Eventually Consistent Partying

Veit Heller

March 5, 2019

Abstract

In distributed systems and life in general, eventual consistency is the desirable state of agreement. In this paper, we show how to reach this state in the context of parties with regards to the buzz factor (also known as inebriation quotient).

Keywords Party System Design, Buzz Factor, SIGBOVIK

1 Introduction

In classical distributed systems, eventual consistency is a state of agreement between nodes in a system that is reached at a certain point in time. This property is usually desirable because it provides clear grounds on which to base assumptions about the state of the system.

At parties, too, there is a certain state of agreement—or agreeability, if you want—that is usually beneficial to the mood of the actors in the system, a property worth optimizing for. This property is in strong correlation with the buzz factor—also known as inebriation quotient—, which describes the state of alcohol saturation of a given actor.

In this paper, we describe a novel approach to reason about eventual consistency as it relates to partying.

2 Preliminaries

Our foremost goal for eventual consistency in a party setting is reaching a quorum of approximate buzz level. It is said to be almost impossible to set up a perfectly consistent system unless you set up a group of exclusively sober actors. There is no consensus on whether a group of sober actors can be classified as a party in the literature, as some authors prefer to call those systems "tea parties".

We characterize an actor by their buzz intake behaviour and their buzz threshold. If the buzz threshold is reached, we characterize an actor as having dropped out and disregard them when checking for a quorum. The buzz threshold seems to be correlated to the actor's gender, age, and bodyweight.

At this stage, it is important to note that there is no standard unit that allows us to talk about buzz-related activities. For the purposes of this paper, we will assume the standard unit to be "one can of beer (TODO)". Interested parties suggested the authors use the more often used unit of "one can of beer (Bud Light)", but that idea was quickly discarded becuase the authors had doubt that a credible party could be based on said unit.

The sole medium of buzz accounted for in this paper is ethanol. While other substances seem to be in use for party-related buzzing, describing their respective interrelations would complect the calculations tremendously while accounting only for a reasonably small subset of actors.

2.1 Archetypes

In our research we discovered four primary archetypes of actors at parties in relation to attaining the buzz factor. We will describe them in the following.

Serious Business. Actors in the "Serious Business" class—also known as "winos" or "boozehounds"—are characterized by a quick intake of buzz. Depending on their buzz threshold, they might drop out early.

Dead Sober. Actors in the "Dead Sober" class—also known as "buzzkills" or "designated drivers"—do not intake buzz. Accordingly, they either have to be in the majority to achieve what is known as an *a priori* quorum, or be in the minority, in which case they will work against the quorum of the other actors.

Low and Slow. The "Low and Slow" class of actors—also known as "normies"—shows a slow, steady intake of buzz. Any spikes in buzz may be counteracted by the intake of water or other non-alcoholic substances, though the increase of buzz over time is almost inevitable.

Sugar Rush. Favoring Cocktails and longdrinks, this class of actors—also known as "fancypants" or "amateur baristas"—show almost no signs of buzz for a period of time—this period is unpredictable and largely based on the compounds used when intaking buzz—before a sudden spike of buzz that can easily overshoot the buzz threshold. That point in time is known as "the tipping point" in the literature, and will be referred to as such in the following.

While this collection of archetypes is helpful in building a vocabulary for expressing actor behavior, it should not be taken as canonical or exhaustive. Party architecture is an understudied area of systems design, and we expect many novel, more accurate categorizations to emerge in the coming years.

3 Practical Discussion

Now that we have laid the groundwork to conceptualize the system, we will develop a vocabulary of basic buzz-related calulations.

3.1 Calculating the Buzz Factor

We have found that a reasonable way to calculate the buzz factor is to presume that there exists a function `f` that, given a time `t`, returns the buzz intake at that time. Calculating the total buzz factor at any given point in time is then as simple as taking the sum of buzz intakes from `t0`—being the time at which the party started—to `t1`—being the time for which the buzz factor should be calculated.

When accounting for each actor independently, it is important to adjust `f` based on their archetype. The model of the archetype might need to be changed slightly to account for the individual differences between actors within the same archetype category. Machine Learning algorithms might be able to predict better versions of `f` for an actor given behavior samples during previous parties, though that area has heretoforth been vastly understudied.

In the following we shall give an overview of functions that seem to best predict actor behavior per archetype. Note that the buzz threshold cannot be predicted and needs to be measured or assumed by the architect.

Serious Business. Actors in this class should best be modelled by a function that returns a static value, since their buzz factor is usually monotonically increasing. An increase by one unit of measurement per hour can usually be assumed. When accounting for individual actors, that number might change, also in accordance with the buzz factor, since some actors in this class seem to drink more or less depending on their current inebriation quotient.

Dead Sober. The function that describes this class of actors will always return `0`.

Low and Slow. This class of actors are modelled similarly to actors of the "Serious Business" archetype, with the caveat that, as the party goes on, they might occasionally lower their buzz factor. This can be modelled as a pseudo-random process. A base likelihood of `1/3` can be chosen, meaning that once every three units the buzz factor might be reduced rather than increased. This process can be made to seem more "lifelike" by introducing random or even fandom numbers (TODO: citation). It is also reasonable to assume a slower buzz intake of about half a unit per hour.

Sugar Rush. A lot of work on party systems design has been devoted to modelling the actors in this class, and for good reason. While the actor count of this archetype across the entire population seems to be smaller than that of the “Low and Slow” archetype, for instance, all functions modelling their buzz intake have been the subject of a high level of scrutiny in the party architecture community, since none of them have yet seemed to fit a majority of actors. A combination of two positive values, one for the time values before the tipping point, and one for the time values after the tipping point, has led to promising results. The tipping point varies, but an average of four hours into the party seems to be a reasonable assumption.

3.2 Modelling a Party

To model a party, the current buzz factor of each actor that has not dropped out—i.e. each actor whose buzz factor is below their buzz threshold—must be calculated. A quorum of buzz factors is reached when a majority of actors have approximately the same buzz factor, where approximate means a distance of not more than 1.5 units of measurement between each actor.

3.2.1 Example

Let us model a seven hour long party of five people as an example. The attendees consist of one designated driver of the “Dead Sober” archetype, three normies in the “Low and Slow” category, and one wino who means “Serious Business”. There is no actor of the “Sugar Rush” archetype present because the host forgot to buy Ginger Ale and limes.

Choosing a reasonable buzz threshold for each actor, using the standard functions from above, and graphing the results, we end up with a figure that clearly shows that we reach a quorum at the hours TODO.

4 Conclusion

Party systems design is a nascent, but promising field. We believe that by introducing ideas from the wider world of distributed systems the field can develop a better vocabulary and more rigorous design methods which will eventually lead to a higher quality of parties.