

FRAND Works

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**Keith Mallinson
Founder, WiseHarbor**

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Major FRAND Successes

- **Video Codecs**

- Widely used in DVDs, broadcast streams, PCs and smartphones
- 29 voluntary licensors and 1,000 licensees to H.264 patent pool
- Efficiently administered by pool supported by patent examiners
- Proprietary and open source software (eg, x.264) implementations
- Aggregate patent royalties approximately \$4 per device

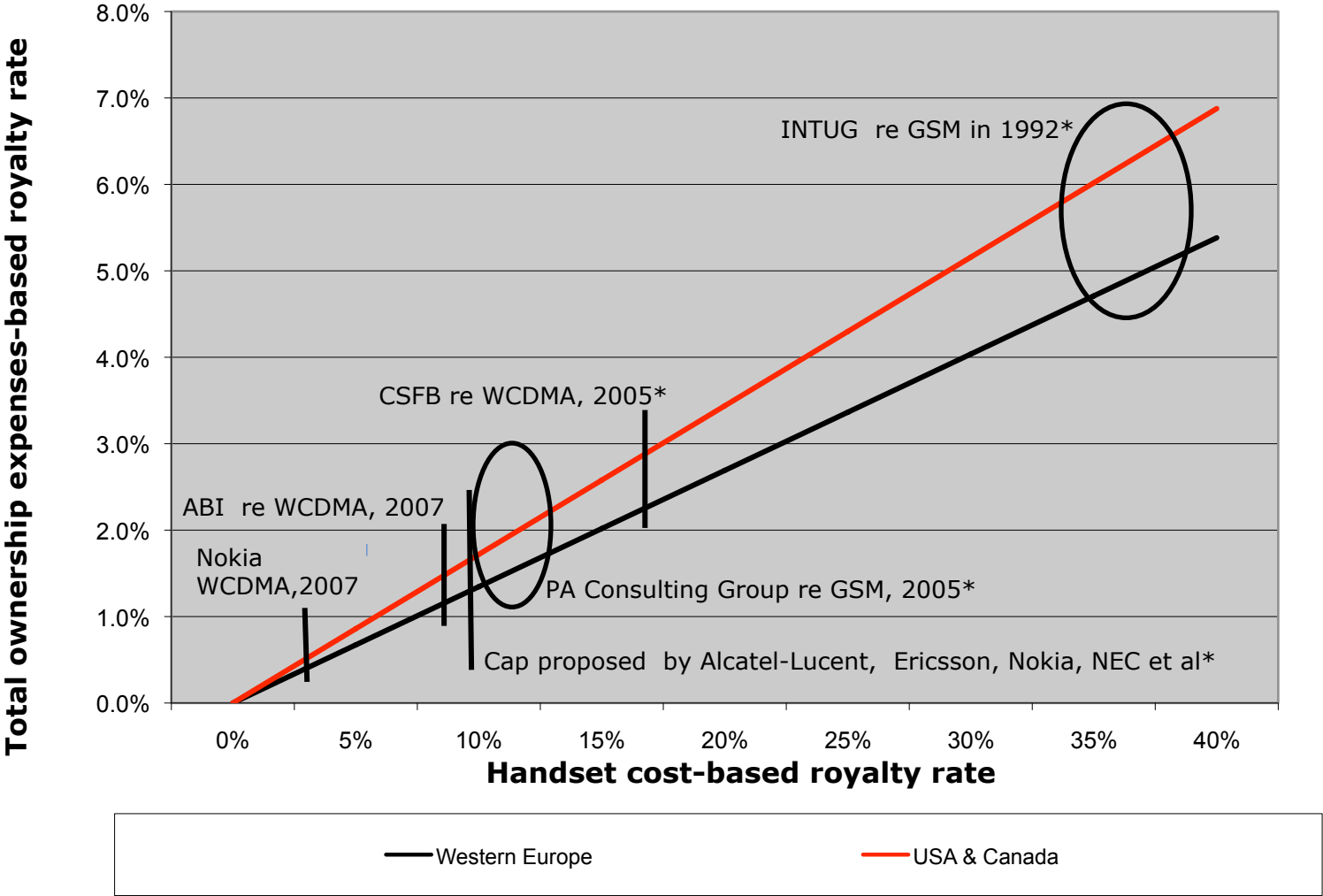
- **Mobile Phones**

- 5 billion phones in a \$1 trillion market including services
- Prices down to \$20 (unsubsidised)
- Most vibrant and innovative market with smartphone revolution
- Data speeds 1,000 faster in 10 years from 56kbps GPRS in 2000
- Hundreds of companies contribute to 3GPP and 3GPP2 standards
- 10 major standards releases by 3GPP and pace increases
- Aggregate royalty rates have declined



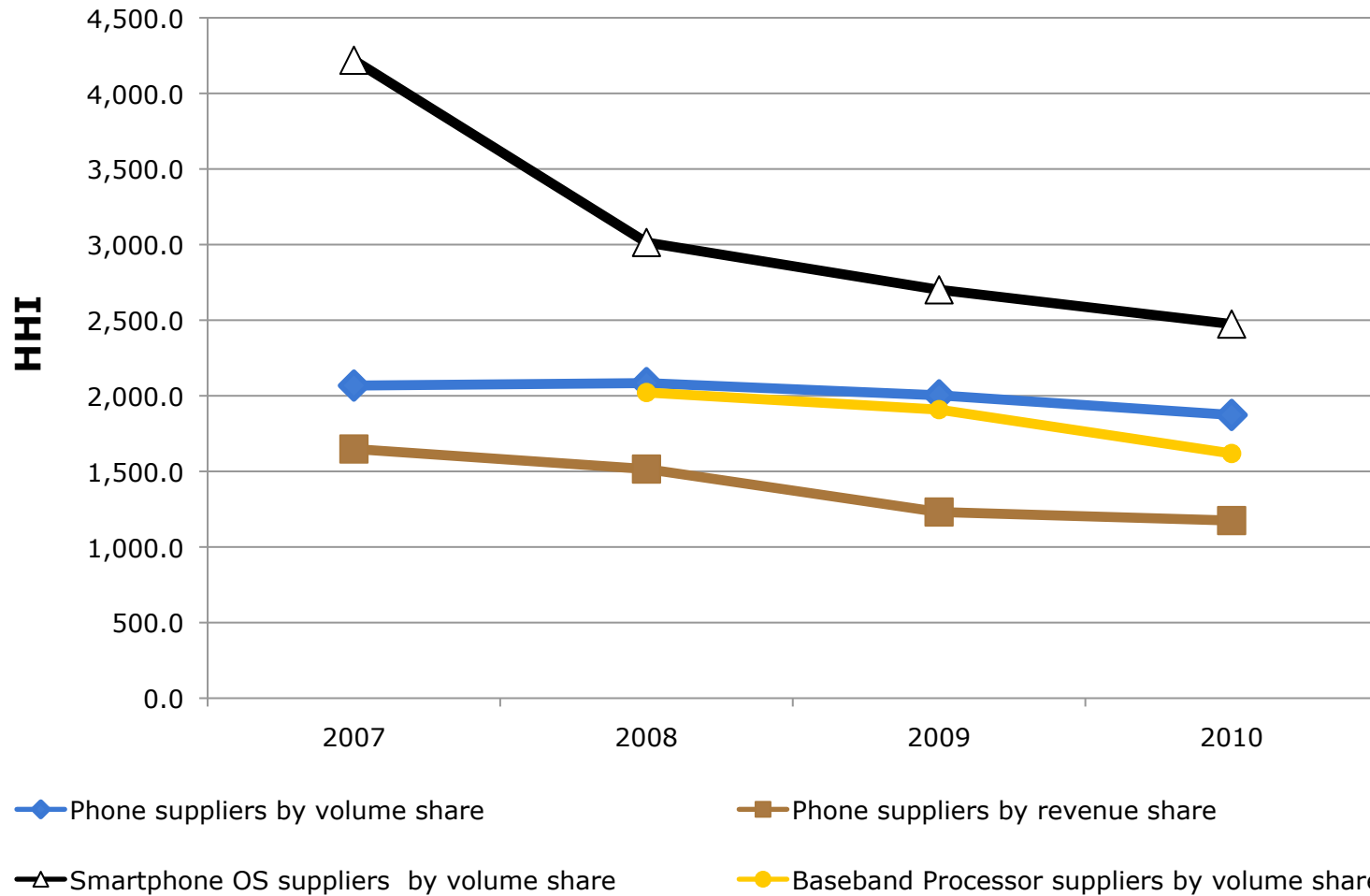
Royalties Increasingly Reasonable

Aggregate royalty rates based on total ownership expenses



Market Supply is Unconcentrated

Herfindahl-Hirschman Index Market Share Concentration Tracking in Mobile



Increasing Choice

Handset Manufacturers and Handset Models Offered, U.S., 2006-2010

Reporting Handset Manufacturers	2006 (Nov)	2007 (Nov)	2008 (Dec)	2009 (June)	2010 (June)
<i>Total Number</i>	8	12	12	16	21
Total Number Offering Ten or More Handset Models	5	8	8	9	11
Total Number of Handset Models Offered	124	168	316	260	302

Source: U.S. Federal Communications Commission, 2011



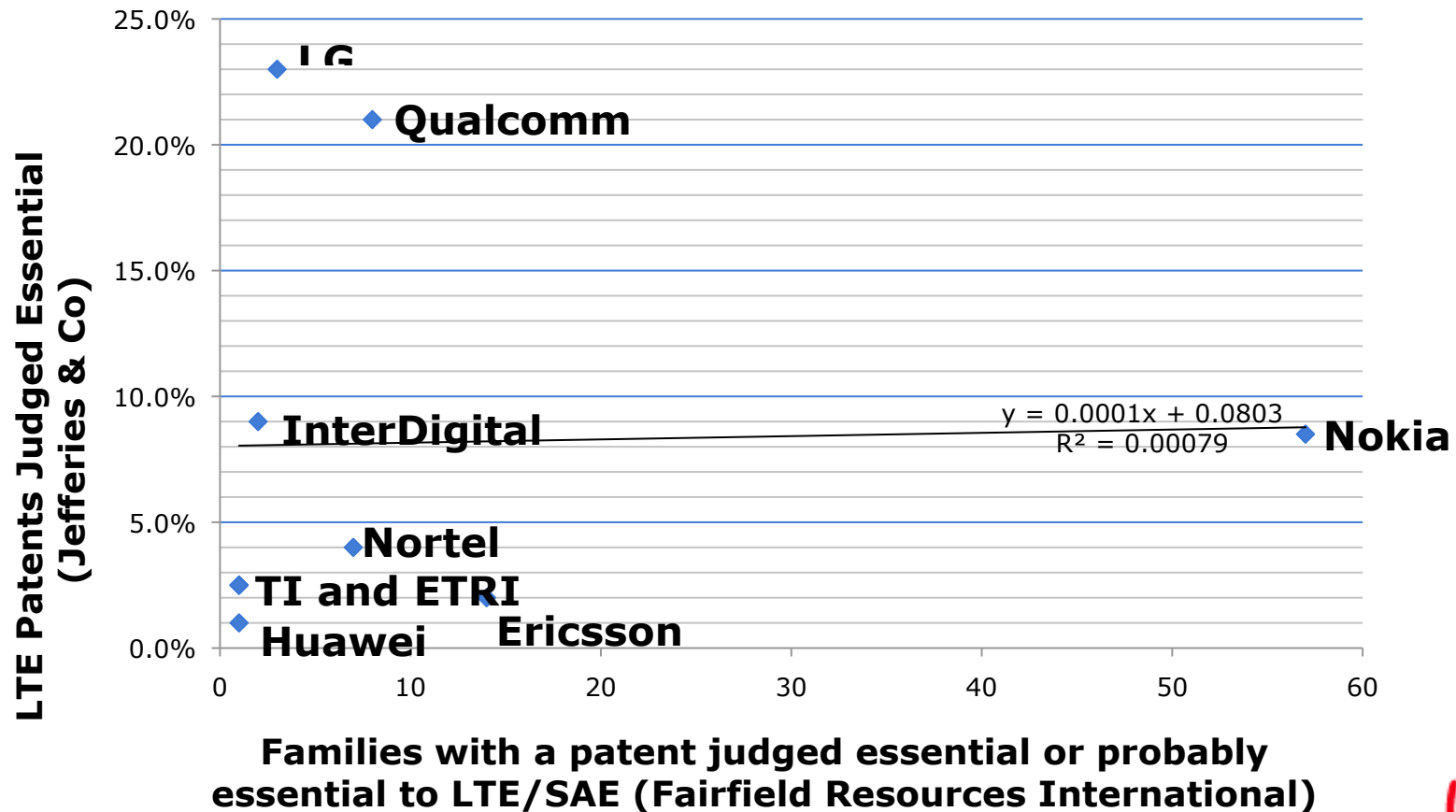
Persistent Questions about FRAND

- **Should FRAND be defined?**
 - Set of principles
 - FRAND is voluntary commitment to offer licenses on those terms
 - Bilateral negotiation is key
 - Patent pooling should be voluntary
- **Commercial implications of FRAND violation?**
 - Agreement to offer licenses on FRAND terms requires a bilaterally negotiated license agreement
 - Violation would be a commercial dispute under this contract
 - Courts can resolve matters when parties cannot agree
- **Is FRAND a regulatory tool or a commercial necessity?**
 - FRAND is required to facilitate various business models
 - Innovators deserve market-based financial returns and implementers deserve market-based licensing terms
 - Regulated rates are a tourniquet to innovation incentives
 - Mandatory “ex-ante” auctions would distort competition and encourage buyer cartel



The Peril of Imposing Valuation Methods

Disagreement on LTE Essential Patent Determinations: $R^2=0.0008$





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Thank You



www.wiseharbor.com

Keith Mallinson

Founder

WiseHarbor

Phone: +44 20 7193 0339

+1 617 418 3977

Email: kmallinson@wiseharbor.com

Twitter: @WiseHarbor

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