Analysis - Intellectual Properties Undone

By Keith Mallinson Tuesday, August 14, 2007

Qualcomm's challenge to the vertically integrated handset vendors' business model is being fiercely resisted by dominant players. The many intellectual property (IP) patent litigation and antitrust actions in the United States, Europe and Korea are battlefields in a backlash from those threatened.

Cross-licensing, with minimal royalty out-payments, enjoyed by leading GSM IP-holders created a cozy oligopoly including Nokia, Motorola and Sony Ericsson with significant commercial barriers for other handset vendors. Dominant players take most of their IP profits in sales of complete handsets. Qualcomm's licensing-based business model with carriers' migration from GSM to W-CDMA is disrupting this lucrative scheme.

Success for other handset vendors in W-CDMA is made possible with Qualcomm's strength as an independent 1-stop shop for chipsets, BREW software and extensive IP rights. Global market shares in W-CDMA are less concentrated than in GSM with Nokia having 34% and 43%, respectively. Qualcomm pioneered all CDMA-based cellular standards, including W-CDMA, since the 1980s and built a leading share of IP. It supplies most CDMA2000 handset vendors with chipsets where Nokia's handset share has not exceeded 13% and is declining with several strategic U-turns this decade.

Migration from GSM to W-CDMA is a particular problem for Nokia with its claimed 38% overall market share and ambition for a sustained 40% or more. As W-CDMA volumes reach similar levels as GSM over the coming years, Nokia's lower W-CDMA share will dilute its overall position. GSM sales still outnumber W-CDMA's 5-fold, so Nokia's lower W-CDMA share is having little effect at the moment. Nokia's W-CDMA share is temporarily increasing as early-adopter Japan – with carriers' preference for local manufacturers – becomes less significant. Gains from Japan's declining share will plateau. Matching or exceeding Nokia's enormous GSM share in W-CDMA – as it must to sustain growth in total share – will be impossible unless it can undermine Qualcomm's licensing business model. Nokia seeks to recreate the commercial environment it enjoys in GSM.

Qualcomm is under an orchestrated attack in several patent infringement suits and antitrust actions. Complainants Broadcom, Ericsson, NEC, Nokia, Panasonic and Texas Instruments claim its practices restrict innovation and competition. Qualcomm counterclaims to be an innovative shared R&D resource facilitating market entry. It is the major chipset provider to more than 60 device vendors including Huawei, LG Samsung and ZTE. Whereas handset market leaders have most to gain by cross-licensing to minimize royalty out-payments on their large sales volumes, Qualcomm – with $1.5 billion R&D expenditures in 2006 – depends on IP royalties to supplement its chipset revenues.

Critics also claim that royalties inflate handset prices and significantly reduce demand. Royalties are small-dollar figures per handset and have reduced as handset prices have fallen. Nokia says "it has paid less than 3% aggregate license fees on W-CDMA handsets under all its patent license agreements." This charge is nevertheless an unwelcome additional cost for those accustomed to obtaining IPR for free through cross-licensing in GSM. If applied to all Nokia's handset sales, it would crop $300 million off its quarterly pre-tax profits.

Royalties are overshadowed by technology benefits and other costs. They compensate for massive investments in improving radio spectrum efficiency – 20-fold since analog – battery performance and handset functionality. Handsets – typically bundled with services at subsidized prices – cost $100 at average wholesale prices and are usually replaced every 18 months in developed nations. The handset corresponds to about 12% of the total cost of wireless ownership with service charges averaging $750 over this period. Total royalties on wireless IPR – charged only on wholesale handset costs, not service revenues – average up to 10% depending on technology. This represents only 1.2% of hardware and service costs combined, with 2% for W-CDMA as royalties on more costly handsets are partially offset by higher service expenditures. These small upfront costs are typically absorbed by carriers and do not appear in retail prices. Handsets are usually subsidized by at least $40 and bundled with service contracts. In contrast, Value Added Tax rates levied on mobile handsets and services range from 15% to 25% in Europe. According to CTIA, 14% of an average U.S. wireless bill comprises government taxes, fees and surcharges.

Mallinson is founder of WiseHarbor, solving commercial problems in wirelessand mobile communications. www.wiseharbor.com