What future for image/video compression

Panel at ICME2011

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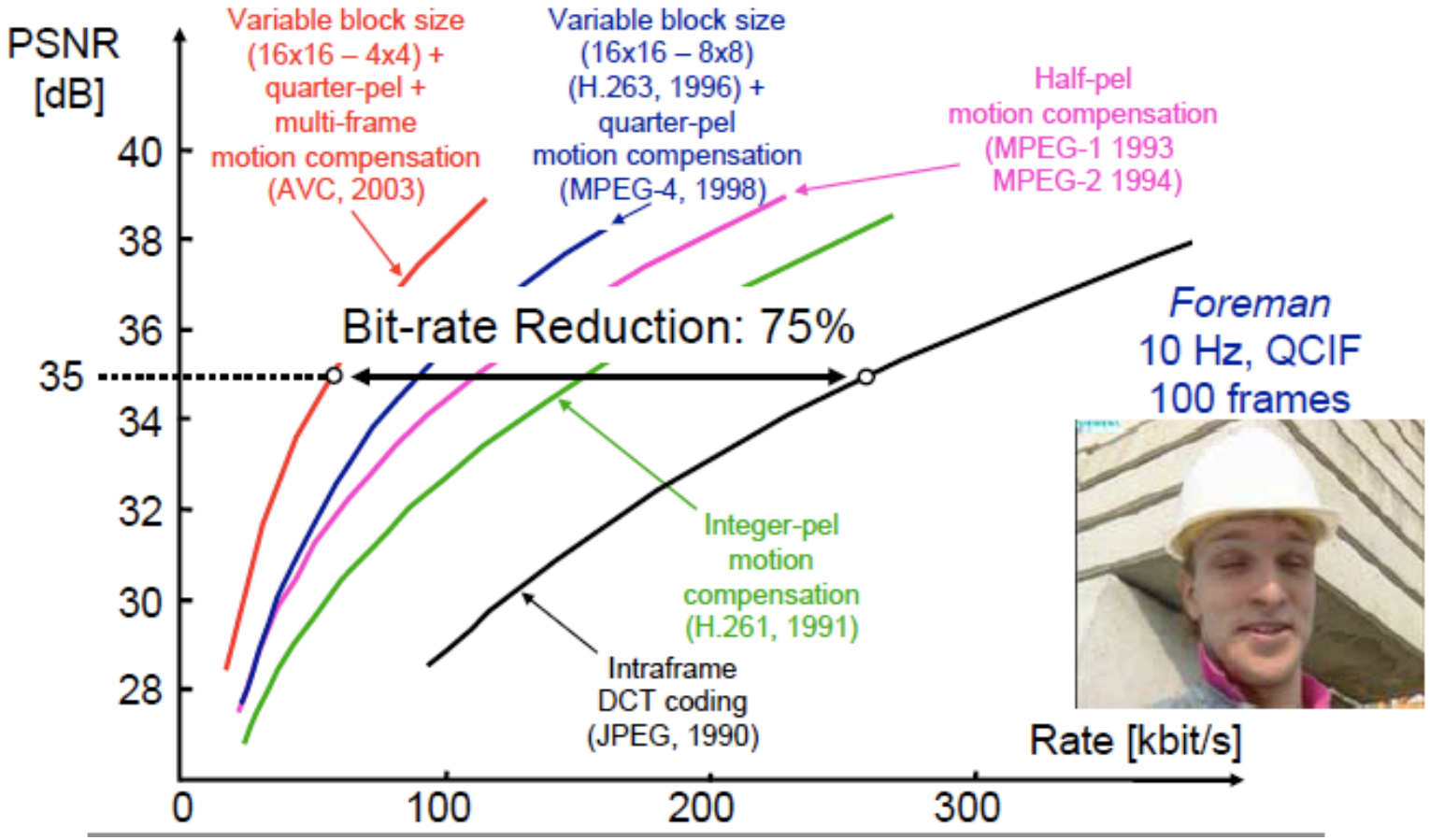
Barcelona, 12th July 2011

Moore's law of compression

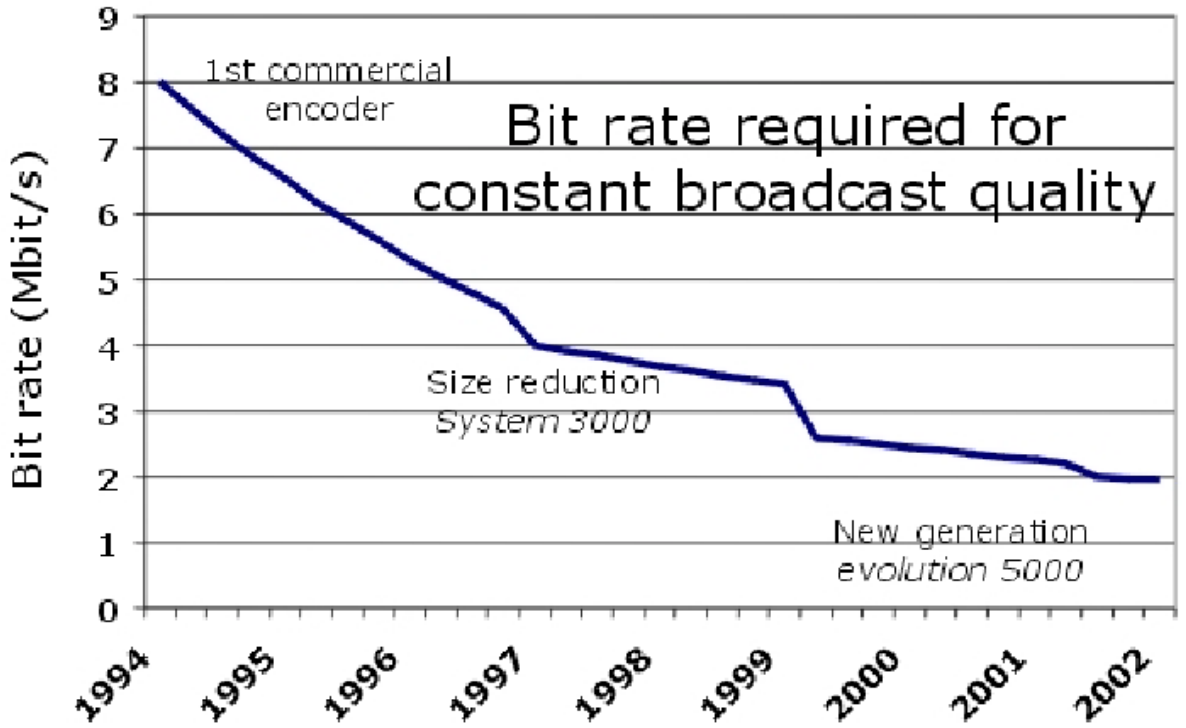
- … between different paradigms …



Moore's law of compression

- … and even within the same paradigm

MPEG-2 video



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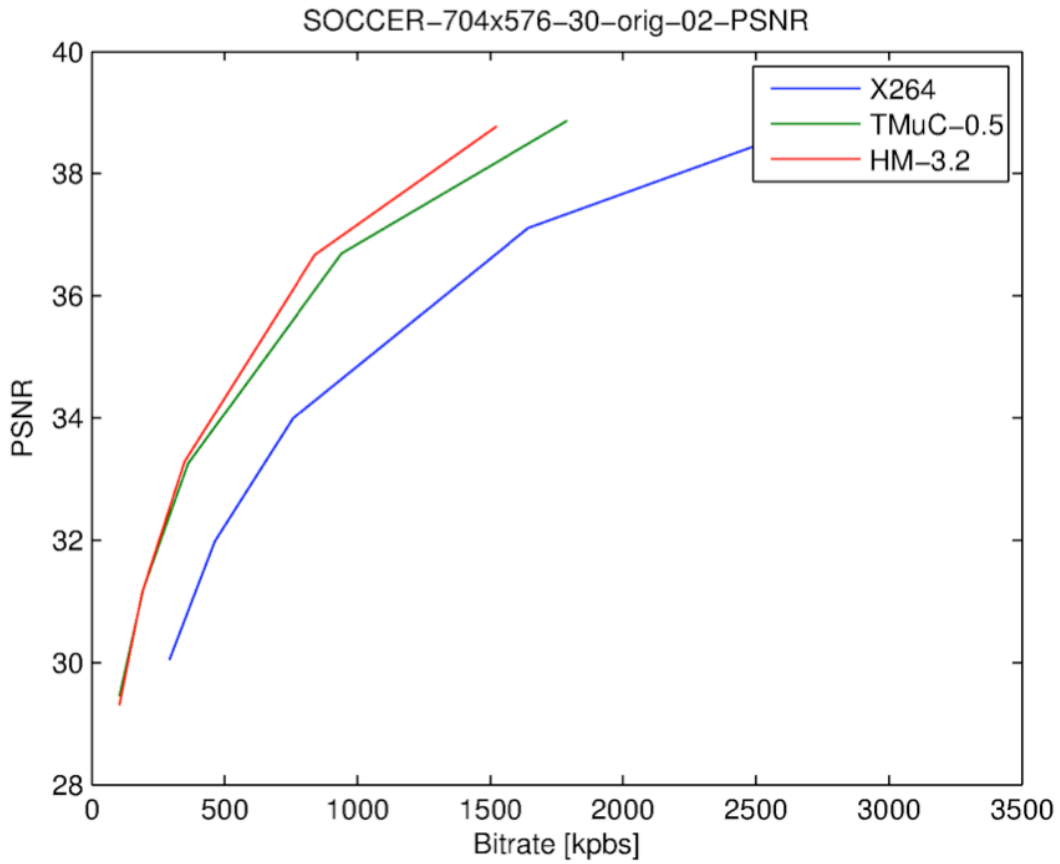
Moore's law of compression

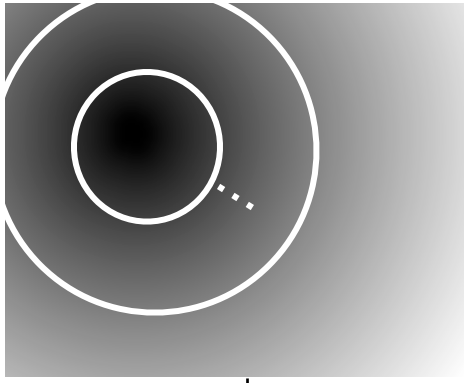
- … and the story still goes on …

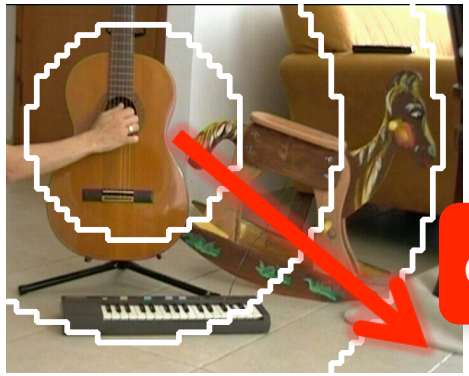


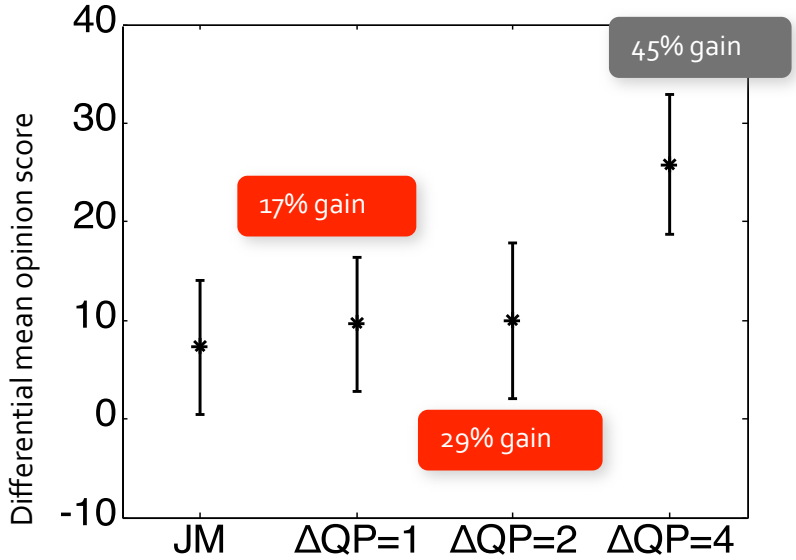
Moore's law of compression

- In all likelihood Moore's law of compression will continue in the next few years:
  - More efficient encoding strategies
  - More efficient pre- and post-processing
  - Taking into better account human perception considerations
  - Alternative technologies/representations:
    - *Compressive sensing*
    - *X-lets*
    - *Model-based coding*
    - *Distributed source coding*
    - *…*

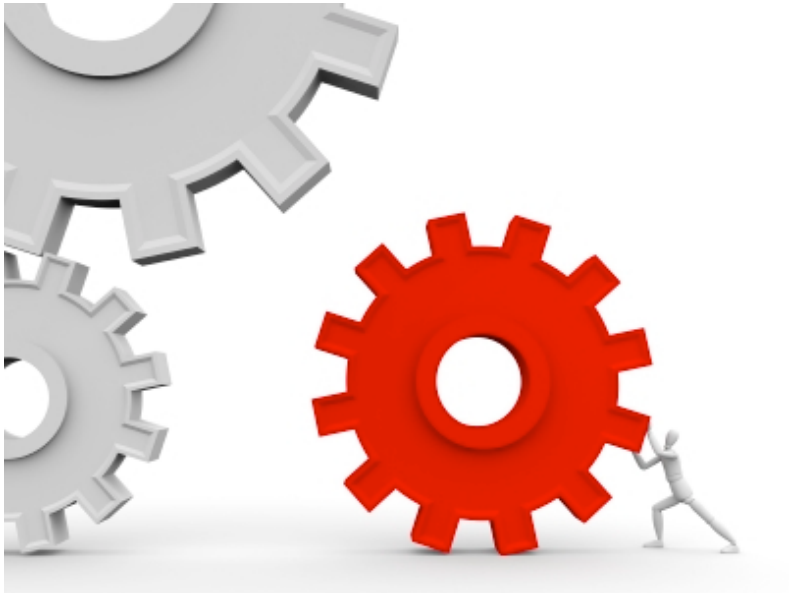
Video coding based on audiovisual focus of attention







- Impacting factors
  - New image/video modalities
  - New applications and their requirements
  - New performance metrics



Impacting factors in image/video compression paradigm

- New visual modalities:
  - Stereoscopic
  - Multi-view
  - High Dynamic Range
  - Depth+Texture
  - Integral imaging
  - Holographic
  - …

Impacting factors in image/video compression paradigm

- New applications and their requirements
  - Scalability
  - Compressed domain processing
  - Low power consumption
  - Error resiliency
  - Low delay
  - Random access
  - Security
  - Privacy
  - Royalty-free
  - …

Impacting factors in image/video compression paradigm

- New performance metrics
  - Quality of Experience (QoE)
  - Complexity
  - Power consumption
  - IP status
  - …

Some last questions

- Do we still need speech, audio, image and maybe soon even video compression in all applications?
- Do we still need standard image/video compression?