

## The Influence of Intrinsic Motivation on user Engagement in Online Buying and Selling: A Gamification Conceptual Model

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**Abstract:** User engagement seeks to engage users, attract users and hold users attention towards the product or services. In order to increase user engagement, the user needs to be motivated to interact with the system. However in current online buying and selling studies, one of the main challenges is to keep the user engaged in performing their desirable buying and selling behaviors and achieving their transaction goals in e-Commerce website. This study explored the relationship between intrinsic motivation and user engagement in online buying and selling. It was found that intrinsic motivation using gamification strategies are able to increase user engagement to achieve their goals. In this study, we propose a set of conceptual gamification strategies which apply the intrinsic motivation to increase user engagement in online buying and selling. This study, also presents few environments that applied these strategies which can be adopted to increase user engagement in online buying and selling activities.

**Key words:** User engagement, intrinsic motivation, gamification, online buying and selling, e-Commerce, intrinsic motivation

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### INTRODUCTION

The act of online buying and selling is the transaction that is performed by the public through the e-Commerce platform. e-Commerce is buying and selling of goods or services, undertaken through electronic means such as computers and the internet (Daniel *et al.*, 2002). Online buying and selling is now rapidly expanding and grant various advantages to the consumers. There are various types of e-Commerce platform such as Business-to-Consumer (B2C) which is transaction conducted over the internet between a business and a consumer; Business-to-Business (B2B) which is the e-Commerce between companies; Consumer-to-Consumer (C2C) which is transaction conducted between individual or consumer and mobile commerce which is buying and selling goods and services through wireless technology. However, among the factors that differentiate between e-Commerce website is the way they approach the engagement of users to their website. In Malaysia, some of e-Commerce websites are in lack of user engagement because the users only go through an ordinary experience process of buying and selling without any hidden motivators for them to visit the website more often. One of the solutions to increase user engagement in e-Commerce is by implementing gamification strategies

in the website. The goals of gamification applications include raising engagement, loyalty, brand awareness and motivation (Lucassen and Jansen, 2014; Muntean, 2011). Gamification is the use of game-thinking and game mechanics in non-game contexts in order to engage and motivate people to achieve their goals (Lucassen and Jansen, 2014). A small body of exploratory research confirms this positive effect of gamification in specific settings such as websites, e-Learning and online idea competitions (Muntean, 2011).

### MATERIALS AND METHODS

#### User engagement

**Definition:** Basically, engagement is something that engages consumers towards the product or services and directly attracts and holds their attention (Chapman, 1997; O'Brien and Toms, 2010). It also acknowledges that user's first impression of an applications and the enjoyment they derive from using it has affected their engagement (O'Brien and Toms, 2010; Quesenbery, 2003). There are two types of user engagement which are offline and online user engagement. Offline or in-store user engagement is usually related with wide-ranging brands and well known products. For example, Apple store they provide physical samples of their products to the public

to attract them to buy the product. Online user engagement usually focuses on interface design that matches the user-service experience. It is important to design the website that tailor to the user needs. Overall, all of these attribute in user engagement demonstrate the physical, cognitive and affective components of user experiences.

**User engagement studies:** Based on research conducted by O'Brien and Toms (2010) they examine these four theories which are flow, play, aesthetics and information interaction. Flow theory has been used to explore situational and personality variables associated with computer-based tasks (O'Brien and Toms, 2010; Woszczynski *et al.*, 2002). Flow is the situation that describes where the people are so involved in an activity, regardless of other things. Even at high cost, people are willing to do so because the experience itself is so, enjoyable (Csikszentmihalyi, 1990; O'Brien and Toms, 2010). Second theories which is aesthetics is the visual appearance of the interface as it follows to design principles and has been applied in interface design by the software developers. Aesthetic experiences are closely related to intrinsic motivation, require focused attention, stimulate curiosity, interesting and pleasurable (Jennings, 2000; O'Brien and Toms, 2010). Some of these attributes is highly linked with engagement. Besides that, play is the physical activity that encourages learning and creativity, develops psychological and social needs and involves aspects of competition and collaboration (Rieber, 1996). Play has been closely linked in increasing frequency and satisfaction in using a system as it increased motivation and challenge while using it. Interactions related to the communication interface between user and computer (Shneiderman, 1997). The specific context used in the interaction between users and system operating will generate an engaging experience. These four theories have its distinctive attributes that will form a model of user engagement.

**User engagement model:** User engagement model is proposed to study the attributes in a previous theoretical framework of flow theory, aesthetic theory, play theory and also information interaction (Heather and Toms, 2008). Engagement is maintained when users can maintain their attention and interest in the application and are characterized by encouraging emotions. In the following are some attributes that associated with user engagement (O'Brien and Toms, 2010).

**Focused attention:** Focused attention is a fully concentrate being engaged in an experience without

thinking of other things (Attfield *et al.*, 2011; O'Brien and Toms, 2010). The more someone is engaged with the task they do, the more likely they are to underestimate the passage of time. This is because it related to distortions in the subjective perception of time during interaction (Attfield *et al.*, 2011; O'Brien and Toms, 2010). That loss of self-consciousness has led to the engagement when their mental state is fully immersed in what they are doing (Attfield *et al.*, 2011; O'Brien and Toms, 2010).

**Perceived usability:** Perceived usability is a way to understand whether flexibility guidelines or tasks that exist are convenient to the users. It is different from informal policies because it applies to each individual's view of their own comfort level with using policies, not to whether others can use them.

**Aesthetics:** Aesthetics related to factors such as screen layout, graphics and the use of design principles in the application (Heather and Toms, 2008). With these attributes, it will lead to promote focused attention and stimulate interest of user in using the application. It concerns the sensory, visual appeal of an interface and is seen as an important factor for engagement.

**Endurability:** This attribute of engagement refers to the someone that are able to remember the experiences that they went through in complete certain task and ready to repeat it (Read *et al.*, 2002). Humans love to remember things that are pleasurable, useful and have remarkable experience which will encourage them to repeat such things. Something that are exciting be rewarded with benefits and incentives can increase engagement (Heather and Toms, 2008).

**Novelty:** Novelty is one of the factors in engagement, for creating feelings of curiosity and encourage behavior that would like to know things (Attfield *et al.*, 2011; O'Brien and Toms, 2010). It is something unfamiliar, surprising and unexpected experiences which will cause excitement and joy to users in experience new things.

**Felt involvement:** Felt involvement is closely related to the user emotion in order to be immersed in the environment and maintain their involvement in the environment (Jennings, 2000). Heather and Toms (2008) found that a meaningful involvement with materials or applications based on cognitive challenge and motivation because participants across applications needed personal interest to continue their tasks and adequate levels of physical or cognitive challenge.

**Gamification:** Gamification is an emerging trend, especially for those who want to embed game mechanics into their products or services in order to engage and motivate their employees or customers better. In general, gamification is “the use of game design elements in non-game contexts” (Deterding, 2012). Gamification is the process of using or adding game mechanics and game dynamics into something to produce gameness, free from intentions defined by its context. For companies and organizations, gamification might simply be defined as the act of embedding points, badges and leaderboards into their business in confidence that the game elements will have influence on their worker’s and client’s engagement and motivation. Popular examples of raised user engagement driven by game techniques that can be seen in various online applications such as recognitions of status (e.g., the badges in foursquare), features for creating challenges among users (e.g., Nike+) and for education (e.g., Khan Academy).

The earliest known use of the term “gamification” was made by Nick Pelling back in 2003 but did not gain popularity until 2010. In 2010, the term became more popular, being adopted by companies such as Bunchball and Badgeville. This can describe the platforms they had created for integrating game elements into sites. In 2011, more companies started developing gamification platforms as they became more popular. In 2012, Gartner predicts 70% of Global 2000 organizations will have at least one gamified application by 2014. In 2014, M2 research predicts that gamification will be a 2.8 billion dollar industry. Gamification has become mainstreams for both businesses and consumers. When it is implemented correctly, gamification produces positive results and is likely to remain a cultural force for years to come.

**Intrinsic motivation:** Basically, motivation can be categorized into two types; intrinsic motivation and extrinsic motivation. Intrinsic motivation involves engaging in action because it is personally rewarding or more accurately, performing an activity for its own sake rather than the craving for some external rewards (Ryan and Deci, 2000a, b). Extrinsic motivation occurs when people are motivated to perform a behavior or engage in an activity to attain some separable outcome or avoid punishments (Ryan and Deci, 2000a, b). These two types of motivation have been distinguished in Self-Determination Theory (SDT) based on the causes or objectives giving rise to a different behavior (Rigby and Ryan, 2011).

## RESULTS AND DISCUSSION

**Gamification strategies for intrinsic motivation:** The aim of this study is to shed further light on the effect of gamification strategies for intrinsic motivation within

e-Commerce website. Implementation of gamification strategies on e-Commerce sites has emerging lately and it is very possible to adapt on all e-Commerce field (Hansun, 2012). Gamification has been defined as a process of improving services with motivational values in order to raise remarkable gaming experiences and further behavioural outcomes (Hamari *et al.*, 2014). Some of simplest components of gamification such as points, levels, leaderboards and badges resulting that the implementation can be a powerful experiences (Deterding, 2012; Rigby and Ryan, 2011). When the users are experiencing enjoyment and fun in doing things they can become intrinsically motivated (Shi *et al.*, 2014).

Self-Determination Theory (SDT) is a theory of motivation that is concerned with supporting individual natural or intrinsic tendencies to motivate in effective and healthy ways (Ryan and Deci, 2000a, b). As a guide to the gamification conceptual model, SDT is applied to promote intrinsic motivation in the e-Commerce environments. Hence, in order to encourage motivation to the user, SDT proposes three basic needs to be fulfilled which is competence, relatedness and autonomy (Ryan and Deci, 2000a, b).

**Competence:** Competence refers to an individual with the continuous interaction in completing certain task in the social environment to experiencing opportunities. To meet the requirements of competence, it would lead someone to seek challenges in improving and maintaining their skills through activities (Ryan and Deci, 2000a, b). Hence, by offering interesting challenges by combining clear rules and objectives can enhance the competence feelings (Groh, 2012).

**Relatedness:** Relatedness refers to the interactions, relationships and experience to pay attention of others. This is because every action and daily activities done by someone will involve other people and the community and through this they will find a sense of belongingness (Ryan and Deci, 2000a, b). Various social interactions such as ratings, comments, social status and reputation such as points, level and leaderboard can enhance relatedness in connecting users on social e-Commerce field with a common interest (Ryan and Deci, 2002a, b).

**Autonomy:** Ryan and Deci (2000a, b) stated that autonomy refers to the sense of free will in doing something or acting out of the interests and values of their own. So, in order to satisfy the need of autonomy, it is essential to let the users to feel their behaviour is based on their own intentions. This can be done by providing interesting and flexible options to further offset the curiosity, skills and goals towards certain things. So by offering intrinsic choices of voluntary behaviour, thus, it can maintain the intrinsic motivation of users (Groh, 2012).

**Identification gamification strategies in interface design:**

The rising of social networking makes the uses of gamification gain more popularity among community. This is because they will compete against each other to be the best in the society. Therefore, the concept of gamification has opened up the opportunities for online businesses to attract more users and directly converts them into loyal buyers. Gamification strategies are some of the indicative desires that effect to the user through the game elements. Every human being has needs and desires that consist of various aspects. So, it is very important for game designers to know how to address their needs in the game environment to allow these methods are widely used.

**Points:** Points can be used to reward users across multiple dimensions and different categories of points can be used to drive different behaviors within the same site or application. Typical types of points that have been used are experience Points (XP), skill points (score, rank) and influence points (rating, reputation). In social e-Commerce, points will be rewarding to the user when they perform a valuable behavior in the website. For instant, for each complete transaction that made by the user they will receive points. When they make more transaction there will be more points that will be earned by the users.

**Levels:** Levels are a system or “obstacle” by which players are rewarded by an increasing value for accumulating points. Often features or abilities are unlocked as player’s progress to higher levels. Leveling is one of the highest components of motivation for gamers. At the certain stage on social e-Commerce, the user will “level up” from the collected point that the user earned from their behavior. Level may help to give a clear picture to the user where they are standing in a community. It may also help to stimulate friendly competition and show the user progress towards the overall goals (Fig. 1 and 2).

**Leaderboard:** The overwhelming majority of successful games have wisely implemented a “high-score table”. They bring aspiration, “fame” and your name in lights. In the context of gamification, leaderboards are used to track and display desired actions, using competition to drive valuable behavior. Leaderboard will rank all users on the social e-Commerce and shortlist the top user based on the points and levels that they have earned from transaction they make. Purpose of leader boards is to encourage the users to perform better behavior in order to achieve their goals and to seal the top spot (Table 1).

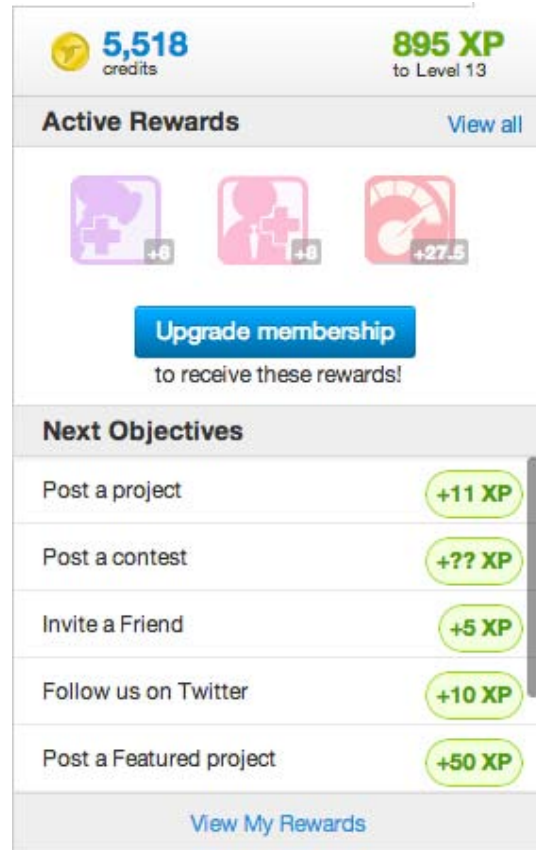


Fig. 1: Example of points elements



Fig. 2: Example of level progressing bar

Table 1: Example of leaderboard

Ranks	Username	Levels	Scores
1	mhanif	Level 20	2,237,630
2	RSGGeneral	Level 20	309,836
3	MCZ	Level 20	174,036
4	pksignup	Level 20	129,065
5	phpMeastro	Level 20	54,120
8910	anrosarnaeg	Level 12	2,761

## CONCLUSION

In this study, we have presented a few gamification strategies that can be implemented in social e-Commerce website for online buying and selling activities. We also have adopted gamification approach that applies the intrinsic motivation for the social interaction in the e-Commerce environment.

## RECOMMENDATION

Therefore, the future research is to seek to implement these strategies into social e-Commerce website to increase the user engagement.

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