

JPEG 2000 for the practitioner

What did JPEG 2000 ever do for us?

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JPEG2000: why should we care?

- “TIFF is so very 1990’s, darling”
- “JPEG 2000 is cool and froody”
- Files are getting bigger:
more resolution, larger bit depths...
- Files are now counted in millions
- Digital preservation strategy can cope with
compression now



JPEG2000: Some of the claimed benefits

- **Open Standard**
- **Improved Compression Efficiency**
- **Mathematically Lossless Compression**
- **Graceful Degradation**
- **Scalability**
- **Dynamic Bandwidth Allocation**
- **Robust Transmission**
- **Easy Post-Production**
- **Region of Interest (ROI)**
- **Low Latency**
- **Constant Quality through Multiple Generations**
- **Encoding - Decoding Processing Power**
- **License-Free**
- **Codec's Comparison Chart**

Region Extraction

“Give me **x,y** coordinates at **z** resolution.”



72ppi: 20KB JPG

600ppi, 200MB TIF; encode to 100MB JP2

Financial realities

- JPEG 2000 is popular primarily for the money it can save us
- Too blunt? Well consider:
 - Total cost of ownership of 1Tb can be between £2,500 - £6,000 per annum depending on configuration.
 - This is purely storage costs, not even considering other digital preservation cost elements.
- The British Library: over 150 million items.
 - Books alone would generate over 3.5 billion pages.



Financial realities

- BL storage sizes for Microsoft/British Library 75,000 19th Century Books
(as reported by Aly Conteh www.slideshare.net/JISCDigi/aly)
 - TIFF = 53 MB
 - JP2K = 17 MB
 - JP2K (lossy) = 4 MB
- Assuming £2,500 per Tb per annum, then the total savings in storage costs alone per 1,000,000 pages is:
 - JP2K vs TIFF = ~£86,000 per annum
 - JP2K (lossy) vs TIFF = ~£116,000 per annum
 - JP2K (lossy) vs JP2K = ~£31,000 per annum

So what still challenges us?

- Displaying JPEG200 in native Web browser environments without any plug-ins/extensions?
- Converting to JPEG2000 from RAW or TIFF – process still feels like engineering. Kakadu scripting anyone?
- Adobe Photoshop et al support still poor
- Bottlenecks still abound in workflows for conversion on the fly
- Can JPEG2000 really be a one stop shopping experience for the future?
 - as a digital preservation format or delivery option?

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