

Table of Contents

Introduction	2
1. Gamification	3
1.1. Reward System	3
1.2. Gamified Systems	3
1.3. Gamified Systems Examples	4
1.3.1. Foursquare and Swarm	4
1.3.2. Nike +	5
1.3.3. BanaBak	6
1.3.4. ScrumKnowsy	7
1.3.5. Visual Studio Achievements	8
2.Monte Carlo Simulation Technique	8
3.Applications in Film Production	9
3.1. Features	9
3.1.1. Call Sheets	9
3.1.2. Script Import	9
3.1.3. Breakdowns	9
3.1.4. Crew Management	10
3.1.5. Calendar	10
3.1.6. File Sharing	10
3.1.7. Shooting Schedule	10
3.1.8. Contact List	10
3.1.9. Announcement	10
3.1.10. Messaging	10
3.1.11. Track Attendance	10
3.1.12. Financing	11
3.1.13. Post Production	11
3.2. SetKick	11
3.3. Studio Binder	11
3.4. Virtual Callboard	12
3.5. Yamdu	12
3.6. Edictive	12
4. Conclusion	13
5.References	14

Abstract

Today, technology is preferred instead of traditional methods in many areas of work life. In this study, we review the review to highlight many perspectives for our project Mega Reji. Mega Reji is a gamified application that will be used by a film production company. Mega Reji gives users chance of communication with each other, planning their schedules, arranging preproduction process, production process and post production process. The goal of this project is, improve the performance of a film production team by enhancing their activities (e.g. managing their time effectively). To this end, we investigate the notion of gamification and state of art for movie production systems. To evaluate our system design we conduct Monte Carlo Simulation.

Introduction

In these days lots of companies are using technological tools in order to do their work easily and finish it in short time. Gamification which means the use of game elements in non-gaming practices becomes a latest subject in software development processes [1]. In addition, many companies start using gamification embeded in their applications in order to motivate the employees. According to Zichermann and Cunningham [2] gamification is helpful technique which is powerful in terms of applicability to many problems solved by individuals through effecting their motivation due to the fact that human factors are one of the most crucial factors for success [3]. Nowadays, in film production area, teams are starting to work with production applications. There are several applications for stage-management by companies including but not limited to Virtual Callboard [4], Yamdu [5], Edictive [6], Setkick [7], Studio Binder [8]. These applications have similar features, but not enough for all work in stage-management. We aim with our senior project Mega Reji, combine all features of these applications at one application in order to make all team members' work easier and lead to work them cooperatively. On the other hand, Mega Reji has a gamified system which incentives for team

members to use Mega Reji application while doing their work. Besides, in this paper, we will convey our research about Monte Carlo Simulation Techniques for evaluation and related work such as Virtual Callboard, Yamdu, Edictive, Setkick and Studio Binder as we mentioned before.

1. Gamification

1.1. Reward Systems

Developing technology and workplace competition circumstances require more effort in terms of managers and employees. However, this situation leads intense work pressure on employees because of difficulty of competing with their rivals. For this reason, managers sometimes need to follow supportive paths such as reward systems in order to encourage the employees to work effectively. According to Wilson, one of the unique features of reward system is its capability of continue employees to focus on work, and encourage them to find new paths in order to reach their goals. In this way, employees are able to cope with negative situations while they are working on a project [9].

1.2. Gamified Systems

Gamification is becoming a popular and significant technological progress in work life. Gamification is the using game design items in non-game environment [10]. Gamification helps to solve problem with game component entertainingly. The presence of entertainment in the gamification makes it possible for boring events to reach more mass. This technology does not mean that users will be constantly being play games. There are more than 7 billion mobile phones in the world [11]. People interact with their smartphones frequently throughout the day and play games. Research shows that people enjoying themselves while spending time in the game. These behaviors of people who play games are very important for the formation of the concept of gamification. Gamification can have multiple uses in different projects. It is difficult to put

gamification in a certain mold and formulate it. For each project has a special gamification can be provided for that project, and in this way the project users gain some advantageous behavior for their work life. It is ensured that the users are better adhered to the project due to the presence of entertainment elements and that these users are more loyal to the projects. If there is entertainment in any job or duty, the time and the success that people will want to spend will increase. Even the most tedious projects can be brought to an entertaining state with gamification. The interest of people in games, and the ease with which various media can be presented to the user gamification. Games are used not only for leisure but also by industries like defence, education, scientific exploration, health care, emergency management, cityplanning, engineering, religion, and politics. They are also called serious games and their main purpose is to train, investigate, or advertise [12]. For instance, educator can use it to make students learn more easily and quickly. Companies can use gamification to raise morale of their employees and establish more sustainable relationships or to increase their sales. Gamification has certain well-known properties. all or none of which may be used or a different method. The major properties are virtual money, award, score, rank and progress rank. These are can use to increase competition and loyalty of the project.

1.3. Gamified Systems Examples

The research shows that there are various gamified mobile and web applications are used by companies or individuals. Some examples of these gamified applications are Foursquare [13], Nike + [14], BanaBak [15], ScrumKnowsy [16] and Visual Studio Achievements [17].

1.3.1 Foursquare and Swarm

Foursquare and Swarm are popular and frequently used mobile application. Foursquare and Swarm interact with each other. With Foursquare people can see other

people's advices about places and they can get inform about places' features like opening and closing times, prices, etc. On the other hand with Swarm people get some points and rewards by checking in from their mobile devices. Depending on how often he/ she visit a place, it is possible to have different status names. They can make gifts or discounts depending on how much you check in restaurants and cafés. Based on the features of this application, it is possible to see places your friends are looking and liking. The playing elements increase the number of users to check in and visit more places.

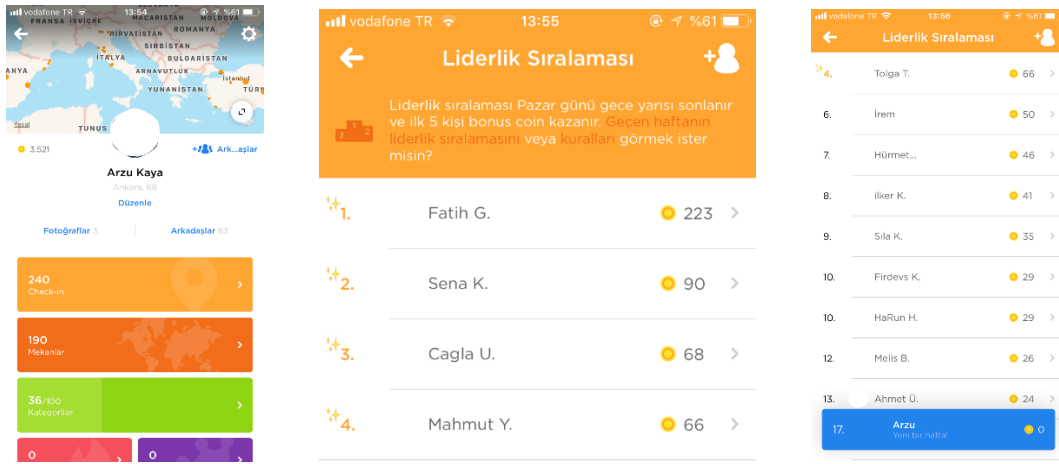


Figure 1: Swarm reward system

1.3.2 Nike +

Nike has developed a special system for some of its products. This system has been expanded with the elements of play. With this system, people liked and liked to play sports. Users can be included in this ecosystem by purchasing Nike + products and installing the Nike + app on smartphones or smartphones. Sensors on Nike + products communicate with intelligent devices to increase the number of steps, distance, speed, By integrating data with Nike + application, users are encouraging spores. The fact that the Nike + application, which features gaming, helps users to target by giving them prizes, increasing the brand's commitment to users. The used play items create a fun

mutualist situation between Nike and the users. Nike sells more products, and users have fun while buying and using the product.

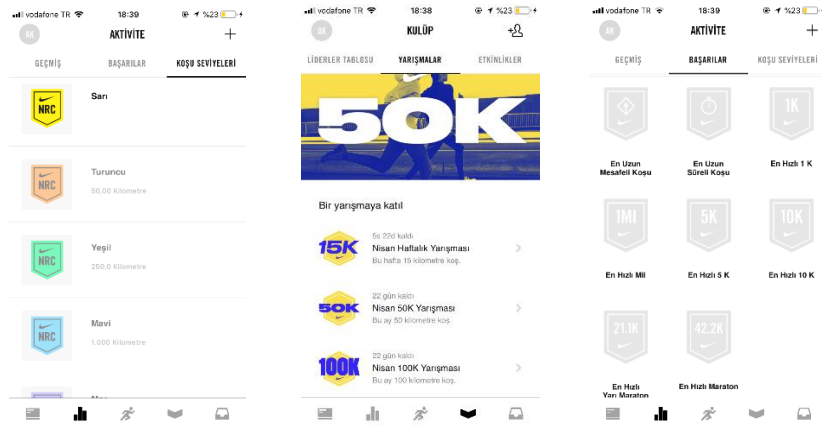


Figure 2: Nike+ Run Reward System

1.3.3 Bana Bak

The Bana Bak application is an application put on the market by the world famous P&G company. This application is only an example of plaything involving university students. In this application, users answer the questions, check in at the places where P&G products are found, and earn coins by proving that they buy P&G products. It is possible to spend these coins with certain options. Users can plant a sapling with these coins, photographic machine, bag, P&G products. Because it is the leader table, the users are allowed to enter the race with their surroundings. P&G offers the opportunity to use this product to increase awareness and add juvenile traits to its products.

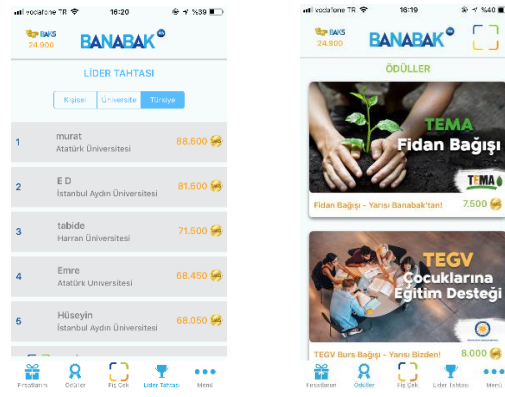
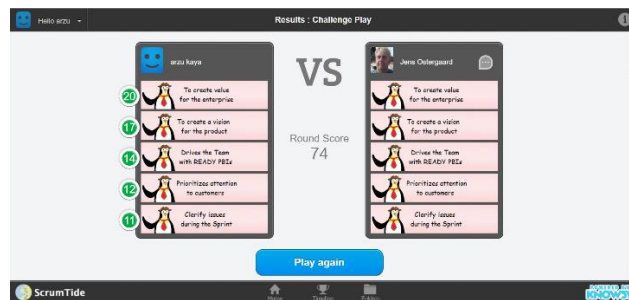
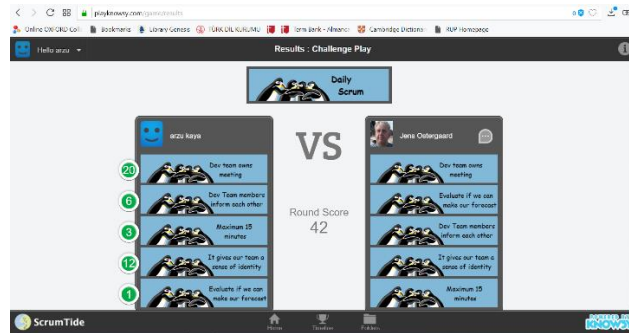


Figure 3: BanaBak Reward System

1.3.4 ScrumKnowsy

The ScrumKnowsy application is an application that uses the gamified system to improve the Scrum information of people or teams. This application contains specific questions and answers. Each question in the question has a different rating. Users and teams can develop scrum capabilities using this application.



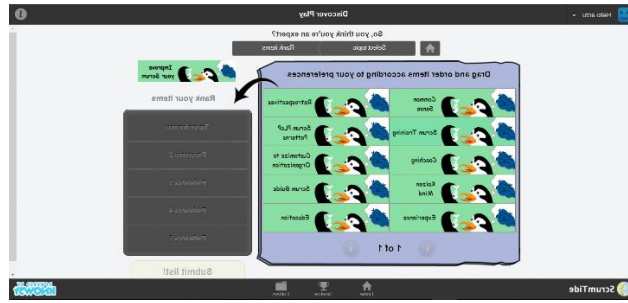


Figure 4: ScrumKnowsy Reward System

1.3.5 Visual Studio Achievements

Visual Studio Achievements is an add-on that is equipped with the gamification elements loaded into visual studio. The purpose of this extension is to remove the tedium of writing code. With this add-on, users can reach a certain level according to the codes they write. They can share this level with their friends. It can be seen how many people have written the code. With this add-on, Microsoft creates a special page where users can share their levels to make them feel more specific. With this add-on, I was encouraged to write code by collecting different badges. In this application, it is desired that the platform is more used and used while the Microsoft is added to the actual playground to be more fun than other programming environments and programming languages.

2. Monte Carlo Simulation Technique

Monte Carlo simulation (i.e. statistical sampling) techniques is used to mimic the operations of complex systems and ultimately produce distributions of possible outcome values that relies on repeated random sampling to obtain numerical results. Computer simulation is an important part of software development process, because test and evaluation of a project are a guidance for software developer. For this reason, we choose Monte Carlo Simulation Technique in order to evaluate our project.

The term Monte Carlo Simulation Technique was introduced by Amelin in his paper as a class of methods to figure out a mathematical problems by using random samples [18]. Therefore, the most important part of simulation study is statistical results of data acquired from simulation model [19]. The term Monte Carlo was used by Von Neumann and Ulam in World War II as a secret term for a problem related with atomic bomb. This study included simulation of random neutron diffusion in nuclear materials [20]. Monte Carlo Simulation Method is widely used in some areas such as finance, engineering, project and management etc.

3. Applications in Film Productions

There are several applications for film production by companies including but not limited to Virtual Callboard, Yamdu, Edictive, Setkick, Studio Binder. These applications provide some features to the users. For instance, CallSheets, Script Import, Sheet Breakdowns, Crew Management, Location, Calender, File Sharing, Shooting Schedule, Contact List, Announcements, Messaging, Financing and Post Production some of these features.

3.1. Features

3.1.1. Call Sheets

Digital calls sheet is a daily plan for all crew, people can be adapt to the schedule.

3.1.2. Script Import

Script import feature provides importing the script in PDF format.

3.1.3. Breakdowns

This feature provides to users complete set of breakdown and strip-boarding tools built right inside their browser with sheet breakdown.

3.1.4. Crew Management

This feature provides accessing cast and crew contact information easily.

3.1.5. Calendar

Schedule, then allocate tasks and milestones for your crew and colleagues on the project. Visually track progress.

3.1.6. File Sharing

User can share file with entire production or departments, also user can create folders in order to organize the files.

3.1.7. Shooting Schedule

Scheduling with scene numbers, roles, short synopsis, estimated shooting time, etc. Also, users are able to connect their shooting schedule.

3.1.8. Contact List

Users can manage and send messages to talent, crew, vendors, clients and more.

3.1.9. Announcement

Coordinators create announcement for all crew in order to inform them.

3.1.10. Messaging

Users can collaborate effortlessly with their crew, stakeholders easily.

3.1.11. Track Attendance

Managers can calculate the number of hours worked by each person in a given week.

3.1.12. Financing

Accountant can easily create unlimited financing scenarios, keep track on deadlines for fundings, and manage contracts and deliverables for their partners.

3.1.13. Post Production

Film production team be informed about post production periods.

3.2. Applications

3.2.1. Setkick

Firstly, Setkick is the least detailed stage production application we have encountered. Setkick provides users digital Call Sheets, Script Import, Sheet Breakdown, Crew Management and Location features. Digital calls sheet is a daily plan for all crew, people can be adapt to the schedule. Script import feature provides importing the script in PDF format. Setkick provides to users complete set of breakdown and strip-boarding tools built right inside their browser with sheet breakdown. The another feature of Setkick is Crew Management. This feature provides accessing cast and crew contact information easily. The last service of Setkick is Location, users can access a map in order to choose set location.

3.2.2. Studio Binder

In addition to Setkick application, Studio Binder provides Calendar, File Sharing, Shooting Schedule and contact list. Users are able to share the files with their colleagues and access the colleagues' files by using file sharing

platform. Shooting schedule is a significant and useful feature for crew in terms of getting information about shooting process.

3.2.3. Virtual Callboard

Virtual Callboard is a more developed application compared with Setkick and Studio Binder. In Virtual Callboard, there is an Announcement, Email, Forum, Track Attendance and Multi- Production Management parts. Managers can calculate the number of hours worked by each person in a given week by using Track Attendance part.

3.2.4. Yamdu

Yamdu is similar application with Virtual Callboard but it has some different features. For instance; Financing which managers easily create unlimited financing scenarios, keep track on deadlines for fundings, and manage contracts and deliverables for their partners. Breakdowns, each department should know needs and contributes the breakdowns part. Post Production, Yamdu provides accessing another application called ARRI Webgate, and crew uses this application for post-production by using Yamdu. In addition to these features, Yamdu provides Costume, Makeup and Prop Management organizations.

3.2.5. Edictive

The last application that we mention in this report is Edictive. There is a Dashboard which is visually track the project and individual work. There is a messaging platform which allows internal and external messaging different from email system. Also, script writer can write scenario and link to his/her production cast, crew, locations etc.

In conclusion all these applications have their own special features, but some features can be developed (please see Table 1).

	Announcements	Call Sheets	Messaging	Task Scheduling	File Sharing	Calender	Shooting Scheduling	Breakdowns	Financing	Contact List	Crew Management	Post Production
Virtual Callboard	✓		✓		✓	✓		✓		✓	✓	
Yamdu	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Edictive	✓	✓	✓	✓		✓		✓	✓			
Setkick		✓			✓			✓			✓	
Studio Blnder		✓		✓	✓		✓	✓		✓	✓	✓

Table 1: Existing Production Applications

4. Conclusion

In conclusion, Mega Reji is a film production software which will be used by film production teams. Gamification is a popular and common system in software era which means using game concept in software applications. Software developers aim motivate users by simple reward systems in terms of usage the application effectively and regularly. The main goal of this project is making gamified application in order to encourage and focus the production team members on their work. As we mentioned in this study before, there are several gamified applications in order to train employees and encourage users to work effectively. Furthermore, this literature review contains explanation about evaluation method of Mega Reji application. We are planning to evaluate our project with Monte Carlo Simulation Technique. Monte Carlo Simulation is a technique for computation of possibilites with data from project. Finally, there are several film production management applications in software sector, such as Yamdu, Setkick, Edict, ect. However, these applications do not fulfil all needs of film production teams. We are planning to unite all features of these applications in one application. Therefore, our literature review is concentrate on previous work related with our project and how to improve and gamified them clearly.

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