Innovative or Indefensible?
An Empirical Assessment of Patenting Within Standard Setting

Anne Layne-Farrar, Compass LexEcon, USA

ABSTRACT

Cooperative standard setting may be burdened by “over patenting”. Because standards may convey market power to firms whose patents are implicated, “strategic” patenting may enable opportunistic behaviors. Thus, particular concerns have been raised over patenting that takes place after the first versions of a standard are published, as these patents may be aimed at the acquisition of market power. This is a reasonable concern, but another possibility also may be likely: “ex post” patenting may be driven by genuine innovation. Which is more prevalent? To begin answering this question, the author empirically assesses the patenting that occurs within a standard setting organization. The author rejects the first stage hypothesis that all ex post patenting must be opportunistic and conclude instead that such patenting is likely a mixed bag of (incremental) innovative contributions along with some strategic ones. As a result, standard setting policy prescriptions should proceed with caution so that the good is not eliminated with the bad.

Keywords: Marketing Power, Over Patenting, Patenting, Patents, Standard Setting

INTRODUCTION

Much has been written — especially in recent years — regarding the perceived problem of “over patenting” within cooperative standard setting. Because standards can convey market power to those firms whose patented technologies are included in the standard, the concern is that “strategic” patenting, driven not by innovation but by rent seeking, will enable firms to license their intellectual property (IP) opportunistically. Hence, theories of IP “anti-commons”, “patent thickets”, and “royalty stacking” have been proposed in the academic literature, along with policy ideas aimed at reducing such problems (Shapiro, 2001; Mueller, 2001; Lemley & Shapiro, 2006). Much of the attention has focused on the sheer rise in patent numbers. With more and more patents being declared as potentially “essential” for the implementation of any given standard, what are the possible detrimental effects on the standardization process? How could the commercialization of the standard be affected? And what are the implications for overall innovation within standard setting contexts?

While several scholars have recognized a link between standards and innovation when considering the benefits of standardization, this story is traditionally one of research and development in anticipation of a new standard (e.g., Farrell & Saloner, 1985). That is, the
chance to increase the end market size through cooperative standardization can provide enhanced incentives to innovate, meaning higher expenditures on R&D, which of course can be accompanied by patenting.

Increased patenting that takes place during standardization, however, and especially patenting that takes place after the first versions of a standard are published, tends to be viewed differently. Such “ex post” patenting is often seen as opportunistic and aimed at the unwarranted acquisition of market power. The logic behind this concern is that once a standard is defined, the key pioneering innovations have already taken place and thus any additional patenting is likely aimed at shifting rents and staking a larger (unjustified) claim of the standard’s IP licensing revenues.

Several scholars have raised concerns over such opportunistic patenting. For example, in their empirical analysis of the 3G mobile telecom standard UMTS (Universal Mobile Telecommunications System), Bekkers and West (2009) caution that a key form of standards-related strategic patenting is when a firm deduces the direction that a standardization effort is proceeding [in] and then attempts to create patents to read on that standard. One way such strategic patenting might be evidenced would be if the patents were filed well after the corresponding standardization effort had begun.

Likewise, Hunt, Simojoki, and Takalo (2007) posit that “… firms may anticipate the outcome of the standard-setting process and apply for patents that would be infringed by users conforming to the standard.” And Dewatripont and Legros (2007) use strategic patenting as motivation for their theoretical assessment of patent “padding” within a standard.

It seems safe to surmise that firms do engage in opportunistic patenting, particularly when the commercial stakes are high, as they often are. But another possibility exists in tandem: that at least some ex post patenting is driven by genuine innovation. This follows from the incremental nature of the standardization process. Once the path of a new standard is chosen, much work may still remain to define the precise implementation details. For example, at the time the technology for the UMTS mobile telecoms standard was selected, the document specifying a crucial component was only 30 pages long, but by the time the standard was ready for commercial implementation the page count had increased to over 13,000.¹ This suggests considerable additional work was necessary to move from the theoretical concept of the chosen technology to the reality of putting that technology to work in the field. This interpretation is corroborated in an industry analyst report, which although focused on mobile telecom notes that the difficulties in moving from concept to implementation are felt in all industries involving complex products and cooperative standards: “Implementation IPR … actually makes up the vast majority of all IPR filed in any technical standard. … In many ways it is just as important … just as a window is of no use unless it can be effectively placed in the space that has been designed for it.”²

Participating firms have strong incentives to solve specific technical problems related to the optimal implementation of a standard so as to move to commercialization as quickly as possible, to increase consumer acceptance and to maximize overall profits. Thus the period of time just after a standard’s initial publication, when the general technology path has been chosen, could be a highly innovative one.

A second possibility for ex post innovation lies in market structure. Consider an early generation standard dominated by a relatively small set of firms. If that standard achieves commercial success, other firms (outside the standard organization) with closely related operations or skill sets could have incentives to innovate in the space in order to join the standard and share in the profits. The existing standard demonstrates commercial success and a perception of supra-competitive pricing for incumbents suggests profits to be made for new entrants. This is how markets are supposed to work: high profits lure entry and competition. Outside firms cannot join an existing standard, however, without a valuable contribution to offer; incumbents will not relinquish their positions easily and must see something in exchange.
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Philippe Massonet, Arnaud Michot, Syed Naqvi, Massimo Villari and Joseph Latanicki
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