RESEARCH IN MOTION RESPONSE TO OFCOM'S PROPOSED APPROACH TO ITS NEW REPORTING DUTY

THE UK COMMUNICATIONS INFRASTRUCTURE REPORT

AUGUST 2010

ABOUT RIM

RIM is a leading designer, manufacturer, and marketer of innovative wireless solutions for the worldwide mobile communications market. Through the development of integrated hardware, software, and services that support multiple wireless network standards, RIM provides platforms and solutions for seamless access to time-sensitive information including email, phone, SMS messaging, Internet and intranet-based applications. RIM technology also enables a broad array of third-party developers and manufacturers to enhance their products and services with wireless connectivity to data. RIM has the world's largest wireless design group dedicated to wireless data innovation. RIM's portfolio of award-winning products, services, and embedded technologies are used by thousands of organizations around the world and include the BlackBerry® wireless platform, the RIM Wireless Handheld™ product line, software development tools, radio-modems, and software/hardware licensing agreements. Founded in 1984 and based in Waterloo, Ontario, Canada, RIM operates offices in North America, Europe, Asia Pacific and Australia. RIM has extensive R&D and manufacturing sites in Europe, which provides substantial direct and indirect employment. For more information, visit www.rim.com or www.blackberry.com

OVERVIEW

Research In Motion Limited (RIM) welcomes the opportunity to comment on Ofcom's proposed approach towards formulating the first UK Communications Infrastructure Report.

RIM recognizes the importance and necessity of having an accurate and up-to-date picture of the state of the country's communications infrastructure so that better, informed decisions concerning UK networks and services can be made by Government, business and consumers alike.

As a global leader in wireless network technologies, RIM intends to focus its comments on the areas of the infrastructure report that it perceives to be the most pressing and relevant to its business; notably on electro-magnetic spectrum **coverage** and **capacity** of UK networks and services.

As the consultation document rightly states: "electro-magnetic spectrum is a scarce resource which is becoming increasingly important as the take up of wireless communications grows." Despite claiming that industry does not need to be consulted for data on spectrum for the first infrastructure report (paragraph 3.10), RIM would like to take this opportunity to contribute to Government and Ofcom's understanding of the current pressures on this resource, and suggest ways to ensure its optimal use.

AN IMPENDING SPECTRUM "CAPACITY CRUNCH"

RIM believes the issue of spectrum capacity to be the single greatest challenge facing the wireless communications industry today. The world is facing an impending spectrum "capacity crunch" arising from the explosive growth in mobile communications and the increasing use of smartphones and attendant bandwidth intensive applications. This situation must be addressed urgently by both business and policy makers in order to enable the continued development of mobile and other forms of wireless communications.

Given the severity and urgency of this issue, the UK Communications Infrastructure Report should place greater emphasis on effectively conveying to Government that the challenges posed by UK spectrum capacity limits need to be urgently addressed.

RIM believes that they must be addressed at two key levels:

•   **Wireless hardware and software equipment must operate more efficiently so as to consume less spectrum. RIM and its BlackBerry technology is a world leader in this area; and**

•   **More spectrum must be made available for mobile communications and fixed wireless solutions.**

In addition to this paper, we have enclosed two recent independent reports entitled *Mobile Broadband Capacity Constraints* and *Spectrum Shortfall Consequences*, both by wireless technology consultants Rysavy Research. The research gives detailed, impartial and opportune insight into key global trends in the mobile broadband industry; we hope you will find this useful.

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SPECTRUM BANDS THREATENED BY IMPENDING CAPACITY CONSTRAINTS

The issue

Whilst it is difficult to predict future communications landscapes -especially where some of the most popular applications, such as user-driven video uploading and social networking were virtually unknown a decade ago -one trend is certain: the overwhelming, ubiquitous and irrevocable move towards mobility and wireless access. In March, Ericsson announced that, for the first time, mobile data traffic surpassed voice on a global basis during December of 2009[1]. This historic milestone powerfully illustrates the overwhelming global shift towards online mobile communications. Furthermore, in its February report, Cisco anticipates that global mobile data traffic will "double every year through 2014, representing a 39 times increase between 2009 and 2014."[2]

Ofcom's Communications Market Report 2010 gives further UK-specific evidence supporting this trend: In 2009, mobile call and text volumes grew in the UK by 7% and 25% respectively, over the same period mobile data volumes increased by 240%.[3] Such massive increases in data use demonstrate the pressing importance of spectrum capacity to the UK market.

Providing communications infrastructures with sufficient capacity to enable this quickly unfolding landscape has now become an overriding imperative which spectrum planning regimes must urgently address. In this light, we would like to stress the need for Ofcom to boldly and directly treat this issue as a central theme of its infrastructure report.

Spectrum is a finite resource and capacity demands are beginning to constrain the available supply. The growing popularity of smartphones and consequent use of bandwidth and data intensive applications is placing extreme demands on existing networks. Rysavy Research is a respected US-based wireless analyst company, whose latest research[4] reveals trends indicating that the surge in wireless data usage is leading to a "capacity crunch". Based on mobile broadband market trends, Rysavy Research estimates that typical operators are likely to find their available spectrum completely consumed in the next three to five years. These constraints will become apparent through dropped calls, web pages that load slowly and applications that are unable to extract requisite data. Ofcom's Communications Market Report 2010 echoes these findings, stating that the UK is already experiencing such problems:

"In some areas and at some times of the day, capacity on mobile networks may have not kept up with demand, creating network congestion resulting in poor download speeds and service disconnections."[5]

Given that Ofcom is already aware of such findings, RIM believes that swift and effective policies are urgently needed to deal with this impending crisis in the UK.

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[1] http://hugin.info/1061/R/1396928/353017.pdf

[2] http://www.rysavy.com/Articles/2010_04_Rysavy_Spectrum_Shortfall_Filing.pdf (p.6)

[3] Ofcom Communications Market Report 2010 p283

[4] http://rysavy.com/Articles/2010_02_Rysavy_Mobile_Broadband_Capacity_Constraints.pdf

[5] Ofcom Communications Market Report 2010 p295

Action needed

RIM believes that the challenge of impending capacity constraints needs to be addressed on two levels:

1.   **Smarter hardware and software; and**
2.   **Focused spectrum planning and allocation policies.**

1) Smarter hardware and software

Thoughtful engineering can conserve network bandwidth and defer the capacity crunch. From a commercial perspective, it needs to be recognized that carrying data over a network has a fixed cost and that, unless industry starts factoring in the cost of carrying data-rich applications, sufficient incentives will not be in place to make data applications and services more efficient.

The use of efficient, energy-conserving hardware and software technologies is crucial. RIM is a company that has focused on efficiency - through the compression, efficient rendering and transmission of data - from the outset. BlackBerry devices were originally designed to run on what were little more than glorified paging networks, and operates on the concept of "just-in-time data" - meaning that the BlackBerry platform only downloads as many bits as are required to provide users with a rich experience. BlackBerry devices are designed to scale better, allowing for fast and efficient mobile e-mail, document attachments, instant messaging, browsing, and faster and more reliable applications. Research has proven that the BlackBerry service can send 11 times more emails per 500 Mbytes of data capacity than an iPhone[6]. By using state of the art technology such as efficient file viewing, a BlackBerry is able to send only the most relevant email data without unnecessarily impacting a network operator's bandwidth constraints.

In terms of web efficiency, Rysavy Research reveals that network operators are able to support three BlackBerry browsing sessions for every one session on other platforms[7]. This efficiency also provides for greater reliability in times of congestion, such as peak demand periods or moments of crisis, when other forms of communication cease to function. An additional advantage of this efficiency is that BlackBerry handsets have superlative battery life: the more efficiently a device handles data, the less it needs to activate its radio, and the longer its battery lasts.

The larger picture is that these efficiencies are not only better for the environment and spectrum resource management; they also enable a very exciting roadmap for applications that can be built on top of this sophisticated, proven and efficient platform.

2) Focused spectrum planning and allocation policies

The fundamental problem remains the paucity of new spectrum being made available to support the unrestricted growth of mobile services. To date, industry has relied on workarounds such as Wi-Fi offloading and femtocells to ease this load. However, even with greater engineering efficiencies, the industry will still remain dependent on governments to make more spectrum available in order to satisfy the growing consumer demand for rich mobile products and services. In relation to spectrum planning and allocation, we believe that this situation gives rise to the following policy imperatives:

a)   more spectrum must be made available for mass-market wireless telecommunications. Authorities

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[6] http://rysavy.com/Articles/2010_02_Rysavy_Mobile_Broadband_Capacity_Constraints.pdf (p.29)

[7] http://rysavy.com/Articles/2010_02_Rysavy_Mobile_Broadband_Capacity_Constraints.pdf (p.27-8)

should closely assess market demands and trends and, where necessary, act pro-actively; and

b) spectrum planning policies must promote an efficient use of spectrum. Interference management should strive for optimum precision, spectrum in popular bands must be utilised fully and, where necessary, re-allocation processes must allow for the expedited prior clearance of bands.

CONCLUSION

If the UK Communications Infrastructure Report is to adequately reflect the true health of the UK's communications infrastructure, then the spectrum capacity challenges facing regulators and business, as outlined in this paper, must not be underestimated. RIM looks forward to continuing a dialogue with Ofcom and other interested stakeholders regarding this specific issue, and regarding ongoing consultation on the infrastructure report as a whole.