



Detailed Economic Document

28.07.2023

Target Platforms: PlayStation / PC / Xbox

Release Date: Q1 2024

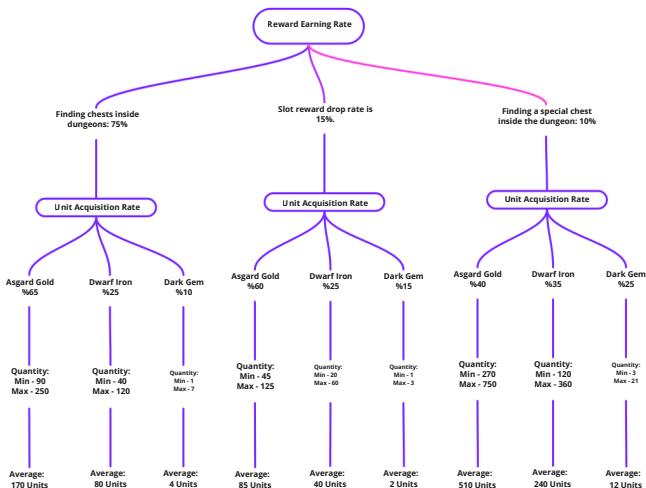


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I. Outcomes of Core Value Elements

A. Loot System Starting Rates

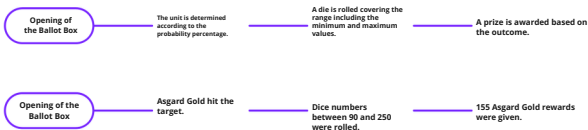
SCHEMA 1



B. Loot System Terms and Conditions and Explanations

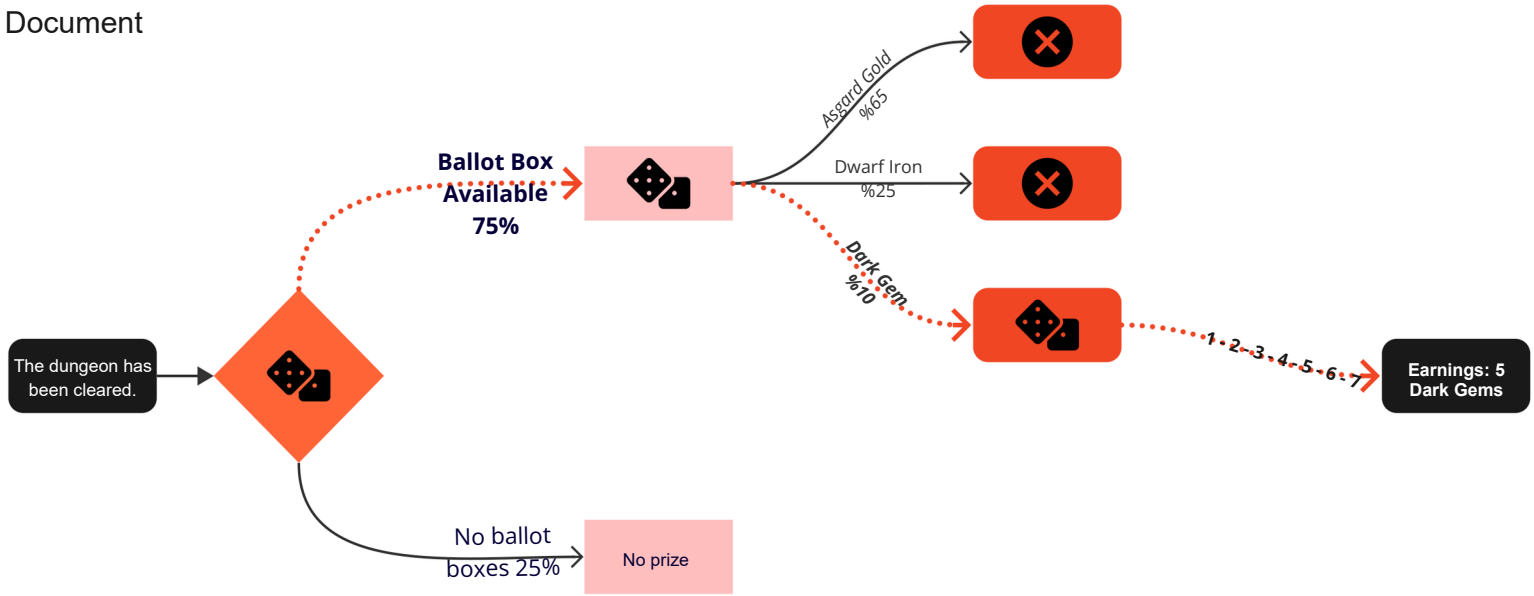
- Only one chest can be found in each dungeon. If a dungeon contains a special chest, it cannot contain a regular chest; vice versa. Special chests are opened with a locksmith key; if the player doesn't have enough keys, they miss the reward. Rewards dropped from slots are not subject to any conditions. Players can drop rewards from slots whether or not there are chests. The player must clear the entire dungeon to open chests.
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The probability and rate of winning rewards work as shown in the examples below.



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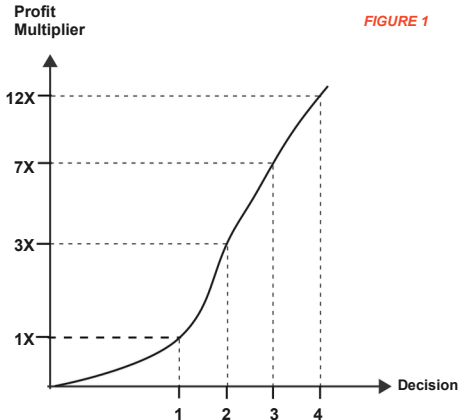
II. Changes in Win Rates According to Game Progression

A. Progression of the Earnings Multiplier

Nine Realms has a structure composed of different realms. The game's difficulty increases exponentially, and this increase is driven by the realms themselves. Therefore, the acquisition of valuable items also progresses exponentially. However, it is not directly proportional to the difficulty. Since acquiring valuable items directly strengthens the player's character, the reward is not proportional to the increased difficulty. This game...

It is designed in this way to avoid disrupting its exponential structure.

In brief, **although the earnings rate shows exponential growth, it can never be equal to or greater than the increase in difficulty.** The earnings growth rates are explained below, based on **SCHEMA 1 Midgard (Starting realm)** and assuming a 1X multiplier.



The multiplier increase described in **"GRAPH 1"** only affects the "Reward Amount". The diagrams below can be examined for a better understanding.



As seen, while the multiplier increase did not affect the percentage decrease in which reward would be awarded, it directly impacted the amount of the reward received.

Note: The multiplier increase is always applied based on 1X. Multipliers never multiply each other. For example, if the multiplier is 1X and the reward earning is 10 units in the first realm, the reward earning multiplier (12X) in the last realm multiplies the earning rate of the first realm and increases to 120 units. The multipliers of the intermediate realms are independent of each other.

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III. The Relationship Between Chance Points and Success Rate

A. Progression in Rate of Return

The higher a player's luck score, the higher their percentage chance of winning a Dark Gem. This increased percentage of Dark Gems is derived from Dwarf Iron and Asgard Gold. The diagrams below can be used to calculate Luck Gem acquisition points.



The increased chance points of the Dark Gem are reduced by 75% of Asgard Gold and 25% of Dwarf Iron. The gain probabilities given in SCHEMA 1 are calculated based on a +0 (minimum) chance point. We know that when the player increases their chance point by +1, there is an increase of 5,882. In this case, the maximum increase is equal to 100%. You can refer to section B for detailed calculations.

B. Chance Score Mathematics

According to the information given in the section, the player won every +1 chance for the score. Let's do the calculations;

A = Asgard Gold B = Dwarf Iron C = Dark Gem

We want to reduce the chance of items A and B winning by 5.8%. However, 75% of this 5.8% will be taken from A and 25% from B. So, we need to reduce A's chance of winning by 4.35% ($5.8 * 0.75$) and B's chance of winning by 1.45% ($5.8 * 0.25$). Then, the total of these reductions (5.8%) will be added to item C.

Let's implement these changes now:

- A's new winning probability is $65\% - 4.35\% = 60.65\%$
- B's new winning probability is $25\% - 1.45\% = 23.55\%$
- C's new winning probability is $10\% + 5.8\% = 15.8\%$

Therefore, the new winning probabilities are as follows:

- A's new winning probability: 60.65%
- B's new winning probability: 23.55%
- C's new winning probability: 15.8%

Furthermore, when we perform the same operations based on the maximum + points, the result is as follows.

- New winning probability for A: 16.25%
- New winning probability for B: 18.75%
- New winning probability for C: 65%

C. Regarding Chance Point Balancing

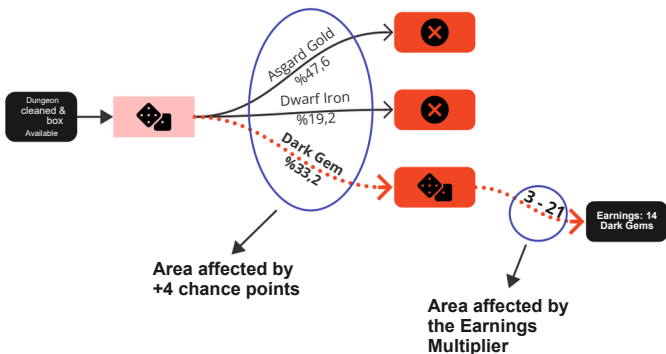
As we explained and calculated, the increase in luck points increases the amount of Dark Gems while decreasing other units. This situation gives the player, among other things...

It can create a disadvantage if it requires additional units. **Because, The player is given the right to trade. The player can trade Dark Ship for other units via the Market.**

D. Relationship Between Chance Score and Payout Multiplier

The payout multiplier and the chance score are completely independent of each other. The chance score does not positively affect the payout multiplier, nor does the payout multiplier negatively affect the chance score. They only affect the resulting outcome together. The odds are calculated as in the example below;

Let's assume the player is in the second realm and has a luck score of +4, and consider a scenario where a reward can be obtained from a simple chest inside a dungeon.



IV. Acquisitions of Collection Items

A. Basic Learning Outcome Logic

Collection items can be obtained simply from ordinary in-dungeon chests, special in-dungeon chests, or slots. However, their acquisition is dependent on core items, and for them to drop, the acquisition of these core items must be triggered; they drop as extra rewards alongside these rewards. Only certain legendary items are obtained with a low probability in god wars.

Collection items essentially have four rarity levels. These are distinguished as **Common**, **Uncommon**, **Rare**, and **Legendary**.

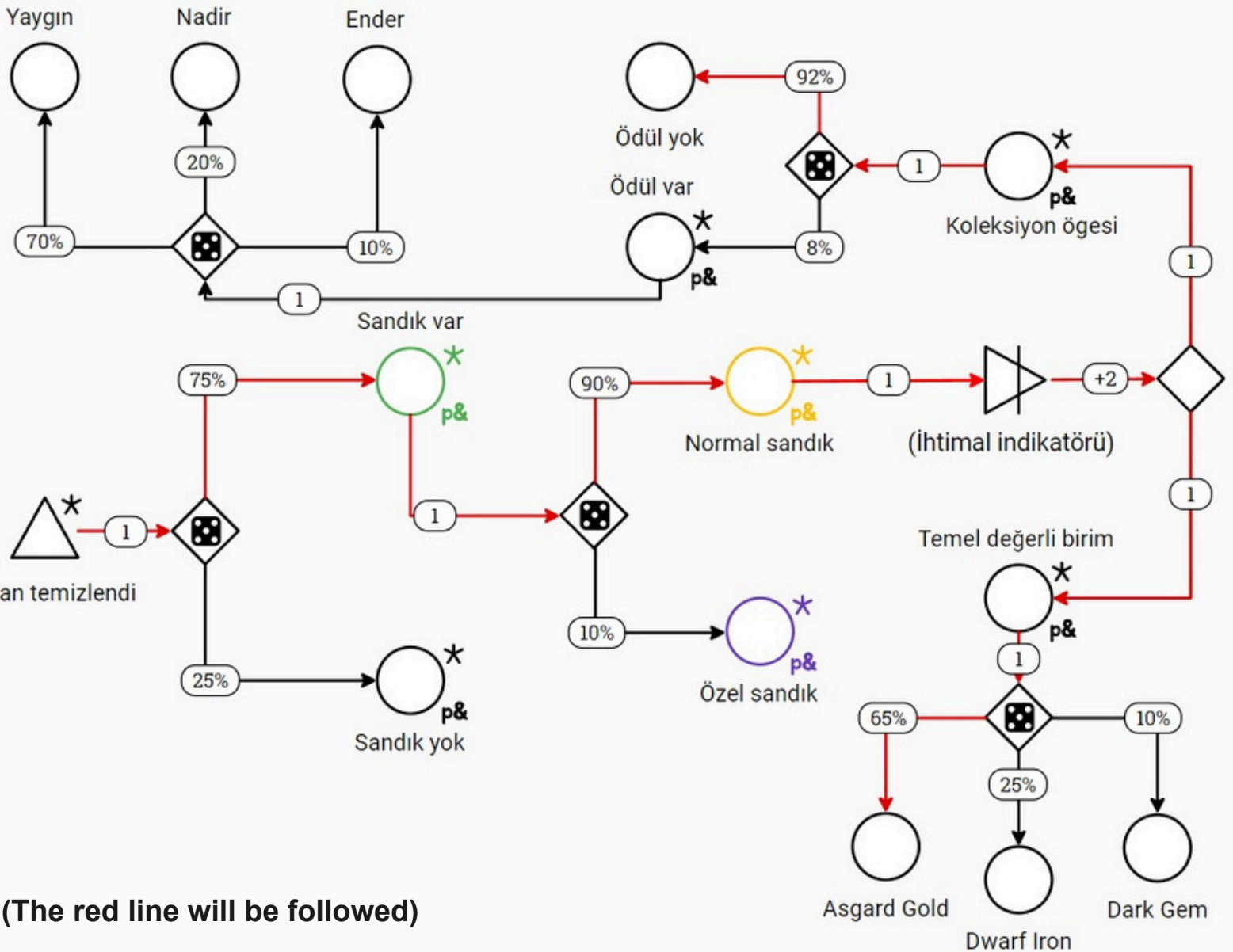
Note: Legendary collectible items can only be obtained from god battles.

B. Acquisition Rates According to Rarity Type

The following diagram can be used to examine the basic acquisition rates of collection items according to their rarity type.



Note: When the reward is triggered while looting, there is also an 8% chance of a collectible item dropping, and a 0.3% chance of a regular drop.



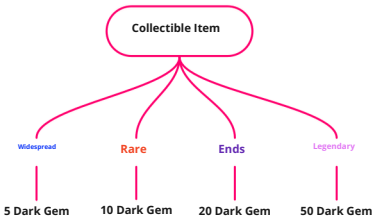
D. Sale of Collection Items

Collection item drops can be sold to the Antiquarian in exchange for Dark Gems. The following rules apply to this item. A collection item obtained for the first time is added to the codex, and the player is considered to have successfully found this item. Selling it does not result in the removal of this item's achievement.

- Each item can be found and sold multiple times.
- The antique dealer bids on collectible items based on their rarity. These bids are only the same for the first sale. Subsequently, the antique dealer may bid lower. For example, if item X is sold to the antique dealer for the fifth time, the dealer will reduce the bid by a certain percentage compared to the first sale. Up to ten of the same collectible items can be stored in the inventory. After ten, the player must sell the remaining items to collect more of the same type.

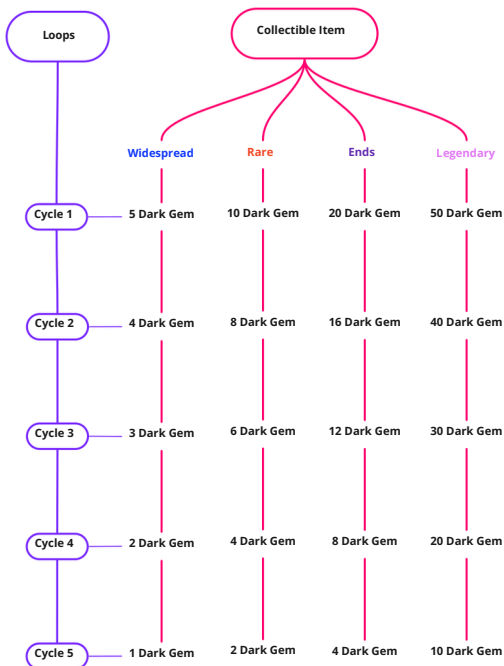
E. Acquisition Mathematics of Collection Items

Based on rarity, you can examine the offers the Antique Dealer will make on the first attempt in the diagram below.



F. Resale of Identical Collection Items

The Antiquarian continuously purchases the same collection item and reduces the offer slightly every five sales cycles; however, after the fifth cycle, the offer is no longer reduced and the Antiquarian continues to buy at the price of the final cycle. The reduction rates according to the cycles are provided in the diagram below. (The legendary item is based on the first god war reward)



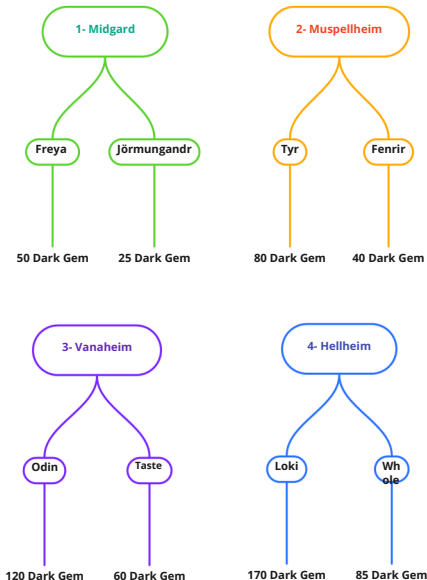
G. Acquiring Legendary Collectible Items

Legendary collectible items, as mentioned in previous sections, differ from other collectible items in that they can only be obtained with a 3% chance of success in god battles. They also possess the following unique characteristics.

- Each Legendary collectible item is unique to the god fought and cannot drop from other gods.
(For example: Freyja's necklace, Loki's wand clasp, etc.)
- **The drop chance of Legendary collection items increases by 3% for each successful god war where a legendary item does not drop. This increase resets to its initial rate once a legendary item is obtained.**
Legendary items can also be obtained from mini god wars under the same conditions and rates. (e.g., Jörmungandr's scale, Fenrir's tooth fragment, etc.)
- **Upon starting the game, the player is guaranteed to earn a legendary collection item from their first successful god war as a one-time occurrence. (The first god fought is Freyja, and the player will absolutely receive the first reward upon defeating Freyja)**
- If the player completes the God War without taking any damage, they will definitely earn a legendary reward. In scenarios where the player takes damage in the God War, every five critical hits on the fought god double the current gain chance percentage, and this percentage increases exponentially. (For example: In a scenario where the player starts the God War with a 9% chance of gaining a legendary item, the chance of the first five critical hits on the god becomes 18%, and the chance of the next five critical hits, totaling ten, becomes 36%.)

H. Sale of Legendary Collectible Items

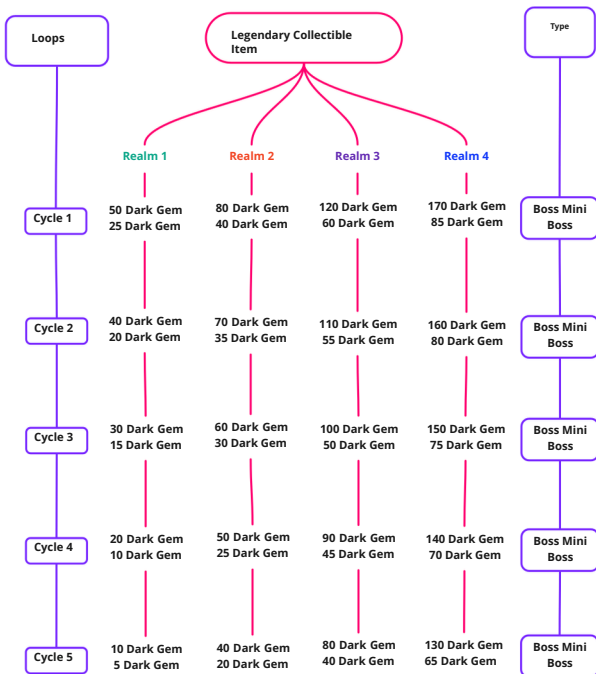
The pricing of Legendary collection items according to realms and realm gods is as shown in the diagram below. **Even if collection items belonging to the same god vary, their prices are the same.**



Note: The bosses are on the left side of the diagram, and the mini-bosses are on the right side.

J. Reselling the Same Legendary Collectible Items

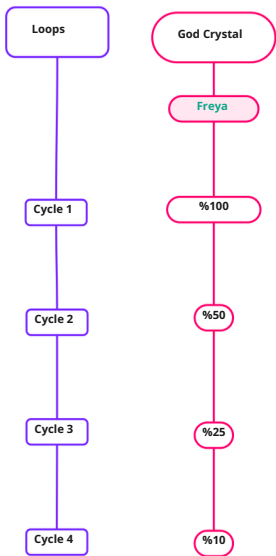
The antique dealer consistently buys the same legendary collectible item, lowering the bid slightly every five sales cycles. However, after the fifth cycle, the bid does not decrease, and the buyer continues to purchase at the price of the last cycle. The percentage decreases by cycle are shown in the diagram below.



Acquisition of the God Crystal

A. Basic Learning Outcome Logic

God Crystals can be earned simply by succeeding in god wars, mini god wars, or by opening surprise boxes. If a Boss is encountered for the first time, a god crystal is guaranteed to be earned if the player is successful. However, in each subsequent encounter, the probability continues to decrease.



Note: The probabilities only change when the player is successful. After success, if the crystal does not drop, the probabilities do not change. For example: in cycle 3, if the player wins the battle but the god crystal does not drop, the probability for the next game will remain at 25% instead of dropping to 10%.

L. XP and UXP Acquisition

A. Basic Learning Outcome Logic

XP or UXP is earned from mobs or bosses. The gain rates for UXP and XP are equal. However, different mobs yield different amounts.

