



## Additional Comment on Recommendations of the Independent Radio Spectrum Management Review

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**FuturePace Solutions**  
PO Box 451  
Mitchell, ACT, 2912  
Australia

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## **1.0 About FuturePace Solutions**

Spectrum Management International Pty Limited, trading as FuturePace Solutions, is a private jointly owned company operating since 1997 and headquartered in Canberra, Australia. Michael Whittaker, now a FuturePace Director, was principally responsible for designing the Australian 500MHz, 800MHz, 1.8GHz, 3.4GHz and 28/31 GHz spectrum licensing technical frameworks.

FuturePace is, consistent with the stated Australian government objectives for industry based management of spectrum, developing innovative on-line business practices seeking technological excellence in not only spectrum licensing but all facets radiofrequency spectrum management.

FuturePace has been keen to participate in the current Productivity Commission's review of the Australian Radiocommunications Act and the Australian Communications Authority (ACA). During the extensive debate about market based reform in Australia we became more and more aware of a difficulty with the implementation of competition that although simple, was not immediately obvious. And we hope our insight may be helpful as a final note for input to the UK Spectrum Management Review.

## **2.0 Some History**

Many tens of years ago a paper in an engineering journal proposed that the objective of good spectrum management should be economic efficiency rather than technical efficiency. Since, in the main, spectrum has been traditionally managed by engineers, and their focus was naturally, technical, they have mostly worked towards what they knew best, technical optimisation. This

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naturally led to a spectrum allocation game called 'picking technological winners'.

Despite the dominance of spectrum management by engineers, the introduction of market based spectrum licensing in both the USA and New Zealand saw, what could best be described as the 'steam-rolling' of engineers by economists. In the nineties, the policy and political situation changed and economists suddenly found they were driving spectrum management policy. Unfortunately, this led to a highly market oriented solution for spectrum licensing in both the USA and New Zealand.

In the USA, Michele Farquhar, Chief of Wireless Telecommunications Bureau FCC said in November 20, 1996 "*It is commonly held that government should minimise regulations governing what services may be provided, and how they should be provided, because such regulations tend to limit competition, obstruct innovation, and impede efficient investment*". Farquhar assumed flexibility would follow from minimum regulation and that flexibility would maximise competition.

The problem is that, in the case of spectrum space, comprehensive regulation is necessary to preserve the space of a spectrum licence for use by a licensee, making very explicit the rights and responsibilities of not only the licensee but government, so that flexibility may be maintained for the full term of the licence. However, in the case of USA and New Zealand, it would have been a very brave engineer indeed who went out to bat for comprehensive technical regulation. And the economists proceeded, essentially unadvised.

The USA, when questioned about their interference management techniques, replied to FuturePace at a London conference "we will let mutual greed sort it out", while in New Zealand the engineers we talked to said they were not seriously consulted. Both these administrations initially came up with so-called 'simplified' frameworks.

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Unfortunately, 'simplified' means that a licensee's rights are often not defined nor able to be maintained.

Australia was fortunate in the timing of the evolution of its spectrum licensing policy in that, while we essentially adopted the USA method of auction, sufficient time was allowed for the ACA, with considerable industry involvement through 1995 to 1996, to develop a comprehensive prototype for a spectrum licensing technical framework. The objectives in the Australian design have been documented in a January 2002 IEEE reference quoted in our previous submission. In addition, we have recently come across another reference [1], which discusses the benefits of the Australian design in relation to future spectrum management requirements. It suffices to say that the Australian objective was to clearly define the Government's and licensee's rights and responsibilities for the different types of interference mechanisms that can occur in a non-homogeneous service environment.

### **3.0 What is Unnecessary Regulation?**

After the government implementation of a clearly defined technical framework we have observed that the ACA is now having difficulty responding, not to the major carriers who seem on the face of comments to the Commission supportive of the spectrum licensing framework, but to the forcefully expressed opinions of two minor players who have their own agendas in seeking to change Government policy. The dominant Australian carrier Telstra has gone on record to the Commission as saying that "*the current regime..... (is) very crucial*". Vodafone Australia have also drawn to attention problems in New Zealand which occur because of the simplified regimen applied there, which does not define interference rules and rights ab initio. In general, industry are already quite well aware of why the different elements of the framework are in current use and of the managerial benefits to be derived from their proper application. Unfortunately, government is so sensitive to

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criticism related to unnecessary regulation, that forms of criticism that would normally not rate a mention have assumed centre stage for the ACA.

Given that a comprehensive set of rules are necessary to preserve the space of a spectrum licence, FuturePace believes that, as far as possible, government, after establishing such a framework, should then not intervene in the economic decisions of companies, unless overriding social or community concerns prevail. Economic management in Australia is underpinned by strong adherence to a free market economic system allowing industry to respond quickly to market signals and adjust their strategies accordingly and ensuring that our economy's resources are allocated efficiently. FuturePace has argued this view strenuously in the current Australian Productivity Commission hearings into the Radiocommunications Act and the operations of the Australian Regulator the ACA.

In our submissions we have identified a number of problems with the recent Australian 3G technical rules prepared by the ACA relating to partial definition and bias towards WCDMA. We see no benefit to industry from this type of government intervention in the 3G design.

FuturePace views, not a comprehensive framework, but the ACA 3G intervention in it, as unnecessary regulation.

#### **4.0 Trying to Create Competition**

When tasked with applying competition rules, the ACA have often tried to create competition, and not only by the use of biased frameworks, rather than creating an unbiased environment in which competition is facilitated. The more you try to create competition the less competition you may have.

Some Australian government engineers would view a biased framework as seeking technical efficiency. However FuturePace believes licence conditions

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should be defined so as to be capable of application against emerging equipment types during the life of the licence and further, that the licensee should have the choice to treat technical efficiency as secondary in their overall search for economic efficiency. What FuturePace is seeking is necessary regulation administered and designed in an unbiased and open manner.

FuturePace views a comprehensive set of rules of spectrum licensing, based on technological neutrality, as an essential regulatory minimum providing an unbiased and clearly defined radiocommunications environment in which competition can flourish. While competition may be controlled it can not be created by the ACA because competition and the factors, which go to create it, are outside the policy and technical purview of a radiocommunications Regulator.

## **5.0 The Regulator's Task**

During the Productivity Commission review the ACA demonstrated uncertainty about their own policy. Managing the input of vocal and often quite aggressive minor industry players seeking their own objectives appears to be dangerous ground for a Regulator.

There is a level where it is quite reasonable for carriers and equipment vendors to argue for varying levels of flexibility. After all, they're pursuing specific business cases and may occasionally find it more convenient to address market competition issues by reducing flexibility. However, this isn't an appropriate consideration for an independent and uncaptured Regulator if they're keen on encouraging competition and new industry participants. We believe it is imperative that government stand above competitive issues by providing technical neutrality supported by full definition and limited negotiation together with a phased move in the Australian market into perpetual licences. We believe that is where competition will be created. In

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effect, government is not charged with creating competition. It is there to create the circumstances in which it can occur.

Commercial interests may actually, as a means of confounding their competitors, want less technical flexibility. We could cite a number of hypothetical circumstances where commercial realities may seek to deny competitors access to different equipment. One equipment vendor may quite legitimately be seeking to establish a technical framework biased to their equipment. A carrier may have a market plan that it doesn't want to reveal, or it may want to cut off a competing commercial interest. However, the government isn't a commercial activist and should be standing above such issues. Rather the government ought to be creating the widest possible, and the most technically creative playing field to allow competitive activity to happen. FuturePace believes there are lessons to be drawn from the ACA experience, in that the ACA is apparently caught up in thinking that it has to create competition, and in doing so may have been captured by commercial interests. That is not what it is being asked. The ACA is properly tasked with creating the conditions under which competition may occur.

FuturePace wishes to first explain this abnormal skewing of debate in the current review of our spectrum management system and warn the UK about similar future tensions in the evolution of your own management regime.

## **6.0 References**

[1] Calin D., Elicegui L., Grandblaise D., "*Spectrum Engineering Options for Software Definable Radio*" Motorola Labs – Paris, France, submitted to WWRF WG4 – Spectrum Issues, 13 April 2001.