

**Prudent Global**

**Business Evaluation**

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| **Online direct-to-consumer Lagos-based footwear and apparel retailer** | **Values** | **Immediate Goals** |
| Cymbal Direct has experienced rapid growth and has had trouble meeting demand. The organization wants to implement solutions that will help scale services and personalize customer experiences. | Customer experience  Leveraging analytics  Improving digital marketing | ● Easily scale to handle additional demand when needed  ● Streamline development  ● Ensure that developers spend as much time on core business functionality as possible, and not have to worry about scalability wherever possible  ● Let partners order directly via AP  ● Deploy a production version of the social media highlighting service and ensure no inappropriate content |

**Key business assumptions**

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| **Stream real-time video to their pilots, as well as their coordinates, so that customers can see the location of their shoes on a map** | **Improve customer experience and easily scale to handle additional demand when needed** | **Potentially different storage solutions for applications and analytics** |

**Technical Evaluation**

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| **Existing Environment** | **Technical Watch points** | **Proposed Solution** |
| Website frontend, pilot, and truck management systems run on Kubernetes  The social media highlighting service currently runs on a single virtual machine  ● SuSE linux  ● Python | ● Move to managed services wherever possible  ● Ensure that developers can deploy container based workloads to testing and production environments in a highly scalable environment.  ● Standardize on containers where possible  Deploy a production version of the social media highlighting service as is.  Refactor the VM so that it can scale out instead of scaling up  Ensure no inappropriate content | ● Global HTTP(s) Load Balancer  ● GKE in two regions  ● Autoscaler  ● Private cluster  ● Separate projects for website / pilot / truck management - dev,test,staging for each ● Cloud Build  ● Cloud Source Repository  ● Artifact Registry  ● Migration type: lift and shift  ● Automation tooling: Terraform  ● Firewall rules - http/s  ● Separate IAM roles for developers and devops  ● Replace GKE with Cloud Run for website (future)  ●Compute Engine  (future)  ●Containers  ●GKE autoscaling deployment.  Image Classification task |
| The social media highlighting service has some performance and scalability issues.  ● MySQL DB  ● Redis | Storage  ●Externalize state to a separate database service  ● Multiple databases including MySQL and Redis | ● Cloud SQL (for MySQL data)  ● Memorystore for Redis |
| ●Many of the APIs are simply built into monolithic apps, and were not designed for partner integration, lacking functionality such as versioning.  ●APIs do not have a built-in mechanism for supporting multiple accounts and granting access is very limited as a result. | API Integration  Partners to integrate with Cymbal Direct’s APIs to submit orders and specify customizations with versioning enabled | ●Configure access with IAM  ●Apigee  ●Cloud endpoint |
| ●Positional data for drone and truck location kept in MongoDB database clusters  ● Drones connected to virtual machines using a stateful connection, streaming video via RMTP to the pilots and sending commands from the pilots to the drones | Data needs  ●Stream IoT data from drones  ●Store the streamed data | ●IOT Core  ●Pub/Sub  ● Dataflow for bulk and stream processing  ● BigTable ideal for IoT, gives consistently sub-10ms latency, and can be used at a petabyte scale  ● BigQuery for analytics |