Piracy and Outlaw Community Innovations

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Abstract

User innovation is a commonly observed phenomenon in various industries where users modify or improve products that they use (von Hippel 1988, 2005). Communities of user innovators – innovation communities – provide platforms for users to openly and voluntarily communicate with each other regarding innovations they are working on either collectively or independently (Franke & Shah 2003, Hienerth 2006, von Hippel 2005). Recent studies that have examined the relationship between innovation communities and firms have found that there is often a symbiotic relationship from which both users and manufacturers benefit (Jeppesen & Molin 2003, Jeppesen & Frederiksen 2006, Prügl & Schreier 2006). Dahlander & Magnusson (2005) distinguish between commensalistic (where the manufacturer gains and the community is indifferent) and parasitic (where the manufacturer gains on the expense of the community) relationships.

However, there is an additional type of relationship where community innovations can be beneficial for users and at the same time harmful for manufacturers. An example of such a relationship is when innovations stemming from communities aim at bypassing legal or technical safeguards that prevent users from unsolicited usage of the manufacturer's products (Mollick 2004). In particular, manufacturers of electronic devices often install security mechanisms to prevent users from executing unauthorized software code or DRM-protected content on their platform (such as pirated copies of

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authorized software or illegal copies of MP3s). Research on user innovations that deactivate such security mechanisms in order to give the user full control over the usage a product was first analyzed by Mollick (2004). Extending this research, Flowers (2006) coined the term *outlaw innovation* and provided case studies of how communities create and disseminate innovations that not only conflict with manufacturers' intensions of the usage of the original product but also violate firms' intellectual property rights. He proposes that outlaw communities consist of both users who innovate and those who simply adopt and use outlaw innovations. Recent examples of such outlaw communities in the consumer electronics industry include www.xbox-scene.com, www.xbox-linux.org and www.free60.org for the Microsoft XBOX (a gaming console); www.iphonehacks.com for Apple's iPhone (a mobile phone); and www.cellphonehacks.com for cell phones in general. In the examples listed above, user innovators were able to 'hack' (disable) security mechanisms enabling them (and other users) to run both user written software code and pirated programs on the now unprotected hardware.

Although Flowers (2006) proposes a set of organizational responses to outlaw innovation, there is still a lack of studies that support these strategies empirically. Furthermore, there is no clear empirical evidence that outlaw innovation is really harmful for the affected firm. But before one can come up with an appropriate structured approach to help firms deal with outlaw innovation, it is important to firstly understand more about the actual individuals who modify and hack their products. To address these issues, our study aims to investigate the characteristics and motivations that drive users to develop and adopt outlaw innovations. Moreover, we will analyze determinants of software piracy across outlaw community participants. Based on these findings, we will discuss a set of managerial issues that firms face.

In our paper, we provide results from an online-survey of users of two outlaw communities focusing on Microsoft's XBOX. In total, we received 2,256 questionnaires from our online-survey posted at `www.xbox-scene.com` and `www.xbox-linux.org`. About 20% of the responses originated from users who actively contributed to modifications of original software or to self-written (so called home-brew) software. Preliminary results indicate that the adopters of outlaw innovations circulated in the surveyed communities are primarily interested in increasing the set of available functions of their XBOX. In fact, the extension of possible uses of the XBOX by executing unauthorized self-written (not pirated) software was the most important motivation for hacking the XBOX (followed by fun, who was named second). However, adopters are also interested in the possibility to run pirated software (only possible after a modification of the XBOX) which was identified as the third most important driver of the adoption of outlaw innovation. In fact, the average user in our sample has pirated about 60% of all video games owned by him. In a tobit regression controlling for demographic factors like users' age, income or education, we find users' innovative activities to be a significant determinant of piracy behavior: Users who actively innovate by providing 'hacks' or self-written software own significantly less pirated software than users who simply adopt innovations provided by the community. Moreover, respondents attitude towards the protection of intellectual property by copyrights is a significant determinant of piracy behavior. Respondents who indicated to respect copyrighted material in the survey are found to own less pirated software.

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