

# What are the key technical drivers for whitespace radio?

How do we make the most of white spaces?

**Whitespace:** a revolution in wireless communications?

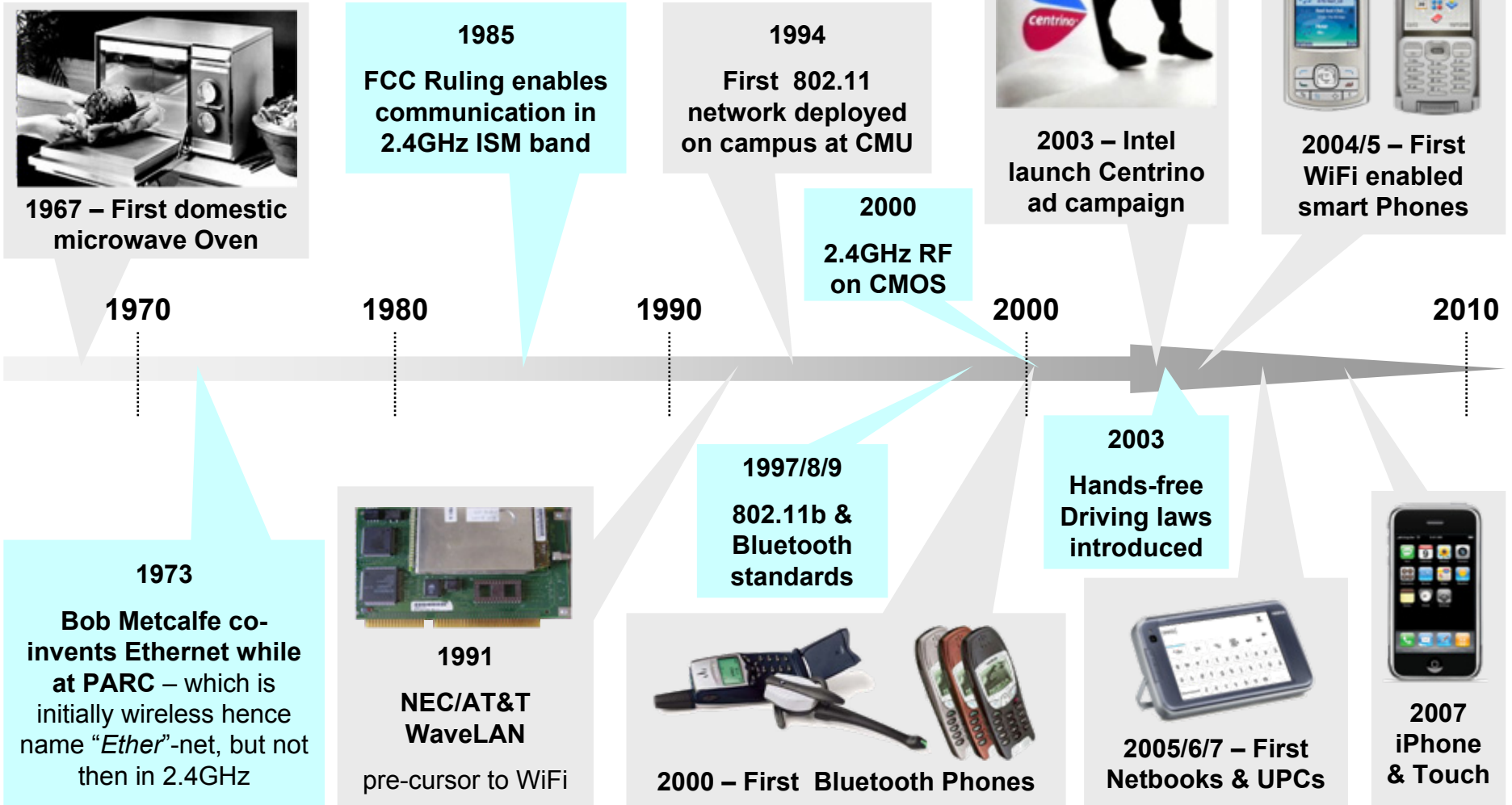
Tim Fowler

9 December 2009



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Some history of use for 2.4GHz



## What are the key technical drivers for whitespace radio?

### Why is this relevant to the white spaces

After spectrum becomes available...

- What makes some **technologies successful** and not others?
- What, if any, further **regulation** is required?
- What **standards** are needed to make whitespace radio work well?
- What **political** driver might make whitespace better or worse?
- Who are the **800lb gorillas** to ensure the technology is best?
- Does the technology need to be **global** to be successful?
- What user or **social** benefits matter?
- What is the likely **timing / lifecycle** for WSR?

## What are the key technical drivers for whitespace radio?

**If we have new spectrum, how do we ensure systems “play nicely”?**  
If the whites paces were green-spaces, what could I do with them?

- Are all uses for shared resources always compatible?
- Can we ensure future co-existence when we don't know what will come along?
  - Can we define access control today to work well into the future?



## What are the key technical drivers for whitespace radio?

### Difference between white spaces and 2.4GHz

- Range (is that good or bad) v other bands?
  - Is range good for spectral re-use?
  - *Faraday-cage wallpaper exists*
- The whitespace incumbents are revenue earning and sensitive services
  - 2.4GHz incumbents were not communication services
- Users appear to accept 2.4GHz technologies as a best efforts free-for-all
  - Is that good enough for whitespace?

## What are the key technical drivers for whitespace radio?

### Questions for the group to consider

- What further regulatory steps might help make the most of WSR?
- What standards need to be defined (and how many) to ensure sensible access and co-existence?
- What are the key technology enablers that are needed ?
- Are there critical user acceptance criteria that must be met to make the most of WSR?

## Whitespace: a revolution in wireless communications?

### Agenda

- 08:20 Welcome and session one: how will whitespace radio change the wireless landscape?
- 10:15 **Refreshments**
- 10:30 Session one continued
- 12:00 **Lunch**
- 13:00 Session two: what are the key technical drivers for whitespace radio?
- 14:30 **Refreshments**
- 14:45 Session two continued
- 16:15 Summary and conclusions
- 16:45 **Close**



## Breakout groups

<b>Group A – Tack I</b>	<b>Group B – The Stetson Boardroom</b>
<p>Kanwar Chadha, CSR &amp; SiRF</p> <p>Prabodh Varshney, Nokia</p> <p>Dan McClosky, Google</p> <p>Rolf de Vegt, Qualcomm, Inc.</p> <p>Dominik Schmidt, Intel</p> <p>Kiran Challapali, Philips</p> <p>David Konetski, Dell, Inc.</p> <p>Joe Ciaudelli, Sennheiser</p>	<p>Max Riegel, Nokia Siemens Networks</p> <p>Ranveer Chandra, Microsoft Research</p> <p>Avi Vaidya, Shure, Inc.</p> <p>VK Jones, Qualcomm, Inc.</p> <p>Russell Cyr, BitWave</p> <p>Paul Lambert, Marvell Semiconductor</p> <p>James Peel, BT</p> <p>Soma Santhiveeran, HP</p>

## Whitespace: a revolution in wireless communications?

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