INTRODUCTION

1.1 Background and Motivation

Since the Industrial Revolution, global temperatures have risen 0.76 degrees Celsius. The average temperature increase doubled from 1960 to 2010, compared with the period from 1860 to 1960 (Labay & Kinnear, 1981). One of the main reasons is energy-related carbon dioxide emissions. Thus, people are looking for solutions on how to reduce carbon dioxide waste and save energy. The Smart Grid technology has developed because of the urgency of global warming. This Smart Grid technology can optimize energy efficiency and improve the power quality worldwide. Many countries have become devoted to building such smart grids. This year, Taiwan announced that it will invest in the Smart Grid industry, which is expected to improve the efficiency of energy use and reduce carbon dioxide emissions (Lubienski, 2003).

When a Smart Grid technology system is built, Power Line Communication (PLC) technology serves as the connector. PLC allows people to use their existing power system as a networking application. PLC technology was invented in the late 1990s, but the speed of PLC’s network transmission was slow as 14Mbps at that time. After the PLC technology’s transmission rate increased above 200Mbps, in this era, PLC became widely discussed (Rao & Monroe, 1988). In Taiwan, ADSL and networks are well-constructed, but the pace of Homeplug adoption is still slow.

As PLC power line communication technology has developed, the speed of new product development of related products/technology has also accelerated, and this acceleration would even be much faster than it weren’t for varying levels of product popularity, which affect the level of consumer’s adoption by consumers’ popularity. Some concepts of PLC products are good, but they still are not able to meet the consumer’s needs. In addition, the life cycle of relevant PLC products is short because standard specifications of PLC products have not been established unified, and the market changes rapidly, in market are fast (Theall, 2006).

This study seeks to investigate the variables that will impact
consumers’ buying intentions for PLC products. If manufacturers understand what factors influence a consumer’s purchase intention, they can then and develop new products that align with customers’ needs. Furthermore, the management teams can create effective marketing strategies to target enhance certain behaviors and therefore affect the consumer's purchase intention.

Thus, in order to First we must explore the relationship between purchasing intention products purchasing intention with and consumer characteristics and a product attributes. Homeplug is a product demonstrating, an application of PLC technology, and thus was chosen as become a the research osubject ofor this study. A thorough review of related literature on consumer behavior, consumer characteristics, and product attributes reserved as a basis to build a framework for this study and the basis for hypotheses. This study explores several variables that will impact consumers’ willingness to purchase an innovative product. Generally, these variables can be classified into two categories, one is, personal characteristics of consumers and the other one is, new product attributes.

Final text

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