MPEG standards: successes and threats

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(Presented by Ali C. Begen)

The world of standards before MPEG

- In the world of media standards before MPEG responsibilities were scattered across different ISO/IEC/ITU committees

- There were committees in charge of audio recording, for cinematography, telephony speech etc.

- The logic was "I and my industry peers gather in one place and develop standards for our needs"

- The logic driving technology licensing was a consequence of this mindset

  - A company with a successful product would bring the specification to a committee, get a stamp on it and license the technology to all companies

  - The licence was configured as users expected it to be because "everybody spoke the same language"

Enter MPEG

- MPEG came (1988) and these committees disappeared or got reconfigured
  - From many committees developing "many vertical media standards"
  - To a single committee – MPEG – developing "single horizontal media standards"
- Today no one would think of creating standards for such old-style "verticals" (30 years of "convergence")
- Life was "easy" in the good old MPEG-2 times
  - Standard was designed to serve the digital television industry
  - Most patent holders actually practised the standard
- It was "easy' to create the MPEG-2 Video (and Systems) technology and license it to digital television users

MPEG-4 down and up

▶ Bumpy times for MPEG-4 Visual (ISO/IEC 14496-2) because the licence

  ▶ Charged those streaming MPEG-4 Visual content based on the duration of content streamed

  ▶ Was refused by the "IT industry" because the licensing terms did not suit their business model

  ▶ A number of companies offered with alternate fortunes video streaming and other IT services

▶ Easy times again for MPEG-4 AVC (ISO/IEC 14496-10) because the licence

  ▶ Satisfied the needs of the broadcasting and consumer electronics industries

  ▶ Corrected the terms considered most outrageous by the IT industry

The HEVC mess
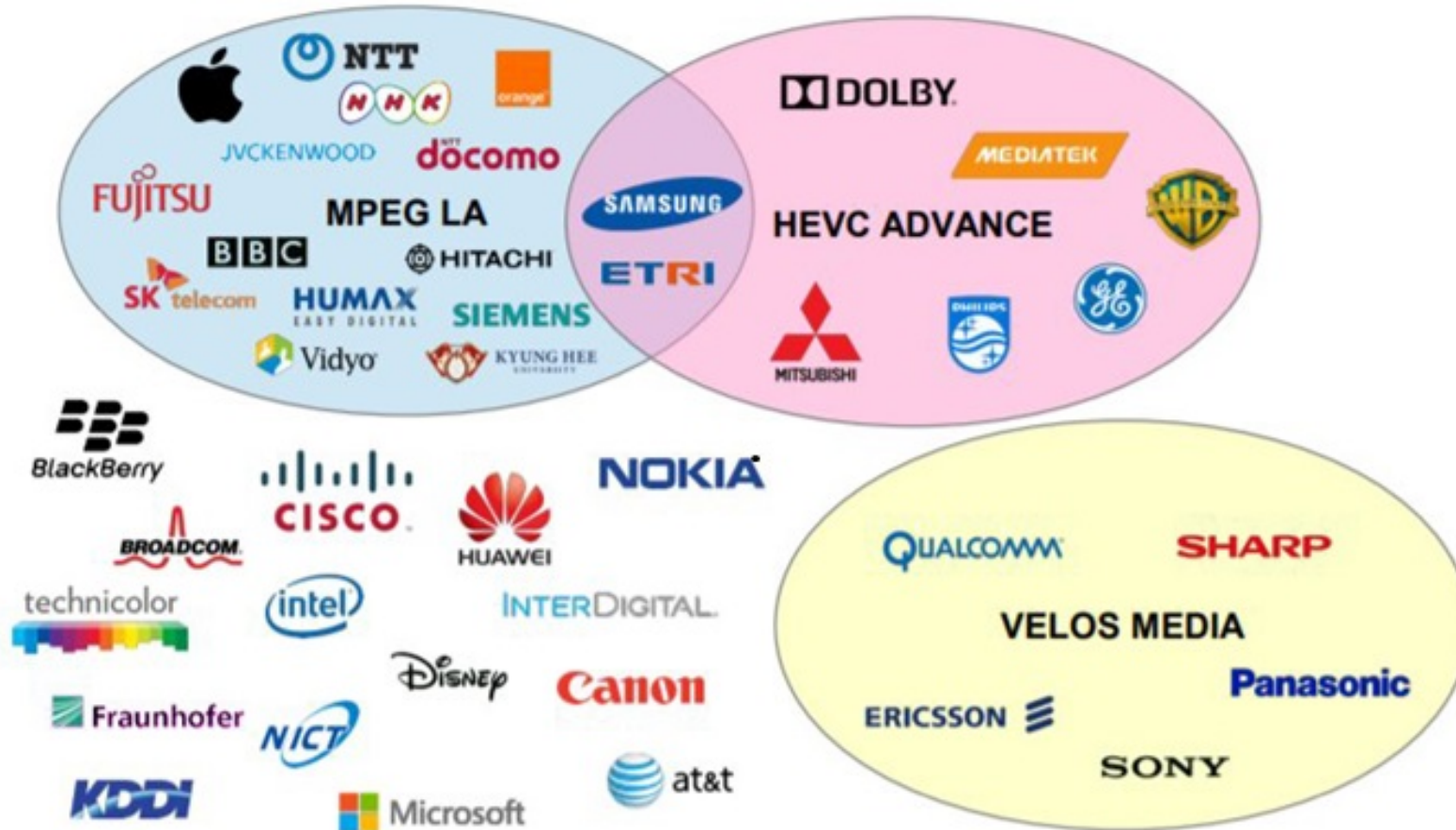
Not unexpected

- In hindsight difficult times for HEVC licensing had to be expected
  - Digital video is used by many disparate industries
  - Vertical standards are unsuitable because industries' roles map to the layers of an OSI model, not to separate non-communicating silos
- Today there are some 45 HEVC patent holders classified as
  - Members of MPEG LA and HEVC Advance (licence published), and of Velos Media (licence unpublished)
  - Not belonging to any patent pool (licences unpublished)
- Alliance for Open Media promises to deliver a royalty free specification performing "better" than HEVC

Summary of the ISO/IEC patent policy

▶ Different industries have different needs but they are forced to develop standards according to a single format set by the ISO/IEC/ITU patent policy

1. Companies who believe they have Intellectual Property (IP) in an ISO/IEC standard should file a declaration with the ISO and IEC secretariats declaring their intention to license their IP according to one of the the options

    ▶ For free (Option 1)

    ▶ FRAND (Option 2)

    ▶ Not license it at all (Option 3)

2. IP holders are not required to identify the patents and the specific claims in the patents;

3. ISO/IEC do not take position on those declarations but simply record them;

4. Committees developing standards may not to assess patent declarations, they just have to comply with them;

5. Licensing of ISO/IEC standards shall be developed outside ISO/IEC.

Analysis of the situation

▶ Item 5 of the patent policy should remain untouched

▶ Items 4 and 3 probably need not to be touched

▶ Item 2: imagine that ISO/IEC receive a patent declaration of type

  ▶ Option 2 against a standard that is intended to be "royalty free" but the declaration does not identify the claimed infringed technology

  ▶ Option 3 against a standard that is intended to be FRAND but the declaration does nots identify the claimed infringed technology

▶ ISO asks MPEG to remove the infringing technology, but the technology is unknown!

  ▶ Instead of siding with one of its committees developing a standard to satisfy a legitimate business model, ISO sides with reticent patent holders

▶ Kafka could have written another of his novels around this story

What is required for continuing successful standardisation

▶ ISO/IEC should allow the development of international standards that satisfy one business model freely adopted by MPEG

▶ MPEG should have the means to remove patented technologies from a standard if the patent holder does not wish their technology to be used in support of the adopted business model

▶ This is no innovation, it is just about recreating the situation of 30 years ago when each committee operated according to the shared business models of the industries populating it