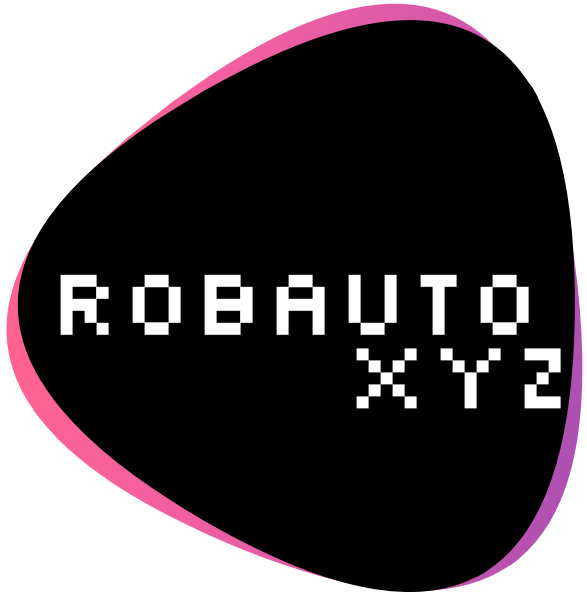
Game Design Planning



I, Game & Robot Hackathon sponsored by DeAutoDAO

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1 - Introduction

This Game Design Planning is the top-level design of the game with the title "**Robauto.xyz**" (referred as Robauto) and it is created as a contribution to the <I, Game & Robot> **Game Design Planning challenge** at the DeAuto hackathon at Gitcoin.

All the documents and assets can be found at the following GitHub repo:
https://github.com/ivanmolto/robauto-xyz-gdp

Scope

This GDP is open to everyone but is intended to be read by the mentors of the panel who will judge the hackathon submissions, other challenges' participants at the DeAuto hackathon, and programmers, artists, and producers involved in the game design implementation (if applicable).

Teaser

Robauto.xyz is a mobile robo-vehicle simulator and race game which links gaming and the real world decentralized automotive ecosystem through a creator economy powered by Web3.

2 - Attribution

As a reference, and as far as we know, other challenge has evolved the insights of our document on this challenge to another challenge of the DeAuto hackathon <I, Game & Robot>. It is the submission **Robauto.xyz monetization model design** found at the following GitHub repo: https://github.com/ivanmolto/robauto-xyz-mmd

Please keep an eye as additional hackers/challenges would be evolving the outputs of this document.

Several times in this document will be referenced the research document "**Q3 2022 State of the Crypto**" by Binance Research.

3 - Genre

Robauto will be a robo-vehicle simulator + racing + DeFi + collectibles game.
That makes it a game with several verticals, and a huge potential to appeal a large audience of gamers.

About Web3 games by genre we found that action, adventure, and collectible are the categories with the greatest number of games.

Ranking of the Robauto's genres: Collectibles (3), DeFi (7), Simulation (11) and Racing (14) according to the Q3 *2022 State of Crypto*.
These ranks can change as blockchain games are still in its early days. With only 30% of games live, most games are still under development.

4 - Robauto game

You are a crypto regen that believes that the decentralized open mobility and sustainable robo-vehicles are the basis of a regenerative creator economy in a new auto ecosystem.
Your job is to demonstrate it and convince the entire society.
For this you need to build and customize your own robo-vehicles and make them the best performers in as much cities as possible. As a reward you will get in-game tokens (RBT) and also governance tokens (NEV).
And a chance to get your robo-vehicle built in the real-world.
With great power comes great responsibility!

5 – Moodboard

6 - Gameplay
The Garage

The Garage is the key scenario in the game.

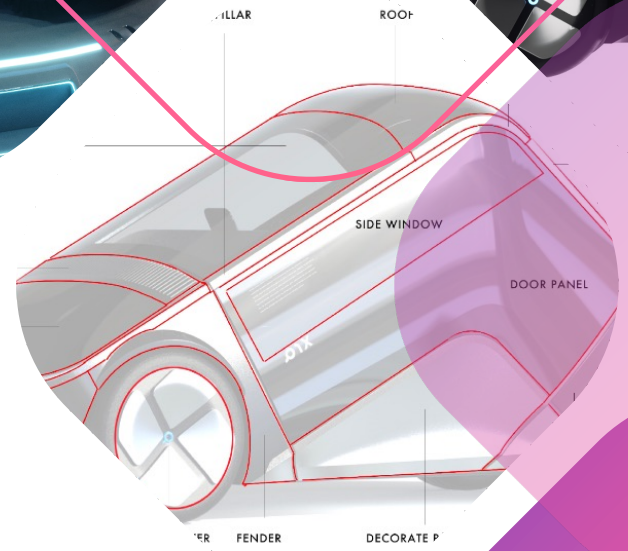
Once the players have acquired the Genesis City NFT of one of the cities, they get randomly a robo-vehicle with its different parts. From there, it is up to the player start racing or customize the robo-vehicle to get the best performance. In the garage we will find the parts (composable NFTs) marketplace to build the desired robo-vehicle.

The players will need an in-game token (RBT) and the governance token(NEV) to build the best.

In the marketplace, players can buy, sell, and auction Genesis City NFTs, and robo-vehicles parts.

The garage equipment is also customizable and upgraded (via NFTs)

More about the monetization in the Monetization Model Design document.



7 - Gameplay:
Build Robo-vehicle

The **NEV robo-vehicle** offers a wide range of parts to be customized in the exterior, Interior and OS.
Here it is a small sample of composable NFTs to be trade: decorate panels, engine, fender, wheelhub cover, pillar, front wind shield, grille, hood, bumper, door panel, and a lot more.

All the parts will be found in the in-game marketplace to be traded.

8 – Gameplay: Cities & Tracks

Once the players have customized their robo-vehicles with the resources they have got from the Genesis City NFT (one for each city is required) and the parts they have acquired from the in-game marketplace...**it is time to race against the time!** This is not a multiplayer race to ease the feasibility of the game.

But first players will need to purchase tickets to race using the RBT in-game tokens.
Each race attempt will require a ticket (NFT/token gated access) and the price will increase for each try.
Only the best performance will be recorded.
Staking your robo-vehicle in the city and based on the performance (time, damage,...) in the city tracks, players will be ranked in the city leaderboard.
And a distribution of RBT in-game tokens and NEV governance tokens will be awarded from top rank to bottom from the weekly pool of rewards.

Additionally, each city will offer the possibility to stake NEV tokens and will reward its stakers with different APY rewards.

Each city has different types of obstacles/enemies: weather, other robo-vehicles, traffic lights, security robots,...We will describe the initial batch of cities.

Maritime City

- A warm and humid nice seaside city. Sometimes it is partly cloud.
- Driving experience is a pleasurable chaos.
- Aspiring smart-city but with bad maintained tracks and debris all around.
- Some showers and strong wind can affect the brake performance and the aerodynamics of robo-vehicles.
- Stake your robo-vehicle here and participate in the RBT reward pool.

Arid City

- Extremely hot and dry city close to the desert.
- Ultrahigh temperatures overheating the robo-vehicle engine.
- State-of-the-art tracks but with lots of radars and security robots.
- Some severe sandstorms can affect the brakes, tires and aerodynamics of the robo-vehicles.
- Stake your robo-vehicle here and participate in the RBT and NEV reward pools.

Green City

- Abundant rain fall, uniform temperature and high humidity.
- A smart-city with a green and sustainable plan.
- Lots of radars, traffic lights, and security robots.
- Well maintained tracks but rain will affect the performance of the robo-vehicle.
- Deal with carbon credits/tokens here.

Dark City

- Very cold, and snowy city challenging the robo-vehicle.
- Dark, and oppressive city close to mountains.
- Lots of traffic-lights and slow robo-trucks.
- Frozen tracks can surprise players.
- Stake your robo-vehicle here and participate in the high APY RBT reward pool.

Neon City

- Hot and cloudy city.
- Lots of metal and neon lights with speedy tracks.
- Climate change fight debt.
- Contamination storms dramatically reducing the visibility of the players.
- Stake your robo-vehicle here and participate in the high APY NEV reward pool.

9 – Gameplay: Weather Environment

The weather environment will have an impact on the robo-vehicles.

Some examples:

- A rainy environment can produce wet conditions with standing water on the tracks and reduce the visibility of the players.
- An extreme climate over heating can produce engine failure performance.
- The wind will affect the aerodynamics of the robo-vehicle

The players must build /customize their robo-vehicle/s to work with the conditions they will find in each one of the cities with their skills and resources (NFT, RBT, NEV) available.

Players will be allowed to **manipulate the weather environment** with special NFTs.

10 – Target Platforms

Robauto will be a blockchain mobile game and it will be published independently.
The target platforms for this game are mobile devices (but a web-based version of the game is not fully discarded). As of now, mobile blockchain and web-based blockchain games are head-to-head.
But blockchain mobile games (Android + iOS) are leading by a small margin the blockchain web-based games. This is not a surprise because there is a high crypto adoption in Asia and a large mobile gaming market in the region.

Robauto will not be published at Google Play and iTunes from Apple. The reasons are their guidelines and policies ban or apply restrictions to blockchain economic and monetization models. And that it would make inviable the creator economy of Robauto.

Anyway, we will keep on the loop for any change regarding this issue on Google Play and iTunes app stores.

11 - Target Blockchain/s

We consider **BNB Chain** as a target candidate blockchain to deploy the Robauto game.
Why? BNB Chain ecosystem is one of the best performing decentralized economies with a massive user access that can be scaled with the BNB Sidechain.

According to the **Q3 2022 State of Crypto** by Binance Research, BNB Chain dominates blockchain gaming with most titles. **Ethereum** and **Polygon** were the second two by market share.

TLDR: BNB Chain (36,6%), Ethereum (20,2%) and Polygon(11,8%) make almost 70% of market share by number of blockchain games.

A couple of powerful economic platforms that BNB Chain offers to blockchain game projects are:

- The Binance Launchpad which is a platform acting as a Public Sale to buy in-game tokens/governance tokens.
- The Binance Launchpool which is a staking platform for users. Users usually can stake BNB and BUSD into separate pools to farm in-game tokens/governance tokens over a time period.

12 - Game Development Tools (I)

Unity 3D and **Unreal Engine** are the go-to cross-platform game engine compatible with Web3 via plugins, Moralis SDK (additional subscription may apply), and other solutions. Both game engines are capable to create outstanding and performant experiences for mobile game development in Web3.
Unity uses C# and Unreal Engine uses C++ for the game development.
If we use Unity3D, we will require paid subscriptions as we will earn or receive more than $100,000 in revenue or funding in the most recent 12-month period. On the other hand, If we use any Unreal Engine code in our game, then the entire game will be governed by the Unreal Engine EULA and it will be subject to 5% royalties when our gross lifetime revenues from that game exceed $ 1 million USD.

Phaser 3D is another cross-platform game engine compatible with Web3 using Moralis SDK (subscription may apply), and other solutions.
It is a fast, free and open-source framework for Canvas and WebGL powered browser games.

12 - Game Development Tools (II)

MUD is an engine for autonomous worlds. It solves all the hard problems of building on-chain games.
It is open source, composable and interoperable. Additionally, it has a Phase3D wrapper. It creates stunning gaming experiences on-chain. It is battle tested in Optimism blockchain.

React/React Native and ThreeJs are also powerful open-source solutions.
React and React Native have been the de facto platforms to release outstanding DeFi products successfully.
ThreeJS will run as a wrapper around WebGL, simpliflying 3D graphics.
In any case, we will need a game engine on top of it such as Rogue Engine and others.

13 - Blockchain Development

- **Hardhat, Truffle or Foundry** to test and deploy smart contracts.

- **Alchemy, icytools or Covalent** NFT APIs

- **Chainlink** to create **random** NFT collections (VRF) and data feeds for **dynamic NFTs**

- **OpenZeppelin** smart contracts

- Composable Carbon Procotol (**Toucan Protocol**)

14 – Regenerative Economy

The **decentralized automotive ecosystem** not only fits with **open mobility** and innovation via the **creator economy** but also with the fight against the climate change.
And so, it would be a plus while dealing with NFT minting/creation, trading and other in-game actions (if apply) to bring **programmable carbon** to our Web3 mobile game.

This kind of infrastructure is not full available in BNB Chain, yet.
Other blockchains such as Polygon and Celo have the infrastructure from **Toucan Protocol** to leverage composable carbon with NFTs, DeFi, and DAOs. It is worth the time to evaluate bridging from them.

15 – Development Plan

Here you will find an estimation of the personnel required to develop the Robauto game.

Personnel: Technical Director, Art Director, Investor Relation, Project Manager, Community Manager, Smart Contract Developer, Token Engineer, 3D Artist, City/Level Designer, Head of Animation, Art Producer, Concept Artist, QA Tester, Game Developer (x2), Full-Stack Engineer, Music Producer & Sound Designer and Web Designer.

Development Plan: It can take an estimation of time about 6 – 12 months including milestones such as Complete Game Design, Look & Feel ,1st Play, Alpha and End of Project.

16 – About the GDP's Creator

Ivan Molto is a Blockchain and Mobile Developer with + 20 years experience in the Gaming, Media, Ecommerce, and Music industries.

He teamed up to Hottrix to build with other brilliant minds Android/ iOS apps and games hitting the top charts (2010) of Google Play and iTunes with +100 millions installs (such as iBeer, iMilk, IceBucket Challenge, and more) as seen on CNN, NBC, Wired, BBC, and other media.

He was also part of the first real tones ever created (including Ferrari, Manchester United, and Vodafone live!) and receiving the Best of Show and Best New Technology awards at the Mobile Music Awards (2004).

He has won several blockchain hackathons prizes at Gitcoin and Encode Club in developments including the following blockchains and decentralized storage solutions: Ethereum, BNB Chain, Polygon, Tezos, Celo, Arweave, and IPFS.

17 – Disclaimer

The images included in this document are provided from two different sources:

- DALL-E 2 from OpenAI with different prompts and variant generations.
- NEV images provided at the DeAuto discord to be used in this hackathon.

Robauto.xyz is a domain registered by us to be used at this hackathon.

In all cases we have the rights/permissions to be used in this document.

This document may be subject to plot, technological and monetization changes always trying to ensure that these are agreed and favorable to all the parties involved.

Risk warning: Cryptocurrency trading is subject to high market risk. Please make your trades cautiously.

Start your engines and...

be part of the decentralized automotive gaming

Thank you