

## Royalty Rates And Licensing Strategies For Essential Patents On LTE (4G) Telecommunication Standards

By Eric Stasik

Long Term Evolution, or LTE, is the latest sequel to the successful GSM series of standards. A so-called fourth generation (4G) mobile communications technology, LTE is an upgrade to UMTS/W-CDMA (3G) providing an enhanced radio interface and all-IP networking technology.<sup>1</sup>

Like a sequel to a successful movie, LTE includes many elements of the original release and offers a few new twists. This is especially true when it comes to the matter of licensing essential IPRs for the LTE standard. Audiences can expect to see the same licensing challenges that first appeared in GSM (2G) and which re-appeared in UMTS (3G) starring again in LTE (4G).<sup>2</sup> The plot is essentially the same: lots of essential patents and many different patent holders.

The LTE sequel begins in much the same way as UMTS did—with an announcement of an industry initiative on the matter of essential IPRs. In LTE this scene took place in April 2008 where a group of leading telecommunication companies committed themselves to a framework for “establishing predictable and more transparent maximum aggregate costs for licensing [patents] that relate to 3GPP Long Term Evolution and Service Architecture Evolution (LTE/SAE) standards.” In particular, these companies stated “support” for “a reasonable maximum aggregate royalty for LTE essential IPR in handsets is a single-digit percentage of the sales price.”<sup>3</sup>

1. For an introduction to LTE refer to the paper published by 3GPP: *UTRA-UTRAN Long Term Evolution (LTE) and 3GPP System Architecture Evolution (SAE)* available at [ftp://ftp.3gpp.org/Inbox/2008\\_web\\_files/LTA\\_Paper.pdf](ftp://ftp.3gpp.org/Inbox/2008_web_files/LTA_Paper.pdf).

2. For a general discussion of GSM see, for example, Bekkers, Rudi, et al. (2002), *Intellectual Property Rights and Standardization: the case of GSM*, Telecommunications Policy 26 (2002), pp. 171-188. A more exhaustive discussion of GSM and W-CDMA may be found in Goldstein and Kearsey's most excellent book, *Technology Patent Licensing: An International Reference on 21st Century Patent Licensing, Patent Pools, and Patent Platforms*, Aspatore Books, ISBN 1-59622-004-X.

3. Ericsson Press Release, (April 14, 2008), *Wireless Industry Leaders commit to framework for LTE technology IPR licensing*, undersigned by Ericsson, Alcatel-Lucent, NEC Corporation, NextWave Wireless, Nokia, Nokia Siemens Networks, and Sony Ericsson. Available on Oct. 13, 2009 at URL: <http://www.ericsson.com/ericsson/press/releases/20080414-1209031.shtml>.

This *ad hoc* licensing framework for LTE closely resembles an arrangement announced for UMTS/W-CDMA. In 2002, “industry leaders NTT DoCoMo, Ericsson, Nokia and Siemens and Japanese manufacturers” reached an understanding on an arrangement to “enable the cumulative royalty rate for W-CDMA to be at a modest single digit level.”<sup>4</sup> A Nokia press release specified that “[u]nder this proposal no manufacturer should pay more than 5 percent royalties covering all essential WCDMA patents from all patent holders.”<sup>5</sup>

Estimates on the actual cumulative royalty paid for GSM and W-CDMA vary widely. In 1998, ITSUG (an obscure organisation representing some operators and manufacturers) filed a complaint with the European Commission claiming that “when GSM mobile handsets first appeared on the market place cumulative royalties amounted to as much as 35 percent to 40 percent of ex-works selling price.”<sup>6</sup> In 2007, Lemley and Shapiro commented that they had “seen estimates [for W-CDMA] as high as 30 percent of the total price of each phone... based on summing royalty demands before any cross-licensing negotia-

■ Eric Stasik,  
Director, Avvika AB,  
Stockholm, Sweden  
E-mail: [eric.stasik@avvika.com](mailto:eric.stasik@avvika.com)

4. NTT DoCoMo Press Release (Sept. 1, 2002) *Industry leaders NTT DoCoMo, Ericsson, Nokia and Siemens, and Japanese Manufacturers reach a mutual understanding to support modest royalty rates for the W-CDMA technology worldwide*. Available on Oct. 16, 2009 at URL: <http://www.nttdocomo.com/pr/2002/000901.html>.

5. Nokia Press Release (May 08, 2002) *Nokia advocates industry-wide commitment to 5 percent cumulative IPR royalty for WCDMA*, Available on Oct. 21, 2009 at URL: [http://press.nokia.com/PR/200205/858681\\_5.html](http://press.nokia.com/PR/200205/858681_5.html).

6. International Telecommunications Standards User Group, *The GSM Standards, IPR and Licensing (An Example of the Restrictive Effects on Standardization)*, December 1998, page 6.

7. Lemley, Mark A. and Shapiro, Carl (2007) *“Patent Holdup and Royalty Stacking”*, Texas Law Review, vol. 85, p. 2026

# Royalty Rates For Telecommunications

tions began.<sup>7</sup> More conservative estimates place the cumulative royalty for GSM for companies that do not have any patents to trade at 10-13 percent.<sup>8</sup>

On the other hand, companies with essential patents who are able to negotiate cross-licenses with other holders of essential patents generally pay less. A lot less. In 2007, Nokia “confirmed that until 2007 it has paid less than 3 percent aggregate license fees on WCDMA handset sales under all its patent license agreements.”<sup>9</sup>

The order of magnitude between 3 percent and 30 percent illustrates just how difficult it has been to obtain precise information on “aggregate licensing fees.” It is generally no secret who demands running royalties for licenses to their essential patents.<sup>10</sup> What they demand has—until recently—been shrouded in confidentiality.

Thanks to efforts made by NGMN IPR Plenary, where members agreed in 2007 to a process of mandatory, but anonymous, disclosure of *ex ante* licensing, some small measure of transparency is emerging.<sup>11</sup> A number of companies have gone fur-

8. See IP Law and Business, July, 2005: it’s “fairly well-known” in the industry that the GSM patent holders swap licenses for free. Meanwhile companies... which hold no GSM patents, can expect to pay 10-13 percent of the average selling price of a phone in GSM royalties.

9. Nokia Press Release (April 17, 2007) *Nokia has paid less than 3 per cent gross royalty rate for WCDMA handsets*. Available on October 16, 2009 at URL: <http://www.nokia.com/press/press-releases/showpressrelease?newsid=1118142>.

10. Many companies routinely issue press releases regarding license agreements. See for example: Ericsson Press Release July 9, 2007, *Ericsson and Samsung Sign Telecom Cross License Deal under the terms of the royalty bearing agreement, Ericsson has granted Samsung... In return, Samsung provides a royalty payment and a reciprococal license to Ericsson*. Available on October 15, 2009 at URL: <http://www.ericsson.com/ericsson/press/releases/2070709-1138258.shtml>.

Qualcomm Press Release July 23, 2008, *Nokia and Qualcomm Enter into a New Agreement*: The financial structure of the settlement includes an up-front payment and on-going royalties payable to Qualcomm. Nokia has agreed to assign ownership of a number of patents to Qualcomm, including patents declared as essential to WCDMA, GSM and OFDMA. The specific terms are confidential. Available on Oct. 15, 2009 at URL: [http://www.qualcomm.com/news/releases/2008/080723\\_Nokia\\_and\\_Qualcomm\\_Enter\\_Into\\_New\\_Agreement.html](http://www.qualcomm.com/news/releases/2008/080723_Nokia_and_Qualcomm_Enter_Into_New_Agreement.html).

11. NGMN IPR Plenary <http://www.ngmn.org/workprogramme/ipr.html>.

12. Nortel Press Release, May 5, 2009, *Nortel Strengthens the case for deployment of LTE by publishing competitive royalty rates*, Available on July 21, 2009 at URL: <http://www2.nortel.com/cgi-bin/printer.cgi?language=en#>

ther to make voluntary, public announcements on what they would potentially charge for a royalty on handsets which use the LTE standard. This is, to say the least, highly unusual.

The first announcement was made by Nortel who in May 2009 published “a competitive handset royalty rate of about one percent.”<sup>12</sup>

Nortel was followed (listed in alphabetical order) by:

Alcatel-Lucent said “we expect that we will license our LTE standard essential patent claims for handsets at a discounted royalty of no greater than 2 percent.”<sup>13</sup>

Ericsson, projecting “a maximum aggregate royalty level of 6-8 percent for handsets,” said its “royalty rate for LTE is therefore expected to be around 1.5 percent for handsets.”<sup>14</sup>

Huawei said it expects to offer “a royalty rate with some flexibility, but not to exceed 1.5 percent” on “end-user products.”<sup>15</sup>

Motorola “expects that its essential patent royalty rate for LTE systems and equipment [including handsets] will be approximately 2.25 percent.”<sup>16</sup>

Nokia said that its “rate for devices that deploy LTE as the only wireless communication standard to be in a range of 1.5 percent from the sales price of an end-user device.”<sup>17</sup>

Nokia-Siemens Networks (NSN), the joint venture between Nokia and Siemens, issued a separate policy anticipating “an LTE royalty rate for end-use terminal devices will be in the region of 0.8 percent of the

13. Alcatel-Lucent Press Release (undated) *Alcatel-Lucent LTE Licensing*. Available on July 21, 2009 at URL: [http://www.alcatel-lucent.com/wps/portal/ut/p/kcxml/04\\_Sj9SPykssy...Innovation&LMSG\\_CONTENT\\_FILE=Innovation\\_Overview/lte\\_licensing.xml](http://www.alcatel-lucent.com/wps/portal/ut/p/kcxml/04_Sj9SPykssy...Innovation&LMSG_CONTENT_FILE=Innovation_Overview/lte_licensing.xml).

14. Ericsson Press Release (undated) *Licensing Programs*. Available on July 21, 2009 at URL: [http://www1.ericsson.com/technology/licensing\\_programs/index.shtml](http://www1.ericsson.com/technology/licensing_programs/index.shtml).

15. Huawei Press Release (undated) *IPR Overview*. Available on July 21, 2009 at URL: <http://www.huawei.ipr2.do>.

16. Motorola Press Release (undated) *Motorola LTE Essential Patent Licensing*. Available on July 21, 2009 at URL: <http://motorola.com/content.jsp?globalObjectid=8827>.

17. Nokia Press Release, *Nokia licensing policy on Long Term Evolution and Service Architecture Evolution essential patents*. Available on July 21, 2009 at URL: <http://www.nokia.com/press/ipr-information/statement/nokia-licensing...-term-evolution-and-service-architecture-evolution-essential-patents>.

18. Nokia-Siemens Networks Press Release (undated), *Our licensing policy for Long Term Evolution and System Architecture Evolution essential patents*. Available on Oct. 13, 2009 at URL: [http://w3.nokiasiemensnetworks.com/es/Insight/network\\_efficiency/network\\_simplification/licensing\\_policy.htm?languagecode=en](http://w3.nokiasiemensnetworks.com/es/Insight/network_efficiency/network_simplification/licensing_policy.htm?languagecode=en).

# Royalty Rates For Telecommunications

selling price.”<sup>18</sup>

Qualcomm “expects that it will charge royalties for a license under its standards essential LTE... patent portfolio...of approximately 3.25 percent of the wholesale selling price...”<sup>19</sup>

ZTE says it “will license its LTE essential patents for mobile communication terminals with a maximum 1 percent from the sales price of an end user device.”<sup>20</sup>

These announced royalty rates are summarized in Table 1 along with information on the LTE IPR declarations available from ETSI. Other than the fact that you can actually find these royalty rates on the Web sites of above-mentioned companies, none of this is any surprise.

In fact, the announced royalty rates for LTE (4G) are exactly within the range Goldstein and Kearsey observed in 2004 for UMTS/W-CDMA (3G) technology where the authors commented that “[i]ndividual patent owners usually charge between 0.5 and 4 percent on essential patents.”<sup>21</sup> The average of the announced royalty rates for LTE also lines up well with other observations. In his book *Intellectual Property Rights, External Effects, and Anti-Trust Law*, Ilkka Rahnasto noted in 2003 that “some commentators have estimated that royalty rates as high as 2 percent would be paid in the communications industry.”<sup>22</sup> The average of the announced royalty rates for LTE is approx. 2.1 percent.

It is necessary at this point to clarify that an “announced” royalty rate may be significantly different than the “actual” royalty rate resulting from a bi-lateral negotiation. Having made a public announcement, a potential

19. Qualcomm *LTE/WiMax Patent Licensing Statement* (December 2008).

20. ZTE Press Release, Dec. 22, 2008, *The Licensing Policy on LTE essential patents of ZTE*. Available on July 21, 2009 at URL: [http://wwwen.zte.com.cn/en/press\\_center/news/200810/t20081008\\_160196.html](http://wwwen.zte.com.cn/en/press_center/news/200810/t20081008_160196.html).

21. Kearsey, Brian and Goldstein, Larry M. 2004. *Technology Patent Licensing: An International Reference on 21st Century Patent Licensing, Patent Pools, and Patent Platforms*, Aspatore Books, page 53.

22. Rahnasto, Ilkka, 2003. *Intellectual Property Rights, External Effects, and Anti-Trust Law*, Oxford University Press, p. 175.

**Table 1. Summary of ETSI Declarations and Announced Royalty Rates for LTE**

	Number of Declared Essential Patents	Published Handset Royalty Rate
Alcatel-Lucent	9	2,00%
Apple	-	
AT&T	1	
Ericsson	146	1,50%
ETRI	35	
France Telecom	3	
Freescale Semiconductor	1	
Gemplus	1	
Hewlett Packard	1	
Huawei	182	1,50%
Icera	1	
iCODING	1	
Infineon	2	
InterDigital Technology Corp	282	
InterDigital Patent Holdings	155	
IPR Licensing, Inc.	4	
LG Electronics	150	
Motorola	16	2,25%
NEC	19	
NextWave Wireless	-	
Nokia Corporation	142	1,50%
Nokia Siemens Networks	32	0,80%
Nortel Networks	46	1,00%
NTT DoCoMo	78	
Panasonic	39	
Qualcomm	350	3,25%
RIM	-	
Samsung	170	
Siemens	11	
Sony	12	
Sony-Ericsson	0	
Texas Instruments	26	
TDF	3	
T-Mobile Deutschland GmbH	12	
T-Mobile International AG	5	
Vodafone	-	
VoiceAge	6	
ZTE	-	1,00%
<b>Totals</b>	<b>1941</b>	<b>14,80%</b>

(SOURCE: ETSI 2010)

# Royalty Rates For Telecommunications

licensee might reasonably expect this to be the opening offer in a negotiation. That is all that should be assumed from these announcements.

For a company with no essential patents and no bargaining power, however, it is probably not unreasonable to expect little difference between the announced and actual royalty rates. For such licensees, based on the announced figures alone (and as a matter of simple arithmetic) the aggregate cumulative royalty rate for LTE—that is to say the total amount of all royalties paid to all essential patent holders—will be as much as 14.80 percent of the sales price of a handset.

The story does not end here. The aggregate cumulative royalty for such licensees (and indeed all licensees) will likely be even higher. No small amount of secrecy remains in this industry and it seems reasonable to expect that some of those companies listed in Table 1 will reveal their royalty privately instead of using a press release.

Moreover, all the numbers are not in yet. Far from it. From a comparison to GSM and UMTS (See Table 2) it would also seem likely that both the number of declared patents and the number of patent holders will increase as the LTE standard matures.

Finally, there is the matter of multi-mode terminals. As a practical matter, nearly all handsets which employ the LTE standard will—for some time—also include GSM/GPRS/EDGE/W-CDMA capability. Both Nokia and Qualcomm made clear in their announcements that a different, higher royalty rate should be charged for end-user devices employing more than one standard.<sup>23</sup> No surprise here either. Lemley and Shapiro previously reported high rates for multimode terminals.<sup>24</sup> It might well be anticipated that others

23. Nokia Press Release (undated), *ibid*, "When multiple wireless standards are used in the same end product... Nokia will not charge more than 2.0 percent from the sales price of an end-user device..."

Qualcomm Press Release (December 2008) "Qualcomm expects that it will not charge a royalty rate on such multi-mode devices... that is greater than Qualcomm's standard 3G CDMA royalty rate..." Qualcomm Press Release (December 2008) On June 3, 2009 during a Global Technology Conference sponsored by Merrill Lynch, Qualcomm COO Len Lauer suggested that Qualcomm normally charges 4 percent-5 percent as royalty for 3G shipments."

24. Lemley and Shapiro (2007) discussed multi-mode phones citing "Thelander suggests that the actual royalties may run 22.5 percent for the WCDMA technology. In addition to the 15-20 percent for GSM technology if the phone is dual band." Page 2027.

**Table 2. Comparison of 2G, 3G, and 4G Standards**

Standard	Total Number of Individual Companies Making Declarations to ETSI	Total Number of IPR Declarations Received by ETSI
GSM	44	4455
UMTS	57	8841
LTE	38	1941

(SOURCE: ETSI March 2010)

will follow this practice. In other words, multi-mode, end-user devices which employ the LTE standard and other standards will likely see higher royalties than those displayed in Table 1.<sup>25</sup>

Taking all of this into consideration, it is hard to imagine a comprehensive calculation of LTE royalty rates which would produce an upper-limit for the aggregate cumulative royalty of less than 25-30 percent. Again to clarify, this is an upper limit. Those companies who have negotiation power will pay less—the best ones will pay much less.

All of which is a very long and drawn out way of saying that the licensing situation confronting LTE is not so very much different than the situation which first confronted GSM and UMTS/W-CDMA.

As with UMTS/W-CDMA there are now moves to form patent pools, or platforms, for LTE.<sup>26</sup> Three companies—Via Licensing, Sisvel, and MPEG LA—are attempting to form a patent pool for LTE. Despite the interest from administrators, patent pools have attracted only limited participation in the past.

The existence of the 3G Patent Platform has been of relatively minor importance in UMTS/W-CDMA licensing. As of January 2010, there are twelve companies associated with the Licensing Programme:

25. The same would however be true for multi-mode handsets that include IEEE 802.11 (WiFi) which has its own thorny licensing challenges.

26. Via Licensing, Sisvel and MPEG LA have issued calls for LTE essential patents Via Licensing Press Release (May 7, 2009) LTE Platform Call for Patents Via Licensing Corporation today announced a call for patents that are essential to the practice of the Long Term Evolution (LTE) platform, which is based on the E-UTRA (3GPP Series 36, release 8), specifications. [http://www.vialicensing.com/news/details.cfm?VIANEWS\\_ID=339](http://www.vialicensing.com/news/details.cfm?VIANEWS_ID=339) Sisvel Press Release (May 11, 2009) Patent Pool for 3G Long Term Evolution (LTE) <http://www.sisvel.com/english/news/sisvelnews/patent-pool> MPEG LA Press Release (Sept. 29, 2009). MPEG LA Holds First Meeting of LTE Essential Patent Owners [http://www.mpegla.com/Lists/MPEG\\_percent20LA\\_percent20News%20List/Attachments/221/n\\_09-09-29\\_pr.pdf](http://www.mpegla.com/Lists/MPEG_percent20LA_percent20News%20List/Attachments/221/n_09-09-29_pr.pdf).

# Royalty Rates For Telecommunications

France Telecom, NTT, Fujitsu, NTT DoCoMo, KPN, Sharp, Mitsubishi Electric, Siemens, NEC, Panasonic, SK Telecom, and Toshiba.<sup>27</sup> These twelve companies represent just over 20 percent of the total number of declared patent holders. Obviously, the large majority of UMTS/W-CDMA essential patent holders (and all of the licensing for GSM where there is no pool or platform) choose to conduct licensing on a bi-lateral basis. The same is likely to be true for LTE.

Key to success in LTE, as in GSM and WCDMA, will thus be the ability to negotiate favorable bi-lateral licenses. When Qualcomm and Nokia, for example, ended their long-running dispute over standard essential patents in 2008, at least one analyst estimated that Nokia will pay 1.5-2.0 percent of the sale price of each phone to Qualcomm for all standards, including LTE.<sup>28</sup> Compared to Qualcomm's announced rate for LTE, this is obviously rather much less.

Companies without any LTE essential patents will face a difficult challenge, but here is where the plot of the sequel diverges from the original. In GSM (and to a large extent repeated in UMTS/W-CDMA) it was said that:

*[t]he process [of obtaining licenses for essential GSM and GPRS patents] was regarded as unfair, complicated, time-consuming, and expensive. [It] was also judged to have created a serious barrier to trade for new entrants and other potential licensees. Basically, the arrangements favored the big players with broad patent portfolios. The painful history of GSM patent licensing has left a lingering resentment within the industry... ”<sup>29</sup>*

As it turned out, the solution to this problem was

27. <http://www.3glicensing.com/Licensors.asp>, The portfolio comprises 305 W-CDMA essential patent families.

28. The same analyst is quoted giving two different estimates. In the *New York Times* (July 24, 2008) “In Settlement, Nokia Will Pay Royalties to Qualcomm” it is 2.0 percent. See: <http://www.nytimes.com/2008/07/24/technology/24qualcomm.html>. In the *San Diego Union Tribune* (July 25, 2008) “Analyst: Nokia Qualcomm Each Like Deal”, says 1.5 percent. See: [http://www.signonsandiego.com/uniontrib/20080725/news\\_1b25qcom.html](http://www.signonsandiego.com/uniontrib/20080725/news_1b25qcom.html).

The actual royalty being paid is of course obscured by future cash flows represented by the NPV of Nokia's \$1.7bn cash payment to Qualcomm, a transfer of patents, and Nokia's agreement to not assert its patents against Qualcomms's chipsets. Each of these things—especially the cash—represent significant value.

29. Kearsey, Brian and Goldstein, Larry M. 2004. *Technology Patent Licensing: An International Reference on 21st Century Patent Licensing, Patent Pools, and Patent Platforms*, Aspatore Books, p. 43.

(and still is) really rather straightforward: if you don't have any essential patents, go out and get some.

This may be done the old-fashioned way: by investing in R&D, participating actively in the development of standards, and obtaining patents on technical contributions made to standards development organisations. This strategy is time consuming, expensive, risky, and once the standard is settled, too late. It's simply not an option for everyone.

Fortunately, this might also be done by proxy: companies that do not have any essential patents—or too few—can buy essential patents from those companies who do invest in the above-mentioned R&D.<sup>30</sup> This is a new twist in the plot.

In January 2008, USPTO records indicated that Ericsson transferred 55 U.S. patents to the Canadian company Research In Motion (RIM) maker of the BlackBerry®. An additional 11 U.S. patents were transferred by Ericsson to RIM in June 2008. An equity research report by JPMorgan estimates that RIM paid as much as \$172M for this “essential GSM technology.”<sup>31</sup>

For RIM this is the cost of doing business in the wireless space. Buying essential patents is a replacement for the investment in research and development of standards (and all of that expensive travel to luxurious locations ETSI is famous for) and an avoidance of the risk-taking associated with these investments. Despite the apparently hefty price tag, this is actually a tremendous bargain if it helps RIM reduce royalty payments in the future.<sup>32</sup>

Of course this is not a risk free solution. Even the most trusted patent might be declared invalid, or not infringed, or “not essential” rendering the investment more or less worthless. No amount of due diligence can predict what a court might decide. Buying a portfolio of patents from a reliable and trusted source—as RIM did—is one way to reduce this risk.

For Ericsson, such a deal is an innovative way to extract value from otherwise unleveraged patent

30. JPMorgan Europe Equity Research (2008) *Ericsson: Patent Proof of an Ericsson/RIM IPR Connection*, 16 July 2008.

31. *Ibid.*

32. In 2007, RIM sold 6,414,000 units at an ASP of \$346 producing \$2,2bn in revenues. (Source RIM 2007 Annual Report). To put this into perspective, a 1 percent royalty on revenues of \$2,2bn corresponds to \$22m. Over a typical five year agreement, a reduction of 1 percent in a negotiated cross-license would result in a savings of \$110m—assuming no growth and flat sales. Depending on existing agreements and encumbrances, the same patents might also be used in negotiations with different parties further leveraging RIM's investment.

# Royalty Rates For Telecommunications

assets. Ericsson has declared to ETSI 838 essential patents on GSM. That's a lot of patents. As a practical matter, selling 50 or 100 or 150 of these assets does not materially affect Ericsson's licensing position.<sup>33</sup> It makes good business sense to calve off these assets from the glacier, sell them off, take the revenue, and get rid of the maintenance expenses. Unbundling these assets and selling them off is good business.

With one caveat: by selling to RIM, who will likely use these patents to negotiate better terms and conditions with competitors, Ericsson keeps these patents in the family of telecommunication equipment manufacturers and under the umbrella of shared interest.

The final twists to the LTE IPR story remain to be written, but it seems clear that it will have something to do with the unbundling of patent assets—either as part of a business agreement as just described, or as a result of business failure.

In the wake of Nortel's bankruptcy, speculation about the value of Nortel's patent assets soared when JPMorganChase analyst Ehud Gelblum issued a research note stating that Nortel's LTE patents could generate royalty revenues of hundreds of millions of dollars, possibly even as much as \$2.9 billion.<sup>34</sup> It remains to be seen where these assets will find harbor, but it is certain that such licensing potential—even if grossly overstated—will attract

the keen interest of investors everywhere.

## An Observation for LTE Patent Pools and Platforms

As more patent holders enter the script, the plot becomes more complicated. The goal of any LTE licensing pool should be to reduce the effect of this fragmentation of patent ownership by making the pool a more attractive choice than bi-lateral licensing. **This means that the main focus of the patent pools for LTE should be on getting the smaller patent holders engaged.** The large patent holders have little incentive to join a pool and lots of reasons not to. They are well capable of taking care of this business themselves. On the other hand, small patent holders who are primarily interested in earning royalty income and who have no strategic cards to play would benefit from access to professional licensing services, cost-sharing the licensing administration, and all the other benefits offered by a licensing pool. The industry would benefit from seeing fragmentation reduced—and there is still plenty of money to earn without having any of the major patent holders involved.

In Hollywood, very few sequels ever do as well as the original.<sup>35</sup> The rule of thumb for movie sequels—spend more and earn less—is also likely to govern the fortunes of LTE. ■

33. Frankly, it changes nothing. Despite all the talk about proportionality, the effect of numbers of patents on the value of a patent portfolio patent licensing is obviously nonlinear. If you have one patent, having two patents to license as a portfolio would be twice as good. If you have 100 patents—and you intend to license the whole portfolio as a package (as one does with essential patents)—the incremental increase of each additional patent is negligible. If you have 838 essential patents, as Ericsson has declared to ETSI, having a few score more or fewer cannot really make much of a difference at all. In large patent portfolios, the effect of having more patents on licensing strength becomes logarithmic. In essence what Ericsson and others have is a large number of individually valuable patents which as individuals contribute no real additional value to the portfolio as a whole.

34. BusinessWeek (July 7, 2009) “Nortel Gets Interest from MatlinPatterson.” [http://www.businessweek.com/technology/content/jul2009/tc2009077\\_109299.htm?chan=rss\\_topEmailedStories\\_ssi\\_5](http://www.businessweek.com/technology/content/jul2009/tc2009077_109299.htm?chan=rss_topEmailedStories_ssi_5)

35. *Godfather II* (1974) is the only sequel to ever win an Oscar for Best Film.