## **Economy & Marketplace Systems Design v1.1**

## **I. Introduction**

This document outlines the design for Project Chimera's economic systems, encompassing both the initial Non-Player Character (NPC) driven economy and the framework for a future player-driven marketplace. The goal is to create a robust and engaging economic layer that realistically reflects the value generated by player skill in cultivation, breeding, processing, and strategic market participation. The approach is phased, with a foundational NPC-based economy at launch (MVP), followed by the introduction of a more complex player-driven marketplace in a future expansion, as outlined in the Game Concept. All monetization strategies will adhere to ethical principles, prioritizing player experience and fairness.

**II. Initial NPC Buyer/Contract Economy (MVP Focus)**

For the initial launch, the primary economic interaction will be with NPC entities through contracts and direct sales. This system will provide players with income sources, objectives, and a way to engage with the game world's demand for cannabis products.

**A. Types of Contracts & NPC Buyers**

* **Cultivation Contracts:** These will be a primary driver of early to mid-game progression and income.
  + **Mechanics:** NPCs or NPC organizations will offer contracts requiring players to deliver specific quantities of cannabis strains, often with stipulations on quality (e.g., minimum THC/CBD levels, specific terpene profiles, visual quality score), and by an in-game deadline.
  + **Examples:** "Deliver 500g of 'High-CBD Alpha Strain' with >15% CBD and <1% THC by Day 60," or "Supply 1kg of any Indica-dominant strain with a 'Earthy & Pine' terpene profile for a new product line."
* **Research & Development Contracts:** Some NPCs (e.g., research institutes, pharmaceutical companies) might offer contracts for developing strains with specific novel traits or for providing data on cultivation techniques.
* **NPC Buyer Personas & Preferences:**
  + To create diverse demand, different NPC buyers or factions could have distinct preferences and offer varying prices.
    - *Example:* A "Medical Dispensary" NPC might prioritize high-CBD, specific terpene profiles, and consistent quality, offering premium prices for meeting these needs. A "Bulk Processor" NPC might accept lower quality product in larger volumes but at lower per-unit prices. An "Enthusiast Collective" NPC might seek rare genetics or exceptionally high-potency/flavorful strains.
  + This encourages players to diversify their cultivation and breeding goals.

**B. Income Generation**

* **Contract Completion:** The primary method of income generation in the MVP.
  + Payment will be based on successful fulfillment of contract terms: quantity delivered, meeting or exceeding quality specifications (verified by in-game lab testing results and potentially visual assessment scores), and timeliness. Bonuses might be offered for exceptional quality or early delivery.
* **Direct Sales to NPC Vendors:** A simpler, more immediate sales option where players can sell uncontracted, surplus product to specific NPC vendors.
  + Prices are likely to be lower than contract rates, reflecting a spot market versus a pre-arranged agreement. This provides an outlet for products that don't meet specific contract requirements or when players need quick cash.
* **Reputation Impact:**
  + Player "company" reputation, built through consistent quality, reliable contract fulfillment, and ethical behavior, will influence interactions with NPC buyers.
  + Higher reputation can lead to access to more lucrative contracts, better pricing, and potentially unique opportunities or requests from NPCs. Conversely, failed contracts or selling poor-quality (e.g., contaminated, mislabeled) products can damage reputation and reduce opportunities.

**C. Costs & Expenses (Player-Side)**

Players will manage various operational costs essential for running their cultivation facility.

* **Building Materials & Equipment:** Initial and ongoing costs for constructing and outfitting grow rooms, labs, and processing areas. This includes walls, floors, lights, fans, pumps, benches, lab gear, etc..
* **Consumables:** Regular purchases of nutrients, growing mediums, amendments, CO2 (for tanks), pest and disease treatments, lab supplies (e.g., for testing), and packaging materials.
* **Utilities:**
  + **Electricity:** A significant and ongoing expense, directly tied to the power consumption of lights, HVAC systems, pumps, and other equipment. The game will simulate power draw.
  + **Water:** May be a metered cost, especially for larger operations or if RO water systems are used (which also consume power and generate wastewater).
  + **Waste Disposal:** Potential minor cost for disposing of used growing medium, plant waste, etc., especially at larger scales.
* **Genetics (Seeds/Clones):** Initial costs for acquiring starting genetics (seeds or clones) from NPC vendors or through special in-game events.
* **Research & Development Costs:** Some advanced research projects or experiments might require direct funding or the consumption of rare/expensive materials.
* **Maintenance & Repair (Potential Future Mechanic):** Equipment could degrade with use over time, necessitating expenditure on spare parts or repair services to maintain optimal functionality. This would add another layer to operational cost management.

**III. Player-Driven Marketplace (Future Expansion)**

This system is planned as a significant post-launch feature, creating a dynamic, player-controlled economy.

**A. Trading Mechanism**

* **Buy/Sell Orders (Recommended):** This robust asynchronous system allows players to:
  + Post **Sell Orders:** Offer specific items (genetics, equipment, resources) at a chosen price and quantity for a set duration.
  + Post **Buy Orders:** Place requests to purchase specific items at a maximum price they are willing to pay.
  + The marketplace system automatically matches compatible buy and sell orders. This facilitates price discovery and allows players to trade without needing to be online simultaneously.
* **Direct Player-to-Player Trades (Limited Scope):** Could be considered for players within the same multiplayer session (if multiplayer is a future goal) or via a "friends list" for specific pre-arranged exchanges. However, the order book system is preferable for broader market activity.

**B. Tradable Items (Examples)**

* **Genetics:** This is anticipated to be a cornerstone of the player marketplace.
  + Player-bred seeds (F1s, IBLs, unique crosses).
  + Clones from elite mother plants.
  + Rare landrace genetics acquired by players.
  + Potentially pollen from unique male plants.
* **Equipment:**
  + New equipment crafted by players (if crafting is implemented).
  + Surplus or used equipment being sold by players upgrading their facilities.
* **Resources & Consumables:**
  + Bulk quantities of high-quality nutrients or rare soil amendments.
  + Specialized growing mediums.
* **Harvested Product (Subject to Design Choices & Platform Policies):**
  + High-quality dried and cured flower.
  + Trim material (for extraction).
  + Collected kief.
  + *(Design Note: Direct player-to-player sales of "cannabis product" may have platform restrictions; this needs careful consideration. An alternative could be trading "genetic samples" or "research biomass" that has value based on its profile).*
* **Processed Goods (If Advanced Processing Implemented):**
  + Cannabis extracts (oils, shatter, wax).
  + Edibles or topicals produced by players.

**C. Marketplace User Interface (UI)**

A clear, intuitive, and functional UI is essential for a positive trading experience.

* **Item Listing:** Easy-to-use interface for players to list items for sale, including fields for item type, strain (if applicable), quantity, detailed description (e.g., genetic lineage, terpene profile notes, quality metrics), asking price, and listing duration. Clear display of any associated listing fees or sales taxes.
* **Browse & Searching:** Robust filtering (by item category, strain name, genetic traits, seller reputation, price range, etc.) and sorting options to help players find what they need efficiently.
* **Order Management:** A personal dashboard for players to:
  + Track their active buy and sell orders.
  + View transaction history.
  + Manage funds held in their marketplace wallet.
  + Claim completed purchases or sales proceeds.
* **Market Data (Potentially Advanced Feature):**
  + Access to historical price charts, average sale prices, and trading volume for specific items.
  + This information helps players make informed pricing decisions and identify market trends. Could be an unlockable feature tied to the "Business" skill tree or require an in-game subscription to a "Market Data Service."

**D. Market Scope (Global vs. Regional)**

* **Global Market (Recommended for Initial Implementation):**
  + All players access the same unified marketplace.
  + Simpler to implement and balance initially. Ensures sufficient liquidity and variety.
* **Regional Market (Potential Future Expansion):**
  + *Implications:* Could introduce mechanics like physical transport of goods between distinct game regions/servers, incurring costs, time delays, and risks (e.g., spoilage, damage, theft if PvP elements were ever introduced). Different regions might have unique supply/demand dynamics, local "regulations" (NPC-enforced), or resource availability, leading to price arbitrage opportunities.
  + *Complexity:* Adds significant design and technical complexity. Best considered for a major post-launch expansion if the global market proves successful and stable.

**E. Core Economic Principles in the Player Market**

* **Supply & Demand:** The fundamental driver of prices. High availability and low player demand for an item will drive its price down, while scarcity and high demand will drive prices up. The game systems should allow these forces to operate naturally.
* **Value Creation:** Players create economic value through:
  + **Breeding Innovation:** Developing unique, high-performance, or rare genetic lines.
  + **Cultivation Excellence:** Producing exceptionally high-quality flower by mastering environmental control and plant care, thus maximizing the genetic potential of their strains.
  + **Processing Prowess:** Efficiently and skillfully transforming raw cannabis into high-value processed goods like premium extracts or perfectly cured flower.
  + **Market Acumen:** Identifying market needs, timing sales effectively, and building a reputation for quality and reliability.
* **Information Asymmetry:** Players who invest in research, data analysis (both in-game for their plants and potentially market data), and understanding underlying game mechanics may gain an economic advantage.

**F. Robust Resource/Currency Sinks (Crucial for Economic Stability)**

To prevent runaway inflation and ensure that in-game currency retains its value, effective currency sinks are essential.

* **Marketplace Tax & Listing Fees:**
  + A small percentage-based tax (e.g., 1-5%) applied to the final sale value of all player marketplace transactions.
  + Potentially a small, flat listing fee for posting items, discouraging market spam.
  + These are primary, consistent currency sinks.
* **NPC Vendors for Unique/Essential Goods & Services:**
  + NPCs can sell certain essential items, rare genetic starting material, unique equipment blueprints, or specialized services (e.g., advanced lab analysis for a high fee) at fixed, often significant, prices. This removes currency from player circulation.
* **Repair & Maintenance Costs:**
  + As equipment ages or sees heavy use, it could degrade, requiring players to spend currency on spare parts (from NPCs or other players) or repair services to restore full functionality.
* **High-End Crafting, Research, & Facility Development:**
  + Unlocking top-tier research projects, crafting elite equipment, performing advanced genetic modification (if implemented), or constructing/upgrading very large and sophisticated facilities will require substantial currency and rare resource investments.
* **Item Degradation & Spoilage:**
  + Perishable goods (e.g., harvested plant material before proper drying/curing, some processed goods like edibles if they have a shelf-life) can lose quality or become unsellable if not handled, stored, or sold within a reasonable timeframe. This removes their potential value from the economy.
* **Operational Costs:** Ongoing utility bills, consumable purchases, and other operational expenses act as continuous small currency sinks.
* **Cosmetic Purchases (Monetization):** If players choose to buy purely cosmetic items with real money, the in-game currency equivalent is effectively removed if those cosmetics were also obtainable (perhaps through very difficult means) with in-game currency (though the primary intent is direct real-money purchase for cosmetics).

**G. Safeguards & Balancing for the Player Marketplace**

Maintaining a fair and stable market is paramount.

* **Against Market Manipulation & Exploits:**
  + **Transaction Limits/Velocity Checks:** Consider limits on the value or volume of trades for very new accounts or within short timeframes to deter illicit Real Money Trading (RMT) and rapid exploit abuse.
  + **Developer Monitoring Tools:** Implement back-end tools to monitor market activity for suspicious patterns, large-scale exploits, or unusual price movements.
  + **Robust Item & Economic Balancing:** Carefully balance the acquisition rates, costs, and utility of all tradable items to prevent any single item or strategy from becoming easily exploitable or destabilizing the entire economy.
* **Preventing Monopolies:**
  + **Encourage Diverse Production Paths:** Ensure multiple viable strategies for success and profitability, so players are not all forced into producing the same few items.
  + **Accessibility of Core Resources:** While rare items should be rare, core resources necessary for basic progression should not be easily cornered by a few powerful players. NPC vendors can help here by offering baseline essentials.
* **New Player Experience & Balance:**
  + **Strong NPC Economy Foundation:** The initial NPC-driven economy ensures new players can progress, learn the game, and earn currency without being immediately overwhelmed by or dependent on the player market.
  + **Skill-Based Market Success:** Design the systems so that success in the player market is primarily driven by in-game skill, knowledge, effort, and strategic decision-making, rather than just accumulated wealth or early advantages.
  + **Gradual Introduction:** New players should be gradually introduced to the complexities of the player marketplace as they progress through the game.

**IV. Monetization Strategy (Ethical Focus)**

Project Chimera will adopt a monetization model that prioritizes player experience, fairness, and long-term engagement. The base game will be a one-time purchase (Buy-to-Play, B2P).

**A. Ethical Microtransactions**

The core principle is **NO Pay-to-Win (P2W)** elements. Microtransactions will not offer competitive gameplay advantages, bypass core progression, include loot boxes, or involve the direct sale of essential game resources or genetics that would unbalance the experience.

* **Cosmetics (Primary Focus):** These are purely aesthetic items with no impact on gameplay mechanics.
  + *Equipment Skins:* Visual customizations for grow lights, hydroponic systems, lab equipment, environmental controllers, etc.
  + *Facility Decor:* Unique paint schemes for walls/floors, decorative items like posters, non-functional furniture, rare (non-cannabis) ornamental plants for grow rooms or offices.
  + *UI Themes:* Optional custom skins for the game's user interface.
* **Marketplace Tax (Future - Serves as Revenue & Currency Sink):**
  + Once the player-driven marketplace is implemented, a small, transparent percentage fee (e.g., 1-5%) will be applied to completed player-to-player sales. This contributes to developer revenue and acts as an essential currency sink for the game's economy.
* **Convenience/Quality-of-Life (QoL) Items (To Be Approached with Extreme Caution & Strict Balancing):**
  + This category will only be considered if it can be implemented without ANY perception of P2W or disruption to the core gameplay loop. Player feedback would be paramount.
  + *Potential Examples (Highly Speculative & Subject to Rigorous Scrutiny):*
    - A one-time consumable that allows for a *very slightly* expedited completion of a non-critical, already researched, short-duration task (e.g., "Insta-Finish" a 5-minute research timer that the player could otherwise just wait for). Must not be applicable to core biological processes like plant growth.
    - Cosmetic "pet" or small non-functional drone that hovers in the facility.
  + *Strict Limitations:* These items must NEVER provide a competitive advantage, allow players to skip significant gameplay or progression milestones, grant access to resources or abilities unobtainable through normal play, or create an unfair playing field. Manual gameplay and earned automation must always be the most effective and rewarding paths.

**B. Paid Expansions (Future Major Content)**

Substantial new content and significant feature additions will be offered as paid expansions.

* **Scope & Content Examples:**
  + **New Maps & Regions:** Vastly different cultivation environments such as dedicated outdoor grow regions with unique climate challenges, advanced subterranean research laboratories, or even themed expansions (e.g., a "Lunar Biodome" if the game lore supports it).
  + **Large Genetic Pool Expansions:** The introduction of a significant number of new landrace strains from different parts of the game world, unique mutations, or even entirely new (fictional) related plant species with different cultivation needs and genetic traits.
  + **Significant New Core Mechanics:**
    - The full implementation of the player-driven marketplace could be part of an expansion.
    - Advanced AI staffing systems where players hire and manage NPC workers with different skills and specializations.
    - Deep, narrative-driven campaigns or story arcs.
    - Complex new processing pathways (e.g., advanced pharmaceutical extraction and product formulation).
    - Introduction of more sophisticated, optional physics simulation models for environmental factors (if deemed beneficial and technically feasible).

**C. Balancing Monetization & Player Experience**

* **Transparency:** All monetization methods will be clearly communicated to the player base.
* **Value Proposition:** Monetized content (especially expansions) must offer substantial new gameplay and value. Cosmetics should be desirable but entirely optional.
* **Respect for Player Investment:** The core B2P game will offer a complete and deeply satisfying experience. Monetization will not be used to create artificial barriers or frustrate players into spending.
* **Community Feedback:** Continuous dialogue with the player community will be essential to ensure monetization strategies are perceived as fair and respectful of their engagement with Project Chimera.

**V. Conclusion**

Project Chimera's economic systems are designed to evolve alongside the player's capabilities and the game's own development. The initial NPC-driven economy will provide a stable foundation for players to learn, grow, and profit. The eventual introduction of a player-driven marketplace, built on sound economic principles and robust safeguards, will offer a dynamic and deeply engaging long-term experience. All monetization will be approached ethically, ensuring that Project Chimera remains a fair, rewarding, and player-respectful simulation game.