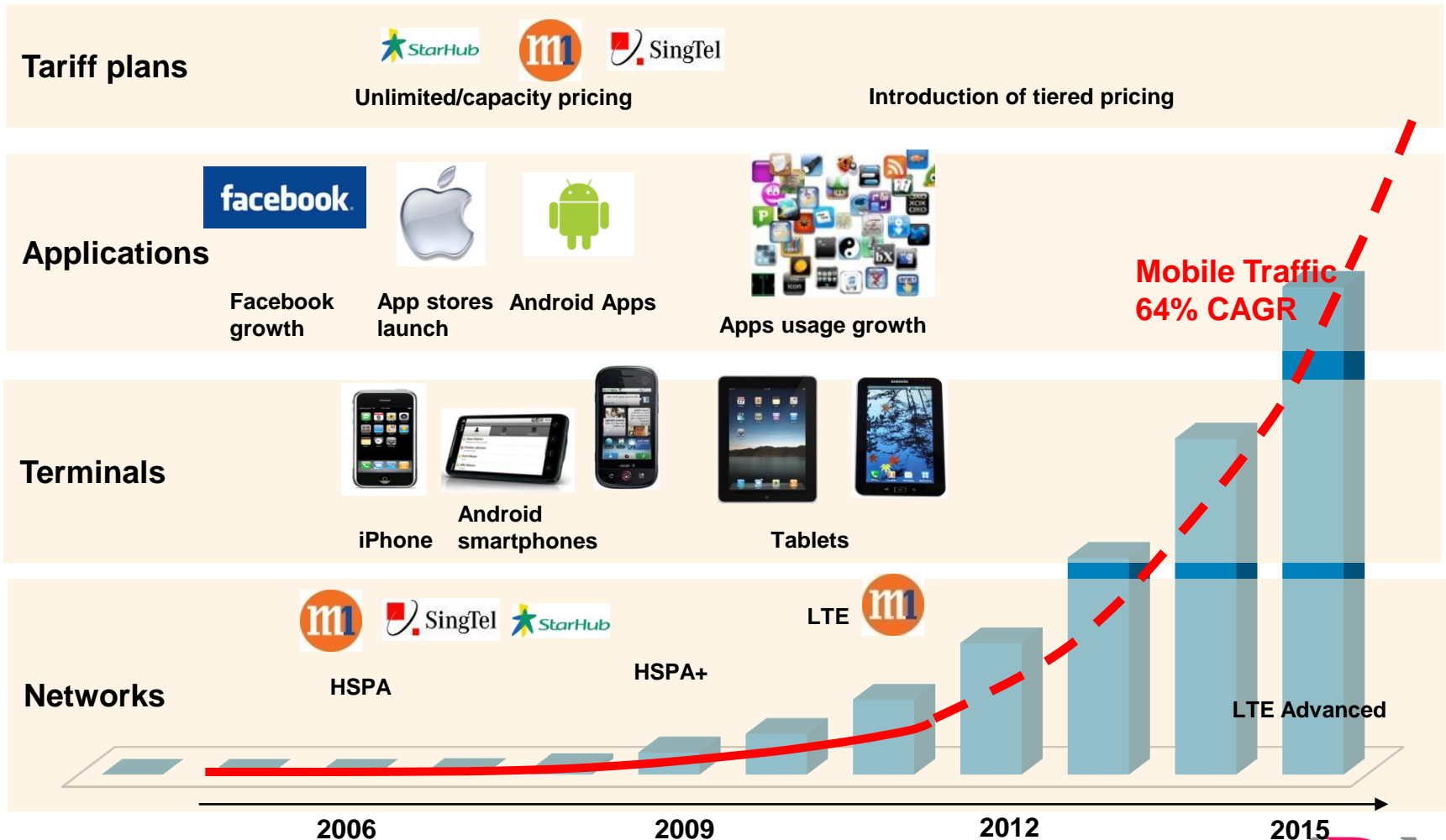




# **Spectrum Policy in Singapore**

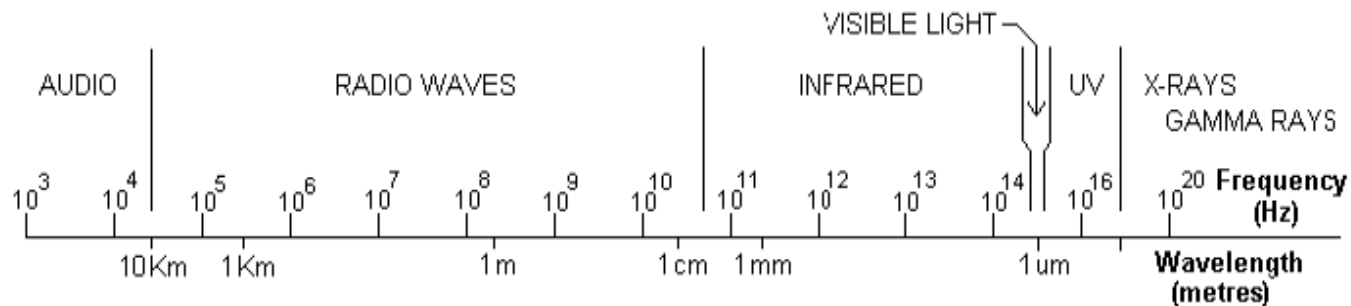
**28 November 2012**

# Growth in mobile data traffic

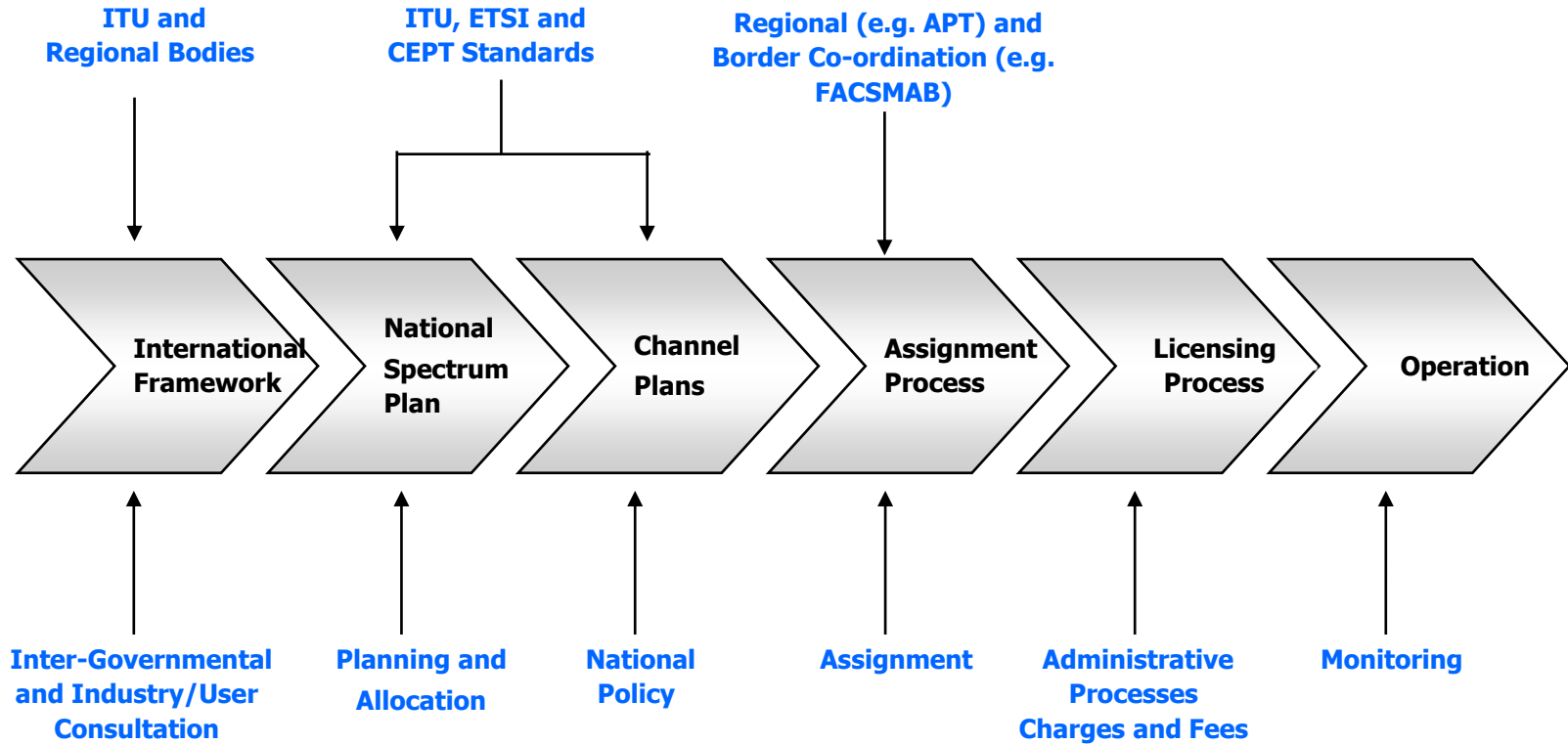


# Objectives of Spectrum Policy

- Ensure efficient use of radio spectrum resource
- Promote innovation in wireless communications services
- Avoid mutual interference between radio services



# Spectrum management process



# Spectrum allocation frameworks

- Spectrum assignment
  - Administrative assignments
  - Market-based assignments/auctions
- Spectrum pricing
  - Cost based
  - Market/value based
- Spectrum use
  - Spectrum trading/sharing
  - 'Spectrum liberalisation'
- Other frameworks
  - Technical trial frameworks
  - Market trial frameworks

# Recent spectrum auctions

- 2005: Wireless Broadband Access spectrum auction (2.3 GHz and 2.5 GHz)
- 2008: Public Cellular Mobile Telecommunication Services auction (i.e. reallocation of 2G bands)
- 2009/2011: Auctions of additional spectrum in 1800 MHz band
- 2010: Auction of additional spectrum in 3G band

# 4G Deployment Has Already Begun

- 4G plans first introduced by M1 in Jun 2011
- All 3 operators offering 4G plans today, with varying coverage



# 4G Deployment Has Already Begun

- Jan 2011: IDA's Interim Decision to affirm that mobile operators can deploy 4G services '2G' and 'WBA' bands
  
- Apr 2012: Public consultation on framework for re-allocation of spectrum bands for 4G. Proposals to:
  - Allocate spectrum in 2.3 GHz, 2.5 GHz and 1800 MHz bands via auction in rights expiring 2030
  - New entrant 'set aside'
  - Spectrum caps to prevent hoarding
  - Nationwide coverage requirements
  - 'Clock plus' or Simultaneous Multi Round Ascending auction formats considered
  
- 2013: [planned] 4G auction



Two vertical bars on the left side of the slide: a thin red bar and a wider red bar.

**Thank You**