A Game Design Approach to a Real-World Problem

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This short note phrases the game design process as an approach to solving more general real-world problems. I apply this process to the problem of Formula One (F1) point scoring, and the seemingly endless quest to devise a system that both rewards the best driver while maximising the drama for onlookers. A new point scoring system based on a simple linear model is suggested.

1 Introduction

FOR most followers of Formula One (F1) car racing, the world's premier class of motor sport, the key point of interest is who will win the World Drivers' Championship (WDC) each year. Unfortunately, the ultimate winner is decided before the final race of the season more often than not, making the final round(s) less interesting for viewers and resulting in reduced audiences.

To address this problem, the chief executive of the Formula One Group decided to try a new system for the 2014 season that awarded double points for the final race, in a transparent effort to keep the WDC battle alive as long as possible. This rule change achieved its desired result, with the WDC being decided on the final race that year, but was widely criticised by viewers and drivers, and was removed the following year [1].

There have been a total of thirty different points scoring systems used for the 66 F1 seasons to date.[1] To a game designer, this behaviour is familiar; the owners of the sport are continually tweaking the rules, to see what works and what does not, in an effort find the fairest rule set that maximises the drama.

This is analogous to the play-testing process that a game designer would employ to improve a flawed design. So can a game design approach to the problem of F1 points scoring yield a workable alternative to this real-world problem?[2] This paper describes the problem, what I mean by a 'game design approach', and how it might be applied to offer a workable solution.

2 F1 Scoring Systems

Every year's F1 scoring system allocates a number of points to the first N drivers who finish each race, from a non-linear distribution that is inflated for the major place-getters. For example,

Table 1 shows the non-linear distribution of 101 points used in the 2015 season, and how these were allocated to the first ten drivers to finish each race.

Pos	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Pts	25	18	15	12	10	8	6	4	2	1

Table 1. 101-point system used for the 2015 season.

For the initial 1950s seasons, only the first five drivers were awarded points (with 1 bonus point for the fastest lap). This increased to the first six drivers during the 1960s, and has continued to increase to the first ten drivers from 2010 onwards.

Complicating matters, all systems used up to 1991 only counted a certain number of results for each driver per season. For the 1950–53 seasons only the best four results were counted per driver, for 1954–57 only the best five, in 1958 the best six, in 1959 the best five again, and so on.

Further complicating matters, for the 1967–1980 seasons, each drivers' WDC points total was determined by combinations of their best and worst results. For example, the 1977 scoring system counted 15 results for each driver; their eight best results from their nine best races and their seven best results from their eight worst races.

For some seasons, points were shared between drivers on a team, or not awarded to drivers who failed to complete a certain distance (even if they finished in the top six), or halved for drivers who failed to complete 3/4 of the race distance, or doubled for the final round, and so on. The optimal point scoring system would:

1. reward the best driver each year,[3] and

2. keep the WDC championship battle alive for as long as possible each year.

The fact that the system has been changed on average every two years suggests that this balance is hard to achieve, and that better systems

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[1]https://en.wikipedia.org/wiki/List_of_Formula_One_World_Championship_points_scoring_systems

[2]Describing F1 scoring as a 'real-world problem' might be a bit of a stretch. However, it is a topic of interest to hundreds of millions of people.

[3]There is ongoing debate as to whether the term 'best' driver should refer to the most consistent or the most successful in terms of race wins.