



RTT TECHNOLOGY TOPIC March 2014

The North to South Transition

The ITU divides the world into three regions with boundaries defined by longitude (west to east) and latitude (north to south) with longitude as the dominant demarcation.

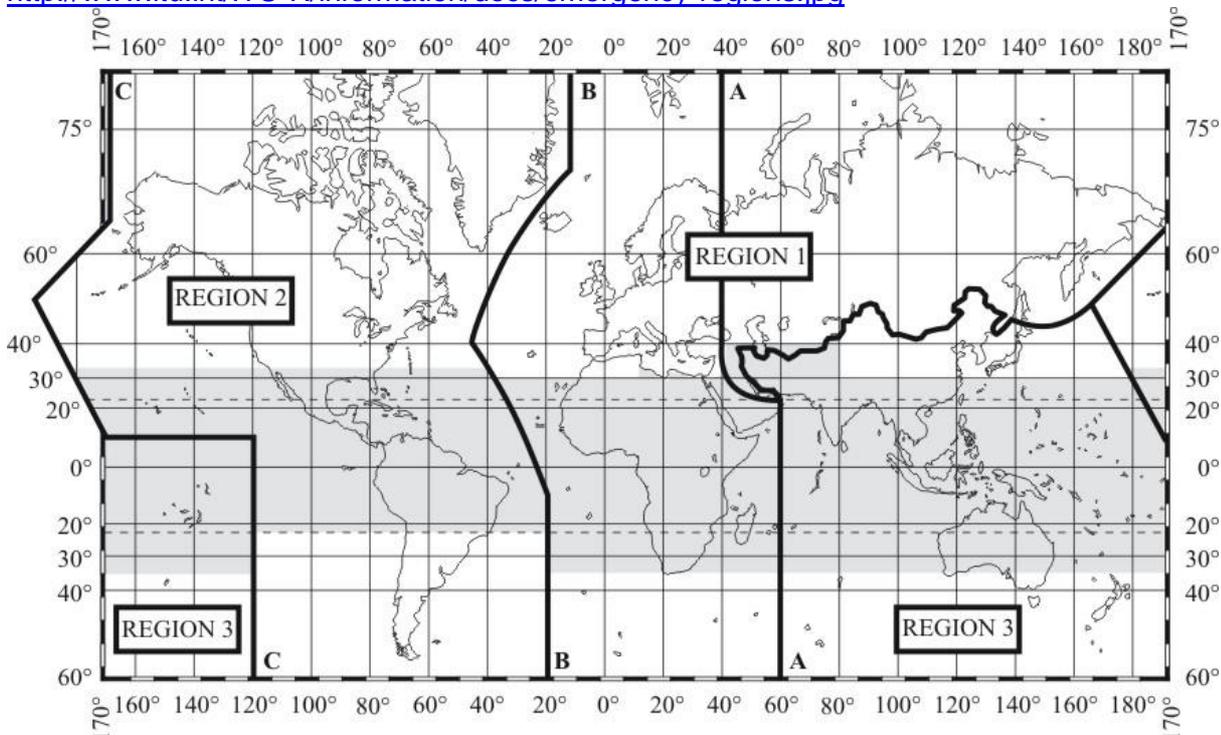
For decades this has provided an adequate basis for realising spectral and regulatory and standards policy for the cellular and broadcast and satellite industry.

In this month's technology topic we study the way in which \$1.3 trillion dollars of mobile broadband global value is drifting southwards and the related impact on European and US regulatory policy, spectral policy, competition policy, standards making and global, regional and national supply chain economics.

The value drift can be shown to be producing a West to East focus which previously did not exist. The process has already started with WARC 12 spectral allocations in the 700 MHz bands coupled to LTE technical specifications that look increasingly likely to become a de facto standard in Latin America, Africa and South East Asia – a geographic focus defined expressly by latitude.

Read on

ITU regions are presently arranged geographically as shown in the global map below
<http://www.itu.int/ITU-R/information/docs/emergency-regions.jpg>



Historically the demography and GDP of countries north of the equator including South Korea and Japan in Region 3, the US in Region 2 and Europe and the Middle East in Region 1 have had a gravitational effect on standards making and band allocation policy with countries close to or south of the equator following the technology lead of their northern neighbours.

The shift of value from north to south challenges that relationship, creating a West to East standards and spectral allocation focus that is becoming increasingly important over time.

While WARC 2012 can be regarded as a turning point, the change started earlier with the formation of the African Telecommunications Union in Kinshasa in 1977, <http://www.atu-uat.org/>, and the Asia Pacific Telecommunity in Thailand in July 1979, <http://www.aptsec.org/>

The significance of WARC 2012 was that a significant part of Africa and Latin America expressed support for the APT 700 band, realising a global 700 MHz FDD and TDD band plan (Band 28) that will be commonly deployed through Latin America, Africa and Asia.
<http://www.gsacom.com/apt700/>

This was a surprise for some WARC 2012 attendees but in retrospect was understandable and predictable particularly as the US and Europe had failed to coordinate a harmonised band plan in the prior five years (from the US 700 MHz band auction in 2007).

The APT band plan has some technical risks including a relatively wide pass band (45 by 45 MHz) which requires two by 30 MHz duplex filters with a 15 MHz overlap but this is offset by the decision to have OOB emission requirements that provide (in their view) adequate rather than excessive protection to spectrally and geographically adjacent TV receivers. This has allowed vendors to design user devices with relatively low insertion loss with standard low cost SAW filters – a significant contrast to the high Q filter requirements required for Band 13 in the US needed to meet public safety radio protection ratios or Band 12 to provide DTT protection.

Within Europe the broadcast community is lobbying for a protection ratio that is 20 to 40 dB higher than the APT technical specification. This can only be achieved by adding filtering and or adopting band specific match optimised power amplifiers with component and system cost multipliers of the order of several dollars per phone compounded by several dB's of performance loss.

Latin America, Africa and South East Asia will thus have access to low cost RF efficient 700 MHz user devices which will be unusable in the northern latitude markets of the US and Europe.

This would be of less consequence if it was not indicative of a more general shift towards a north south axis with the south being progressively more cost and performance efficient over time. The reasons for this deserve close analysis.

The southern latitude markets in Latin America, Africa and South East Asia have traditionally been regarded as GDP constrained low penetration low ARPU markets. Low penetration is however a market opportunity particularly if GDP constraints are less severe than the statistics suggest.

This is clearly the case for a number of reasons.

Firstly GDP is an unreliable proxy for household income and it is household income that determines the money available to be spent on mobile communications.

Secondly this is not substitution spending – mobile phones are not being purchased as an alternative to wireline internet and voice access because landline internet and voice access is generally unavailable or prohibitively expensive.

Thirdly investment in mobile (bi-directional) access provides more profound economic benefits to the user.

A convincing example is M-Pesa which has just broken through \$1 billion per month of transaction value in East Africa (Kenya, Tanzania, Uganda, and Rwanda). Hardly surprising when you consider that for every bank account holder there are three mobile phone owners and hardly surprising given that the transaction costs are a fraction of the cost of processing through a traditional banking system.

http://mobilemoneyafrica.com/details.php?post_id=462,

Add together demographic factors (large fast growing young populations), geographic factors (long distances making copper, cable and fibre uneconomic), rising GDP statistics with multiplier effects (household income and high relative economic value to each user) and compare these with saturated European and US markets relatively better served by alternative fixed access options and it becomes clear that the North to South value shift has only just begun.

The shift is however potentially being accelerated by present US and European competition and regulatory policy.

This includes, at least in Europe, a progressively less sustainable belief that each national market needs four or five operators to be market efficient.

If market efficiency is defined as the maximisation of short term spectral value then this may be defensible but if more broadly defined to include technical and commercial efficiency then such a policy is manifestly indefensible.

Technical and commercial inefficiency translates directly into higher per bit delivery cost. Europe specific technical requirements that add dollars of cost to user devices and take several dB's off the link budget compounds the delivery cost problem. This translates into lower EBITDA which translates into a more adverse debt to equity ratio, a vicious rather than virtuous circle.

So it can be observed that Northern latitude regulatory and competition policy is obeying the tried and trusted law of unintended consequences and unexpected outcomes.

What we need is a new attitude to latitude and longitude is not the answer.

Within the next ten to 15 years (a mere heartbeat in telecoms time), the balance of global telecoms value and the consequential influence that comes with that value will have shifted southwards but will be consolidated horizontally (West to East) across Latin America, Africa and South East Asia. Even China will be small when compared to the size and power of these markets and the US and Europe will be smaller.

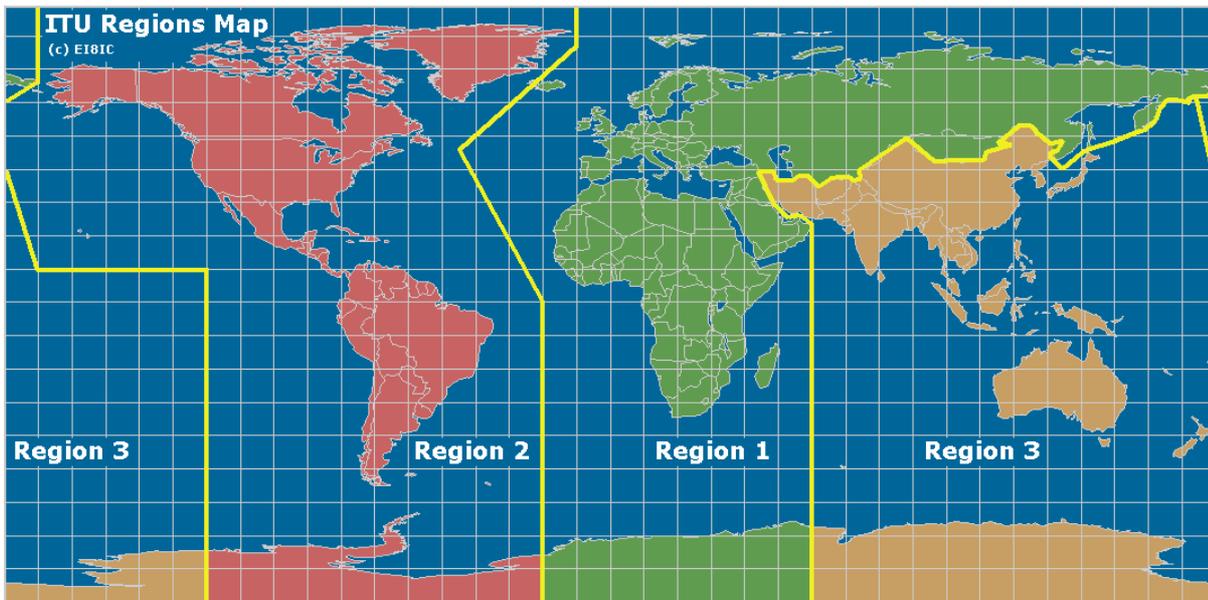
The consequence of the southern hemisphere going horizontal is that the northern hemisphere will have to do the same in order to remain globally competitive.

That means that European and USA standards and band planning will have to converge - presently an unlikely prospect.

Ends

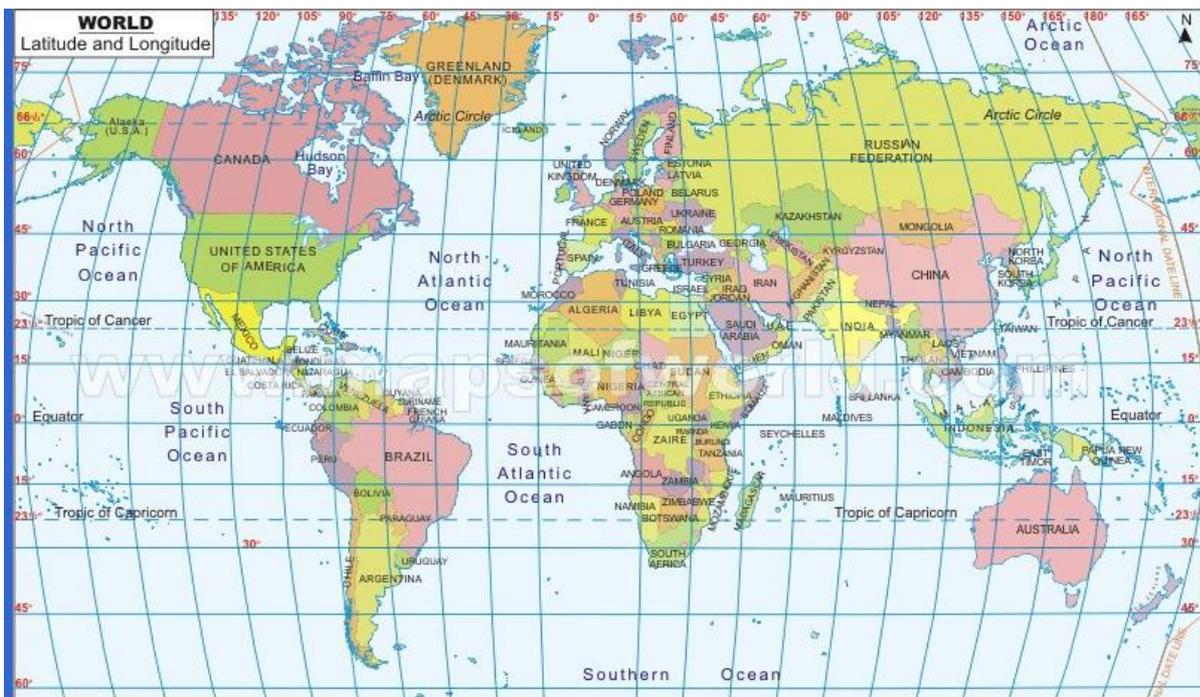
Our thanks to The Mobile World <http://www.themobileworld.com/> and our colleagues in the US <http://www.janezweig.com/> for providing insights to this and other technology topics. If you are interested in a more definitive financial analysis of the north to south transition then please contact john.tysoe@themobileworld.com

The ITU World



The Mercator World

http://www.mercatornet.com/info/who_was_mercator



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