

# GAMIFICATION IN COMMUNITY-DRIVEN WEB APPLICATIONS

## ГЕЙМИФИКАЦИЯ В ОБЩЕСТВЕННО-ЗАДВИЖВАНИ УЕБ ПРИЛОЖЕНИЯ

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**Abstract:** *Community-driven web applications often do not supply enough user-generated content to kick-start their growth and expand their audience. A way to deal with this problem is to introduce an achievement system that gives users a reason to explore and interact with each other. The use of game design principles to motivate the participants in a community-driven web application has been proving successful. In this paper we take a look at one major example of gamification in a website for careers and job opportunities.*

**Keywords:** GAMIFICATION, COMMUNITY-DRIVEN, ACHIEVEMENT SYSTEM, WEB APPLICATION

### 1. Introduction

Gamification as a term has seen an increasing usage in the past couple of years. It has sparked numerous discussions, various definitions and case studies on the effects of adopting game design principles and applying them in non-gaming context. The strongest trait of gamification is the opportunity to create competition between people - employees, students or customers. Competition is a healthy way the demonstrate skill and knowledge, earn rewards and recognition amongst peers. Organizations use games to train their interns, motivate their workers and promote a place for creative ideas. Games are being incorporated into traditional areas of daily life – ranging from business schools to software companies to pharmaceutical companies to government organizations and beyond [1]. A form of gamification is the development of a trophy or an achievement system that rewards participants for completing certain objectives. Achievements in games are used as a psychological tool to set goals for players, further the narrative and to guide them through unfamiliar territory. They are often used create a meta-gaming environment in which, completing objectives that reward achievements is done purely because of the achievement itself and the social status of it.

In this paper we are going to take a look at an achievement system implemented in a website for careers and job opportunities as a means to encourage users to interact and explore the application's features and stimulate them to create content.

### 2. Community-driven web

A common issue for any new website or web application is the struggle to attract an audience. Startups invest a great deal of effort and resources into advertising and promoting their business online. In many cases the PR campaign is crucial for the success and growth of small companies. However, based on the services being offered, there can be a more difficult challenge that has to be overcome. Social networks, job and career portals, forums and imageboards are all examples of the community-driven web. They offer a place for people to share their thoughts and interact with each other, create content and find new hobbies. They exist as long as there is fresh content being produced and posted that can spark-up a conversation and attract an audience. Community-driven web applications as an evolving concept, but inherently they will face an increasing difficulty to become popular the bigger their number is. To explain the above statement we will explore a plausible scenario.

The majority of web users have established a preference towards certain websites. The general online user has limited time in his daily routine that he can spend online. He will frequently visit more popular websites like Facebook or Twitter, because they are rich in terms of content. Many of his friends, family and co-workers are using those social platforms to share their ideas and interact in some way with their interests and other people. If Facebook was a

startup and had merely 10 users, any of them would spend significantly less time on it. There would be very little to do, very few pages or stories being shared. Furthermore, if that number didn't go up, there will be a content drought – the website would suffer from low activity and interaction between the user base. In other words, it is as important to keep the users invested and creating content as is to attract them to in the first place. Even if the services being offered are impeccable, the design is innovative and functionality on par with similar projects, the application cannot operate without the community.

To summarize: **a new community-driven project would first have to attract an audience and second - motivate its user base to interact with the features and to create and share content.**

An example of one such project was developed at the University of Economics – Varna and launched at the end of April 2015. It is a business network web application, part of a Euro-funded project aimed at integrating youth, academics and employers – <http://uebn.ue-varna.bg/>. The application serves as a career and job offers portal, as well as an internship tracking system. Furthermore, to strengthen the connection between the academics and university students and engage them in activities outside the university, the system offers creating, publishing and participating in consulting projects and case studies. With six user groups – employers, students, alumni, consultants, university experts and prospective students – the system became complex. Attracting users is relatively easy due to the fact that seniors are required to do an internship and the process would be recorded in the system. The difficult part is to motivate them to explore and use the platform's features regularly. This may present a problem due to the way users interact with each other via the system – if there are no job offers being posted, then students would not be active on the platform; if employers did not receive applicants for their job offers, they would not continue publishing them. To avoid this paradox we looked at ways to incite user activity within the web application. Following the success of enterprises such as Foursquare [2], Cisco's "Binary Game", Kaplan University's Badge System, Verizon Insider and many other<sup>1</sup>, an achievement system was proposed to be integrated with the business network platform.

### 3. Achievements in games

Achievements, trophies or badges are found in games as sub-system that evolved since its first introduction during 2002 in Microsoft's Xbox Live service. Quickly achievements became very popular way to create additional challenges in video games with little expense [3]. The rewards players receive vary greatly – from unlocking bonus in-game content to winning real prizes. Furthermore, earning exclusive achievements and completing difficult tasks affect the social status of the player amongst the

<sup>1</sup> <https://badgeville.com>

gaming community. Players often go out of their way to complete achievements solely to earn points and score higher than others. As long as there is a form of competition this can also be applied in non-gaming contexts. Gamification can fix large-scale, complex problems, but that does not mean its application needs to be large-scale and complex [4]. Achievement systems can be a simple addition to an already existing platform. They have proven to be a useful tool to motivate users to try out new approaches and test their knowledge and skills in different scenarios. Earning achievements has a satisfying psychological effect on people by giving them the feel of competence, autonomy and relatedness [5]. In addition achievements can serve as a measurement, regarding how involved are users with certain features, which modules they like or dislike. One of the big promises of today's commercial deployments of "gamified" systems is easy access to more ecologically valid user data on the different kinds of experiences and natural categories that arise from interaction with these systems [6]. Achievements can also serve as an instruction tool. Sometimes when players are not familiar with the environment or their capabilities in the game world, achievements can help them choose which path they should take.

The goals we set for the achievement system are to efficiently promote exploration and interaction with the application's features via instructional achievements, e.g.:

- *Generated a CV via the application;*
- *Published an internship program;*
- *Chosen fields of consulting expertise;*
- Etc.

Designing achievements for all six user groups was required in order to gather information and stimulate content creation. To incite users to complete achievements, there must be a reward as well. During the design period several options were explored, including colorful badge popups and profile trophies. However, due to the nature of the euro project it was concluded that the environment must be kept formal and it should be emphasized on the key principle of competition. There is already a natural competition between students when they are applying for a job, so it was decided that a ranking is to be created, based on how many achievements each participant has completed. Thus, when employers are viewing applicants or using the website's search functionality, the top results will be both active and devoted students. Of course the same idea is applied to the rest of the user groups – employers for example with a high number of achievements will see their ads at the top of the lists.

#### 4. Results and discussion

The achievement system was implemented a month after the application's launch. Within 2 weeks the database recorded an increase of 39% in user actions that were related to achievements - 2058, compared to the previous two weeks - 1481, excluding those of the designated testers and administrators. The following two weeks saw an increase of 65% in user actions - 3399 - and towards the beginning of July we noticed a steady decline. Although there were new users registering every day, because of the nature of the data that was being submitted, many of the forms did not need to be constantly updated, e.g. *Student status, Education, Project, Cases, Publications* and etc. For the month of July we saw a total of 731 user actions, however we can attribute this also to the fact that during this period of the year the majority of job spots have been filled and the amount of ads is significantly lower than for example throughout May and the beginning of June. Respectively most students are already employed and are less likely to register to a career and job opportunity web portal.

As a way to test if the achievements did attribute to the general usage of the system, we planned to add several new goals for our users, two of them that were within reach and two that would require more time to be completed. Experimental studies have

illustrated that the most motivating goals are those that are just out of comfortable reach [7]. The first two achievements were related to the internship programs - one for students to grade their experience and summarize the projects they worked on, and respectively one for the employers to rate the interns. The long-term achievements were related to reaching certain milestones - viewing a number of employer profile pages and publishing a number of case studies.

Overall we found out that it was better if we combine easy to get achievements with ones that take time. Furthermore, it was clear that to keep users involved we would have to gradually create new interesting ones. Alongside that, we would need to come up with exclusive achievements for certain actions in the system, which only a few users will be able to earn. Finally we came to an understanding that we need to allow users to see each other's achievements.

#### 5. Conclusion

Gamification is a useful tool as a means to motivate the participants in a community-driven web application to explore and contribute towards the creation of content. Achievements are a secondary sub-system that can help when a complex feature is introduced and the users are reluctant to try it. The social psychology behind achievements relies on the desire of participants to demonstrate their competitive spirit and win rewards for completing objectives. Although designing such functionality and integrating it in a more complex system varies in difficulty based on the subject area, it is highly useful if the application has many features and its scope covers various activities. Gamification is becoming increasingly relevant as more and more enterprises face the question whether certain aspects or modules of their products would need to be gamified.

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