

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Fostering Innovation and Investment in the Wireless Communications Market	)	GN Docket No. 09-157
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51

**COMMENTS OF VODAFONE**

INTRODUCTION

Vodafone Group Plc ("Vodafone") is the world's leading mobile telecommunications company, with a significant presence in Europe, the Middle East, Africa, Asia Pacific and the United States through the Company's subsidiary undertakings, joint ventures, associated undertakings and investments. Vodafone holds a 45% interest in Verizon Wireless in the United States and had 315 million customers as of 30 June 2009<sup>1</sup>.

Vodafone welcomes the opportunity to comment on the Commission's Notice of Inquiry<sup>2</sup>. We do so as a company with interests in mobile operations in over 31 countries across 5 continents. The different models of competition, innovation and market development which we see around the world often make direct comparison between markets difficult or inappropriate. Nonetheless, we welcome this opportunity to make some comments which are informed by our international experience and which we hope will assist the Commission in this Inquiry<sup>3</sup>.

---

<sup>1</sup> Calculated on a proportionate basis in accordance with the Company's percentage interest in the ventures in which it has an ownership interest. More information on Vodafone's business activities generally is available at [www.vodafone.com](http://www.vodafone.com)

<sup>2</sup> *Fostering Innovation and Investment in the Wireless Communications Market, A National Broadband Plan for Our Future*; Notice of Inquiry, GN Docket No. 09-157, GN Docket No. 09-51, FCC 09-66 (Aug. 27, 2009) ("Wireless Innovation NOI").

<sup>3</sup> We have reviewed, and support, the comments submitted by our associated undertaking, Verizon Wireless, and by the GSMA Association, of which Vodafone is a member

## WIRELESS INNOVATION AND COMPETITION IS INTENSE AND GROWING.

The wireless communications sector as a whole has proven to be one of most innovative in the global economy over the past 20 years. Innovation has occurred at all levels of the supply chain: in core network capabilities like IP, in radio access such as 3G and LTE, in devices such as netbooks and smartphones, and in new service platforms such as mobile messaging, portals, advertising and micropayments. These and other innovations mean that the mobile services that are taken for granted by billions of users around the world today would have been inconceivable twenty years ago.

The rate of innovation in the wireless communications sector shows no sign of abating. Only last week Vodafone announced the launch of 'Vodafone 360', a suite of mobile internet services centred upon a radical new approach to the mobile address book. 360 allows users to combine and then integrate all their existing communications tools and content on both their mobile and their PC. The 360 platform, and associated devices, are expected to further drive the adoption and use of a next generation of rich wireless data services<sup>4</sup>.

New superfast broadband wireless platforms will support devices with new interfaces in the future, including virtual paper and wearable devices, whilst we are also at the beginning of an explosion in wireless-enabled machine to machine services. These innovations are responding to the central role which wireless technologies play in addressing enduring social needs, such as the need to stay connected and safe, as well as their vital role in confronting new challenges such as energy management, intelligent transportation, healthcare delivery and more sustainable economic development.

The primary driver of innovation in the wireless sector has been, and is likely to remain, competition between private enterprises. Competition is present in all levels of the wireless supply chain. Some activities, such as the development of new infrastructure platforms, require very significant investments in R&D and are often undertaken on a collaborative basis. Other activities are much less capital intensive and can be

---

<sup>4</sup> For full details of Vodafone's 360 vision, see the webcast at [http://www.vodafone.com/start/media\\_relations/news/group\\_press\\_releases/2009/360/webcast.html](http://www.vodafone.com/start/media_relations/news/group_press_releases/2009/360/webcast.html), and press release at [http://www.vodafone.com/start/media\\_relations/news/group\\_press\\_releases/2009/360.html](http://www.vodafone.com/start/media_relations/news/group_press_releases/2009/360.html)

undertaken locally by individual firms. Different market structures have emerged, and are likely to emerge in the future, at different points in the supply chain.

## INNOVATION IS INCREASINGLY A GLOBAL ACTIVITY

Although the wireless sector has always seen a significant degree of international collaboration, Vodafone sees these activities increasing further as international collaboration becomes a means by which all participants can better share their intellectual capital and benefit from economies of scale in production. Although collaboration in the past was often undertaken through Government-sponsored standardisation work (such as the European Commission's sponsorship of GSM standardisation activities in the 1980s), today's collaboration is more likely to be undertaken through commercial alliances between firms. A recent example of this is the agreement between Vodafone, Verizon Wireless, China Mobile and Softbank to support and develop a 'Joint Innovation Laboratory' (JIL) so as to allow applications developers to access a single set of APIs and related software tools and thereby develop widget-based services for a combined customer base of over 1 billion users globally<sup>5</sup>. Similar initiatives, such as those to develop metrics to support mobile advertising on a global basis, are being undertaken by private sector trade bodies such as the GSM Association<sup>6</sup>.

American consumers stand to benefit enormously from the scale and interoperability benefits that result from the active participation by American firms in these global activities. As the JIL initiative demonstrates, the pooling of intellectual capital and innovation on a global basis delivers faster and better innovation to wireless users across the globe. The globalisation of the sector will introduce new international competitors at different points in the value chain, and this will create both opportunities and threats for American (and European) firms. Vodafone believes that the overriding American interest is best sustained by a strong commitment to global free trade and that the American and European administrations should remain solidly opposed to protectionism which seeks to favour particular national interests or to distort fair competition at any point in the global supply chain. A particular challenge for the wireless sector today is the

---

<sup>5</sup>

[http://www.vodafone.com/start/media\\_relations/news/group\\_press\\_releases/2009/Verizon\\_Wireless\\_to\\_join\\_China\\_Mobile.html](http://www.vodafone.com/start/media_relations/news/group_press_releases/2009/Verizon_Wireless_to_join_China_Mobile.html)

<sup>6</sup> <http://www.gsmworld.com/newsroom/press-releases/2009/2532.htm>

sustainability of competitive supply of wireless network infrastructure, where many US and European suppliers currently face acute financial pressures

## NETWORK OPERATORS PLAY A CRITICAL ROLE IN THE INNOVATION PROCESS

There is a common misperception amongst some policymakers that small firms drive innovation, or that innovation only occurs at edge of the network. In Vodafone's experience, neither assertion is well founded. Innovation is required along the value chain and this requires enormous investments in wireless infrastructure to meet the explosive growth in demand for capacity and speed which underpin many of the new services developed by operators or third parties. Wireless operators also have a central role to play in finding innovative means to monetise many of the new services which will develop. Indeed, without monetisation, some innovation will not occur at all.

Networks also lie at the heart of the cybersecurity challenge, where innovation and investment will be required if services are to be delivered without disruption and the trust of users is to be retained. Again, demand for and use of new digital services will not occur without trust.

As noted above, the launch last week of 'Vodafone 360' – an innovative suite of services which allows customers to bring all aspects of their digital life together – demonstrates how wireless network operators such as Vodafone or Verizon drive innovation across all levels of the value chain<sup>7</sup>.

Scale is required both to support the R&D which drives innovation and to provide a single point of engagement for others in the value chain. One of the greatest challenges in the wireless sector in recent years has been overcoming fragmentation, particularly in wireless networks, when dealing both with other suppliers who are accustomed to dealing with a single provider and in facing new competitors who already operate on a global basis. Excessive fragmentation – in networks, in mobile operating systems, in browsers, and in services - has at times inhibited rather than sustained growth and innovation in the wireless sector. Ongoing standardisation activities and new web-based

---

<sup>7</sup> See fn 4

technologies (such as widgets) allow us to overcome these challenges to some degree, but other forms of collaboration – particularly amongst wireless network operators - are likely to be required to overcome the dangers of excessive fragmentation in future.

Wireless network investments will remain an enormously capital intensive activity. Vodafone invested almost \$10bn in its worldwide wireless operations in the year to March 2010<sup>8</sup>. Markets must allow sustainable returns on these investments. Recent trends, in both the United States and elsewhere, have been towards greater consolidation amongst wireless network operators within the same national market– see, for example, the recent merger between Vodafone and Hutchison in Australia to create sufficient scale to support the next stage of investment in mobile broadband infrastructure<sup>9</sup> - as well as amongst those operating across different markets – see, for example, recent proposals for a merger between India’s Bharti and Africa’s MTN<sup>10</sup>. Absent acquisitions and mergers, many wireless operators are also seeking to improve their network economics through the pursuit of new forms of collaboration, including network sharing arrangements such as that recently concluded between Vodafone and Telefonica in Europe markets<sup>11</sup>. We would expect these trends to continue in wireless markets across the world.

These trends will facilitate competition and innovation by providing the scale and scope to make the huge investments that the world’s wireless systems require to meet exploding consumer demand for mobile data. Such developments are wholly consistent with the maintenance of the vigorous competition which characterises wireless markets today. Competition remains robust in the markets that Vodafone participates, many of which have fewer national operators than the United States. This confirms that simplistic market share/HHI metrics do not properly reveal competitive performance in this sector. The US wireless market performs well today when we consider far more relevant outputs such as consumption, prices, innovation and investment.

---

<sup>8</sup> [http://www.vodafone.com/static/annual\\_report09/performance/kpis/index.html](http://www.vodafone.com/static/annual_report09/performance/kpis/index.html)

<sup>9</sup> <http://www.accc.gov.au/content/index.phtml/itemId/874495>

<sup>10</sup> <http://news.bbc.co.uk/1/hi/business/8067140.stm>

<sup>11</sup>

[http://www.vodafone.com/start/media\\_relations/news/group\\_press\\_releases/2009/telefonica\\_and\\_vodafone.html](http://www.vodafone.com/start/media_relations/news/group_press_releases/2009/telefonica_and_vodafone.html)

THE US HAS A HEAD START IN SPECTRUM, BUT WILL NEED TO FIND MORE SPECTRUM TO MEET INCREASING DEMAND FOR MOBILE COMMUNICATIONS.

The primary challenge for the Commission and US authorities remains the risk that spectrum shortages will inhibit the growth in the wireless industry upon which the broader American economy now depends to a significant degree.

The United States is well placed for the short run to support the next generation of wireless broadband infrastructure as a result of the early release of 700 MHz spectrum. Vodafone is now urging other Governments, including those in Europe, India and Africa, to follow the lead of the US and release the so-called 'digital dividend' spectrum which can be made available following the transition from analogue to digital terrestrial television<sup>12</sup>. The United States is likely to retain a head start of at least 3-4 years over other regions in the exploitation of this critical spectrum.

At present, Vodafone sees limited interest in unlicensed, cognitive or other shared spectrum applications outside of the US. In particular, Vodafone has yet to see anything to suggest that fundamental challenges of spectrum scarcity will be overcome by technological innovation. We therefore continue to see the licensing on an exclusive rights basis as likely to yield the best returns from spectrum for large scale, mass market wireless applications<sup>13</sup>.

Vodafone shares the Commission's enthusiasm for spectrum flexibility or 'repurposing'<sup>14</sup>, and considers that this is another area of spectrum policy where the US has been ahead of much of the rest of the world. Our expectation remains that the biggest gains from spectrum liberalisation will arise from the reuse of spectrum by an existing holder rather than a trade or transfer between parties in a secondary market.

---

<sup>12</sup> See Vodafone comments on latest European Commission proposals at [http://ec.europa.eu/information\\_society/policy/ecomm/radio\\_spectrum/\\_document\\_storage/consultations/2009\\_digitaldividend/replies/014\\_vodafone.pdf](http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/_document_storage/consultations/2009_digitaldividend/replies/014_vodafone.pdf)

<sup>13</sup> We have therefore been critical of the European Commission's proposals to change European licensing processes and establish a presumption in favour of unlicensed spectrum, see [http://ec.europa.eu/information\\_society/policy/ecomm/doc/library/public\\_consult/review\\_2/comments/vodafone\\_final\\_submission\\_10102006.pdf](http://ec.europa.eu/information_society/policy/ecomm/doc/library/public_consult/review_2/comments/vodafone_final_submission_10102006.pdf)

<sup>14</sup> Wireless Innovation NOI, para 25

Experience also suggests that it is neither possible nor necessary to design spectrum licences that confer 'perfect neutrality' in the sense that they would allow any conceivable technology or any conceivable service to be provided (Ofcom's 'Spectrum Usage Rights' concept, to which Notice refers<sup>15</sup>, was one such attempt). Most of the gains of spectrum flexibility or repurposing can be obtained by adopting approaches which are simpler and more pragmatic, albeit with the loss of some theoretical flexibility. Ofcom's subsequent proposals for a 'neutral' 700 MHz UHF auction design – which required almost 200 pages to explain and which is likely unworkable in practice – illustrate the dangers of such over-theorising<sup>16</sup>. We hope and expect that Ofcom will adopt a more pragmatic approach when this spectrum comes to be auctioned in late 2010.

Since the US has already addressed the key challenges of ensuring greater flexibility of use for existing spectrum and releasing new UHF spectrum, the remaining issue for the Commission and for US policymakers must be the identification and release of further spectrum to support continued innovation in wireless platforms. Given the high levels of utilisation amongst private users in many markets, Governments around the world are increasingly looking at public users as a potential source for such further spectrum release<sup>17</sup>. Current budgetary pressures on Governments make this a timely opportunity to reconsider the utilisation of these valuable resources.

Vodafone recognises that spectrum scarcity could be used to restrict competition and to inhibit innovation, but this would be a concern primarily where the associated output market is a monopoly (as may be the case with spectrum used to support the delivery of some public services) than if output market is competitive, as is generally the case for commercial wireless markets. We see no evidence of a failure to exploit or corner spectrum. On the contrary, as commentators such as Thomas Hazlett note, wireless communications technologies have been delivering economic and social returns from

---

<sup>15</sup> Wireless Innovation NOI, para 37

<sup>16</sup> See <http://www.ofcom.org.uk/consult/condocs/clearedaward/condoc.pdf> and Vodafone comments at <http://www.ofcom.org.uk/consult/condocs/clearedaward/responses/vodafone.pdf>

<sup>17</sup> The European Commission has commissioned a study on optimising the use of spectrum in the public sector, as yet unpublished, see [http://ec.europa.eu/information\\_society/policy/ecomm/radio\\_spectrum/document\\_storage/studies/optimizing/oj\\_notice\\_pub\\_use\\_study.pdf](http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/document_storage/studies/optimizing/oj_notice_pub_use_study.pdf). The UK Government asked Professor Martin Cave to audit UK Government holdings, which he concluded had a market value of £3-20bn, see <http://www.spectrumaudit.org.uk/pdf/caveaudit.pdf>

the spectrum they consume which are unrivalled by any other wireless technology in history<sup>18</sup>.

#### THE COMMISSION SHOULD RESIST PROPOSALS TO REGULATE COMMERCIAL RELATIONSHIPS IN THE WIRELESS SUPPLY CHAIN

Some parties have requested that the Commission regulate device exclusivity contracts between suppliers and carriers. Such requests have yet to be seen in Europe or elsewhere, despite the use of similar models by wireless operators and device vendors<sup>19</sup>. We believe this is because it is widely accepted by most policymakers that exclusivity and vertical integration can greatly benefit consumers (and incentivise innovation) provided there is effective competition between integrated firms, as there is in US and in most other wireless markets today. All the evidence suggests that the Apple iPhone, Blackberry Storm<sup>20</sup> and other such devices have enormously benefited consumers and stimulated further innovation in the markets in which they are available. This is not to say that exclusivity can never give rise to concerns about foreclosure or other forms of consumer harm, but it does suggest that the Commission would be wise to avoid attempts to formulate rigid, ex ante rules in this area and should instead continue to evaluate these issues on a case by case basis.

Many of the other questions posed in the Notice, for example about optimal relationships between different actors in the supply chain, suggest a potential role for the Commission in supervising or even restructuring commercial relationships through regulation. Vodafone sees no evidence to suggest that such interventions would promote innovation or otherwise improve upon an existing competitive environment which has served the United States so well for many years. The wireless supply chain remains a highly dynamic and complex set of competitive and collaborative interactions between many firms. These are conditions under which regulation is likely to have unintended consequences and generally to do more harm than good. Instead, we suggest the

---

<sup>18</sup> See [http://www.vodafone.com/etc/medialib/public\\_policy\\_series.Par.58911.File.dat/public\\_policy\\_series\\_5.pdf](http://www.vodafone.com/etc/medialib/public_policy_series.Par.58911.File.dat/public_policy_series_5.pdf)

<sup>19</sup> An exception being the ruling by the French anti trust authority in relation to the exclusive arrangements between Apple and Orange in France, see <http://www.autoritedelaconurrence.fr/pdf/avis/08mc01.pdf>

<sup>20</sup> The Samsung 360 devices, exclusive to Vodafone, are a further example of how exclusive vertical relationships drive innovation, see <http://info.vodafone360.com/en/phones/360H1>

Commission should continue its general oversight of the wireless sector with the goal of ensuring that the existing levels of robust competition between platform providers are sustained (and that there is sufficient additional spectrum available to facilitate this). All the available evidence suggests that this approach will best promote innovation.

## CONCLUSION

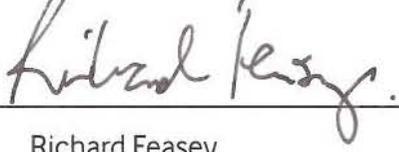
The United States wireless market continues to serve US consumers well. It will be one of the first in the world to grasp the new opportunities afforded by the release of new UHF spectrum and the next generation of mobile broadband infrastructure. Innovation is being driven by competition at all levels of the supply chain. Some of these markets are national, but many are increasingly global in nature. It is vital that fair and effective competition prevails in all of them.

There is no doubt that the dynamism of the wireless sector will continue to present new challenges for the Commission and to policymakers around the world. More spectrum will need to be found to sustain wireless growth, and technology alone is unlikely to solve the problem of spectrum scarcity in the foreseeable future. New relationships between different participants in the supply chain will need to develop, and conflicts will no doubt arise between competitors. In some cases, competitors will need to collaborate to overcome the disadvantages of fragmentation which has sometimes inhibited the development of the sector in the past. This too will raise challenges for policymakers.

All of the above is evidence of the kind of robust competitive environment that we have been accustomed to for the past 20 years. The outcomes of competition often cannot be anticipated either by policymakers or by firms themselves. Issues of consumer harm or anti competitive conduct will no doubt arise, but general ex ante rules are unlikely to be able to anticipate particular circumstances and are more likely to deter further investment and innovation than facilitate it.

Respectfully submitted,

VODAFONE GROUP SERVICES LTD

By: \_\_\_\_\_

Richard Feasey

Public Policy Director

September 30, 2009