Chapter 5

Untangling the Web of Relationships between Wealth, Culture, and Global Software Piracy Rates:
A Path Model

Trevor T. Moores
University of Nevada Las Vegas, USA

ABSTRACT

This article examines the relationship between Hofstede's national culture indices (IDV, PSI, MAS, and UAI), economic wealth (GNI), and national software piracy rates (SPR). Although a number of studies have already examined this relationship, the contribution of this article is two-fold. First, we develop a path model that highlights not only the key factors that promote software piracy, but also the inter-relationships between these factors. Second, most studies have used the dataset from the pre-2003 methodology which only accounted for business software and did not take into account local market conditions. Using the latest dataset and a large sample of countries (n=61) we find there is an important triadic relationship between PDI, IDV, and GNI that explains over 80% of the variance in software piracy rates. Implications for combating software piracy are discussed.

INTRODUCTION

Software piracy continues to be a major problem for the software industry. It is estimated that in 2007, 38% of all software in use was a pirated copy, accounting for US$47.1Bn in lost sales (BSA, 2008). In a number of recent studies, the national software piracy rate (SPR) has been related to socio-economic factors such as economic wealth (Gopal & Sanders, 2000; Ronkainen & Guerrero-Cusumano, 2001; Shin et al., 2004), trade with the USA (Depken & Simmons, 2004), income inequality (Andrés, 2006) and foreign direct investment (Robertson et al., 2008).

Culture is also seen as important (Husted, 2000; Moores, 2003), as well as socio-political factors such as the rule of law and levels of corruption (Banerjee et al., 2005; Marron & Steel, 2000).

Given that wealth is a strong factor in almost all of these models, economic models have proposed combating software piracy by adjusting the cost of legal software to fit the market (Bae & Choi, 2006; Sundararajan, 2004), or by increasing the cost of pirating by some sort of version control, for instance, where only legitimate copies can benefit from online updates or service support (August & Tunca, 2008; Chiu et al., 2008; Wu & Chen, 2008).

In this article we argue that although wealth may appear to be the dominant factor in explaining national piracy rates, many of the factors used in these models are themselves inter-related. In particular, wealth, culture, and perceived levels of corruption are all significantly correlated (Davis & Ruhe, 2003; Getz & Volkema, 2001; Park, 2003). This suggests that software piracy is motivated by a web of factors.

We highlight these inter-relationships by developing a path model of the national software piracy rates using a measure of economic wealth and Hoftsede's four cultural dimensions. Using the largest available set of countries (n=61) over a 4-year period (2003 to 2006), we show that economic wealth is the most important direct effect, individualism (IDV) and power distance (PDI) interact to form key antecedents to levels of wealth, and hence, levels of software piracy. The model stresses the complexity of the positive and negative forces motivating software piracy, and can act as a blueprint for further research.

THEORETICAL BACKGROUND

Software is treated as an original work of authorship and, along with literary, musical, audio-visual, and artistic work, is protected by intellectual property rights (IPR) legislation in most countries around the world. Within the US, the main IPR legislation is the Copyright Act of 1976, which has been extended by the Digital Millennium Copyright Act (DMCA) of 1998. The DCMA implemented the provisions of the World Intellectual Property Organization (WIPO) Copyright Treaty of 1996, which now has more than 50 signatory countries. Software piracy, then, involves the copying, distribution, or sale of commercial software in violation of the end user license agreement (EULA) that comes with each piece of commercial software. In practice, this means making a copy of a commercial piece of software (say, Microsoft Office 2007), and giving or selling a copy to someone else.

An accurate measure of the level of software piracy in each country would be almost impossible to determine, given that it would require a count of the number of applications being packaged and sold by criminal gangs, as well as the number being shared amongst family and friends. As such, vendor organizations such as the Business Software Alliance (BSA) estimate the levels of piracy by assuming that for each personal computer sold, a certain amount of software will also be sold. Information about computer and software sales in provided by BSA member companies, such as Adobe, Dell, HP, IBM, and Microsoft

The software piracy rate (SPR) is then calculated as the ratio of missing sales to the estimated overall market, with some adjustments made for local conditions and for replacement hardware where software is being transferred from one machine to another. For instance, a SPR of 50% would suggest half of the software in use is a pirated copy. A global SPR is calculated by treating the world as a single market and is heavily influenced by the levels of piracy in the largest markets in the world, such as the U.S., China, and Russia. The SPR for a particular country is calculated by using country-specific data. Small markets with high SPRs would have little influence on the global SPR.

The BSA gathers data for more than 80 countries and estimates that between 1994 and 2002, the global software piracy rate averaged 41%, with

Related Content

The Internet and Global Markets
José Manuel Ortega Egeaand Manuel Recio Menedez (2008). *Global Information Technologies: Concepts, Methodologies, Tools, and Applications (pp. 417-448).*
www.irma-international.org/chapter/internet-global-markets/18980

The Role of the Information Systems Organization in ISO 9000 Registration
Elizabeth R. Towell, Joachim Lauerand Kathleen L. Mcfadden (1996). *Journal of Global Information Management (pp. 25-33).*
www.irma-international.org/article/role-information-systems-organization-iso/51279

User Attitude Towards Mandatory Use of Information Systems: A Chinese Cultural Perspective
Xunhua Guoand Nan Zhang (2010). *Journal of Global Information Management (pp. 1-18).*
www.irma-international.org/article/user-attitude-towards-mandatory-use/46953

The Context of Introducing IT/IS-Based Innovation into Local Government in Colombia
Mahmoud M. Watad (1999). *Journal of Global Information Management (pp. 39-45).*
www.irma-international.org/article/context-introducing-based-innovation-into/51325

A Comparative Study of the Effects of Low and High Uncertainty Avoidance on Continuance Behavior
Hak-Jin Kim, Hun Choiand Jinwoo Kim (2010). *Journal of Global Information Management (pp. 1-29).*
www.irma-international.org/article/comparative-study-effects-low-high/42087