

Business and IT alignment with the Value Map and SEAM: Implementation and First Solutions in the Context of a Start-up

Semester project - LAMS Laboratory

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Summary

- CheeseCat Company Overview
- Part I CheeseCat strategy
 - Strategy Introduction
 - Ecosystem Definition
 - Organisational Analysis
 - Issues & Solutions
- Part II Analytical IT solution
 - Business Requirements
 - Functional Requirements
 - Implementation



Company Overview



CheeseCat Strategy

Adaptative Strategy

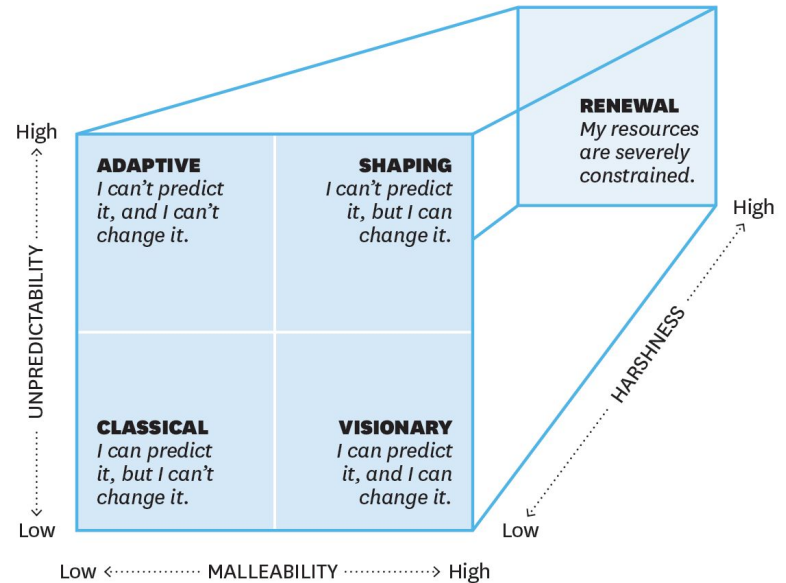
- be fast
- adapt to change
- continuously experiment

Lean methodology

- shortening time to release
- progress through validated learning
- goals in term measurable metrics

5 Approaches to Strategy

And the business environment in which you might use each one.



SOURCE BCG

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Ecosystem Definition

Advertisement

- Who is the main adopter?
- The advertiser?
- The user?

The value map - Trade your mind

- Service model
- Alignement

Main Supplier

Cheese Cat

Main Competitor

Bitcoin Faucet

Main Adopter

Aarki

Key Partners

- Amazon
- Google Analytics
- Apache Cordova
- BitcoinMiners
- Google Play
- App Store
- Unity

Components

- App distribution
- Backend servers
- Blockchain
- Hybrid application
- User stats

Features

- Arcade game
- Bitcoin distribution
- Leaderboards
- Number and length of ad display
- Number of users
- Retention rate
- Type of users

Benefits

- Discover other games through advertising
- Increase audience
- Match advertisers and audience
- Play arcade game
- Reach target audience
- Win Bitcoins
- Win weekly competition

Influencers

- Google AdMob
- Salt (advertiser)
- Le Matin
- Bitcoin news ecosystem
- KingCoin (player)

Regulation Authorities

- AdMob
- Google Play
- App Store

Supplier Value Network



Main Supplier / Key Partners

-  Cheese Cat
-  Amazon
-  Google Analytics
-  Apache Cordova
-  BitcoinMiners
-  Google Play
-  App Store
-  Unity



Components

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	App distribution
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Backend servers
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Blockchain
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hybrid application
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	User stats

Components

1. App distribution

2. Backend servers

3. Blockchain

4. Hybrid application

5. User stats

Features

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1. Arcade game	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Bitcoin distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Leaderboards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Number and length of ad display	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Number of users	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Retention rate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Type of users	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Benefits

1. Discover other games through advertising

2. Increase audience

3. Match advertisers and audience

4. Play arcade game

5. Reach target audience

6. Win Bitcoins

7. Win weekly competition

Main Adopter / Key Influencer



Benefits

Discover other games through advertising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Increase audience	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Match advertisers and audience	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Play arcade game	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reach target audience	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Win Bitcoins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Win weekly competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Main Supplier

Cheese Cat

Main Competitor

Saru Tobi

Main Adopter

KingCoin (player)

Key Partners

- Google AdMob
- Amazon
- Google Analytics
- Apache Cordova
- Google Play
- App Store
- Unity

Components

- App distribution
- Backend servers
- Customized flow
- Graphics
- Hybrid application
- User stats

Features

- Arcade game
- Leaderboards
- Multiplayer game
- Quality and finition of graphics
- Rightly calibrated difficulty
- Wide range of levels

Benefits

- Help audience discover local entertainment
- Play a social game
- Play an entertaining game
- Play arcade game
- To get excited
- To pass time while waiting
- To relax
- To solve challenges or express creativity
- Win Bitcoins
- Win weekly competition

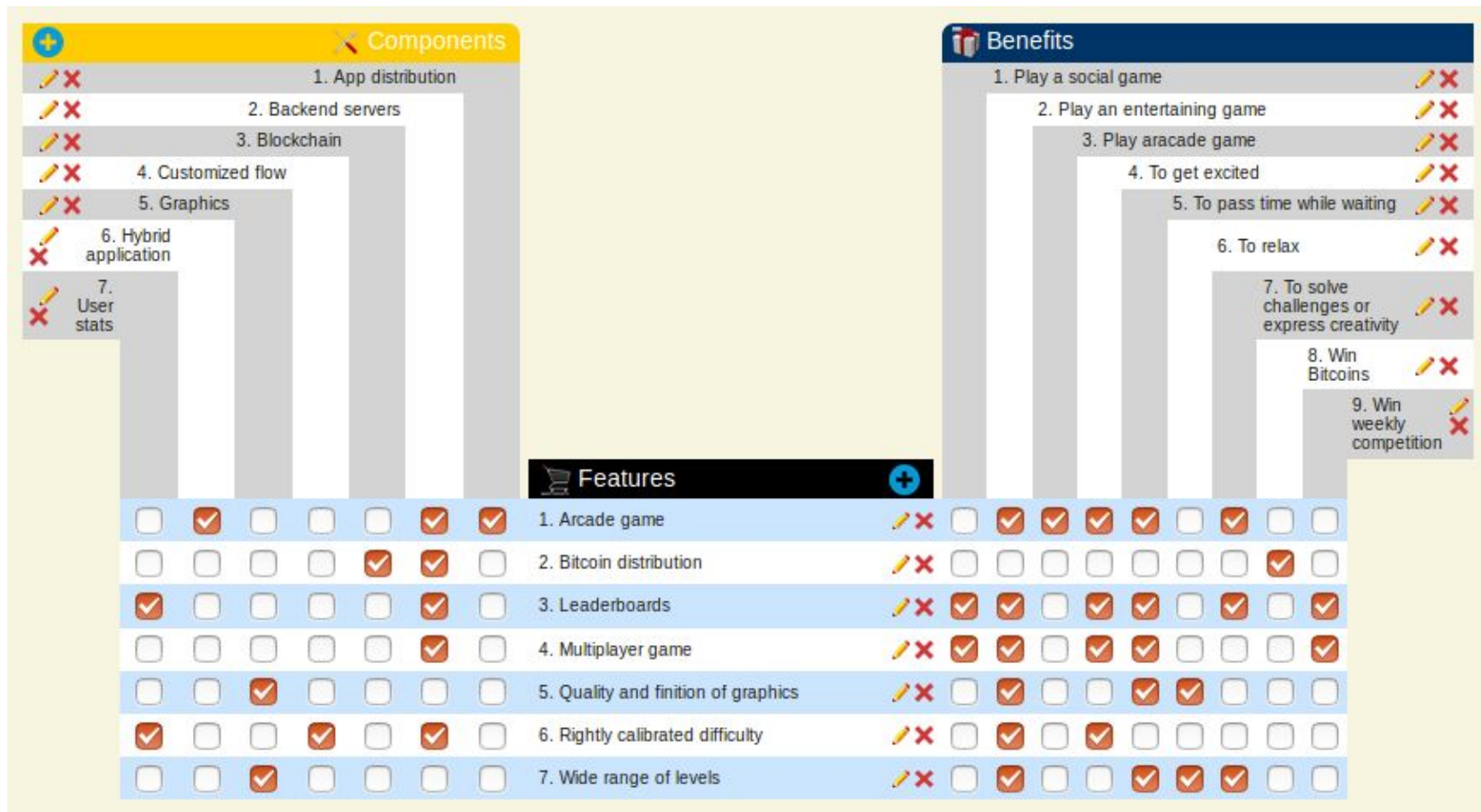
Influencers

- Aarki (ads company)
- Google AdMob (ads auction)
- Salt (advertiser)
- Le Matin
- Bitcoin news ecosystem

Regulation Authorities

- AdMob
- Google Play
- App Store

Supplier Value Network



Value Map - Conclusion

We create value

- For both

We capture value

- From both

- Both maps add details
- Must be read jointly
- Two step process

Present

- Focus on user
- As impact on advertiser limited
- And most actionable features create value for user

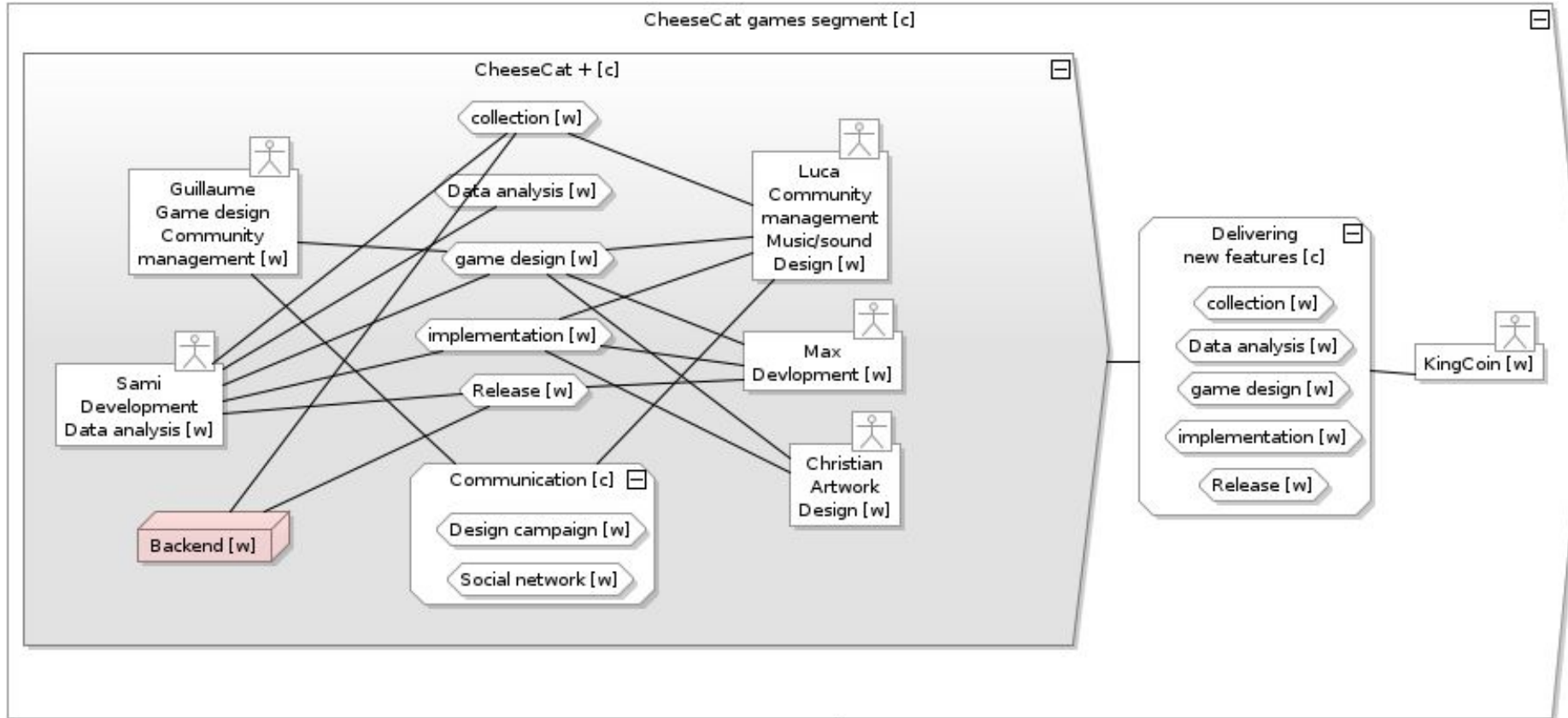
Future - Insight with value map

- Leverage competition even more
- Cut the middleman
- Work on user segmentation

CheeseCat - Organisational Analysis

- Five people
- Young company
- Service provided require complicated mfg process with more steps than there are people
- 15 IT systems

SEAM - Delivering New Features Process - AS-IS



Issues & Solutions

- Roles not clearly defined
- Data analysis is manually conducted
- Responsibilities not clearly defined
- Monday meetings cover all aspects
- Complex system: managing evolution with SEAM
- Roles and responsibilities + discussion on governance
- Analytical IT solution

Governance

- If everyone needs to talk with everyone: $O(n^2)$ communications

But

- Creative process, everyone's inputs is important and valuable!

Sociocracy

1. Decisions are made by consent
2. Organisation is composed of circles
3. Each circle elects a representative
4. Election are made by consent

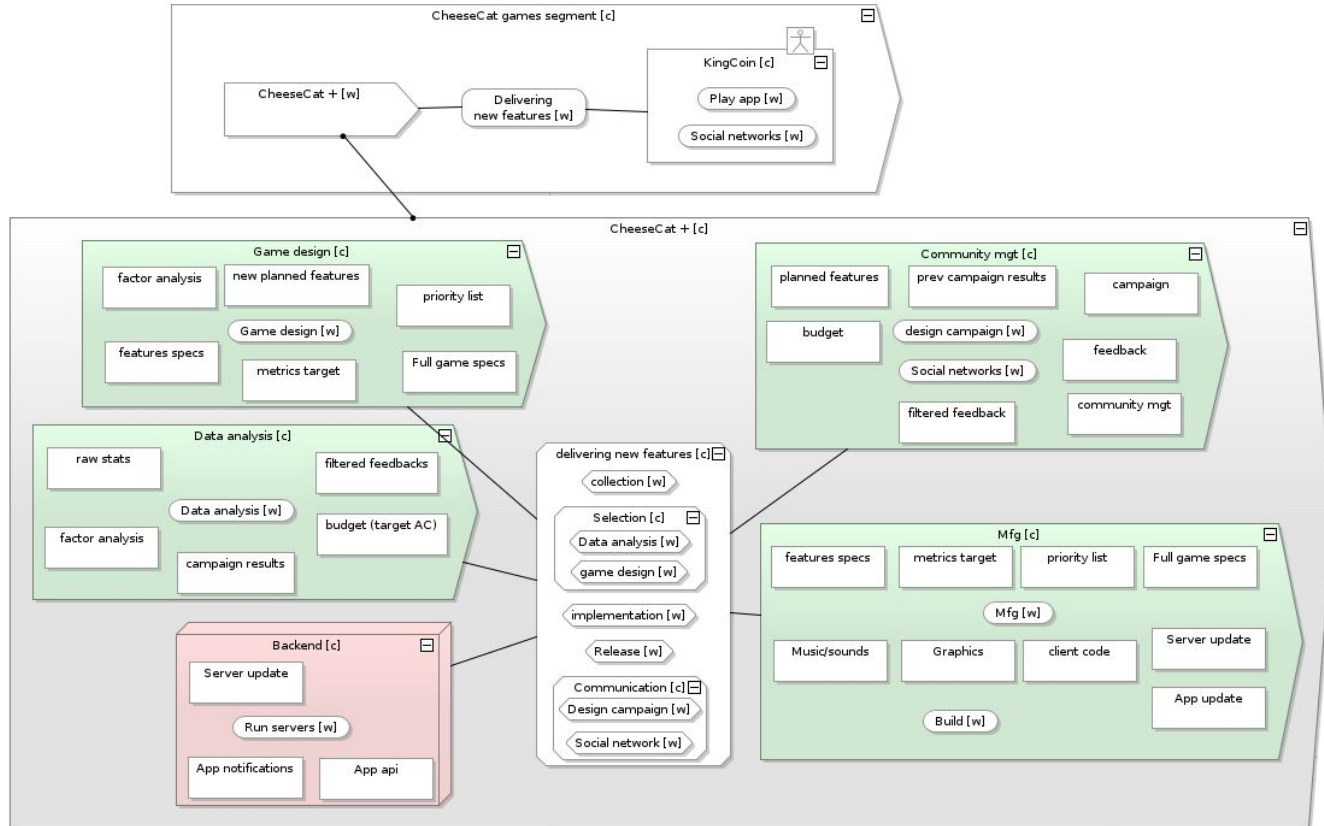
Holacracy

- Similar to sociocracy
- core structure: *role*

Roles

- Community Management
- Game Design
- Design
- Artwork
- Music / sound
- Devloppement
- Data Analysis

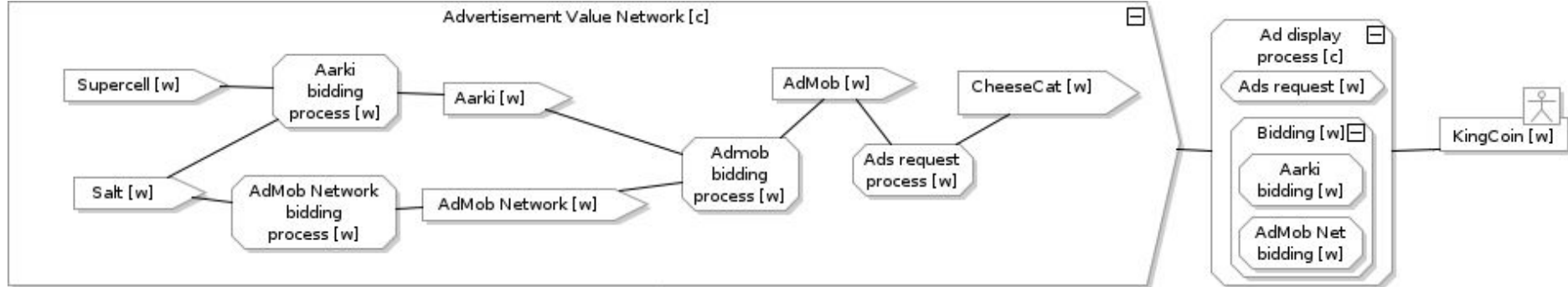
SEAM - Delivering New Features Process - TO-BE



Appendix - Advertisement Value Network

- Admob as ad source
 - Auction platform
- Contain advertiser networks
 - Eg: Admob network, Aarki,...
 - Bidding process
- Networks have multiple clients
 - End clients, eg Salt, Supercell...

Appendix - Advertisement Value Network



Part II

Analytical IT solution

Analytical IT solution - Business Requirements

- Basic Health Indicators
 - #user, #session, Session duration, Ads display, Sales
- Audience
 - Demographics
- Prediction
 - Supervised - predict basic health indicator
 - Unsupervised - clustering, distribution
- Impact Tracking
 - Features impact
- Existing Tool
 - Google Analytics
 - Basic health ind.
 - Audience
 - Impact tracking
- Custom Tool
 - Prediction

Analytical IT Solutions - Business Requirements 2

Histogram

- Insight on probability distribution
 - Normal / uniform
- Shows pattern in distribution
 - Symmetric / Skewed
 - Uni / multimodal

Scatter plot

- Display two variables
 - Indication on correlation
 - Color utilization for basic prediction
 - Bubble display to account large number of similar points

Functional requirements

Front-end collection

- Fast, easy implementation
 - Live collection
- Reuse existing code
 - Google Analytics event tracking
 - Proxy pattern

Storage

- Each click choices registered
- Distinguish between events:
 - Screen
 - Category
 - Action
 - UserId
 - Label (opt)
 - Value (opt)

Functional requirements 2

Back-end

- Again, reuse existing infrastructure
 - Node.js
- Build DB queries
- Large number of requests, needs to be very fast
 - Nginx proxying
 - Minimal checks before insert (just authentication and input cleaning)

Front-end visualization

- Web front-end, use HTML, css, Javascript
- Parameterisable requests
 - On tables, columns, rows
- Display histogram and scatter plot

Analytical IT Solution - Implementation

Back-end

- 5 HTTP API route
 - HTTPS at proxy level
 - Corresponding SQL queries: 4 SELECT, 1 INSERT
 - Sql queries for table schema => generic solution, zero overhead on schema change
- Routes for static files
 - Cached in memory
- Most work delegated to DBMS
 - Appart for binning histogram

Database

- Postgresql DBMS
- Index on all rows
- JOIN on UserId on all tables (dynamic SQL queries)

Analytical IT Solution - Implementation 2

Frontend - collection

- Unity (c#)
- Proxy pattern
 - Substitute GA.LogEvent by custom LogEvent with same parameters
 - Proxy forward call to GA and HTTPS call to API

Frontend - visualisation

- Predictor selection via inputs
- Canvas display
- 2 Libs used for display
 - Bootstrap for styling (reuse viz in other docs)
 - Chart.js for plotting

Analytical IT Solution - Demonstration

Thank you!

Any questions?