



Office of Utility Regulation

## **Mobile Market Review**

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### Consultation on Further Development of Mobile Market

**Document No:** OUR 08/14

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**Office of Utility Regulation**

Suites B1 & B2, Hirzel Court, St Peter Port, Guernsey, GY1 2NH  
Tel: (0)1481 711120, Fax: (0)1481 711140, Web: [www.regutil.gg](http://www.regutil.gg)

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# 1. Introduction

In February 2006, the Director General (“DG”) commenced a process to award a second 3G mobile licence. That process concluded in September 2006 with the licensing of Guernsey Airtel (now trading as Airtel-Vodafone). The company has recently commenced the provision of mobile services in the Bailiwick. Consequently, there are now two 3G operators and three 2G operators providing mobile services in the Bailiwick; Airtel-Vodafone (“Airtel”), C&W Guernsey (“C&WG”) and Wave Telecom (“Wave”).

In the OUR decision commencing the licensing process in 2006, the DG indicated that before considering whether any further mobile licensing should take place, he intended to undertake a review of the mobile market in Guernsey to assess whether consumers would benefit from any further competition and if so, how that might be introduced in a sustainable manner.

Since the previous licences were granted in September 2006, a number of important positive developments have occurred in the mobile market. These include:

- The reduction in mobile termination rates in February 2007;
- The commitment of the mobile operators to mast sharing and a more structured approach to the future development of mobile infrastructure with the Environment Department;
- The commitment by the three mobile operators to introducing Mobile Number Portability (MNP) by 1<sup>st</sup> December 2008; and
- The decision at a European level to liberalise the use to which the various mobile frequency bands can be put.

Recently mobile broadband services have been launched and there continues to be on-going investment by the mobile companies in new services and in improving the underlying infrastructure needed to support future enhanced mobile services.

The purpose of this paper is therefore to set out the DG’s proposals for the further liberalisation of the mobile market in a manner which reflects the economic and social demands of the Bailiwick. A fuller discussion on these points is addressed later in this paper. Based upon the response to this consultation the DG will consider further the next appropriate actions that may be required.

*This document does not constitute legal, technical or commercial advice; the DG is not bound by this document and may amend it from time to time. This document is without prejudice to the legal position or the rights and duties of the DG to regulate the market generally.*

## **2. Structure of Paper and Process**

### **2.1. Structure of Paper**

The paper is structured as follows:

- Section 3 describes the telecommunications regulatory regime in the Bailiwick of Guernsey;
- Section 4 provides background information on the mobile market in Guernsey;
- Section 5 discusses the key issues which have been considered as part of this review;
- Section 6 discusses the options for liberalising the spectrum currently held by the three mobile operators; and
- Section 7 sets out the next steps in the process.
- Appendix 1 contains a report prepared for the DG by economic consultants Dotecon on competition in the mobile market.

### **2.2. Procedure and Timetable**

Responses to this document should be submitted in writing and should be received by the OUR before 5.00pm on Friday 8<sup>th</sup> August 2008. Written comments should be submitted to:

Office of Utility Regulation  
Suites B1 & B2,  
Hirzel Court,  
St Peter Port,  
Guernsey, GY1 2NH.

All comments should be clearly marked: “Mobile Market Review: Consultation on Further Development of the Mobile Market”.

In accordance with the OUR’s policy on consultation set out in Document OUR 05/28 – “Regulation in Guernsey; the OUR Approach and Consultation Procedures”, non-confidential responses to the consultation will be made available on the OUR’s website ([www.regutil.gg](http://www.regutil.gg)) and for inspection at the OUR’s Office during normal working hours. Any material that is confidential should be put in a separate annex and clearly marked so that it can be kept confidential. However, the DG regrets that he is not in a position to respond individually to the responses to this consultation.

## **3. Background Information**

### **3.1. Statutory Requirements**

Section 2 (1) of the Telecommunications (Bailiwick of Guernsey) Law 2001 describes the DG's responsibilities regarding the granting of licences for telecommunications networks and services. Having regard to the objectives set out in section 2 of the Regulation Law, and subject to the provisions of any States' Directions, the DG may grant a licence authorising any person to establish, operate and maintain a telecommunications network or to provide telecommunications services of any class or description specified in the licence.

Section 3 (1) of the Telecommunications Law describes the DG's responsibilities for publishing details of the procedures to be followed and the criteria to be applied in relation to applications for, and the grant of, a licence. The mobile telephony market in Guernsey was opened to competition from 1 April 2003 with the award of both a 2G and 3G licence to Wave Telecom. A further competition was carried out in 2006 resulting in the award of a further 2G and 3G licence. There are currently three 2G operators (Airtel, C&WG and Wave) and two 3G operators (Airtel and Wave) licensed to provide mobile services in the Bailiwick of Guernsey.

### **3.2. Licensing Background**

In May, 2002, the Director General published a consultation paper (OUR 02/18), entitled "Mobile Telecommunications Licence Terms and Conditions"<sup>1</sup>, which focused on the licence obligations and conditions for the new 2G and 3G licensees. This followed an earlier consultation paper "Mobile Telephony Licensing in Guernsey"<sup>2</sup> (OUR 01/25) published in December 2001 and the subsequent "Report on the Consultation and Decision Paper"<sup>3</sup> published in April 2002 (OUR 02/14). The May Consultation Paper (02/18) sought the views and comments of interested parties on issues and principles to be applied to the new mobile telecommunications network licences being awarded at that time. The Director General's intention was to develop a licensing regime that fosters competition between mobile operators and service providers in order to maximise the benefits to Guernsey consumers in terms of prices, innovation and quality of service.

Following the consultation process, a competition to award the mobile licences was launched at the end of 2002 and in March 2003 the Director General awarded Wave both a 2G and a 3G mobile licence.

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<sup>1</sup> Document No: OUR 02/18 May 2002, Mobile Telecommunications Licence Terms and Conditions.

<sup>2</sup> Document No OUR 01/25 Mobile Telephony Licensing in Guernsey.

<sup>3</sup> Document No OUR 02/14 Mobile Telephony Licensing in Guernsey Report on the Consultation and Decision Paper.

As there remained sufficient spectrum to accommodate a further 3G licence, in November 2005 the DG commenced a further process aimed at awarding a further licence. In November 2005 the DG published a document entitled “Competition for Mobile Telecommunications Licences; Call for Expressions of Interest and Call for Comments on Preliminary Tender Document” (05/27), inviting expressions of interest from interested parties. Following consideration of the two responses and further work by the OUR itself, the DG launched the second mobile licence competition in February 2006 with the publication of the rules of the competition in “Competition for 3G Mobile Telecommunications Licence; Information Memorandum” (OUR 06/04). He also published his consideration of the comments made by respondents to the earlier call for expressions of interest to address certain matters raised by respondents at that time in a document entitled “Competition for 3G Mobile Telecommunications Licence; Report on the Consultation” (OUR 06/03).

Two applications were received, from Airtel and C&WG. Following a detailed assessment of both applications, the DG ranked the Airtel application first and commenced negotiations on the terms of its licences. These discussions concluded successfully and in September 2006 Airtel was awarded a 2G licence and a 3G licence. Following the award of the licence to Airtel, C&WG mounted an unsuccessful legal challenge which, in May 2007, was dismissed by the Royal Court.

### **3.3. Licence Modifications**

The DG can after publishing notice of his proposal to do so, amend the licence of any operator. Under Section 8 of the Telecommunications (Bailiwick of Guernsey) Law, 2001 the DG may after giving notice and after consideration of any representations made to him, amend any condition of a licence issued by him to a licensed operator. The DG is required by Law to give a minimum of seven days notice of any proposed modification. In addition each operator’s licence contains a condition which enables the DG to amend a licence subject to compliance with the Telecoms Law.

### **3.4. Mast Sharing**

In August 2007 the DG reviewed the terms of the existing mobile operators’ licences insofar as they addressed the issue of mast sharing. Each operator’s licence contains a condition relating to access to facilities. In reviewing the powers available to the OUR to encourage and mandate greater co-operation the DG noted there were discrepancies between the condition in some licences with regard to access to facilities (which includes base stations and ancillary equipment). The DG also believed there was merit in strengthening the requirement, as part of the licence obligations on the three mobile operators, for greater co-ordination of their activities with regard to network development and roll-out. Following a statutory consultation (OUR 07/11) as required under the Telecommunications (Bailiwick of Guernsey) Law 2001, the DG finalised the changes to the existing mobile operators’ licences in September 2007 (OUR 07/14).

The OUR now publishes a register of mobile phone mast locations. The most recent register is available in OUR document OUR 08/12.

## 4. The Mobile Market in Guernsey

### Overview

The mobile market in Guernsey has, since the introduction of regulation in 2001 and the commercialisation of Guernsey Telecom at the same time, become progressively more competitive. While competition in the mobile market only commenced in July 2004 with the launch by Wave of its mobile network and services, by the end of 2006 it had captured about 20% of the mobile market. Airtel only recently entered the market (March 2008) and at the current time no data is available on the take up of its services. Currently mobile penetration is over 100%.

The three current operators are:

- C&W Guernsey

C&WG is a wholly owned subsidiary of Cable & Wireless plc. C&WG is licensed by the OUR to provide both fixed and mobile services and took over the former States owned telecoms company, Guernsey Telecom in 2002. It is licensed to provide 2G services. C&WG is required to provide its 2G services using 900MHz spectrum only and this spectrum is currently reserved for just 2G services under both its mobile licence from the OUR and its Wireless Telegraphy licences from Ofcom.

- Wave Telecom Limited

Wave is a wholly owned subsidiary of the Jersey Telecom Group Limited. It has been granted licences to operate both fixed (granted in 2002) and both 2G and 3G mobile (granted in 2003) networks by the OUR. Wave was the first operator to gain a 3G mobile operators licence in the Channel Islands. It is licensed to provide 2G services using DCS1800 spectrum and 3G services using 1900MHz/2100MHz spectrum under the terms of its licences from the OUR and its Wireless Telegraphy licences from Ofcom.

- Guernsey Airtel Limited

Airtel (branded as Airtel-Vodafone) is the newest mobile telecommunications service provider in Guernsey having launched its network in March 2008. Airtel is a wholly owned subsidiary of the Bharti Group of India and has a commercial relationship with Vodafone to provide certain Vodafone products in Guernsey. Airtel provides both 2G and 3G mobile services. It is licensed to provide 2G services using DCS1800 spectrum and 3G services using 1900MHz/2100MHz spectrum under the terms of its licences from the OUR and its Wireless Telegraphy licences from Ofcom.

The attached report from Dotecon offers further commentary on the Guernsey mobile market.



## 5. Comments on the Proposed Mobile Review

In March 2008 the DG wrote to the three mobile companies seeking their views on the merits of bringing forward the review of the mobile market proposed in February 2006. It became clear to the DG in the context of the discussions on the proposed introduction of MNP that the overall benefit to consumers might be further enhanced by carrying out an earlier review than that previously indicated in February 2006.

In OUR 06/03, published in February 2006, the DG, in response to a request from C&WG that no further licences be granted after the award of the licences proposed in the 2006 competition, stated the following:

*“Whilst the DG acknowledges that a period of stability is desirable to enable network investment to be recouped by a new mobile operator, he sees it as unnecessary to fetter his discretion as far into the future as the licence duration, given that applications or technologies may develop that could make more operators sustainable within the Bailiwick’s mobile telecommunications market. For this reason, the DG intends to review the situation in the 3G mobile telephony market after the same period of time as that between the award of the first 3G licence and this process, i.e. not before 2009. Thus the DG intends to achieve a balance between sustainable competition and environmental impacts.”*

The DG is mindful that having set out his proposed approach it would be inappropriate to deviate from it without proper justification given that competitors to the 2006 competition may have based their bids upon the assurances given. The DG therefore sought industry agreement on an earlier review and all three indicated they had no objection to the review being carried out earlier than 2009. As a consequence their initial input was sought as to the issues that might be considered as part of the review.

Airtel and C&WG responded to the initial request for views and the issues identified by them are summarised below. These include;

- The need for a further review of Mobile Termination Rates (MTRs);
- The need to ensure site sharing as a component of any review and for strong conditions on site sharing to be included in any future mobile licence(s);
- A review of what were seen as excessively high site sharing fees being charged by certain operators;
- That the positive licence conditions included with regard to environmental issues in the Airtel licences be extended to all operators;
- The lack of any need for a review of mobile spectrum at this time;
- That licence conditions should be reviewed to remove retail price notification;
- That mobile licences should become technology neutral; and
- That no further mobile operators should be licensed in Guernsey given the size of the market but that all three existing operators should have the ability to provide all mobile services (e.g. 2G, 3G services);

Wave Telecom raised no issues.

The DG is grateful to the operators for their input so far in this process and for the positive approach they have taken to the mobile review being accelerated. The issues identified above are considered in greater detail below.

### **5.1. MTRs**

In August 2006 the OUR commenced a review of MTRs charged by the (then) two mobile operators in Guernsey. The review was prompted by an assessment of the rates charged which indicated that MTRs were at the top end of rates charged in the 31 countries benchmarked by the OUR. As a result, the DG in February 2007 published his decision to impose a significant reduction to the MTRs all three mobile operators can charge and set a maximum target average charge of 6.75ppm. He also indicated that this rate would be fixed for a three year period and that it would be further reviewed closer to the end of that period.

The DG is however mindful that since that decision, there has been an increase in regulatory interest in mobile charges in general, particularly by the EU Commission. In 2007, the EU Commission imposed significant controls on the roaming charges operators may charge EU customers roaming in other EU countries. Recently there have been calls from BT and a UK mobile operator for Ofcom to review and substantially reduce MTRs in the UK. There is also a demand that charges for certain services (such as SMS) be reviewed, particularly in regard to roaming charges.

The review of MTRs in 2006 was based on a benchmark review of MTRs in other countries. The DG believed at the time it was the most effective and proportionate means of achieving a reduction in the high rates that existed in the market at that time. He is aware however that these rates may not reflect the charges an efficient operator might charge and that to determine such charges may require a greater level of assessment and analysis.

While the DG does not propose to review MTRs as part of this review, he does intend to give further thought to the merits of a more detailed assessment of this charge and how such a review might take place. He would welcome comments from respondents as to their thoughts on both the current level of MTRs and on the merits of a further review.

### **5.2. Site Sharing/Environmental Concerns**

During 2007, in the context of applications by Airtel for planning consent for the erection of its mobile infrastructure, the issue of the need for the sharing of mast sites to the largest extent possible was highlighted. It became apparent that while a sizeable number of mast sites existed in Guernsey, not all of them were or could be shared, based on the nature and strength of the infrastructure which had previously been approved by the Environment Department.

This created a number of delays in the processing of the Airtel applications as negotiations between operators and the Environment Department progressed. In August 2007, the OUR amended the terms of the three mobile operators licences to strengthen the requirement for mast sharing and to shorten the timeframe within which such issues should be progressed. As a result of this work, as the latest site register highlights, 50% of all sites are now shared; double the level of sharing in October 2007.

The issues faced by Airtel highlight the very clear conflict that exists in the development of new infrastructure for the telecoms market. On the one hand there is a very obvious desire from consumers for new services, better coverage and greater choice. This is borne out by the fact that the mobile market now accounts for about half the total revenue of the telecoms market, the strong growth in mobile subscriber numbers and the demand for new services that exists. On the other hand, the opposition faced by the mobile companies to getting approval for the necessary infrastructure needed to serve this demand brought into focus the clear tension that exists.

The issue is however not just confined to mobile. Future technological developments in fixed wireless services may well mean that wireless networks will present a real alternative to the more traditional fixed copper network. However, as with mobile, such networks require infrastructure to support their services and this may well involve future mast structures to support this development

The OUR believes that there is a need for a fundamental review of the current infrastructure utilised by the mobile operators on Guernsey. The current infrastructure utilised by the three mobile operators has developed over an extended period of time with various planning approval approaches being applied in each case. As a result the overall design of the various masts on the Island either are in less valuable positions (network wise) or are less useful (design wise) than might be the case had all three networks developed at a closer stage.

Over the past year, with the arrival of Airtel-Vodafone in the mobile market, there has been an increased focus on the balance that needs to be struck between, on the one hand promoting competition and ensuing consumers have access to leading edge technological services with on the other hand the very real need to preserve the character and visual quality of the Bailiwick's environment.

The challenge of assessing the degree to which operators' proposals for infrastructure development meets current States policy falls to the Environment Department. We understand that the starting point for the Department in considering an application for such development is the States of Guernsey Strategic and Corporate Plan, or Strategic Land Use Plan (SLUP). Strategic Policy 26 of the SLUP states that: "The Detailed Development Plans may include provision for the development of telecommunications infrastructure and equipment taking into account the need to minimise any adverse visual impacts on the environment." We also believe the States Strategic Economic Plan and

the States Government Business Plan will be important reference points for how future infrastructure proposals are considered.

It is important that a planning framework is put in place that ensures the Island enjoys quality and choice in its telecommunications services whilst minimising any adverse visual impacts. To-date the Environment Department has followed a successful strategy of requiring operators to share sites and masts where this is justified in terms of limiting the visual impact on the locality and where there are no insurmountable technical obstacles to doing so. The result of this approach has is, as has already been noted, a doubling in the number of sites shared between October 2007 and May 2008 with almost 50% of all existing sites now shared.

In pursuance of this policy, and in considering applications for telecommunications development within the terms of the Island Development Laws, the Environment Department has taken a number of practical steps, including:

- Publicising and consulting upon all submitted applications, and considering carefully all representations on proposals before reaching a decision within the terms of the relevant policies and the Law.
- Consulting with the Environmental Health Department on all applications to ensure that health concerns are adequately addressed, and requesting from operators certification of emissions at the earliest stage to assist in this process.
- Developing an overarching strategic Departmental approach to its consideration of such applications with the clear aim of minimising new ‘green field’ mast development.
- As part of this approach, requiring mast sharing wherever practically possible, including reaching agreement with operators on a method of sharing of existing monopole masts to ensure that second masts are not erected in proximity to those existing structures.
- Taking steps towards creating a code of best practice for mobile telecommunications development in Guernsey, along the lines of those that exist in the UK.

Key amongst these, in the OUR’s view, is seeking to minimise new greenfield sites where possible. In addition, the Environment Department, in co-operation with the mobile operators, has sought to adopt a system similar to that used in the UK of having greater visibility of operators’ wider plans for infrastructure development as opposed to assessing applications for sites on a case-by-case basis. In the event that in future a further new entrant joins the Guernsey market (either providing mobile or fixed wireless services), the need to provide a detailed and robust justification for new sites will be paramount.

Clearly it will be important that what may seem as conflicting objectives of the States – promoting sustainable competition and improving choice for consumers versus protection of the environment – are balanced so as to enhance the social and economic wellbeing of the Bailiwick.

The OUR believes there is merit in the Environment Department, the Commerce & Employment Department and the OUR working jointly to consider how best this issue might be addressed. The DG is encouraged by his discussions to date with both Departments with their willingness to engage in establishing a clear framework for future telecoms development that is consistent with the Government Business Plan, the Economic and Fiscal Policy and with the Environment Department's obligations including the Rural Area Development Plan.

The DG is aware that there is a view that there should be no further licensing of mobile operators in Guernsey and that the competition in the market should be confined to the existing three operators. The DG does not believe that this is either appropriate or necessarily desirable. The rapid developments in the mobile market makes it difficult to predict what network developments may take place which would enable some future operator to provide a better, more innovative range of services than that that might be offered by the current operators. This view is supported by the DG's economic advisors, Dotecon, and their report on this issue is attached as an appendix to this consultation. Further, as already mentioned, the challenge faced by the mobile operators will in all likelihood confront any operator that seeks to develop a fixed wireless network. The issue therefore does not go away.

However the DG believes that it is in everyone's interest – consumers, operators and the States – that there is greater clarity on the framework within which services can develop. He therefore proposes that no further mobile licence will be considered for award until the review referred to above is complete. The DG believes that this should be completed by early 2009 and at the appropriate stage after that the DG will consider whether further competition is warranted and if so how this might be facilitated.

The DG believes there may be merit, as part of these discussions, in assessing the options for a rationalisation of the current mobile networks and to explore the development of a single 'backbone' network for the three operators. This may then provide greater flexibility to individual operators to be creative in how they deploy their own equipment off this backbone in a manner that is more sympathetic to the environmental concerns of Islanders. The DG accepts that should such an approach be adopted it will involve a transition over a number of years but should assist the longer term development of the telecoms industry in a manner that minimises the impact on the environment. The DG recognises that this proposal is not without its challenges and operators views on such an overhaul would be welcome as part of this consultation.

### **5.3. Site Sharing Charges**

The current desire for mast sharing to the maximum extent possible raises certain issues with regard to how the fees for access to sites and the annual rental thereof is determined. It could be argued that the Environment Department's approach places a new entrant at a possible disadvantage in that they will be aware that they are obliged to negotiate site

sharing in order to develop their network. Equally, existing infrastructure providers (i.e. existing mobile operators) will be in a strong position in such negotiations.

The OUR notes that there exists concern in the mobile market with regard to the level of charges imposed by certain operators for site sharing. The OUR is aware that there exists a 'rate card' which was originally negotiated between C&WG and Wave and that it applies both in Guernsey and in Jersey (between Jersey Telecom and C&W Jersey.). The OUR has been told that the same charges apply to operators where more than one operator shares the same site. However the OUR is concerned about the level of charges based on our initial assessment. In addition there appears to be differences between the level of charges applied by the telecoms operators compared to the level of charges applied at sites not controlled by these operators and there is not as yet any clear rationale for why this should be the case.

The OUR is continuing its assessment of the charges that apply for site sharing. While the DG intends to assess this issue separate to this mobile market review, he would welcome any further comments interested parties may have on this issue.

#### **5.4. Strengthening Environmental requirements**

It has been suggested that in any future licence, should one be granted, that additional requirements with regard to protecting the environment and minimising waste should be incorporated into the licence terms. The DG is aware that Airtel, in its bid for its 3G licence include a specific licence condition which was included as part of its licence terms. The DG is also aware of the recent public debate on the possibility of further operators publishing their own telephone directories in addition to the C&WG directory and Wave's 'The Book' directory. This latter issue merits comment at this time.

C&WG is required, in order to comply with the Universal Service Obligation which has been determined by the States in 2001, to maintain a printed directory and ensure it is available to every subscriber. Other operators are required under the terms of their licences to cooperate with C&WG in ensuring that the information is accurate and up-to-date. No other operator is required under either the terms of their licence, the Regulation or Telecoms Law or States directions to publish a printed directory. Any decision by an operator other than C&WG is purely a commercial matter for the company and the OUR has no legal basis upon which to direct that such publication should cease.

There are two reasons for this. First, the States has placed an obligation on the OUR to regulate the telecoms sector (and others) in a proportionate manner. Essentially this means to strive for what is more commonly referred to as 'light touch' regulation. The DG is of the view that interfering in a company's decision to undertake a purely commercially driven business activity when there is no specific regulatory or competition issue at stake goes against the States obligation. Second the publication by Wave of its directory is based on Wave acquiring the data for the 'White Pages' directory from (we understand) BT in the UK. The 'Yellow Pages' part of the directory is advertising bought by clients of Wave's directory. It is possible for any organisation to approach BT and,

subject to agreeing commercial terms, acquire this information and produce a directory. The publication by any business of a telephone directory is not an activity for which a licence is required under the Telecoms Law. Therefore there is no legal basis open to the OUR to direct that only one directory be printed.

The DG is aware that other various suggestions (such as alternate year publication by C&WG and Wave) have been proposed. The DG does not see any legal basis upon which the States could mandate any party from refraining to print its own directory should it be minded to so do. He is clear that there is no basis under the OUR's powers for such action.

In terms of whether wider environmental obligations should be included in any future licence (or even added to the licence of existing operators) the DG is currently minded to address such a proposal as part of the wider review of licence terms scheduled for later in 2008. However his initial view is that, given the purpose of the licence review is to reduce regulatory oversight he is minded not to include as standard such a condition. While Airtel had proposed the condition itself, in the context of a beauty parade competition that was designed to distinguish it from other applicants, the DG does not believe that this warrants extending the condition to other operators.

### **5.5. Removal of Price Notifications**

Currently C&WG is required, as the operator that has been found to be dominant in the retail mobile market, to publish notice of any changes to its tariffs or the introduction of any new tariffs 21 days prior to such charges coming into force. Airtel and Wave are not subject to such a requirement as neither has been found to be dominant in the retail mobile market.

C&WG has argued that such a notification process places it at a disadvantage as other operators can react to any changes in C&WG's pricing more speedily than it can respond to the other operators' price changes. It notes that as all three mobile operators have their own networks that the rationale for maintaining a process of notification is now absent (unlike in the fixed market where C&WG and its competitors avail of the use of C&WG's network).

The issue of price notifications is an important issue for the OUR. There is currently an absence of competition law in Guernsey and therefore one of the justifications commonly offered for regulators not needing to be active in requiring price notifications is absent in Guernsey. The DG is also mindful that at this stage competition in the mobile market is not as effective as in other jurisdictions and the relative market share of C&WG is still extremely strong, some four years after the launch of Wave Telecom. Given that a further new entrant (Airtel) has now entered the market, the DG is minded to consider this particular issue further in the context of the wider licence review when more detailed consideration can be given to the issue. He does not therefore believe it necessary to set out any particular thinking at this stage, but he is however minded to look closely at the use of sunset clauses in licences as part of the review planned for later this year.

## **5.6. Technology Neutral licences**

The issue of whether mobile operators should be issued with a generic mobile licence and remove all references to the specific spectrum that must be used is an interesting point. The report attached from Dotecon also makes comment on this issue.

The move would in effect result in all mobile operators possessing a licence similar to their fixed licence where they would be free to provide a full range of mobile services (2G & 3G) subject to having the necessary Wireless Telegraphy licences from Ofcom. (The process applied in Guernsey so far has been that Ofcom allocates spectrum to Guernsey licensees after consultation with the OUR).

In adopting such a move a number of issues arise. Such a move might negate the need for a further competition (at this time) for any further 3G licence, as the existing three operators would each then have a licence that would enable them to provide both 2G and 3G services. This approach is consistent with the DG's longer term plans to ease where possible the restrictions on mobile operators with regard to the operation of their businesses. In essence all three existing mobile operators would be able to use their existing 2G and 3G spectrum to provide any mobile services (i.e. 2G and 3G).

While the administrative process of amending a licence is relatively straight forward, in this particular case it does raise issues which are complex for the market as a whole. Among the issues to be considered are:

- Should C&WG be required to surrender some of its 900MHz spectrum given it may provide it with certain competitive advantages? Because of the nature of the propagation of the various mobile spectrum bands (900/1800/2100MHz) they each have certain advantages and disadvantages when it comes to mobile services. The obvious advantage that 900MHz spectrum has for network roll-out is that it enables better coverage from few base stations. However the DG would wish to consider whether such an advantage places C&WG in a position of material competitive advantage. In balancing this equation, both Wave and Airtel possess both 2G and 3G spectrum and it could be argued that both have access to sufficient spectrum to enable them to compete with C&WG and have already rolled-out their networks utilising this spectrum. The DG would welcome respondents' views on this particular issue. In the event that the DG is minded to review the spectrum allocations to any particular operator, he would propose to engage with industry separate to this review on identifying the timetable for such a review. However, to help inform this issue, he is currently minded to propose that C&WG surrender 2 x 5MHz of 900MHz spectrum.
- What is the appropriate fee that should be charged to C&WG given it will be in a position to compete in the 3G market? Both Wave and Airtel have paid £250,000 each for the right to have a 3G licence. The DG believes there may be merit in applying a similar fee to C&WG. The DG believes there might be an obvious unfairness in a situation where two operators who have competed successfully for



a licence (and incurred costs in doing so) having to pay a fee and C&WG (which in the first competition chose not to apply and in the second was unsuccessful) being able to obtain the right to offer 3G services without paying any licence fee. The DG is of the view that the equitable outcome, should it be decided to amend the licences in the manner proposed is that C&WG be required to pay a fee similar to that paid by the other mobile operators.

The DG does see significant merit in the approach where all three operators have non-service specific licences and he is minded to adopt such an approach from this review. This issue is discussed further in section 6.

### **5.7. Review of Mobile Spectrum**

The DG has considered whether there may be merit in requesting Ofcom, the UK regulator and the body responsible for the management of radio spectrum in the Bailiwick, to undertake an audit of how spectrum is used, with a particular focus on spectrum allocated to the mobile operators.

Spectrum used for mobile services is extremely valuable. As a scarce resources it is important that it is used efficiently. The DG is aware that the manner in which various frequency allocations in Guernsey developed is in part more related to history than efficiency. C&WG, on taking over Guernsey Telecom, acquired access to the entire GSM 900 spectrum in the Bailiwick. When the first mobile competition was carried out Wave was awarded 2G spectrum in the DCS1800 band along with 3G spectrum. In addition it has since been allocated E-GSM spectrum. Airtel has both DCS1800 spectrum and 3G spectrum.

While the DG notes that both C&WG and Airtel do not believe this is a priority, he would welcome further views on this issue. He believes it would make sense in the longer term that Guernsey operators are required to use spectrum, given its value, more efficiently and he is minded to consider further the need for an audit of spectrum use. This audit would however be separate to his proposal to reduce C&WG's 900MHz spectrum by 2 x5MHz as proposed above.

### **5.8. Number of Mobile Operators**

C&WG in its response has provided some assessment of the number of mobile competitors which, in its view, the mobile market in Guernsey can sustain. In its view that number is three and that the DG's energy should be concentrated on ensuring that all three can compete on what it describes as a level playing field. C&WG believes the most appropriate means of promoting the economic and social well-being of the Bailiwick is through fostering greater competition between the existing three operators. Airtel for its part believes that true competition is only driven when three or more operators are actively competing. It has indicated that it has no objection to a further licence being issued to an existing or indeed new operator.

The number of mobile operators that Guernsey can sustain is an issue on which the DG has previously canvassed opinion. Not surprisingly the view of operators in the market has evolved over time as circumstances changed. In 2002, C&WG's view was that the mobile market in the Bailiwick was not large enough to support two network operators and that customers would not benefit from two competing operators striving to earn an acceptable return on capital. The OUR did not accept that rationale at that time and subsequently, following a competitive process, awarded Wave Telecom its mobile licences in April 2003.

In 2005, the DG commenced a further competition to award a second 3G licence. In response to the consultation at that time, C&WG's view was that the market could only sustain two 3G operators and sought confirmation that no further licence would be awarded after the completion of the competition for the duration of the proposed licence term. On the other hand, another respondent to that consultation strongly believed that having several operators encourages a stimulating market dynamic, maximising the consumer benefits and innovative advances. In its view, having potentially only three operators present in the Bailiwick of Guernsey, or possibly just two operators, would not bring the same benefits into the mobile market. Given that available spectrum, geographical size, population distribution and overall profile are very similar in Jersey and Guernsey, the respondent recommended that the OUR should consider opening up mobile competition to a larger group of new market entrants by making more than one 3G licence available. Clearly this is a case where there is some flux in the opinions of interested parties.

In considering the DG's statutory duties in so far as they relate to this issue, the DG has given detailed consideration as to how best to balance what are clearly competing interests. The DG has already indicated that he does not believe it would be appropriate at this time to close off on future licence in the mobile market (for the reasons set out in section 5.2). The attached report from Dotecon makes further reference to the lack of convincing arguments for closing off further competition whilst reflecting on the obvious trade-offs that need to be considered. However equally the DG believes this particular issue requires further consideration and he has already indicated that in consultation with the Environment Department and the Commerce & Employment Department a review of the framework within which future competition should develop will be undertaken. Any future licensing would be considered further at that stage.

## 6. Spectrum Liberalisation

There is a growing interest in deploying 3G services (UMTS) using the 900MHz frequency band (and to a lesser extent 1800MHz). The 900MHz band has until recently been reserved solely for 2G services. The move to free up the use to which this frequency band can be put was advanced at a European level in 2007 by a decision by the Radio Spectrum Committee<sup>4</sup> to liberalise the use of the 900 MHz and 1800 MHz spectrum and so allow the spectrum to be used for 3G and potentially other technologies.

Currently Ofcom, which manages the radio spectrum for the Channel Islands, is itself consulting on its own proposals for liberalising the use of 900MHz and 1800MHz spectrum as it recognises the potential that freeing up the use of this spectrum for 3G may have for the UK mobile market. In addition the GSM Association<sup>5</sup>, the industry body representing GSM operators worldwide, has itself encouraged liberalisation of the use of 2G spectrum for 3G services.

As the spectrum in Guernsey is managed by Ofcom, it is necessary for the OUR to engage with Ofcom on the practical steps associated with the consideration of such a move. Our discussions with Ofcom have been very constructive on this issue and Ofcom has agreed to a different approach to that being followed in the UK that will, subject to the outcome of this consultation, see the liberalisation of the use of 900MHz and 1800MHz spectrum take place in Guernsey earlier than it is likely to happen in the UK.

### 6.1. Spectrum Liberalisation in Guernsey

Currently the three mobile operators in Guernsey use a combination of frequencies to deliver their mobile services. The table below details the frequencies used and the allocations currently made to the three operators by Ofcom:

	GSM 900	GSM 1800	3G
C&WG	890.1 - 914.9 935.1 - 959.9		
Wave	880.1 - 889.9 925.1 - 934.9	1715.1 - 1725.1 1810.1 - 1820.1	1904.9 – 1909.9 (TDD) 1949.7 - 1959.7 2139.7 - 2149.7
Airtel- Vodafone		1724.9 - 1730.1 1742.3 - 1743.3 1819.9 - 1825.1 1837.3 - 1838.3	1970.0 – 1980.0 2160.0 - 2170.0

<sup>4</sup> For a fuller discussion on the background to this change the Ofcom Consultation document provides a useful discussion on this topic; <http://www.ofcom.org.uk/consult/condocs/liberalisation/liberalisation.pdf>

<sup>5</sup> The GSMA's report also provides an interesting discussion on this topic; [http://www.gsmworld.com/documents/umts900\\_full\\_report.pdf](http://www.gsmworld.com/documents/umts900_full_report.pdf)

It is clear from the table above that C&WG possess the vast majority of the 900MHz spectrum in Guernsey. This is a result of the historical development of mobile services in Guernsey whereby Guernsey Telecoms, as the first mobile operator, was allocated almost the entire 900MHz band. Such an allocation would be unlikely in current times for spectrum efficiency reasons.

Given the DG's interest in promoting competition to the fullest extent possible in Guernsey, the DG believes there is merit in liberalising the use for which both 900MHz, 1800MHz and 1900/2100MHz spectrum can be used. Following discussions with Ofcom, it sees no impediment to proceeding with a relaxation in the use to which this spectrum can be put and has no objection to this proceeding at a pace which is different to that being pursued by Ofcom in the UK with regard to the mobile operators licensed by it there. It accepts that there are particular circumstances which exist in Guernsey which allow for this move to be taken now.

Therefore the DG proposes to amend the licences of all three operators to remove the restriction on the use to which the 2G and 3G spectrum held by them can be used to enable all three frequency bands to be used for mobile services (be that 2G or 3G services). In considering this proposal further the DG particularly invites comments on the extent to which some rationalisation of the 900MHz spectrum may be required given the advantage it offers as identified by Ofcom and the GSMA. The DG accepts that should any clawback of spectrum be required he would intend to address the detail of that outside of the liberalisation of the spectrum being proposed here as he is aware that the practical issues associated with this will require planning and time. He notes that in the UK Ofcom has itself identified a timeframe over which 900MHz spectrum might be recovered from both Vodafone and O2.

However he believes it is important in assisting the fullest consideration of this proposal to be made that he signal the likely rationalisation he is minded to consider. Following discussions with Ofcom, the DG believes that C&WG could be required to surrender 2x 5MHz of 900MHz spectrum and still have sufficient spectrum to provide (subject to the outcome of this consultation) a competitive 2G and 3G services to its customers.

The obvious consequence of this proposal is that there will be a further competitor in the 3G market (i.e. C&WG). The DG believes that this approach to fostering greater competition is consistent with his duties and functions under the Regulation Law.

## **6.2. Licence Modification**

In the event that the DG proceeds with this proposal, it will be necessary to modify the licence of all three mobile operators. Currently each operator's 2G and/or 3G licence contains the following definition:

### **C&WG 2G Mobile Licence**

*“Licensed Mobile Telecommunications Services”*: means services (other than satellite services) the provision of which consists, wholly or partly, in the establishment of radiocommunications to Users, which makes use wholly or

*partly of a Mobile Telecommunications Network and which has the characteristic of a pan-European, cellular, digital, land based, mobile telephony service compatible with the GSM standard. These services shall be provided in **the 900MHz band** in accordance with the Wireless Telegraphy Act and the ETSI technical specifications;*

#### **Wave Telecom/Airtel Vodafone 2G Licence**

*“**Licensed 2G Mobile Telecommunications Services**”: means services (other than satellite services) the provision of which consists, wholly or partly, in the establishment of radio communications to Users, which makes use wholly or partly of a Licensed 2G Mobile Telecommunications Network and which has the characteristic of a pan-European, cellular, digital, land based, mobile telephony service compatible with the GSM standard. These services shall be provided in **the 1800MHz band** in accordance with the Wireless Telegraphy Act and the ETSI technical specifications;*

#### **Wave Telecom/Airtel Vodafone 2G Licence**

*“**Licensed 3G Mobile Telecommunications Services**”: means services (other than satellite services) the provision of which consists, wholly or partly, in the establishment of radio communications to Users, which makes use wholly or partly of a 3G Mobile Telecommunications Network and which has the characteristic of a pan-European, cellular, digital, land based, mobile telephony service compatible with the European UMTS standard. These services shall be provided in **the 1900/2100 Mhz band** in accordance with the Wireless Telegraphy Act and the relevant ETSI technical specifications;*

The DG proposes that, subject to the outcome of the consultation that each operator will hold only one licence and that the licence shall instead contain a definition which shall read as follows:

*“**Licensed Mobile Telecommunication Services**”; means services (other than satellite services) the provision of which consists, wholly or partly, in the establishment of radio communications to Users, which makes use wholly or partly of a Mobile Telecommunications Network and which has the characteristic of a pan-European, cellular, digital, land based, mobile telephony service compatible with the European GSM or UMTS standard. These services shall be provided utilising the frequency bands assigned to the Licensee, with the approval of the Director General, by the Office of Communications (Ofcom) in accordance with the Wireless Telegraphy Act and the relevant ETSI technical specifications;*

However the DG intends to undertake a formal licence modification process in accordance with section 8 of the Telecommunications Law on this proposed amendment should the outcome of this consultation support such a move. Therefore the revised definition is included here to enable operators to consider more fully the likely change

that will be considered at that time and this consultation does not constitute a formal licence modification consultation as required under section 8 of the Telecoms Law.

## 7. Next Steps

As the DG is keen to ensure there is maximum choice available to consumer when MNP is introduced in December 2008, he is anxious to proceed with the further steps that might be required arising from this consultation in the event that there is support for his proposals. He therefore seeks respondents views on shortening the consultation process from the standard three stage process (consultation, draft decision, decision) and proposes to move straight to a final decision following a review of any comments received. The DG believes such a move is warranted given the timing issues associated with MNP and that it is therefore in the best interest of consumers.

In terms of the next steps, this will very much be informed by any responses received to this paper. However the DG would envisage that the following actions will be required in the event that there is support for his proposals:

- A formal licence modification process will need to be undertaken;
- Mobile Operators will need to engage with Ofcom on seeking a modification to their WT licences;
- The OUR will consider further the proposals put forward in this paper relating to the rationalisation of the 900MHz spectrum held by C&WG and the proposal to reduce C&WG's allocation by 2 x5MHz; and
- Following finalisation of this proposal, discussions will commence with the Commerce & Employment Department and the Environment Department on clarifying the framework within which further competition is promoted in the Bailiwick.

The DG envisages finalising his decision on this issue in September 2008 following the consideration of any comments received.

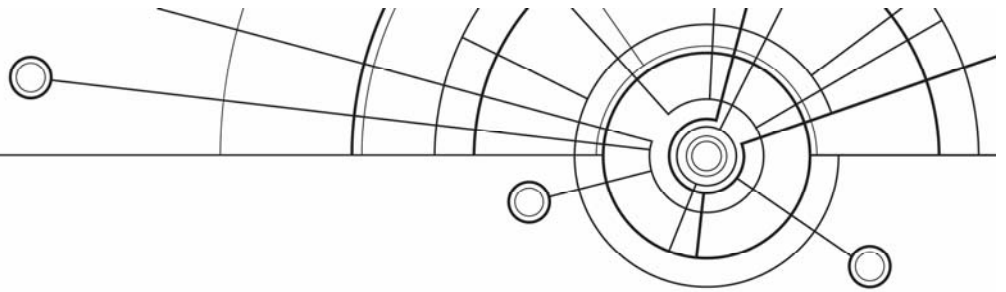
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## **Appendix 1**

**Report by Dotecon for the OUR**

**Competition in the Provision of  
Mobile Services in Guernsey**





# Competition in the provision of mobile services in Guernsey

Report for the Office of Utility  
Regulation

June 2008

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## *Executive Summary*

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1. In this report for the OUR, we review the existing position in relation to competition in the provision of mobile communications services within Guernsey, we examine how technological and spectrum-related developments might impact on the mobile market and the related market for broadband services, we assess environmental aspects pertaining to further mobile network development, we consider the options open to the OUR in promoting further competition within the mobile market and we outline the approaches that might be taken in relation to the future allocation of mobile licences by the OUR.

### *Overview of the Guernsey mobile market*

2. From the point of view of the spectrum allocations granted, mobile licensing has occurred in quite a fragmented manner within Guernsey. C&WG has been granted a block of 900 MHz spectrum but it holds no 2G spectrum in the 1800 MHz band and neither does it hold any 3G spectrum. Both Wave Telecom and Airtel-Vodafone both hold 2G and 3G assignments but, unlike C&WG, neither of them is in possession of any GSM spectrum in the 900 MHz band, although Wave Telecom does have an assignment of 900 MHz spectrum in the GSM extension band.
3. The most recent data available to us on customer numbers demonstrate that C&WG holds an extremely strong position within the mobile market in Guernsey. At end-2006, C&WG held a market share of 80% and its superior mix (compared, at that point, to its sole competitor Wave Telecom) between post-pay and pre-pay customers mean that, if calculated in revenue terms, its market share would have been even higher.
4. Published financial data for the years 2005 to 2007 show that C&WG enjoyed extremely strong returns from its mobile operations, which were well in excess both of C&WG's own WACC on its regulated services for the years in question and of the returns made by mobile operators in other countries where profitability was one measure used in concluding that the operators in question held positions of market power. This suggests strongly that C&WG is enjoying returns on its mobile operations that are well in excess of what might be expected in a competitive market.
5. The OUR has taken a number of measures in recent years to boost competition in the mobile market, including the licensing of a third mobile operator (Airtel-Vodafone), the imposition of mandatory obligations on the mobile operators in the area of site sharing and the introduction (with effect from December 2008) of mobile number portability.

### *Technology and spectrum-related developments*

6. Technology developments are rapidly altering and improving the service capabilities of mobile networks across the world. Mobile broadband services, based on the deployment of HSPA-enabled 3G networks, are now widely available in many markets across the globe. Close to fifty operators around the world already provide mobile broadband services supporting data download speeds of 3.6 Mbps and devices currently on the market support speeds of up to 7.2 Mbps.

## Executive Summary

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7. There is increasing evidence that mobile broadband services are rapidly finding favour with customers. The GSMA has published data showing a rapid increase in take-up for such services over the past year, which suggests strongly that mobile operators are beginning to compete directly within the broadband space.
8. Mobile broadband technology is continuing to evolve, both with further developments in HSPA and in plans for more advanced mobile broadband services. These initiatives are expected to result in the deployment over the medium term of mobile broadband services with significantly faster data speeds than are currently available. In the longer-term, plans are being made for a '4G' standard, supporting download speeds of at least 100 Mbps in conditions of high mobility and up to 1 Gbps in low mobility conditions. Services of such a nature, however, remain some distance off.
9. Significant shifts are also underway in relation to the spectrum that is used to provide mobile services, both with regard to the regulation of and assignment processes for spectrum allocations and regarding the availability of new spectrum bands that could be used for advanced mobile data services. There are three principal factors driving change in this area, namely spectrum liberalisation moves generally, the refarming of 2G spectrum and the availability of new spectrum blocks arising from the 'Digital Dividend':
  - **Spectrum liberalisation** is resulting in a fundamental reassessment by spectrum managers of how frequency assignments should be allocated and the rules that ought (or, more specifically, ought not) to be applied in relation to spectrum usage;
  - **2G spectrum refarming** is beginning to be considered by national regulators so that some of the spectrum already allocated to operators in the 900 MHz and 1800 MHz bands may be used for more efficient provision of 3G services;
  - **The availability for re-use of spectrum blocks arising from the 'Digital Dividend'** means that more frequency bands are likely to be made available for advanced mobile broadband services.
10. Technology and spectrum-related developments are likely to herald a significant shift in the nature of competition within the mobile market and, in particular, the way in which mobile operators are beginning to compete with existing fixed-line broadband providers. Given the current lack of serious competition in the retail broadband market within Guernsey, there seems to be significant scope for 3G mobile operators deploying HSPA-enabled networks to provide an important competitive spur in this area.

### **Environmental aspects**

11. We understand that strict planning rules apply in relation to new network build by communications providers, which, in practice, make it extremely difficult for mobile operators to secure planning permission for new standalone masts. Operators are obliged to share infrastructure where possible, with the result that shared sites account for a significant proportion of the cell site inventory within Guernsey.

## *Executive Summary*

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12. It appears that the greatest opposition to the siting of new mobile network infrastructure in Guernsey occurs in the situation where new free-standing masts and monopoles are being proposed and we understand that these kind of contentious, free-standing structures account for over 40% of all current cell sites. Despite the difficulties that such opposition has created for new network development, the application of rigorous appraisal of mobile-related planning developments has nevertheless resulted in Airtel-Vodafone being able to roll out its network. It is fair to conclude, however, that any new operator would face even greater difficulties in doing so.
13. Viewed in economic terms, we do not believe that there is any trade-off between greater competition in the provision of mobile services and environmental protection, given the multi-faceted benefits of competition and the effective rules that already exist in relation to site sharing. This does not mean, however, that current planning rules do not have a bearing on the development of competition as they could well mean that any potential new entrant would decide that the planning environment is such that market entry is not worth pursuing.
14. Regardless of the planning issue, we believe it may not be in the best interests of the long-term development of the Bailiwick's communications infrastructure to close off the possibility of new network deployment, even if a new operator may face planning difficulties. The environment for network rollout is just one factor that any potential entrant will weigh up in considering whether or not the market entry opportunity is one worth pursuing, although it is likely to be a very significant factor.

### ***Promoting competition***

15. As the only alternative platforms to the incumbent's DSL network, 3G mobile operators (specifically those not owned by the fixed incumbent) are set to become major players in the broadband sector within Guernsey over the medium term. As a result, the promotion of competition within mobile ought to be a key priority for the OUR.
16. A policy aimed at the outset solely at maximising competition between the existing licensed operators would prove self-defeating and impractical to implement. It would also be an approach that takes no account of the impact of likely future technological developments within the mobile sector. Reasons why the OUR should not adopt such a regulatory approach include the following:
  - It could be difficult in practice to create the desired 'level playing field' amongst the three operators in relation to 2G and 3G spectrum assignments;
  - In order to ensure that C&WG is allocated a 3G licence, some form of non-competitive allocation process would be required and it is not clear if such an option would be open to the OUR to use;
  - Any entry signals (for example, arising from data on excessive returns being made by existing operators) could not be responded to by potential entrants if the route to market entry is closed off;

## Executive Summary

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- In order to be efficient, entry decisions ought to be left to those entities who are considering market entry and not by regulators, and
  - There could be negative, knock-on effects arising from a blunting of competition in the adjacent market for retail broadband services.
17. A policy which promotes further market entry would make far more sense for the OUR to adopt as this has the potential to increase competition for both mobile and broadband services within Guernsey. Reasons why the OUR should pursue such a policy include the following:
- It would leave any decision on possible market entry by an additional operator where it should be left, i.e. with potential entrants themselves;
  - It would ensure that competition is maximised, both within the mobile market and in the wider market for voice and broadband services;
  - It would make it far less likely that the OUR would need to impose any sector-specific regulation on existing mobile players due to an absence of competitive rivalry amongst them, and
  - Such a move would be wholly consistent with technological and spectrum-related developments.

### *Allocation processes*

18. The use of comparative evaluations for assigning spectrum rights is gradually giving way to market-based auction methods. In addition, spectrum managers are increasingly allocating spectrum without placing restrictions on the technologies and services that operators are allowed to use within the allocated spectrum band.
19. Comparative evaluation 'beauty contest' processes tend to be inherently inefficient and involve an inordinate amount of time and effort both to administer and to partake in. The process of awarding a licence via a 'beauty contest' can often be slow, wasteful of resources (especially for bidders) and lacking in transparency, given that it is never wholly clear in a 'beauty contest' why one entity's bid is considered 'better' than another's.
20. Auctions, in contrast, tend to be highly efficient, speedy, extremely transparent and have low participation costs. A well-designed auction – which is, in effect, a well-designed market place – should encourage new market entry and, hence, promote the development of competition.
21. We recommend that the OUR should opt for an allocation process that would ensure that the spectrum on offer is assigned in the most efficient way. It is obviously the case that an auction would produce a far more efficient outcome in allocating the spectrum on offer than would be the case under a 'beauty contest'.

## 1 Introduction

The Office of Utility Regulation (OUR) is the regulatory agency with responsibility for what are classified as the three 'utility sectors' of telecommunications, post and electricity within Guernsey. The OUR has two principal strategic aims, namely to ensure that:

- consumers receive the best value, choice and access to high quality utility services, and
- the Bailiwick of Guernsey has vibrant, sustainable utility sectors capable of maintaining pace with global developments and thereby contributing to the economic and social well-being of the islands.

Within the telecommunications sector, the OUR is responsible for licensing market players and for managing the ongoing liberalisation of the market.

In this context, the OUR is considering how best to use the licensing process to promote competition in the provision of mobile services, in particular 3G mobile services. At the present time, two operators – Wave Telecom and Airtel-Vodafone – have been licensed to provide both 2G and 3G mobile services while a third, the incumbent provider Cable & Wireless Guernsey (C&WG), holds only a 2G mobile licence although it still retains by far the largest share of the mobile market within Guernsey.

Prior to proceeding with any new licensing process for the provision of mobile services, the OUR wishes to examine the relative merits of maximising the benefits to customers of having three existing operators within the market, versus facilitating potential further entry by a fourth operator.

The OUR has therefore commissioned DotEcon to advise it on its licensing options in the context of technological developments within the mobile sector generally and bearing in mind the OUR's own specific legal duty to minimise any adverse impact of utility activities on the environment.

The remainder of this report is structured as follows:

- In Section 2, we provide an overview of the mobile market in Guernsey, which includes a discussion on market players, market shares, the profitability of the principal operator C&WG and the measures the OUR has taken to date to boost competition.
- In Section 3, we discuss the principal technology developments that are likely to impact on the mobile sector over the medium-term as well as changes that are taking place in relation to spectrum management and we provide an assessment of the implications these developments are likely to have on the provision of mobile services in Guernsey.
- In Section 4, we examine the issue of mobile network development in the context of the OUR's duty to minimise any adverse environmental impact arising from such development and we look at the implications such development might have in terms of the use of infrastructure and what it could mean for competition.



- In Section 5, we focus in more detail on the OUR's options for the promotion of competition, in particular by assessing the relative merits for competition arising from a situation where rivalry takes place within a consolidated market comprising three integrated 2G/3G players compared with the alternative where new market entry is facilitated.
- In Section 6, we examine the OUR's options in relation to the optimum licence award process to adopt.

## 2 Overview of mobile market in Guernsey

In this section of our report, we provide a brief overview of the mobile market in Guernsey, in terms of the players involved, the market shares held by each and the technologies deployed. We also examine briefly issues relating to the competitiveness of the market and the initiatives that have been undertaken by the OUR to help boost competitiveness.

### 2.1 Market players

There are currently three mobile network operators (MNOs) providing services within Guernsey. They are as follows:

- **Cable & Wireless Guernsey (C&WG)** is the mobile subsidiary of the fixed incumbent operator in Guernsey. C&WG was the first operator to provide a mobile service within Guernsey, having launched its 2G service in March 1996. As part of the market liberalisation process, C&WG was issued with an operating licence to provide 2G mobile services within the 900 MHz band on 1<sup>st</sup> October 2001.
- **Wave Telecom** was licensed to provide 2G (using 900 MHz and 1800 MHz spectrum) and 3G (utilising 2100 MHz spectrum) mobile services in March 2003 and it launched its 2G/3G mobile services in July 2004.
- **Airtel-Vodafone** was licensed to provide 2G (using 1800 MHz spectrum) and 3G (using 2100 MHz spectrum) mobile services in September 2006 and the company launched its services in March 2008.

### 2.2 2G and 3G spectrum allocations

From the point of view of the spectrum allocations granted, mobile licensing has occurred in quite a fragmented manner within Guernsey. The erstwhile monopoly mobile operator, C&WG, has been granted a block of 900 MHz spectrum but it holds no 2G spectrum in the 1800 MHz band and, more noteworthy, it also does not yet hold any 3G spectrum. Wave Telecom and Airtel-Vodafone both hold 2G (1800 MHz) and 3G (2100 MHz) assignments but, unlike C&WG, neither of them are in possession of any GSM spectrum in the 900 MHz band. While Wave Telecom has been granted 900 MHz spectrum, its allocation of such spectrum is confined to the GSM extension band.

Full details of the spectrum allocations granted to the three mobile operators are set out in Table 1 below.

**Table 1: Mobile spectrum allocations in Guernsey**

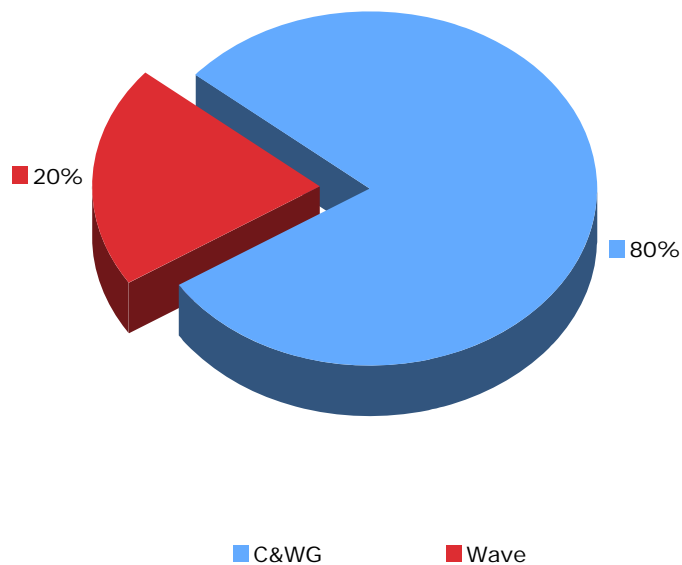
	GSM 900	GSM 1800	3G
C&WG	890.1 - 914.9 935.1 - 959.9		
Wave	880.1 - 889.9 925.1 - 934.9	1715.1 - 1725.1 1810.1 - 1820.1	1904.9 – 1909.9 (TDD) 1949.7 - 1959.7 2139.7 - 2149.7
Airtel- Vodafone		1724.9 - 1730.1 1742.3 - 1743.3 1819.9 - 1825.1 1837.3 - 1838.3	1970.0 – 1980.0 2160.0 - 2170.0

Source: OUR

### 2.3 Market shares

The most recent customer numbers for mobile services in Guernsey that have been published are those for the end of 2006. On this basis, Figure 1 below shows that C&WG holds an extremely strong position in terms of market share:

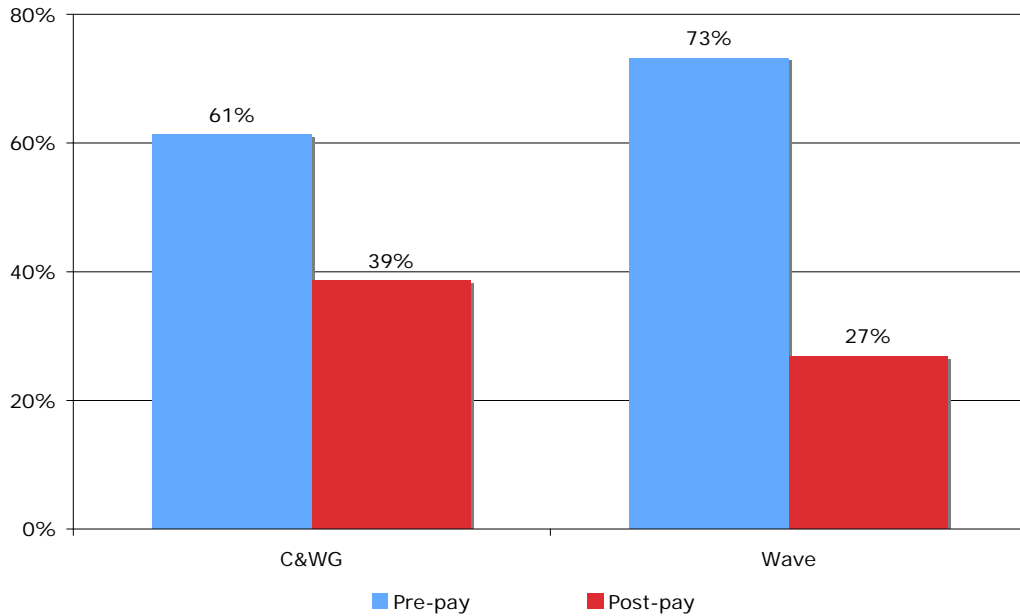
**Figure 1: Mobile market shares**



Source: OUR. Figures are for end-2006.

It is also the case that C&WG’s customer base is made up of a higher proportion of post-pay customers than is that of Wave Telecom, a fact illustrated in Figure 2 below. Post-pay customers typically account for higher Average Revenue Per User (ARPU) compared to pre-paid customers, which means that, were market shares to be expressed as a proportion of revenues, C&WG’s share would in all likelihood be higher than the figure indicated in Figure 1 above.

**Figure 2: Post-pay and pre-pay customer breakdown by operator**



Source: OUR. Figures are for end-2006.

With Airtel-Vodafone having only launched its services in April of this year, there are, as yet, no published figures in relation to its customer numbers.

## 2.4 Profitability of C&WG

An important statistic in evaluating the competitiveness of any market for mobile telephony services is the profitability of the market players. In this context, regulatory accounts published by C&WG – which, as we have seen, holds the most significant market share and has a superior split between post-pay and pre-pay customers – illustrate the returns being made by C&WG in the mobile market in recent years and these figures, which are set out in Table 2 below, provide a valuable insight into the likely competitiveness of the mobile market in Guernsey.

**Table 2: C&WG selected financial information, 2005-7**

	2007	2006	2005
Turnover	£20,674,280	£21,394,346	£21,286,629
Operating costs	£15,621,850	£15,514,107	£12,539,854
Return on turnover	£5,052,430	£5,880,239	£8,746,775
Capital employed	£6,254,544	£5,508,558	£5,674,886
Return on turnover (%)	24.44	27.49	41.09
Return on capital employed (%)	80.78	106.75	154.13

Source: OUR, from Cable & Wireless Guernsey Regulatory Accounts, 2006 and 2007.

It is clear from the above figures that C&WG is enjoying significant returns from its mobile operations. These returns may be contrasted with the Weighted Average Cost of Capital (WACC) for C&WG on its regulated services for the years in question. C&WG's WACC was set by the OUR in order to mimic the kinds of returns that might be expected to be made in a competitive market and, for the years in question, C&WG's WACC was set at 12%.<sup>1</sup> As a result, it is self-evidently the case that the returns enjoyed by C&WG from its mobile operations have far exceeded those allowed on its fixed market regulated activities for the year in question.

Moreover, a comparison of the ROCE achieved by C&WG on its mobile activities compared to the returns achieved in recent years by Vodafone's operating companies in mobile markets where it was determined that the operating units in question held positions of market power (partly because arising from their profitability levels) shows that C&WG has been able to garner far higher returns than Vodafone's operating businesses did in these other markets. In this respect, C&WG's returns in 2005 (154.13%), 2006 (106.75%) and 2007 (80.78%) may be contrasted with the returns made in 2004 by Vodafone in Malta (27.64%)<sup>2</sup> and in Spain (42%)<sup>3</sup> and in 2003 by Vodafone in Ireland (39%).<sup>4</sup>

Vodafone's operating companies in these other markets were all designated with Significant Market Power<sup>5</sup> and it is the case that the returns being

<sup>1</sup> See OUR Document 05/19. C&WG's current regulated cost of capital for retail services has been set (with effect from 1<sup>st</sup> April 2008) at 11.6%: see OUR Document 08/07.

<sup>2</sup> Source: Malta Communications Authority.

<sup>3</sup> Source: European Commission, DG Information Society.

<sup>4</sup> Source: ComReg.

<sup>5</sup> In each of the cases cited, the regulators in Malta, Spain and Ireland determined that the operators in question held a position of Significant Market Power (SMP) on the basis of joint dominance. In each case, the European Commission raised no objections to the market analyses undertaken by the regulators in each of the three Member States. In the Irish case, however, ComReg subsequently withdrew its SMP finding, following issues that emerged on appeal in relation to its analysis.

enjoyed by C&WG in Guernsey are higher than those garnered by Vodafone's businesses in Malta, Spain and Ireland. As a result, there exists a strong suspicion that C&WG is enjoying returns in this area that are well in excess of what might be expected in a competitive market.

## 2.5 Regulatory measures taken by OUR to boost competition

The OUR has taken a number of significant actions in recent times to boost competition in the provision of mobile services in Guernsey.

The first was to **licence a third mobile operator**, Airtel-Vodafone, and this new operator launched commercial services on its 2G/3G network in April 2008. Once this operator has completed its rollout and begins to compete aggressively for both post-pay and pre-pay customer segments, this should make it more difficult for C&WG to continue to achieve such a high ROCE from its mobile activities, due to the increased competitive dynamic in a three-player market, the presence of such an internationally established mobile brand and the imminent introduction of mobile number portability (see below).

Prior to this, in October 2007, the OUR amended the operating licences of the two existing mobile operators to oblige them to engage constructively in **site sharing**, a move that should significantly reduce the time and effort that it would otherwise have taken for Airtel-Vodafone to roll out its network. The OUR's latest figures which show that Airtel-Vodafone now has more mobile cell sites than either C&WG or Wave Telecom would indicate that the OUR's regulatory measures in this area have proved to be extremely successful.

Moreover, the OUR has also recently put in place procedures for **mobile number portability** (MNP), with this facility due to come into operation on 1<sup>st</sup> December 2008. We understand that, under the agreed procedures for MNP in Guernsey, all ports must be completed within a 48-hour window. MNP has proved to be a significantly pro-competitive measure in other markets where it has been introduced in recent years and there is every reason to expect that it will have a similar positive impact on the level of competition within the mobile market in Guernsey.

### 3 Technology developments and market implications

In this section of our report, we briefly review the main technology developments affecting the mobile and wireless sectors globally, as well as the changes that are taking place internationally in the area of spectrum licensing. We then provide of an assessment of the likely impact for the mobile market in Guernsey arising from these developments.

#### 3.1 Mobile broadband services

Technology developments are rapidly altering and improving the service capabilities of mobile networks across the world. Recent enhancements within the 3G mobile standard have finally seen the arrival of long-heralded mobile broadband services, which are now widely available in many markets across the globe.

Already, 175 mobile operators in 75 countries<sup>6</sup> have deployed High Speed Packet Access (HSPA)<sup>7</sup> within their 3G mobile networks. These operators typically offer mobile high-speed data services with download speeds of 1 Mbps, although the theoretical peak rate is to 14.4 Mbps.<sup>8</sup> However, some 47 mobile operators around the world are already providing HSPA services supporting 3.6 Mbps download speeds<sup>9</sup> and current commercial devices support speeds up to 7.2 Mbps.<sup>10</sup> There is already a wide array of HSPA-enabled devices on the market, with one recent estimate putting the figure of such devices at 400, including mobile handsets, notebooks, PC modems and routers.<sup>11</sup>

The widespread deployment of and customer appetite for HSPA-enabled 3G services has given common currency to the term “mobile broadband”, which the GSM Association (GSMA) defines as “the delivery of end-user downlink data rates of 500 kbps or more while providing full mobility”.<sup>12</sup> One vendor estimates that out of the estimated 1.8 billion broadband customers globally in 2012, two-thirds will be subscribers of mobile broadband services.<sup>13</sup> The

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<sup>6</sup> GSM World (<http://www.gsmworld.com/technology/3g/evolution.shtml>).

<sup>7</sup> HSPA is a software-based enhancement that boosts the air interface capacity of 3G W-CDMA networks by 2 times and delivers a 4-5 fold increase in data speeds. HSPA encompasses two technologies, i.e. High Speed Download Packet Access (HSDPA) and High Speed Upload Packet Access (HSUPA).

<sup>8</sup> GSM World, op. cit.

<sup>9</sup> Ibid.

<sup>10</sup> LM Ericsson, *HSPA, LTE and Beyond*, Press Backgrounder, February 2008, available at <http://tinyurl.com/64g2cs>.

<sup>11</sup> Ibid.

<sup>12</sup> See GSMA HSPA Briefing Note, *Delivering Mobile Broadband Today*, available at <http://tinyurl.com/6rcytp>. Other terms used to market such services include 3G+, NextG, 3G Broadband and 3.5G.

<sup>13</sup> Ericsson, op. cit.

same company estimates that, by 2011, at least half of all notebooks shipped annually will feature HSPA embedded modules.<sup>14</sup>

At the same time, the development of femtocells – tiny, low-powered 3G base stations that are installed within the customer’s own business or residential premises – offers the opportunity for mobile operators to improve in-building mobile coverage, including mobile broadband. Femtocells operate within licensed spectrum with a range of around 30 metres and mobile voice and data services are then backhauled via a standard broadband connection (usually DSL) to an operator’s 3G network. Because of the improved propagation from having an indoor-only base station, the reduced contention means that the femtocell could offer data rates that are as fast as the broadband link that backhauls it.

By encouraging customers, possibly via new indoor-only pricing packages, to deploy HSPA-enabled femtocells in their homes, mobile operators have the opportunity to expand in-building coverage at significantly lower cost compared to doing so by extending normal macro cellular coverage. This approach could also lead to a significant expansion in mobile voice and data usage within the home. Femtocell services are expected to begin coming on stream in the second half of 2008 and it is estimated that there could be 102 million users on 32 million femtocells by 2011.<sup>15</sup>

### 3.2 Further evolution of mobile broadband services

Mobile broadband technology is continuing to evolve, both with further developments in HSPA and in plans for more advanced mobile broadband services. These initiatives are expected to result in the deployment of mobile broadband services with significantly faster data speeds than are currently available.

The next phase of HSPA development, termed HSPA Evolution, will see end-user download data rates rising to 42 Mbps, with uplink speeds rising to 12 Mbps.<sup>16</sup> At the same time, the Third Generation Partnership Project (3GPP) Long Term Evolution (LTE) initiative envisages mobile multimedia services offering download speeds of at least 100 Mbps and uplink speeds of 50 Mbps.<sup>17</sup> The LTE initiative also provides, at least in theory, a smooth evolution path to the delivery of advanced mobile data services using different spectrum bands. This would include not only existing 2G and 3G spectrum allocations but also other bands such as those being freed up for re-use arising from the ‘Digital Dividend’.<sup>18</sup>

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<sup>14</sup> Ibid.

<sup>15</sup> See Futurity Media, *Making the most of mobile broadband with HSPA and Femtocells*, December 2007, available from <http://tinyurl.com/5on484>.

<sup>16</sup> GSM World, op. cit.

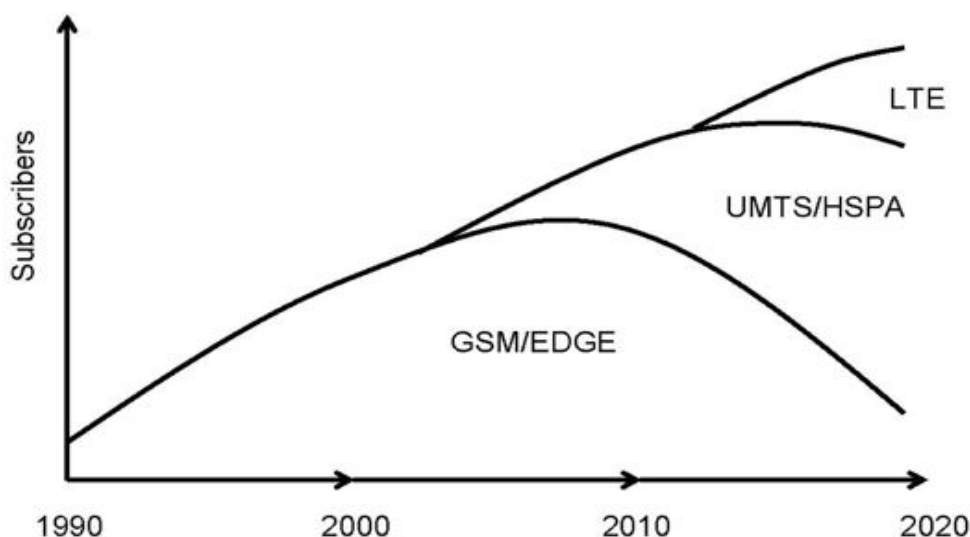
<sup>17</sup> 3GPP (<http://www.3gpp.org/Highlights/LTE/lte.htm>).

<sup>18</sup> The term ‘Digital Dividend’ commonly relates to the spectrum that is being freed up for re-use arising from the switchover from terrestrial analogue to digital TV broadcasting services. As Digital Terrestrial TV (DTT) services will not require the same amount of spectrum as existing analogue services, once the latter are switched



A schematic representation of the way in which these technologies have evolved over time and are expected to continue to develop is contained in Figure 3 below.

**Figure 3: evolution of mobile broadband technologies**



Source: Rysavy Research, *EDGE, HSPA and LTE – The Mobile Broadband Advantage*, September 2007, Figure 6.

In the longer-term, the International Telecommunication Union (ITU) has defined an 'IMT-Advanced' standard for mobile multimedia services, which it has termed '4G'. The intention is that this standard will support download data speeds of at least 100 Mbps in conditions of high mobility and up to 1 Gbps in low mobility or nomadic conditions.<sup>19</sup>

### 3.3 Fixed wireless services

The use of fixed wireless technologies (notably those using the WiMax standard, which typically operate in the 3.5 GHz frequency band) is also relevant for the provision of broadband services. Fixed wireless accounted for 1.1% of all broadband access lines within the EU in January 2008, up from 0.8% twelve months previously,<sup>20</sup> with this access method proving particularly important in the Czech Republic, Ireland and Slovakia.<sup>21</sup>

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off, spectrum that is not required for use in providing DTT services will be available for re-use in other areas, notably for advanced mobile broadband services.

<sup>19</sup> ITU (<http://tinyurl.com/5av56b>).

<sup>20</sup> European Commission, 13<sup>th</sup> Implementation Report, Staff Working Document (Volume 1), p. 29.

<sup>21</sup> Ibid., p. 30.

Given the technologies involved and the ability to offer niche services in particular geographical areas, the licensing of fixed wireless operators tends to be far less restrictive than that for cellular mobile services. In many instances, fixed wireless services are licensed on a first-come-first-served basis and we understand that there are few restrictions on the licensing of such services within Guernsey.

Market projections for the future take-up of fixed wireless services are, however, far less bullish than those for mobile broadband. Recent research undertaken by Arthur D Little pointed to the significant capex disadvantage that WiMax faces compared to HSPA without any speed advantages for customers.<sup>22</sup> This research also suggested that the strong momentum which HSPA has already built up across the world compared to WiMax means that the former is much more likely than the latter to emerge as a credible broadband technology. These findings have since been given greater credence by the admission made by an Australian WiMax operator that the technology it had deployed was “a miserable failure”.<sup>23</sup>

### 3.4 Spectrum developments

It is not just in relation to technology developments that mobile markets are evolving. Significant shifts are also underway in relation to the spectrum that is used to provide mobile services, both with regard to the regulation of and assignment processes for spectrum allocations and regarding the availability of new spectrum bands that could be used for advanced mobile data services.

There are three main developments in this area that are worth focusing on for the purposes of our analysis here. They are:

- The trend towards spectrum liberalisation generally;
- Refarming of 2G mobile spectrum, and
- New spectrum availability arising from the ‘Digital Dividend’.

We discuss each of these developments briefly below.

#### 3.4.1 Spectrum liberalisation

Regulators have historically adopted a ‘command and control’ administrative approach to assigning spectrum rights to users, with licences issued to specific users granting them exclusive rights to provide specified services in certain frequency bands. This approach has often involved specifying the equipment that a licensee is allowed to use and the power levels at which this equipment is operated.

In recent years, however, some regulators have started to adopt positions on the management of the radio spectrum that differ fundamentally to the kind of ‘command and control’ methods that had hitherto been the norm in

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<sup>22</sup> See Arthur D Little *HSPA and Mobile WiMax for Mobile Broadband Wireless Access*, March 2007, available at <http://tinyurl.com/6dfg6k>. This study was, it should be noted, carried out for the GSM Association, which is one of the principal advocates of HSPA.

<sup>23</sup> See <http://tinyurl.com/5rq3c3>.

Europe and elsewhere. Within the European Union (EU), for example, the 2003 Regulatory Framework provides for a significant shift in emphasis in terms of how the radio spectrum ought to be managed by national regulators, in particular, by specifying a regulatory approach based on network and service neutrality.<sup>24</sup>

At Member State level, most notably in the UK, the trend towards spectrum liberalisation has seen a significant shift in how spectrum allocations are being made. Comparative evaluation processes (or 'beauty contests') are being replaced by auctions and spectrum assignments are starting to be made in a way that does not prescribe in advance the technologies or services that operators are allowed to deploy within the spectrum allocation granted. The degree to which this policy shift is altering fundamentally how regulators deal with spectrum allocation is evidenced by Ofcom's plans to move to a situation where, by 2010, 71% of allocations will be completed via market mechanisms, compared to the position in 2000 where 96% of spectrum allocations were being made using administrative processes.<sup>25</sup>

It is expected that over the coming years more and more national regulators across the EU will adopt the same kind of market-based approach to the allocation of spectrum as that being pioneered by Ofcom. Hand-in-hand with this development will come a significant EU-wide liberalisation in the area of spectrum usage, which, over time, will see the provision of existing services being provided in different spectrum bands and the launch of new services in bands which operators, rather than regulators, judge to be the most efficient for the service in question.

### 3.4.2 Refarming of 2G spectrum

In an era of complete spectrum liberalisation, operators would, at least in theory, be free to provide whatever services they wanted within whatever frequency bands they could gain a spectrum allocation. Within the EU (and elsewhere) there are, however, significant legacy allocations of spectrum that have been made on an administrative basis, with licences granted to operators for a specified time period enabling them to provide specific services within designated frequency bands.

One example of this is the spectrum allocations granted to mobile operators in both 2G, i.e. at 900 MHz and 1800 MHz, and at 3G, i.e. at 2.1 GHz and 2.6 GHz, with operators permitted to provide voice, SMS and always-on data services up to an including EDGE using their 2G spectrum and to provide voice, SMS and always-on 3G data services (including HSPA) using their 3G spectrum.

With the increasing popularity of mobile broadband services amongst customers, mobile operators have become increasingly keen to expand both the geographic reach and the in-building coverage of their HSPA-enabled 3G networks. It would, however, make far more sense from a commercial basis for operators to be able to use some of the spectrum already allocated to

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<sup>24</sup> See in particular Directive 2002/21/EC (Framework Directive).

<sup>25</sup> Cave M, Doyle D and Webb, W, *Essentials of Modern Spectrum Management*, Cambridge University Press, 2007, Ch. 4, Para 4.1.

them in the 900 MHz and 1800 MHz bands in order to do so, given that greater coverage could be achieved with fewer base stations by using the spectrum currently assigned solely for 2G services, rather than the current 3G assignments.

The rationale for such a re-use of existing spectrum allocations was recognised in June 2007 by the European Commission's Radio Spectrum Committee (RSC) which adopted a Decision aimed at liberalising the use of the 900 MHz and the 1800 MHz spectrum for use as 3G spectrum.<sup>26</sup> It is in this context that Ofcom is currently examining the possibility of allowing 2G operators in the UK to 'refarm' their existing 900/1800 MHz allocations for re-use as 3G spectrum.<sup>27</sup> The Irish regulator, ComReg, is also planning to examine this issue later in 2008<sup>28</sup> and, bearing in mind the Commission's RSC Decision, it is likely that national regulators from across the EU will follow suit in the near future.

### 3.4.3 'Digital Dividend' spectrum

Analogue terrestrial TV services are due to be switched off across the EU in 2012.<sup>29</sup> The combination of analogue switch-off and the launch of more spectrally efficient Digital Terrestrial TV (DTT) services will mean that significant allocations of spectrum that hitherto have been used to support the provision of analogue TV broadcasting will be freed up for re-use in other areas. Spectrum management agencies in Europe and elsewhere have already begun to implement plans for making use of this 'Digital Dividend'.

In the United States, spectrum in the 700 MHz band which had been freed up in this way was auctioned earlier in this year. The auction was completed in March 2008, raising \$19.6 billion. The principal winners were AT&T and Verizon, who together accounted for 80% of the spectrum that was auctioned and who paid \$16 billion for their spectrum allocation.<sup>30</sup> It is widely expected that this spectrum will be used to provide some form of advanced wireless broadband services.

The European Commission, in its November 2007 Telecoms Reform Package, signalled the importance of the Digital Dividend from an EU perspective and highlighted the opportunity it afforded for the launch of new wireless broadband and mobile multimedia services.<sup>31</sup> The Commission also called for a pan-EU approach in terms of how to use the Digital Dividend spectrum.

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<sup>26</sup> RSC Decision RSCOM-07-04 (available at: <http://tinyurl.com/6l9cso>).

<sup>27</sup> See Ofcom Consultation Document at: <http://tinyurl.com/39gdun>.

<sup>28</sup> ComReg has recently issued an ITT for technical consultancy advice relating to the refarming of the 2G spectrum. See <http://tinyurl.com/6kpw89>.

<sup>29</sup> Although there is no mandated date by which analogue switch-off (ASO) must be completed across the EU, the Commission has proposed that the switch-over to digital should be completed by 2012. For more details see <http://tinyurl.com/5zjazu>.

<sup>30</sup> See FCC announcement at <http://tinyurl.com/5l82p7>.

<sup>31</sup> See European Commission's EU Telecoms Reform Fact Sheet on the Digital Dividend at <http://tinyurl.com/62oqxa>.

In the UK, Ofcom in December 2007 completed its Digital Dividend Review (DDR), arising from which it decided to auction cleared spectrum in the UHF band in the frequencies 470-862 MHz.<sup>32</sup> Ofcom decided not to reserve any of the available spectrum for particular services but stated that it intends to package the spectrum in a way that enables the widest possible range of uses, including additional DTT multiplexes and new mobile services.<sup>33</sup> On 6<sup>th</sup> June this year, Ofcom published consultation documents setting out its detailed proposals on how the cleared spectrum in the 550-630 MHz and 790-854 MHz bands will be auctioned.<sup>34</sup> Ofcom proposes to auction this spectrum in 2009.

### 3.5 Implications for mobile market development in Guernsey

The OUR has asked us to provide an assessment of what the likely implications of the technology and spectrum developments described above will have for telecommunications market development within Guernsey. Specifically, the OUR have asked us to address the impact of these developments on:

- the nature of competition within the mobile market, and
- the impact on fixed line (voice and broadband) services

We address both of these issues in the remainder of this section. The OUR has also asked us to comment on what these developments might mean for what might be viewed as the optimal number of operators within the mobile market in Guernsey. We believe that this question is best answered as part of a wider consideration of the OUR's options for promoting competition in the provision of mobile services, an issue we examine in detail in Section 4 of this report.

#### 3.5.1 The nature of mobile market competition

The developments outlined above are likely to herald a significant shift in the nature of competition within the mobile market and, in particular, the way in which mobile operators are beginning to compete with existing fixed-line broadband providers.

The degree to which mobile operators will be able to compete effectively in the broadband market remains an open question. The operators themselves and their infrastructure vendors can often be bullish in their predictions about their competitive capabilities and it is certainly the case that HSPA services have the capability to compete with basic (1 Mbps) fixed broadband offerings. Providing the planned further HSPA and LTE technology developments come on stream within a reasonable timeframe, there is a strong possibility that mobile will be in a position to compete effectively with higher speed fixed networks, though it is likely to remain the case that the latter, with fibre being deployed ever closer to the customer within Next

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<sup>32</sup> See Ofcom's DDR Statement at <http://tinyurl.com/2upklb>.

<sup>33</sup> Ibid.

<sup>34</sup> See Ofcom's proposals at <http://tinyurl.com/5dz3k9>.

Generation Access (NGA) networks, will tend to retain inherent technical advantages – especially in relation to capacity - over the former.

In terms of current market developments, there is already clear international evidence that HSPA-enabled 3G mobile broadband services are rapidly gaining traction. Mobile operators all over the world are deploying HSPA-enabled 3G networks and while there are not as yet any reliable cross-country statistics on customer take-up of HSPA services, what evidence there is suggests that there is strong appetite for such services:

- The GSM Association recently reported an 850% year-on-year increase in the number of mobile broadband connections worldwide.<sup>35</sup>
- In Ireland, the regulator ComReg estimated that, by end-2007, the number of mobile broadband subscriptions and reached 127,500 and that this access medium accounted for 14.4% of all broadband connections within the country.<sup>36</sup>
- In Austria, the mobile operator mobilkom recently announced that it has 290,000 mobile broadband customers, two-thirds of whom are using HSPA.<sup>37</sup>
- In Australia, Telstra's mobile unit stated that, in January 2008, it had 3.5 million 3G customers, most of whom were using its HSPA "NextG" service.<sup>38</sup>

These developments suggest strongly that mobile operators are beginning to compete directly within the broadband space and that the much-heralded convergence between and fixed and mobile services may at last be starting to happen for real. This trend can only become more pronounced in the future as further developments in the 3G HSPA standard will mean that mobile operators will be able to offer broadband services with significantly enhanced data speeds.

Moreover, 2G spectrum refarming will enable mobile operators to roll out mobile broadband networks on a nationwide basis more rapidly and less expensively than would otherwise have been the case. The cost advantage to them of being able to do so using their 2G spectrum will leave them better placed to compete with broadband providers using other technologies.

As noted above, however, fixed broadband services are also set to develop further in the years ahead, with the increasing use of fibre within parts of the local access network as NGNs are rolled out. As a result, the mooted future developments in mobile broadband will need to happen in practice if mobile is to become a credible long-term competitor to fixed broadband services.

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<sup>35</sup> The period in question was from Q1 2007 to Q1 2008. The GSMA quoted global research carried out by Wireless Intelligence. See GSMA's press release at: <http://tinyurl.com/5w232o>. It is, however, worth noting that one reason the percentage increase quoted is extremely high is due to the fact that the starting base (3 million worldwide) for the calculation is so low.

<sup>36</sup> See ComReg's Quarterly Report for March 2008 at <http://tinyurl.com/56ud59>.

<sup>37</sup> GSMA, op. cit.

<sup>38</sup> Ibid.



Within Guernsey, both Wave Telecom and Airtel-Vodafone have already launched 3G services, with the latter advertising a HSPA-enabled 1.8 Mbps service which it states is already available to 70% of the population.<sup>39</sup> Given the international trends, we can see no reason as to why 3G operators in Guernsey would not want to compete aggressively for the provision of broadband services within the Bailiwick.

We understand that while broadband services are already available to 100% of the population in Guernsey, broadband penetration stands at just 23% in population terms and that virtually all of these connections are supplied over the incumbent's DSL network.<sup>40</sup> As a result, the two existing 3G mobile operators would seem to have a strong incentive to seek to grow their revenues through competing in the broadband market, not least because mobile penetration already stands at 102%<sup>41</sup> and so there will be limited room for growth in terms of 2G customer numbers.

It could be expected, however, that a fixed incumbent would not, if granted a 3G licence, have the same incentive to compete in this way, as any such strategy could involve to some extent cannibalising its existing DSL base. This, in turn, would suggest that the award of a 3G licence in such circumstances could lead to less competitive pressure than might otherwise be the case. As a result, such an approach could also have implications for the degree of competition that occurs beyond mobile.

Over the longer term, spectrum liberalisation and the availability for re-use of 'Digital Dividend' spectrum will create opportunities for market entry for new wireless-based broadband providers. At this juncture, however, it is not clear what such services might be in practice or what spectrum bands are likely to prove popular for providing any new services. Given the small size of the market in Guernsey, it is reasonable to expect that such services would need to prove successful in larger markets nearby – in particular, in the UK – before operators seek to deploy them in a market such as Guernsey.

We understand that one operator (Newtel) is providing fixed wireless services using 3.6 GHz spectrum but that this operator has not succeeded in building up any significant customer base to date. The ability of WiMax operators to compete for broadband services remains an open question internationally and the same is true in Guernsey.

### 3.5.2 The impact on fixed line services

As we have already discussed, the impact of mobile technology developments on the fixed line market is likely to be profound. Just as mobile voice services have, over the past decade, eaten strongly into the market for fixed voice – at the end of 2007, the European Commission

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<sup>39</sup> See Airtel-Vodafone's website at <http://tinyurl.com/3pg8mq>.

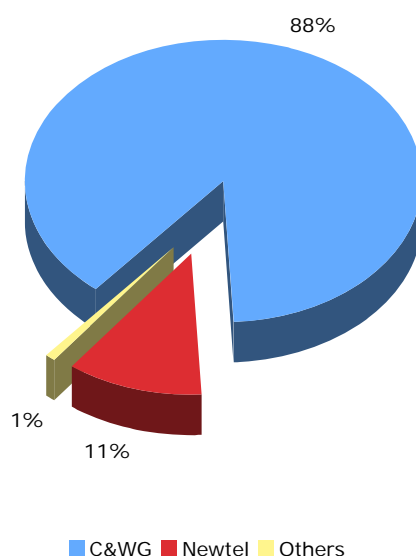
<sup>40</sup> OUR. The penetration figure is based on population figures and current estimates from C&WG (<http://www.surecw.com/guernsey/page-1335>) of the total number of broadband connections.

<sup>41</sup> OUR. The penetration figure is based on population figures and active SIMs as at end-2006.

estimated that mobile revenues stood at €137 billion compared to €79 billion for fixed with the former continuing to rise as the latter declines year-on-year<sup>42</sup> - so mobile broadband services seem set over the coming years to take an ever larger share of total broadband revenues.

Infrastructure-based competition for broadband services is virtually non-existent within Guernsey and almost all broadband connections are provided over C&WG's DSL network. While there is some competition at the retail level for the provision of broadband services, C&WG still retains the lion's share of this market as well, as Figure 4 below shows.

**Figure 4: Retail broadband connections, by operator**



Source: OUR. C&WG has 11,557 business and residential connections, Newtel has 1,470, while Itex, Microtech and Hughes have 93 between them. Figures are for end-2006.

As noted earlier, the total number of current broadband customers is estimated to stand at 15,000, i.e. a 14% increase on the end-2006 figure.<sup>43</sup> We understand from the OUR that there is no reason to expect that C&WG's share of this expanded market is any lower than it was at the end of 2006 and that there is every possibility that it could be higher.

Given the current lack of serious competition in the retail broadband market within Guernsey, there seems to be significant scope for 3G mobile operators deploying HSPA-enabled networks to provide an important competitive spur in this area. There is no reason why 3G mobile operators should not be able to compete effectively with C&WG for broadband services and, as the data speeds available over HSPA increases and 2G spectrum

<sup>42</sup> European commission, 13<sup>th</sup> Implementation Report, Section 2.

<sup>43</sup> C&WG (see footnote 40 above).



refarming is enabled, the mobile broadband providers should be in a position to provide compelling infrastructure-based alternative broadband offerings to customers in Guernsey.

As noted already, however, C&WG would not, if it is licensed to provide 3G services, have the same strong incentive to compete in the provision of broadband services as the existing 3G licensees clearly have.

### 3.5.3 Conclusions on the implications for market development

Technological and spectrum-based developments over the coming years are likely to provoke profound changes in the nature of mobile services that are currently provided. Mobile operators within Guernsey are likely to extend their services well beyond their existing product suite to become strong players within the broadband market. The lack of any significant retail broadband competition to date and the absence of any other infrastructure-based broadband competitors to C&WG mean that 3G mobile broadband providers in Guernsey ought to be perfectly positioned to lay down a strong competitive marker to the incumbent in this area.

In the longer term, further technological advances in the wireless arena, allied to the significant shifts taking place in relation to spectrum management, raise the prospect that new kinds of wireless multimedia operators will emerge. Such possible developments remain somewhat conjectural, however, and are well beyond the scope of this report.

## 4 Network development and environmental impact

In this section of our report, we examine the impact that further network development, in particular in the area of mobile, could have in terms of the additional infrastructure that would need to be deployed, bearing in mind the regulations in place within Guernsey governing the environmental impact of network deployment.

### 4.1 OUR's duty to lessen environmental impact of utility activities

An unusual aspect of the OUR's remit is the legal duty placed in it to minimise any adverse environmental impact arising from the activities of the 'utility' organisations which it regulates. The Regulation of Utilities (Bailiwick of Guernsey) Law, 2001, (Section 2 (f)) states that "the DG shall have a duty to lessen, where practicable, any adverse impact of utility activities on the environment".

Although this obligation on the OUR appears to be formulated rather loosely and may be open to differing interpretation, it does mean that the OUR is obliged to consider the possible environmental ramifications arising from policy decisions that it makes and to do what it can to minimise any possible adverse affects on the environment.

In the context of mobile market development, any discussion of environmental impact will inevitably focus on network infrastructure and, in particular, the possible construction of the new mobile cell sites. This, in turn, means that existing rules on site sharing are an important consideration, as such rules represent the main method by which planning authorities (and regulators) are able to maximise the use of existing structures for the deployment of new cell sites and minimise the construction of new ones.

### 4.2 Site sharing and other infrastructure regulation within Guernsey

We understand that communications operators in Guernsey must abide by quite stringent regulations in relation to site sharing and that strict regulatory constraints also apply in relation to other aspects of network deployment, such as road openings. In this section of our report, we summarise briefly the current position as we understand it with regard to site sharing and road openings regulation.

#### 4.2.1 Obligation to engage in site sharing

All three mobile operators within Guernsey have obligations contained in their operating licences requiring them to engage in site sharing with each other and with any new mobile entrants. We understand that this licence obligation empowers the OUR to indicate the timescale by which operators must reach agreement on the terms for sharing equipment and associated facilities and that, where operators fail to reach agreement, the OUR is empowered to determine the terms and conditions for such facility sharing, including provision for fair and reasonable compensation payable for the shared use of the facility in question.

#### 4.2.2 Planning restrictions on construction of new masts

We understand that, in relation to the construction of new masts for mobile base stations, the Environment Department in Guernsey has adopted an approach whereby operators seeking to construct new masts are asked to negotiate with other operators who already have a mast in that location, so that the existing mast is shared and, if necessary, redeveloped so that all licensed operators can use it. The other option open to operators wishing to construct a new stand-alone mast is to site it beside an existing mast and construct it in such a way that the equipment on the original mast can be accommodated on the new mast so that, once this has been done, the original mast is then dismantled.

We understand that any planning application for the construction of a new communications mast that does not follow either of the two approaches outlined above is extremely unlikely to be successful.

#### 4.2.3 Planning restrictions on road openings

We also understand that there are significant restrictions in relation to road opening works undertaken by utility companies, including communications providers within Guernsey. The Environment Department's roadworks policy outlines a number of restrictions that apply in relation to when and where roadworks are permitted to be undertaken within the Bailiwick.<sup>44</sup> These restrictions mean that fixed network deployment which involves the undertaking of road opening works needs to be planned well in advance and can only be done at certain times of the year.

#### 4.2.4 Site sharing in practice

As we have seen, regulations enforcing site sharing for communications infrastructure within Guernsey are rather stringent. It comes as no surprise, then, that recently-published data from the OUR<sup>45</sup> on cell site locations show that shared sites account for close to half of the cell site inventory within the Bailiwick. This is illustrated in Figure 5 below, which shows that shared sites account for 32 (i.e. 46%) out of a total inventory of 69 cell sites. Wave accounts for the highest number of single-operator sites (with 15), while C&WG holds 12 and Airtel-Vodafone has 10.

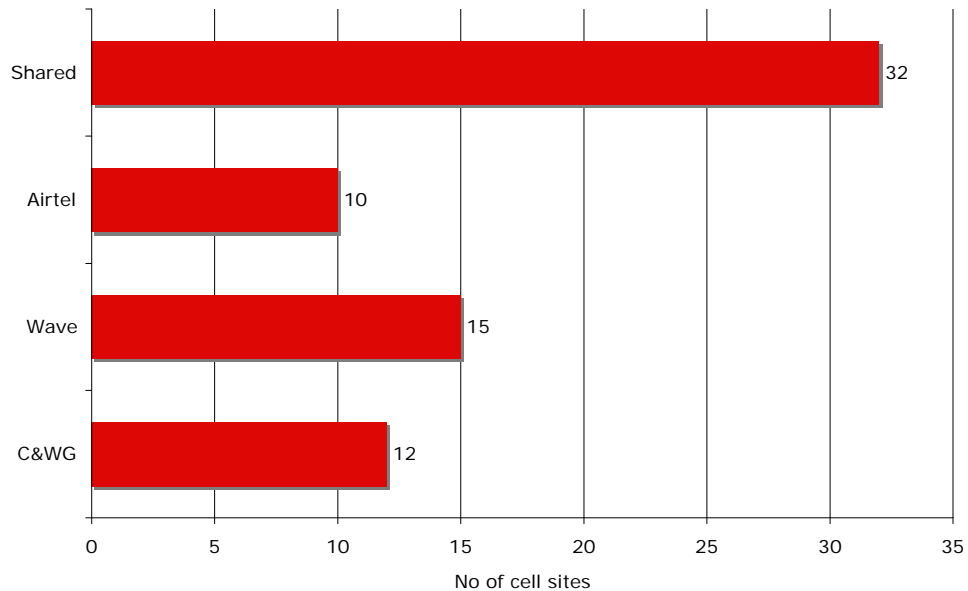
From the above figures, it is clear that public policy, which strongly encourages extensive site sharing, is being implemented on the ground by the three mobile operators. As a result, no one operator controls a large bank of single-operator sites and all operators are clearly open and willing to share sites with each other.

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<sup>44</sup> See <http://tinyurl.com/55x5ba> for full details of the Environment Department's roadworks policy.

<sup>45</sup> See OUR, *Register of mobile Phone Operator Mast Sites in the Bailiwick of Guernsey*, Document No. 08/12, June 2008, available at: <http://tinyurl.com/5eeczd>.

**Figure 5: Mobile cell sites, by operator and type**



Source: OUR Document No. OUR 08/12, June 2008.

### 4.3 Environmental impact of further network development

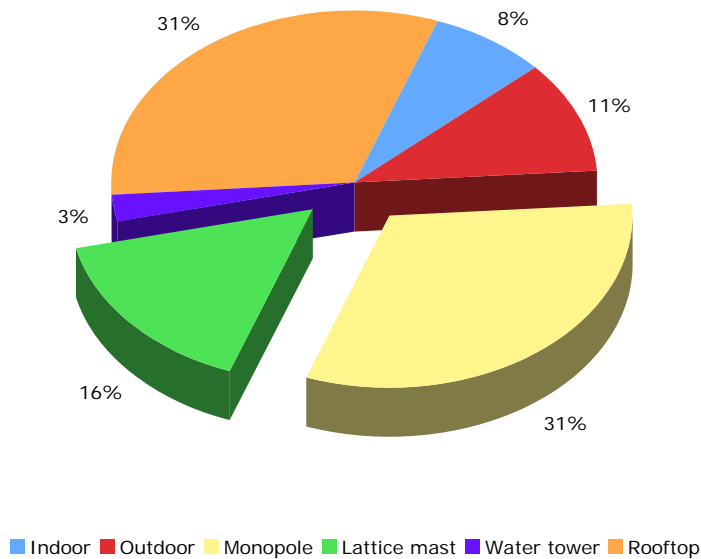
As we understand it, the greatest opposition to the siting of new mobile network infrastructure in Guernsey occurs in the situation where new free-standing lattice masts and monopoles are being proposed. A quick perusal of the kind of structures that are used to site mobile network infrastructure demonstrates that these kind of contentious, free-standing structures represent a significant proportion of the total number of sites.

This is illustrated in Figure 6 below, which shows the proportion of mobile cell sites by type. As Figure 6 shows, lattice masts and monopoles together account for almost half (47%) of all cell sites, with 12 of the former and 24 of the latter. While the deployment of lattice masts might be expected – due to their larger size and hence their visual impact – to encounter most resistance, they are also the kind of structures that are amenable to being shared. It is little surprise, then, to see that nine of the 12 are. Monopoles are less conducive to sharing and while the OUR's figures show that ten out of the total of 24 are shared, all of this sharing involves in each instance just two of the three operators, whereas the majority of sharing in the case of lattice masts (i.e. on six of the nine masts) involves all three operators.

These figures suggest that there has been some trade-off between the deployment of lattice masts and monopoles, with the latter possibly outnumbering the former because of the smaller visual impact involved. However, this trade-off has, to some extent, proved counter-productive as

the reduced scope for sharing of monopolies has almost certainly meant that there has been a greater proliferation of cell sites than would have been the case if, provided they were shared by all three operators, more lattice masts had been built.

**Figure 6: Mobile cell sites, by type**



Source: OUR, Document No. 08/12, June 2008.

While network planning is first and foremost a technical exercise based on radio planning principles, it seems obvious from the above analysis that the deployment of additional mobile network infrastructure, possibly arising from the licensing of a fourth 3G mobile licence, could only realistically occur if the new operator were to use site sharing as the basis for deploying the vast bulk of its access network. Given the strict rules on site sharing and the ability of the third operator, Airtel-Vodafone, to roll out its 2G/3G network in an unobtrusive manner (albeit an exercise that took quite some time to complete), it is not impossible to imagine that, by using an approach biased even more heavily towards site sharing, a fourth licensee might be able to deploy a mobile network within a reasonable timeframe as well. That said, it is abundantly clear that the planning environment is not one that is conducive to new network deployment and this fact is likely to weigh heavily in the minds of any putative new entrants.

Given the strict planning rules that are in place, the issue about possible adverse environmental impacts arising from further development of the mobile market in Guernsey is somewhat moot. The planning rules will obviously not be relaxed to accommodate network deployment by any new entrant so it is instead a question of whether or not any new entrant will

come forward if a fourth licence is offered, knowing as it will how hostile the planning environment is likely to be.

In this sense, we do not believe that there is any trade-off between, on the one hand, greater competition in the provision of mobile services and, on the other, environmental protection. The two can obviously go hand-in-hand, though it is undoubtedly the case that an overly strict planning approach will, all other things being equal, lead to less network development and, as a result, less intense competition than would be the case under a more accommodating planning regime.

It is also the case that a public policy approach that concentrates to a greater extent on planning matters than it does on the development of competition will inevitably be one-dimensional and will not take into account the multi-faceted benefits of competition. These benefits do not simply include the normal efficiency gains one would expect to result from increased competition but would also include the following:

- Positive environmental aspects arising from fewer car journeys being made;
- A possible requirement for fewer road openings if mobile broadband displaces fixed in certain areas;
- Economic benefits arising from greater productivity arising from the use of mobiles, including the positive 'network effects' arising from greater connectivity amongst the population of Guernsey;
- Economic benefits arising from employment created by mobile network operators and the tax revenues generated arising out of economic activities undertaken by mobile network operators, and
- Increased social inclusion arising from the use of mobiles, such as parents being able to keep in contact with their school-going children to ensure their safety and to facilitate greater connectivity with more marginal groups, such as the elderly.

In light of these many positive benefits, we do not believe that it would be in the long-term interests of the development of communications infrastructure in Guernsey for the OUR to close off the possibility of new network deployment, purely because of perceived planning difficulties that a new entrant 3G operator might face. The environment for network rollout is just one factor, albeit a very significant one, that any potential entrant will weigh up in considering whether or not the market entry opportunity is one worth pursuing. As such, any decision on market entry and any issues that might arise consequent to this decision are ones for the putative entrant to deal with.

## 5 Promoting competition

Our brief from the OUR requires us to assess the OUR's options in relation to the promotion of competition within the mobile market in Guernsey, bearing in mind the technological and spectrum developments discussed in Section 3 and the environmental aspects that were covered in Section 4. We do so in this section of our report, focusing in particular on the key issue of whether or not it makes sense for the OUR, as a matter of policy, to seek to maximise competition between the three existing operators or else to facilitate further market entry.

### 5.1 Technology developments and the promotion of competition

As we have already discussed in some detail in Section 3, mobile technology developments and complementary shifts in the management of the radio spectrum are together causing a profound alteration of the landscape in relation to the provision of mobile communications services. The well-established trend of voice services shifting from fixed to mobile continues apace but the delivery of broadband services is also likely to start switching in significant numbers in the same direction in the not-too-distant future. Technological advances in mobile data speeds and the availability of new spectrum bands for the delivery of mobile broadband services will help in this transition.

Within Guernsey, the rise of mobile broadband services should result in a much-needed increase in retail broadband competition. As the only alternative platforms to the incumbent's DSL network, 3G mobile operators (specifically those not owned by the fixed incumbent) are set to become major players in the broadband sector within Guernsey over the medium term. As a result, the promotion of competition within mobile ought to be a key priority for the OUR.

### 5.2 Environmental concerns and the promotion of competition

We have examined closely in Section 4 the environmental aspects of mobile network development, paying particular attention to the rules that exist in relation to site sharing. Our conclusion is that there is no trade-off between further mobile network development and environmental protection and that, if anything, the development of further mobile competition could be of positive environmental value.

Existing site sharing rules mean that it should prove relatively straightforward – as Airtel-Vodafone has demonstrated – to roll out another mobile network without building any new stand-alone masts and, similarly, the rearrangement of operators' existing networks (arising, for example, from 2G spectrum refarming) should also be easily accommodated using existing structures.

In summary and for the reasons already outlined, it is our strong belief that environmental concerns should not be seen as a determining factor in the OUR's consideration of the promotion of competition within the mobile market in Guernsey.

### 5.3 Assessment of the OUR's options for promoting competition

The OUR has asked us to consider the relative merits of its adopting a regulatory approach either based on maximising competition in the mobile market in Guernsey between the three existing licensed operators or one based on promoting further entry.

#### 5.3.1 Consolidating competition amongst existing market players

As we understand it, there are two possible reasons for adopting an approach aimed at consolidating competition amongst the three existing market players:

- all three existing operators would have mobile licences enabling them to provide 2G and 3G services and so competition between them would take place on a 'level playing field' basis, and
- the small size of the market might make further entry unattractive and a fourth mobile player might prove not to be viable.

In our view, neither of these reasons is persuasive and it is our opinion that a policy aimed at the outset solely at maximising competition between the existing licensed operators would prove self-defeating and impractical to implement. It would also be an approach that takes no account of the impact of likely future technological developments within the mobile sector.

The reasons why we believe that the OUR should not adopt such a regulatory approach include the following:

- There may be practical difficulties in achieving a 'level playing field' in terms of spectrum allocations granted to the three operators and simply granting C&WG access to a block of 3G spectrum would not achieve this. As was discussed in Section 2, spectrum assignments made to date have been quite disjointed, with C&WG holding 900 MHz spectrum, Wave holding 900 MHz spectrum in the GSM extension band and with Wave and Airtel holding 2G 1800 MHz spectrum as well as 3G spectrum. Under a 2G refarming scenario, some reallocation of existing assignments would be needed in order to create a true 'level playing field';
- A further practical problem would arise in relation to the process used for allocating the 3G spectrum to C&WG. The only way in which C&WG could be guaranteed an allocation of 3G spectrum would be to make this allocation on some kind of non-competitive basis, which, we assume, would not be possible under current licensing rules. Moreover, as mentioned earlier, it is reasonable to conclude that competition for broadband services is unlikely to be significantly enhanced by the award of a single additional 3G mobile licence to C&WG, given that this operator will not have a strong incentive to compete, in effect, with itself in this market;
- While the relatively small size of the market might make the opportunity for new market entry less attractive to potential entrants, this does not mean that the possibility of new entry should be



completely closed off from the outset. As was highlighted in Section 2, C&WG's regulatory accounts for 2006 and 2007 show that it generated extremely high returns in both years on its mobile activities and it could well be that these figures could prove an attractive entry signal for potential entrants. A policy aimed at consolidating competition between the existing operators would mean that such entry signals could not be responded to in the way that economic theory suggests they should be allowed to;

- The only valid assessment that can be made about whether or not it is worth the risk to enter a particular market is one that is taken by the entity that is prepared to take that risk. It follows that other organisations, such as market regulators, should not take decisions which would impact on or, in the extreme, prevent market entry based on any assumption that the risk associated with such entry is too high. In other words, the only entities that can validly assess whether or not a fourth mobile licence in Guernsey might be viable or not are those entities that might consider it worth their while to bid for any such licence;
- A decision not to licence any further mobile operators would be one that takes no cognisance of the likely technological developments that will see today's mobile operators become important players in the broadband market in the not-too-distant future. Given the lack of any real competition to date for retail broadband services in Guernsey, it would be doubly ironic if any decision not to licence new mobile operators were to have the added effect of blunting competition for retail broadband services as well.

It is also the case that Governments across the world have attempted to create 'national champions' in many industries and, in order to do so, have used various kinds of protectionist tools (including licensing) in order to inhibit the emergence of new competitors to the chosen 'national champion'. By preventing new market entry, more efficient firms are unable to replace less efficient ones and so all such efforts at creating 'national champions' have succeeded in doing is to allow these protected companies to enrich themselves at the expense of consumers.

One real-life example suffices to illustrate this point. It has been estimated that Japanese firms in sectors that face competition perform at productivity levels that are 130% of the levels in the United States but that those that are sheltered from competition function at only 50% of US productivity levels.<sup>46</sup>

Applying this analysis to the mobile market in Guernsey, it is clear that such a policy would place the interests of operators above those of consumers and could be conducive to unproductive rent-seeking within the sector. Without the threat of new market entry, the existing operators would be guaranteed a 'quiet life', which Hicks famously identified as "the best of all

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<sup>46</sup> William Lewis, *The Power of Productivity: Wealth, Poverty and the Threat to Global Stability*, University of Chicago Press, 2004, p.103.

monopoly profits".<sup>47</sup> It is difficult to see why the OUR would want to see the mobile market in Guernsey develop along such a path.

### 5.3.2 Promoting further market entry

A policy based on the promotion of further market entry would face none of the drawbacks outlined above. Were the OUR to decide to offer access to two additional 3G licences, then it is very likely (though not certain) that C&WG would win one of them and so that the three existing players would each have allocations of 2G and 3G spectrum. That would still leave the issue of reassigning spectrum allocations so that each of the operators would have equivalent allocations of spectrum within the 900 and 1800 MHz bands but that issue needs to be resolved regardless of what approach the OUR decides to adopt. If the OUR does decide to grant two further 3G licences, it would also need to reserve an appropriate 900 and 1800 MHz allocation for any new entrant applicant that emerges.

It could well be the case, of course, that no new applicant would come forward for a fourth 3G licence. By offering the opportunity, however, the OUR will be leaving the decision about market entry by a new player to where it is best left, that is to possible entrants themselves. This is a far better position for the OUR to adopt than simply closing off the option of further market entry.

An approach which keeps open the possibility of new market entry is also one that ensures competition is maximised, both amongst the existing players and in a market with an expanded number of operators. The imminent entry of a new player should prompt the existing operators to refresh their existing product offerings in advance of the new entrant's launch and, once that launch occurs, the new entrant's more competitive packages would be likely to trigger off further competitive activity. None of this would happen if the existing operators were secure in the knowledge that the competitive *status quo* was to be maintained into the future.

An approach which promotes new market entry would also mean that the OUR would be less likely, if competition amongst existing players prove too weak, to have to intervene at a later stage to impose sector-specific regulation in areas such as wholesale access or controls on retail prices. As the expression goes, "competition is the best regulator"<sup>48</sup> and regulation aimed at mimicking a competitive outcome would be a poor substitute to a genuinely more competitive outcome.

Moreover, an approach based on promoting additional market entry would be consistent with the likely increased role that mobile operators are likely to play in the coming years in relation to the provision of broadband services. Were the OUR to issue a 3G licence only to C&WG, then it could not be reasonably anticipated that this operator would be keen to compete aggressively in the broadband space, as it is owned by the same company that provides the vast number of retail DSL broadband licences within the

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<sup>47</sup> JR Hicks, "Annual Survey of Economic Theory," *Econometrica*, January 1935.

<sup>48</sup> See Baldwin, R and Cave, M, *Understanding Regulation: Theory, Strategy and Practice*, Oxford University Press, 1999, Ch. 16.

Bailiwick. While the other two existing operators would, unlike C&WG, have a strong incentive to compete for broadband services, a greater competitive spur – in both the mobile and broadband sectors – would accrue from the licensing of a further operator in this area.

At a more general level, it is the case that new technologies – the development and take-up of which more often than not catches policy-makers by surprise – can deliver significant economic and societal benefits and that the best way for such technologies to be offered to consumers is more often than not via new entrants. This was certainly the case in relation to mobile telephony itself, where take-up was virtually non-existent in most markets across the EU until such time as competing providers were licensed and mass-market services such as pre-pay were launched.

In the same way, the transition to mobile broadband services is likely to require the emergence of new kinds of mobile players who are not overly burdened with protecting existing legacy services and associated revenue streams. New entrants have a strong incentive to adopt totally different approaches to building up a customer base and consumers can benefit enormously from the kind of innovative approaches adopted by new entrants. In contrast, there are few examples of incumbents adopting this kind of approach to the deployment of new technologies.

### 5.3.3 Conclusions

For the reasons outlined above, it is our strong belief that the OUR would be ill-advised to attempt solely to maximise competition amongst the existing three mobile providers. There are significant downsides inherent in such an approach and it is, in any event, one that would be likely to prove self-defeating in practice. It would make far more sense for the OUR to promote further competition by offering a fourth mobile licence which, if potential entrants view as sufficiently attractive to risk investing in the opportunity, has the potential to increase competition for both mobile and broadband services within Guernsey.

## 6 Process for awarding further mobile licences

The final part of our report deals with the process for allocating any further mobile licences that the OUR might wish to issue. The OUR has asked us for an assessment of the various options that are open to it in this context and to advise it on what we see as the most appropriate allocation process.

### 6.1 Allocation processes used by the OUR to date

A number of licence allocations have been made by the OUR over the past few years for the provision of mobile services within the Bailiwick. Details of these allocations are set out in Table 3 below.

**Table 3: Mobile licence allocations made to date**

Operator	Licence award date	Licence type	Allocation process
C&WG	01/10/2001	2G (900 MHz)	Non-competitive assignment (arising from C&WG's position as ex-monopoly mobile incumbent)
Wave Telecom	23/03/2003	2G (900/1800 MHz) and 3G	Comparative evaluation
Airtel-Vodafone	15/09/2006	2G (1800 MHz) and 3G	Comparative evaluation

Source: OUR.

As may be seen from Table 3 above, the method used to date by the OUR for allocating mobile licences in competitive situations has been a comparative evaluation or 'beauty contest' one. Although such an approach would be consistent with that applied by licensing authorities in many other jurisdictions around the world, in particular for the licensing of 2G mobile services, there has been over the past decade an increasing trend away from comparative evaluations and towards the use of auctions.

### 6.2 Comparative evaluations versus auctions

Comparative evaluation processes were widely used within Europe and elsewhere for the licensing of 2G mobile services and this method continues to be used as the primary one for assigning rights of usage to spectrum blocks in many countries. The use of 'beauty contests' is, however, far from universal and spectrum auctions have been widely used in the United States since the early 1990s.<sup>49</sup>

<sup>49</sup> The use of spectrum auctions was first advocated by the economist Ronald Coase almost 50 years ago. See Coase, Ronald, "The Federal Communication Commission," *Journal of Law & Economics*, Vol II 1959.

With the shift in attitude that had been underway amongst spectrum managers in Europe and elsewhere (which we discussed in Section 3), the use of comparative evaluations has gradually been giving way to market-based auction methods. A number of 3G licence awards within the EU were made via auction processes and a significant number of licence awards in various spectrum bands since have been made in the same way, in many cases without there being any restriction applied on the technologies and services that operators are allowed to use within the allocated spectrum band.

The main reason why 'beauty contests' have fallen from favour relates to efficiency considerations. A comparative evaluation process is an inherently inefficient process, one that can often involve a significant amount of time and effort both to administer and to partake in. The process of awarding a licence via a 'beauty contest' can often turn out to be slow, wasteful of resources (especially for bidders) and lacking in transparency, given that it is never wholly clear in a 'beauty contest' why one entity's bid is considered 'better' than another's.

In contrast, auctions tend to be highly efficient, speedy, extremely transparent and have low participation costs. This latter property is important because it means that a well-designed auction – which is, in effect, a well-designed market place, one that attracts the maximum number of buyers and best matches the preferences of buyers and sellers – should encourage new market entry and, hence, promote the development of competition.

In our opinion, the OUR should opt for an allocation process that would ensure that the spectrum on offer is assigned in the most efficient way. It is obviously the case that an auction would produce a far more efficient outcome in allocating the spectrum on offer than would be the case under a 'beauty contest'.

Opting for an auction format does not mean that the OUR would need to abandon any public policy objectives it might wish to promote arising from the spectrum allocation process. It is often the case that auctions include a number of pre-qualification clauses which must be agreed to by those taking part in the auction: a common one in relation to the auctioning of 3G spectrum is the granting of 2G roaming rights by 2G incumbents seeking access to 3G spectrum. This means that the OUR would still be able to specify pre-conditions in relation to issues of concern (for example on site sharing) in framing its auction rules. However, it would be important for the OUR to guard against the imposition of too many pre-conditions as this would militate against the efficient allocation of the spectrum and would make the process more akin to a 'beauty contest', with all the drawbacks inherent in such an allocation process.

It is beyond the scope of this report to consider the specific type of auction process that the OUR might use for licensing further assignments of 3G spectrum in Guernsey. We would, however, note that there are a number of different auction formats that may be used<sup>50</sup> and that careful rule-setting

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<sup>50</sup> For a discussion on auction formats, see Cave, Doyle and Webb, *op. cit.*, Ch. 4.

and auction design are required to provide the best chance for a successful outcome to the auction process.