Scoring System

# Introduction

Our game requires a scoring system that allows for players to compete on building the most impressive factory. Players will be able to submit their score to a leader board, where they can compare it to other players scores.

‘Most impressive’ is a hard thing to summarise and is often subjective. For instance, some people may claim that the most impressive factory would be one that looks the most aesthetically pleasing to them. Others may say that it is based on efficiency of the factory and how many ticks it takes to produce an output. Others may say the opposite and think that intricate factories with interesting and unique approaches to solving a problem are the most impressive. It varies between person and therefore I believe it is a good idea to look at our demographic and psychographic to establish what ‘Most impressive’ means to them.

# Demographic and Psychographic

According to our research, our demographic is particularly interested in Challenge, Strategy and Power where their ideal game would be one with difficult content that can be beaten by strategic thinking and skilful implementation. They are also like to be rewarded with progression and the ability to complete earlier challenges more easily with more powerful resources at their disposal.

They are not influenced by Fantasy, Excitement and Discovery elements and are not intrigued by story or destruction; however, the Design aspect is relatively impactful on them.

The following are the appeal of game traits to our demographic based on our research:

* Power – 58%
* Design – 38%
* Strategy – 30%
* Community – 27%
* Story – 3%
* Destruction – 2%

The following are the appeal of game aspects to our demographic based on our research:

* Challenge – 56%
* Completion – 35%
* Competition – 22%
* Fantasy – 5%
* Excitement – 2%
* Discovery – 1%

# Comparison of scoring methods

## Efficiency

Probably the most obvious scoring method is to use efficiency of design to calculate a score. This benefits our demographic because they enjoy strategy and design. Efficient implementation requires strategy and design as well as a lot of thinking to implement; therefore, the challenge and completion aspects are also met well using this method.

The limitation of this is that with our current design, we lack the depth required to provide the challenge to build an efficient factory, but this may change as development progresses and we start introducing new aspects to the factory building mechanic.

One possible implementation using this would be to count the number of ticks it takes to produce the expected output of the factory and use this as a factor with the number of tiles occupied with machinery (although currently it would seem the two are directly proportional). The following formula could be used, where S is score, n is number of tiles occupied and t is number of ticks to produce the expected output.

## Aesthetics

Aesthetics doesn’t suit our demographic too well as it only really supports the design game trait, and although our demographic likes that, it doesn’t support any other game traits.

Another problem with this approach is that it is quite hard to develop a system that is competitive. One way to approach this choice is to give each machine an ‘Appeal’ attribute and then base the score on the total appeal of the entire factory. This would tie in nicely to the completion aspect, since we could unlock more appealing machines as time went on.

I personally feel like this approach is to be avoided though since ‘Appeal’ is subjective and therefore what one player may think is appealing may not be appealing to another play. It would also reduce variety in factories across the player base.

## Intricacy and Complexity

Another interesting approach to the scoring system is to base it on how intricate and complex your factories are. This utilises the design and strategy game traits, as well as the competition and competition game aspects.

This approach will also be complex to implement since complexity is quite hard to judge. Currently I can only thing the score would be directly proportional to the number of machines in the factory and the level of machines, although I’m not sure if this is the best approach. The formula below describes this where n is number of tiles occupied by machines and c is an assigned complexity value for a machine.

## Conclusion

I think the efficiency is the best scoring method to use currently, since it provides simplicity, competition and challenge, and awards completion, design and strategy. All of which our demographic likes.