

# **A Study of Consumers' Upgrade Intention of High-technology Products**

By

**Winn Wing-Yiu Chow**

BEng(Hons) (Electrical Engineering), BSc (Computer Science)  
The University of Melbourne, Australia

MSc (Electrical Engineering)  
California Institute of Technology, USA

Master of Business Administration  
The University of New South Wales, Australia

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## Statement of Originality

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## Synopsis

Consumers' upgrading of high-technology products rapidly grows in importance, but is still under-researched. This research aims to investigate the consumer upgrading intentions relating to high-technology products. It expands the prior research on technology acceptance and use in the information systems literature, and consumer upgrade behaviour in the marketing literature, to propose a technology upgrade model. The model extends the most recent extended unified theory of acceptance and use of technology model (UTAUT2) and incorporates two different concepts of satisfaction: satisfaction with a high-technology product, and satisfaction with the underlying technology of a high-technology product. Recency of purchase is hypothesized to moderate the effects of consumer beliefs about a high-technology product on consumer upgrade intentions. Results from a quantitative, cross-sectional study involving an anonymous questionnaire survey of a sample of 410 degree and sub-degree university students in Hong Kong provided empirical support for the model. The results showed that the model is more useful and powerful than the UTAUT2 model for explaining consumer upgrade intentions. The model explained 46.4% and 57.8% of the variation in upgrade intentions for consumers who had purchased a smartphone less than or equal to 12 months previously, and for consumers who had purchased a smartphone more than 12 months previously respectively. This research makes several significant theoretical contributions. Firstly, it extends the generalisability of the UTAUT2 from a consumer acceptance and use context to a consumer upgrade context. Secondly, it explains the contradictory result on the effect of satisfaction on consumer upgrade intentions in prior research. Most significantly, this research showed that the two different concepts of satisfaction regarding a high-technology product were two of the most significant

factors that explain consumers' upgrade of technology. Lastly, it reveals that a technology upgrade decision is similar to a technology acceptance decision when recency of purchase is old, but is more similar to a technology continued use decision when a purchase had been made recently (that is, 12 months or less). This research also indicates several practical implications for marketing managers. Marketers are advised to focus on hedonic motivation in order to attract consumers who made an earlier purchase to upgrade. Marketers should also focus less on price competition but more on product differentiation based on innovation and customer support services to promote upgrades.

## **Abstract**

Consumers are adopting new technologies more readily and replacing high-technology products with improved versions more frequently. This phenomenon is most apparent regarding smartphone adoption and upgrading. Although substantial theoretical and empirical research has been undertaken to explain users' acceptance and use of technology, consumers' upgrading of high-technology products remains largely under-researched.

This research investigates the consumer upgrading intentions relating to high-technology products. The study will undertake this through formulating a technology upgrade model that expands the most recent extended unified theory of acceptance and use of technology model. This study will incorporate three different concepts: satisfaction with a high-technology product, satisfaction with the underlying technology of a high-technology product, and recency of purchase. A quantitative, cross-sectional study involving an anonymous questionnaire survey was conducted on a sample of 410 degree and sub-degree university students in Hong Kong. Confirmatory factor analysis was used to assess the measurement model validity of the technology upgrade model. Structural equation modelling analysis with multi-group analysis was used to assess the structural model validity of the technology upgrade model, the relationships between the constructs, and the moderating effect of recency of purchase. Empirical support is evident for the proposed technology upgrade model's applicability to the consumer upgrade context. The variance explained in consumer upgrade intentions was substantial. The model explained 46.4% of the variation in consumer upgrade intentions for consumers who had purchased a smartphone less than or equal to 12 months previously; this was 57.8% when the purchase had been made more than 12

months previously. This suggests that the proposed technology upgrade model is useful and powerful for explaining consumer upgrade intentions regarding high-technology products.

The major findings from testing the proposed technology upgrade model reveal the following:

1. The proposed technology upgrade model (as a development of the extended unified theory of acceptance and use of technology model, incorporating satisfaction and recency of purchase) is relevant and powerful for explaining consumer upgrade intentions relating to high-technology products.
2. Prior research on the extended unified theory of acceptance and use of technology model suggests that seven significant factors influence consumer acceptance and use intention (Venkatesh, Thong, & Xu, 2012). In contrast, this research shows that only four factors—effort expectancy, social influence, facilitating conditions and hedonic motivation—are significant in relation to consumer technology upgrades.
3. This research verifies that two different concepts of satisfaction relate to consumer technology upgrades. These are satisfaction with the current high-technology product, and satisfaction with the technology that supports the current high-technology product. While consumers who are dissatisfied with their current high-technology product are more likely to upgrade, satisfaction with the technology that supports the current high-technology product actually influences upgrading intentions. This research shows that these satisfaction-related concepts are two of the most significant factors that explain consumer technology upgrades.

4. This research also shows that consumers made significantly different considerations regarding upgrading decisions when recency of purchase was greater than 12 months and less than or equal to 12 months. When recency of purchase was greater than 12 months, consumers were driven to upgrade more strongly by effort expectancy, social influence and hedonic motivation. However, these consumers were not driven by facilitating conditions. When recency of purchase was less than or equal to 12 months, consumers who were satisfied with their current high-technology product were reluctant to upgrade. However, those who were more satisfied with the technology supporting their current high-technology product were more attracted to upgrades linked to gaining further benefits from the technology.

This research seeks to identify the significant factors that influence consumer upgrading intentions regarding high-technology products. This research reveals that the proposed technology upgrade model incorporating satisfaction and recency of purchase is more applicable and powerful than the extended unified theory of acceptance and use of technology model for explaining consumer upgrading intentions regarding high-technology products. Additionally, the research results suggest that a technology upgrade decision is similar to a technology acceptance decision when recency of purchase is greater than 12 months, but is more similar to a technology continued use decision when recency of purchase is less than or equal to 12 months.

This research indicates several practical implications for marketing managers of consumer technology vendors in product design, promotion, pricing and customer support. The findings show that consumers who wait longer to make an upgrade perceive hedonic motivation as vital. Hence, marketers are advised to focus on the

development of new features or the 'look and feel' that will make the usage experience enjoyable for these customers. Consumers are increasingly regarding high-technology products as essential. Therefore, consumers may become insensitive to price when considering an upgrade. Marketing managers should focus less on price competition and more on product differentiation. Finally, only consumers who are satisfied with using a technology but are no longer satisfied with their current high-technology product will consider upgrading to an improved product. In evaluating consumer satisfaction and potential for an upgrade, marketing managers must measure not only consumer satisfaction with the current high-technology product, but also their satisfaction with the technology that supports the product.