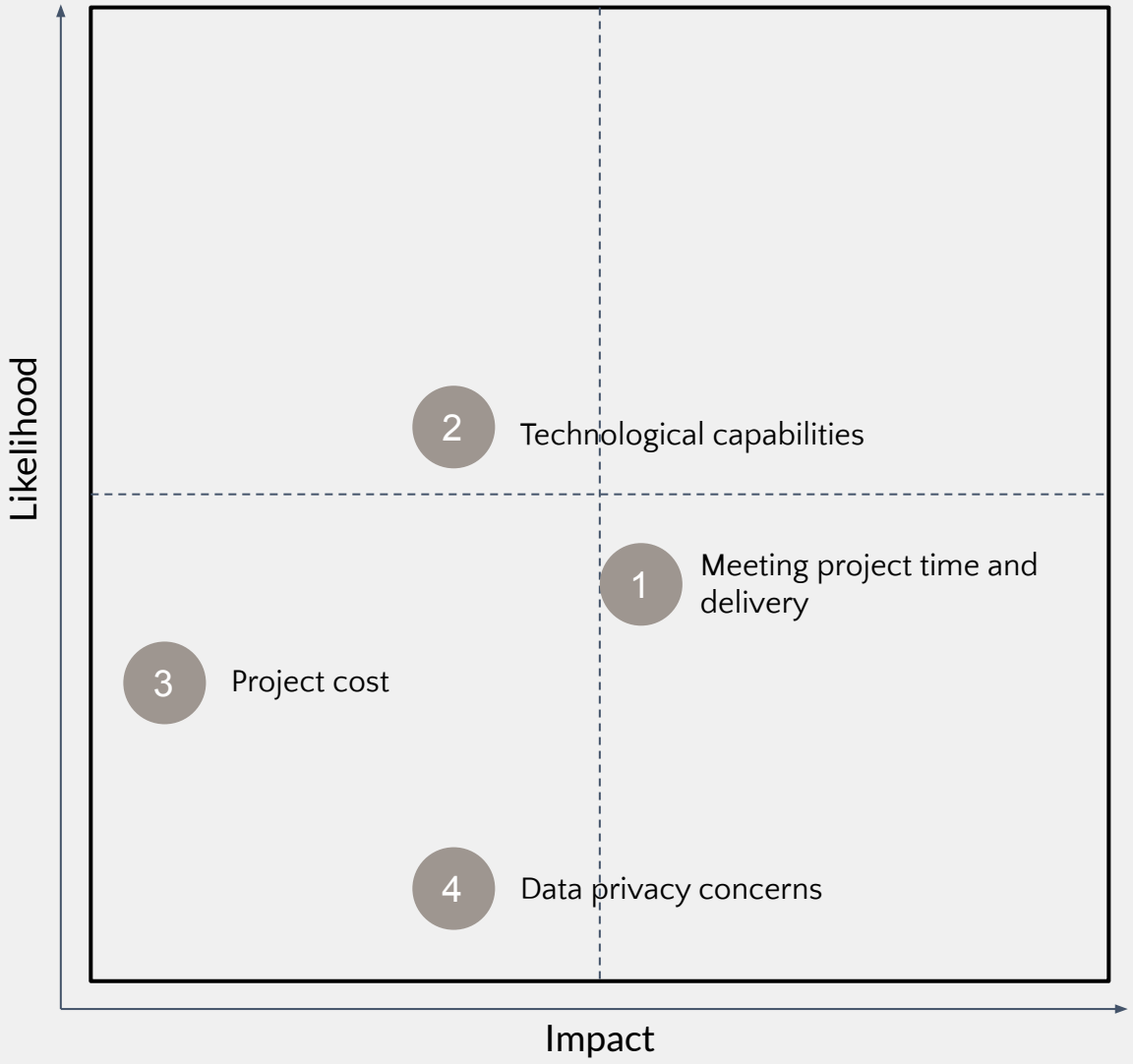
Data Storage Solutions

LEAF CONSULTING

When migrating to the cloud, compare and contrast the options that are available

AWS Aurora	Amazon RDS	Amazon RedShift
• MySQL and PostgreSQL compatible database built for the cloud • High performance, flexible scaling, and low latency making it ideal for data collection, storage and retrieval • Easy integration with S3, Sagemaker, Comprehend, Lambda, Cloudtrail, etc. • $0 transfer IN to Aurora from internet • $0.11 per GB Month storage • $0.22 per 1 million requests	• Easy integration with MySQL database (Can use an AWS Aurora engine) • Easily scalable, high performance • Uses SSD storage for better I/O throughput • Cost-effective for general purpose uses • $0 transfer IN to RDS from internet • $0.138 per GB Month Storage • $0.2 per hour for on demand instances	• Tailor-made to query millions of rows over petabytes of data with more focus of going down the column rather than going across the rows • Focuses for on the OLAP (Analytical data) side like budgeting, forecasting, analysis, discovery etc. • Aurora is optimized for OLTP (Transactional) workloads that deal with several transactions concurrently • $0.33 per hour of on-demand • $0.098 per GB of data IN to redshift

Risk and Mitigations



	Core Risks	Mitigation Strategies
1	Meeting project time and delivery • adhere to 15th Nov launch date	Consider implementation methodology: • agile scrum approach ensures project can achieve faster time to market
2	Technological capabilities • limited IT staff with no experience with cloud migration/technology	• free training and upskilling offered by Amazon • DevAx program • no prior machine learning experience required to implement Amazon Personalise campaigns
3	Project cost: • risks of exceeding budget of Ochre as a medium sized business	• Flexible pricing options by Amazon for Elastic Beanstalk and Personalise • Regular progress checks to ensure progression is on track
4	Data privacy concerns • cybersecurity risks associated with cloud databases • risks of compromising customer data	• AWS offers secure systems with 256 bit encryption • transparency in T&Cs for usage of customer data