Regulatory Focus and Smart Phone Switching Behavior: the Role of Quality Type

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Abstract
This paper tests empirically the effect of regulatory focus on switching behavior by smart phone quality types. We designed an experiment to examine the interaction effect of smart phone quality type (system quality vs. service quality) and goal orientation (promotion focus vs. prevention focus) on switching decision behavior. In the system or functional quality disappointment situation, the promotion-focused users tend to switch their smart phone platform more than the prevention-focused users. In contrast, in the service quality disappointment situation, the prevention-focused users show higher possibility to switch their platform than the promotion-focused users.

Keywords: Quality Types, Regulatory Focus, Smart Phone Platform, Switching Behavior

1. Introduction
The growth of the smart phone service market led to the battlefield of mobile platforms and their ecosystems. According to the forecast by Gartner¹, mobile phone shipments are expected to increase to over 1.9 billion in 2014. In contrast, PC sales have decreased by 10.6% in 2013 compared to 2012 and are expected to decrease further in 2014. Previous researches have explored some factors that may moderate replacement decision; for example, Shin and Kim² investigated switching barriers under the mobile number portability to show the effect of demographics on switching decision. Chuang³ insisted that subscribers’ satisfaction, switching costs, and habit strength negatively influence switching intentions.

However, despite of goal orientation has an important impact on the context of decision making, users’ goal orientation has not yet received much attention in the studies on switching behavior. This research focuses on examining the interaction effect of smart phone quality types (system quality vs. service quality) and goal orientation types (promotion focus vs. prevention focus) on smart phone replacement decision. Considering the impact of goal orientation on switching behavioral intention is important when users are given different types of quality.

2. Theoretical Background

2.1 Switching Behavioral Intention
Switching behavior has received much attention from psychologists and behavioral researchers during past decades. One of the early studies is to determine the determinants of consumers’ switching behavior in different service industries from beauty salons to mobile service providers⁴. Recently rapid information technologies bring an increasing number of studies on individuals’ switching behavior. Switching behavior theory which combined with the extrinsic and intrinsic motivation theory has been extensively applied to various research fields such as social media web sites, push-pull-mooring model, etc⁵.

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Shin and Kim\(^2\) insisted that switching intention is important to understand the behaviors of customers. This mental inclination means that customers are willing to switch to another or terminate the purchasing from the present product or brand. According to Jones, Mothersbaugh, and Beatty\(^6\), switching intention typically arises from the dissatisfaction with the current provider’s performance of products or services. Chuang\(^7\) insisted that failure or poor in providing product performance and services are the main reasons that customers make switch to other providers or competitors.

Following up on the previous researches, the cause of switching behavior can be divided into two categories such as power expression and cost consideration. The starting point is the expression of his/her power and the cost consideration ends in. If somebody feels uncomfortable or has a complaint about some services or situation, first of all, he or she may decide to switch the services from current status to another options for expressing his/her power. Secondly, agonizing more rationally, he or she has no choice but to consider the incurred cost. Finally, he or she makes a decision whether or not to switch actually. The costs are not only evaluated from the economic aspect, nevertheless it also contains the physical and emotional cost\(^7\).

Hence, we can regard switching behavioral intention as an individual’s consideration when they want to show their power before they weigh the switching costs. If the cost to keep existing condition is smaller than that of switching cost, most customers renounce to take any switching action. On the contrary, if the switching cost is smaller than the current cost, most people might have actual switching intention. Therefore, switching intention can be defined as not only their expression toward current dissatisfaction about product performance or services\(^7\), but also their temporal decision results to consider switching carefully about existing smart phone provider which might cause lose in money, energy, time, and relationship.

2.2 IS Success Model

Despite the large number of empirical studies in MIS area, what exactly affect “Information Systems Success” has never been clarified. It appears that IS Success is one of the burning issues that have not found much agreement. The problem is compounded because “success” is a multi-dimensional concept that can be evaluated at various aspects such as technical, individual, or organizational level. However, many MIS researchers regard DeLone and McLean’s model as a major breakthrough\(^9\). DeLone and McLean\(^9\), after a comprehensive review of many kinds of measures used in the literature to assess IS Success, proposed the model that incorporates several individual dimensions of success into an overall model of IS Success. The model is to be explained in the following ways — “System Quality” and “Information Quality” singularly and jointly affect both “Use” and “User Satisfaction”. Additionally, the amount of “Use” can affect the degree of “User Satisfaction” positively or negatively as well as the reverse being true. “Use” and “User Satisfaction” are direct antecedents of “Individual Impact” and lastly they impact on individual performance, eventually should have some “Organizational Impact”.

This IS Success model has aroused a number of subsequent studies. However, it also has not only its own share of strong criticisms but also misrepresentation of communication and the unreality of the unidirectional relationship among constructs\(^8\). Afterward, the initial development model was further refined by the original authors a decade late in response to feedback received from other researchers. DeLone and McLean\(^10\) identified and described the IS Success model which include three critical independent variables of IS success. In the model, the quality has three major dimensions: “System Quality”, “Service Quality,” and “Information Quality”. Each should be measured or controlled for separately, because they affect subsequent “User Satisfaction” singularly or jointly.

In this research, switching smart phone does not mean the replacement of design or mobile communication company, or the model upgrade, but the replacement of the mobile platforms. Therefore, we considered the system or functional and service qualities which are regarded as a key construct applied to the switching intention of smart phone platform in IS success model.

2.3 Goal Orientation on Switching Behavior

The regulatory focus theory contains two distinct self-regulatory systems, a promotion focused system and a prevention focused system. Zhao and Penchmann\(^11\) conceptualized that promotion focus, which originates from the regulation of nurturance needs, relies on the use of approach strategies to regulate the achievement of a desirable end. This focus is especially active in the pursuit of ideals; that is the pursuit of wishes, dreams, and
aspirations. In contrast, prevention focus, which derived
from the regulation of security needs, relies on avoidance
strategies to regulate the achievement of desirable ends.
Prevention focus is especially active in the pursuit of
things that one ought to do; that is, the fulfillment of
responsibilities, obligations, and duties\(^\text{12}\).

The differences between promotion and prevention
focus can be summarized into three approaches\(^\text{12,13}\). First,
“the needs” that individuals seek to satisfy the standards
with which individuals focus to align themselves. In
relation with an individual’s needs, promotion focus
orientation has relationship with growth and development.
In contrast, prevention focus individual is associated with
safety. Second, “the aims” that individuals seek to achieve,
promotion focus is related with the focus on ideal itself as
reflected in hopes, whereas prevention focus set the focus
on oneself explained by obligations and duties. Third, “the
behavioral outcomes” that individuals seek to recognize,
promotion focus favors the presence of positive outcomes
and wishes to omit the error. However, prevention focus
favors the absence of negative outcomes and to ensure the
presence of correct rejections.

Chen and Chang\(^\text{14}\) discussed whether customer are
affected with regulatory focus they adopted between
different crisis types such as performance-related
crisis and value-related crisis. They proved that when a
performance-related crisis occurs, the adverse influence
that prevention focus consumers perceived is larger than
promotion focus consumers; whereas when a values
related crisis occurs, the adverse influence that promotion
focus consumers perceived is larger than prevention focus
consumers. While system quality is related with functional
aspect as performance related outcomes, service quality
is value related issues. Therefore this research predicts
that the quality types and goal orientation will have an
interaction effect on switching behavior. When given the
dissatisfaction about functional quality or service quality,
users may experience an unfavorable situation (losses)
and show different power to make switching decision
according to promotion or prevention focus. These
predictions lead to the following hypotheses:

- **H1**: Quality type and goal orientation will have an
  interaction effect on the smart phone switching behavior.
- **H2\(_a\)**: In the unsatisfied situation on system quali-
ty, promotion-focused users will switch their smart
phone more easily than prevention-focused users.

### 3. Methodology

#### 3.1 Sample and Procedure

One hundred and twenty university students in South
Korea participated in the experiment. The mean age of
participants was 22.97 years old with a range of 20 to
25. The experiment adopted a two (quality types: system
quality vs. service quality) by two (goal orientation: promotion focus vs. prevention focus) between-subjects
experimental design, where quality types and goal
orientations acted as the independent variables, and
the extent of switching behavior intention acted as the
dependent variable. The extent of switching intention
was characterized and measured by: I likely to switch my
smart phone to another platform in future. Participants
were randomly assigned to the experimental conditions
that were balanced for gender and current smart phone
platform. They worked in mixed male and female groups
as well as Android platform and iOS platform of two
scenario sessions. A preliminary analysis examined that
there was no difference between genders or between
platform types on the extent of switching intention.

An independent t-Test result showed that M=5.05,
SD=1.41 for male (n=70), and M=4.49, SD=1.96 for female
(n=50), t(50)=2.29, p=0.198. And M=4.82, SD=1.51 for
Android user (n=80), and M=4.64, SD=1.93 for iOS user
(n=40), t(41)=1.25, p=0.457. No significant results were
obtained, so gender and current platform type was not
considered further.

#### 3.2 Measure

#### 3.2.1 Goal Orientation

Many previous studies of goal orientation\(^\text{12,15}\) have
adopted Button, Mathieu, and Zajac\(^\text{16}\) measurement scale
due to its high level of reliability and validity. Therefore,
in this study, eight item scales were designed to measure
promotion focus level, e.g., I frequently imagine how
could I will achieve my hopes and aspirations; I often
think about the person I would ideally like to be in the
future; I typically focus on the success which I really
hope to achieve in the future; In general, I am focused on achieving positive outcomes in my life; Overall, I am more oriented toward achieving success than preventing failure.

Also, eight item scales were designed to measure prevention focus, e.g., I frequently think about how I can prevent failures in my life; I often think about the person who I really afraid I might become in the future; I often imagine myself experiencing bad things that I fear might happen to me; I am more oriented toward preventing losses than I am toward achieving gains; In general, I am focused on preventing negative events in my life. All measures were adopted from previous research.

All the measured values were in the range from 1 ("strongly disagree") to 7 ("strongly agree"). We used 7-point Likert scale to measure the items because it has been reported to offer higher sensitivity and better discrimination between the respondents. In addition, with a seven-point Likert scale respondents are less inclined to tick the middle score as they are given a better variety of answers. We evaluated the internal reliability of scales by a Cronbach's alpha; the reliability of two constructs (promotion focus and prevention focus) were enough, 0.915 and 0.958, respectively, which confirmed that the measures were internally consistent, above the acceptable value of 0.70.

There were 120 completed responses. To classify the participants as being promotion-focused or prevention-focused, we adopted a procedure that is similar to what has been used in previous research. Specifically, each participant's responses on the promotion and prevention measures were averaged. A measure of dominant regulatory focus was calculated by subtracting the prevention score from the promotion score. Subsequently, participants were classified as being either promotion-focused people or prevention-focused one on the basis of a median split (Median = 0.603). With this method, 80 participants were classified into promotion-focused, and 80 participants were classified into prevention-focused.

### 3.2.2 Quality Types in Scenario

As stated previously, there were two manipulated variables in this 2 x 2 between subjects experimental design. Thus, two scenarios were created in which respondents imagined that they experienced their current smart phone for either functional system quality or service quality. More specifically, for the system quality manipulation, respondents read the following scenario which describes the functional quality disappointment about their current smart phone usage.

> I am using my smart phone that I have more than 1 year. The stipulated (contract) time still remains. I am always anxious about system security when I get or download something in smart phone app store or market due to platform characteristics. When I try to update apps or software patches on my smart phone, error messages pops up very frequently than before because of poor software compatibility. Recently, my smart phone is shutting down frequently by itself. Although there are so many users, especially my friends around me, with same type of platform, I am very frustrated and angry every time when I use it. That's why I am unsatisfied with it. Sooner or later, I would like going to switch another smart phone platform which is new version and famous brand for the functionality and performance of my smart phone.

For the service quality manipulation, respondents read the following scenario of service quality disappointment about their current smart phone usage that they felt at the smart phone service center. A service center setting was selected because the situation of the service process in a service center was relatively realistic.

> I have used my smart phone for 4 years. I have been satisfied with overall functional quality. The stipulated (contract) time was already finished. However, whenever I had visited the customer service center due to cracked display screen, battery malfunction, or antenna failure, etc., I was so disappointed, inconvenient, and angry about their services. First of all, I had a hard time to find the customer service center. And I always waited too long time to handle my request because of the short of service staffs unkind as well as unskilled. Moreover, to make things worse, they always charged the repair fee more than I expected. That's why I discontinue using my smart phone, and sooner or later I’m going to change another new smart phone platform which is famous for its services.

### 3.2.3 Dependent Variable

After reading the scenario, the respondents were asked how likely it was that they would switch the current smart phone platform to another type one. They responded...
on a seven-point scale anchored by with 1 being “Very unlikely” and 7 being “Very likely”. The measurement of switching intention was like this: “I would likely to switch my smart phone device to another platform in the future”.

4. Results and Discussion

This research administered an ANOVA to analyze the main effects and the interaction effect of quality type and goal orientation on the switching behavioral intention. Results indicated that the main effects of goal orientation (F(1, 84) = 1.64, p>0.05) and quality type (F(1, 84) = 2.30, p>0.05) were not statistically significant. The main effect of goal orientation revealed that the extent of switching behavioral intention in the promotion-focused condition (M = 4.89) was greater than that in the prevention-focused condition (M = 4.52). But it was not supported. Also the main effect of service type indicated that the extent of switching behavioral intention in the service dissatisfaction condition (M = 4.89) was greater than that in the functional system dissatisfaction condition (M = 4.67). However, the results showed that the interaction effects of quality types with goal orientation was significant (F(1,84) = 17.20, p <0.01). Table 1 presents the ANOVA results of the main and interaction effect.

Table 1. Anova results

|              | DF1 | DF2 | F   | Sig  |
|--------------|-----|-----|-----|------|
| Goal Orientation | 1   | 84  | 1.64| 0.86 |
| Quality Type  | 1   | 84  | 2.30| 0.71 |
| Goal Orientation * Quality Type | 1   | 84  | 17.20| <0.01 |

A further analysis of t-Test indicated that, in the disappointment of system quality, promotion-focused users exhibited a higher extent of switching intention than prevention-focused users (M
promotion
 = 5.48 > M
prevention
 = 3.54, t = 3.93, p<0.01, Table 2). Conversely, in the condition of service quality disappointment, prevention focused users showed a higher extent of replacement decision than promotion-focused consumers (M
promotion
 = 4.05 < M
prevention
 = 5.70, t = -3.08, p<0.01, Table 2). Hence all hypotheses were supported. As a result, the manipulated goal orientation in experiment revealed that goal orientation and quality type yield an interaction effect on smart phone switching behavior, implying that the findings in this research have practically important for smart phone service providers and dealers.

Table 2. Interaction effect of goal orientation and quality type

| Quality Type (Status) | Goal Orientation | Mean | t    | Sig  |
|-----------------------|------------------|------|------|------|
| System Quality (Dissatisfaction) | Promotion oriented | 5.48 | 3.93 | <0.01 |
|                        | Prevention oriented | 3.54 |      |      |
| Service Quality (Dissatisfaction) | Promotion oriented | 4.05 | -3.08| <0.01 |
|                        | Prevention oriented | 5.70 |      |      |

In this paper the results that there was an interaction effect between goal orientation and quality type played an important role to figure out decision making mechanism for switching behavior, especially platform switching behavioral intention. From the ANOVA analysis and t-tests, we could derive some important implications.

First, there was no main effect between goal orientation and switching intention for smart phone platform. Whether the smart phone user is promotion focused or prevention focused, the direct relationship between goal orientation and switching intention could not found. From the test result, we can insist switching intention is not impulsive or extemporaneous, nor does follow individual’s goal orientation itself, but is highly related with a high-involvement decision.

Second, we could not find enough evidence statistically to prove the direct relationship between quality type and switching intention for smart phone platform. When user compare the cost of maintaining present one with new platform, the dissatisfaction level is more important than the quality types.

Finally, as the test result showed, there was a significant interaction effect between goal orientation and quality types. Although goal orientation and quality type did not affect switching intention independently, it is good evident that goal orientation and quality type play an important moderating role on switching behavior of smart phone platform when they are combined.

According to the ‘affect-as-information’ heuristic, prevention focused individuals are less likely to rely on social affects than promotion focused individuals. They tend to be more vigilant and externally rather than internally focused and can use emotions as a valuable input for their subsequent evaluations. Moreover, Kramer and Yoon insisted that the salience of emotional arguments could also be determined by the characteristics of the message itself. When the message is congruent with their regulatory focus, there will be
Service quality situations themselves may be inherently more emotional than rational in terms of customer’s (dis) satisfaction\textsuperscript{23}. Perceived system quality is a key construct representing utilitarian aspect. According to the rational choice theory, utilitarianism must be based on their rational calculations\textsuperscript{22}. Based on the above theories, system quality is related with rational aspect and service quality is associated with emotional aspect. Cornelis, Adams, and Cauberghe\textsuperscript{22} demonstrated that rational and emotional aspects could yield goal orientation. This study further indicated that the interaction effect between goal orientation and quality types (system quality as rational aspect and service quality as emotional aspect) can yield user’s switching intention. As a result, placed in the disappointment of system or functional quality, promotion-focused users might have higher possibility to be willing to switch their smart phone platform. And placed in the disappointment of service quality, prevention-focused users might have higher possibility to switch their smart phone platform.

5. Conclusion

This research differs from the prior researches in three main topics, which contribute to the switching intention literature. First, while platform switching intention behavior is a key issue in the domain of smart phone ecosystem being under fierce competition, regulatory focus theory (promotion focus vs. prevention focus) has drawn much attention due to its importance in behavioral psychology and has extended into the domain of technology acceptance. However, there are few researches about an impact of goal orientation on switching intention in the field of empirical test. This research contributes to fills the gap between regulatory focus and switching intention by examining the quality types.

Second, many satisfaction researches tried to relate switching intentions to system and service quality. Studies of Dabholkar\textsuperscript{23} and Dlodlo\textsuperscript{24} showed that system and service quality from IS success model proposed by DeLone and McLean\textsuperscript{8} has direct effect on behavioral intentions through satisfaction. While perceived system and service quality is high, satisfaction will also be high and then switching tendency of the users will be low. We concludes that when given a situation of perceived system quality dissatisfaction, promotion-focused consumers exhibit a higher extent of switching intention than prevention-focused consumers; in contrast, when given a context of perceived service quality dissatisfaction, prevention-focused consumers exhibit a higher extent of switching intention than promotion-focused consumers. This paper includes goal orientation to offer a more comprehensive insight for the impact of goal orientation on switching intention for smart phone platform.

Third, Pham and Avent\textsuperscript{19} argue that individuals with different goal orientations (promotion focus vs. prevention focus) tend to have congruency effects. So, when the message is emotional or rational and congruent with their self-regulatory focus, individuals will subsequently result in more favorable judgments. This research further indicates that when given a situation of perceived system dissatisfaction, prevention-focused users exhibit a lower extent of switching intention as to response more effectively toward emotional messages. In contrast, when given a context of perceived service dissatisfaction, promotion-focused users exhibit a higher extent of switching intention as to response more effectively toward rational messages.

Finally, as compared with the direct manipulation of goal orientation in the previous studies, this paper applied scenario-based measurement as a method to manipulate the goal orientation. It is controversial whether the subjects’ goal orientation can be primed by means of a scenario-based measurement method. Hence, future research is recommended about directly manipulated goal orientation. And some more mediating or moderating variables can be introduced to examine their potential interaction effects on switching behavioral intention. For example, risk tendency is a potential moderator to be applied in the future research.

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