On Infringements of Intellectual Property Rights

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Synopsis

Piracy is a threatening issue in this era of digitalisation. Be it product piracy or piracy of virtual goods, both are compromising the profitability of the firms producing the original versions of these good to a great deal. Despite having several legal protocol to check piracy by the respective governments of the countries, international institutions like World Intellectual Property Organisation (WIPO) and multilateral trade agreement named TRIPS – Trade-Related Aspects of Intellectual Property Rights, piracy is growing in accelerating pace. The increasing incidence of piracy is affecting the economies in more than one way. Piracy is generally categorised in two forms – end-user piracy and commercial piracy. The former refers to piracy practised at individual levels, where the pirates copy the original product illegally for his/her personal use. The second type of piracy is characterised by a firm illegally counterfeiting a good and selling it commercially in the market. Both forms of piracy infringe the intellectual property rights of the original good producers and diminish their profit level. Piracy has far fetching consequences on the individual's purchasing decision and consequently on the general welfare of the economy. The present dissertation studies the infringements of intellectual property rights of information good in forms of both end – user and commercial piracy of information good, the economic and behavioural causes behind piracy and some policy prescriptions for improving the profit level of the original good producer.

The present dissertation studies product piracy in both forms incorporating both theoretical models and empirical verification. The primary reason behind product piracy is cheaper price. The massive expansion of internet and mobile technology along with the availability of smart phones has led to easy downloading of any information good or media file at trivial cost.

Owing to upgraded technology, the quality of the pirated goods has slightest difference with that of the original good. This is the picture both in case of end-user as well as commercial piracy. In the third chapter of the dissertation concerning end-user piracy, a monopoly market is considered which is infringed by end-user pirates. The behavioural aspects of the pirates are considered and their impact on the price-quality strategy of the monopolist has been studied with the help of a theoretical model. The price differential between the original and pirated good surely surges the consumer surplus of the pirates, which is equivalent to the acquisition utility of the purchaser. Besides, it also gives a cognitive or psychological satisfaction to the pirates on availing the good at such a trivial price. This concept of psychological satisfaction is rather similar to the concept of transaction utility developed by Richard Thaler (1980). The difference between the observed price (copying cost) and reference price (original good's price) is assumed to give a transaction utility to the consumers besides acquisition utility. This concept of transaction utility in the context of end-user piracy has been incorporated in the theoretical model and the price – quality strategy of the monopolist producing the original good in the context of this infringement has been studied in detail. Transaction utility plays an important role in the consumer's purchasing decision and has been incorporated in the utility function of the consumer. Assuming two groups of consumers – one enjoying transaction utility from piracy and the other not enjoying the same, the model has studied the effect of transaction utility parameter on the price and quality of the original good. The result shows that both price and quality of the original good are decreasing in transaction utility parameter. The effect of pirated good's quality on the price-quality decision of the monopolist is also found to be negative. Further, a decline in the proportion of consumers enjoying transaction utility has been shown to have a positive impact on price, quality and profit level of the monopolist. Lastly, it has been showed in the chapter that the transaction utility parameter has a negative impact on the piracy rate for consumers not receiving transaction utility from piracy but has an ambiguous effect on the piracy rate for consumers enjoying transaction utility from the same.

In the following chapter an empirical study has been conducted to evaluate the existence and study the intensity of transaction utility in the purchasing decision of potential pirates through a controlled laboratory experiment. A sample of 209 students from Jadavpur University, Kolkata, India, across different streams of education in the age group 18 – 23 has been voluntarily participated in the experiment. The experiment attempts to scrutinize the prevalence of transaction utility in their decision to pirate software and other media files. The experiment was conducted with four different treatments, treating the price of the original good as the reference price for the potential pirates. Standard descriptive analysis and logistic regression with clustered standard error at individual level are applied to obtain determinants of probability of choosing pirated good. The result shows that transaction utility positively and significantly affects the likelihood of choosing pirated good by the consumer. It has further been showed that acquisition utility which is equivalent to value consciousness of the consumers also increases the likelihood of consuming the pirated product significantly. It reveals that high quality copy at low cost always induces consumers to practise product piracy. The results on socio – demographic parameters show that male respondents are more likely to practise piracy compared to their female counterparts. Finally it has been shown that students from Humanities stream are more likely to be potential pirates than others.

The consequent chapter studies commercial piracy in a vertically differentiated duopoly market with a business group of consumers and a home group of consumers that vary across their respective valuation for the good. The market has an incumbent firm producing information good, a commercial pirate who illegally reproduces the product and sells commercially in the market. The quality provision of the incumbent firm is assumed to have a quadratic structure. Further, there is a stringent government that undertakes monitoring activity which poses a unit cost to the commercial pirate. The incumbent firm takes the monitoring rate as given and acts as price leader. A sequential game is played between the four respective players – the firm, the commercial pirate, the government and the consumer. Two different regimes of product versioning and no-versioning have been studied and discussed in this context. The no-versioning regime is where the incumbent firm produces a single version of the product and sells to both the group of consumers at the same market price. In the versioning regime the firm produces two versions of good, differing in quality and sells to the two groups of consumers at different market prices. However, in the versioning regime we have assumed two different categories, one where the firm can perfectly discriminate between the two groups of consumers and the other where it cannot. The game is solved using backward induction method. The results show that stricter monitoring of piracy induces the firm to raise its price for the original product in both the regimes. The quality of the original product has been determined diagrammatically in the versioning regime. Finally the profit of the incumbent firm has been compared for both the versioning regime and the no-versioning regime. Though the mathematical comparison between the profits shows no conclusive result, application of simulation method shows that the optimal strategy for the firm is producing a single version of the product when the degree of substitutability of the pirated product is high. The result is attributable to the fact that the quality provision is costly and endogenous and since production of business version of the product requires higher quality cost, the firms may not find it profitable to differentiate its product when it is competing with the profit maximising commercial pirate.

The present dissertation has studied the behaviour of the firm producing original good in either a monopoly market or a duopoly market in the presence of product piracy of both forms. The concept of transaction utility has been incorporated in the context of end-user piracy where the potential pirates are assumed to receive transaction utility, along with acquisition utility. This behavioural motivation behind practicing piracy has been theoretically studied in detail and its impact on the price – quality decision of the firm has also been studied. The consequent chapter undertakes an empirical study to validate the existence of transaction utility with the help of a laboratory experiment and it reveals that indeed transaction utility significantly affects the piracy decision of the consumer besides acquisition utility. The next chapter concerning a theoretical study related to commercial piracy assumes a duopoly market where the incumbent firm serves two differentiated groups of consumers varying across their valuation for product in the presence of a commercial pirate. The mathematical comparison of profit of the firm between product versioning and no-versioning regimes shows ambiguous result. Further by applying simulation, it is shown that no-versioning profit is higher than versioning profit, thus concluding that product versioning is not always the optimal strategy to fight piracy by the incumbent firm.

The dissertation probes in to the issues that to best of our knowledge have not been discussed in the existing literature. Hence, the present study contributes uniquely and significantly in the literature pertaining to the study of infringement of Intellectual Property Rights and piracy of information goods by discussing the cognitive motivation behind the practice of piracy, the strategy of the incumbent firm to combat piracy and the economic and non-economic incentives behind piracy.