## The Neurobiology of Motivation and Gamification

#### Are points, medals and trophies useful for motivation in gamification or not?



The neurobiology of motivation can help us clarify and explore this question in more detail, in particular by analysing how dopamine explains motivation.

# Dopamine: the powerful motivator

**Dopamine** is a neurochemical, much referenced in studies on gamification, and is considered to be the neurotransmitter of motivation. The pleasure of winning is due to the release of dopamine in the brain.







When we win, our brain releases this neurochemical, which causes a feeling of pleasure and motivates us to repeat the action in search of more pleasure. (Additive behaviours are explained through this vicious cycle).

We are tempted to conclude that it is enough to create reward systems with points, medals and trophies to ensure that people feel pleasure in playing, continuing to be involved and motivated in gamified activities.

And it is this hastiness that has led to the failure of many gamified systems.

Although it is seen as a "reward neurochemical", it is necessary to understand that dopamine can have **different consequences on motivation**. We now know that dopamine acts to drive the feeling of "desire" associated with reward.



#### How can I use rewards in gamification in order to produce dopamine release?

- **By creating unpredictable rewards:** when you are surprised by a reward that you did not expect;
- By creating repeated reward opportunities, so that the brain "learns" to anticipate the reward, because the probability of getting it is high;
- Ensuring clear and immediate feedback, so that the brain has no doubts about the behaviour that generated the reward or why it did not get it.

#### And when a reward is "promised", is it more motivating?

It **may not be,** because when the reward is expected there is a certain area of the brain that is activated and that will decide whether the reward is valuable enough to justify the effort.



### So points, medals and trophies can be motivating and reinforce certain behaviours if:

- Allow positive feedback, so that people learn and perceive the outcome as dependent on themselves;
- They occur spontaneously, surprising people;
- Are valuable enough to justify the effort.

Considering that what makes a reward "valuable" is not the same for everyone, you need to **diversify the nature of rewards, according to each person's profile.** 



If fun and the meaning of the task are associated with intrinsic motivation, and rewards and punishments with extrinsic motivation, the use of points, medals and trophies should be used in conjunction with other gamification elements, so that they result in intrinsic motivation or autonomous extrinsic motivation.