



Silver Screen Meets Black Gold

What Oil and Gas can learn from the Film Industry

George Ilko, 29th May 2013, Aberdeen

Advance Organiser

As Einstein said, “Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.”

- An introduction to ‘Smart Thinking’ 
- How the film industry uses technology
- How the oil and gas industry could benefit from a similar approach

About ISN

- Founded in 1999
- 3 of top 4 UK Independents
- Specialist in Upstream Infrastructure



Introducing 'Smart Thinking'



What is 'Smart Thinking'

'Smart Thinking' is about the content of what you know and how you use it...



James Dyson



Fiona Fairhurst



Spencer Silver & Art Fry

Creating smart habits

...and changing behaviours:

- The mind is designed to think as little as possible

In 1870 this man...



Christopher Sholes

Created this...



QWERTY keypad

Creating smart habits

...and changing behaviours:

- Habits are created by consistent mapping and repetition



Habit change requires replacing bad habits with new ones! E.g. Email

Promote quality learning

...by knowing your limits:

- The mind imposes limits when perceiving and thinking about the world (the role of three)



Promote quality learning

- Use your awareness of these limits to improve the quality of your knowledge...



or



www.moviemistakes.com

Understanding how things work

- Causal knowledge is the information you know about how the world works
- The quality of our causal knowledge is worse than we think it is (10,000 HRS!)
- We can improve the quality of our causal knowledge through self-explanation



Making comparisons

...and applying your knowledge:

- Reusing past experiences requires finding similarities between past and present
- Analogies allow us to use similarities from distant domains
- Retrieving a good analogy can be difficult, but there are ways to improve it
 - We need high quality knowledge about the base domain
 - We need to connect the base and target domains
 - *We need to re-describe the problem*



How the film industry uses technology

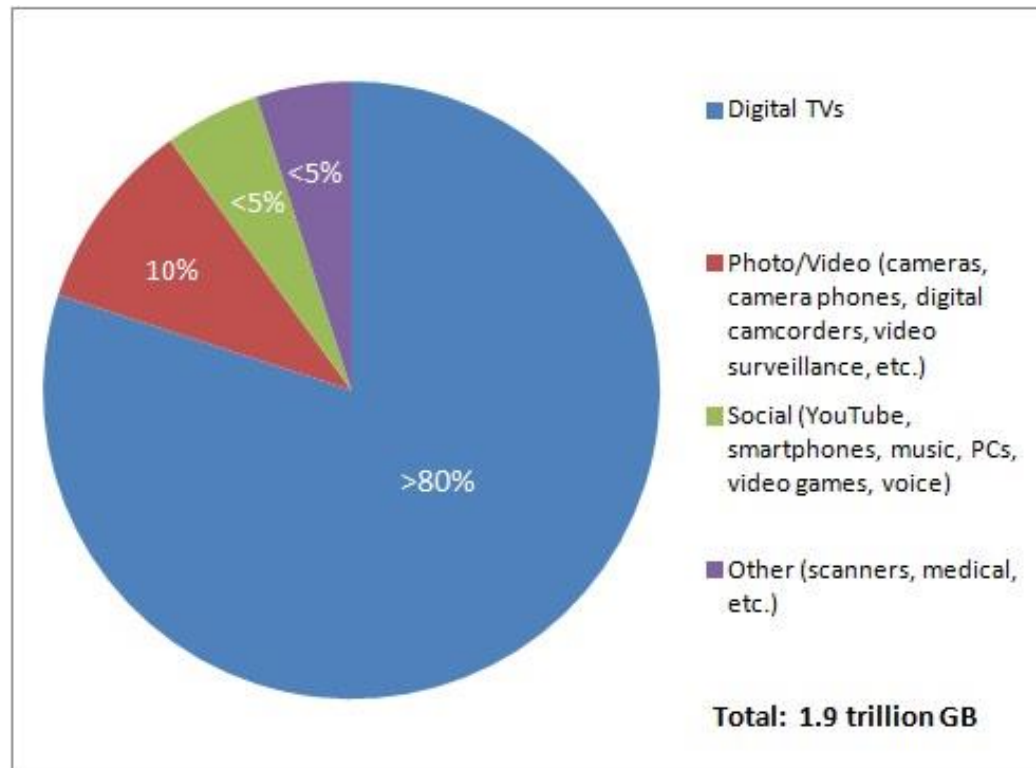


Data created in 2012 by Source

- In 2005, analysts at market research firm IDC began publishing an annual estimate of all the bytes added to the “digital universe”
- Defined as “all the information created, replicated, and consumed in a single year”
- the number has grown from 130 billion gigabytes to 2.8 trillion gigabytes in 2012
- IDC’s latest projection is that by 2020 the number will reach 40 trillion.

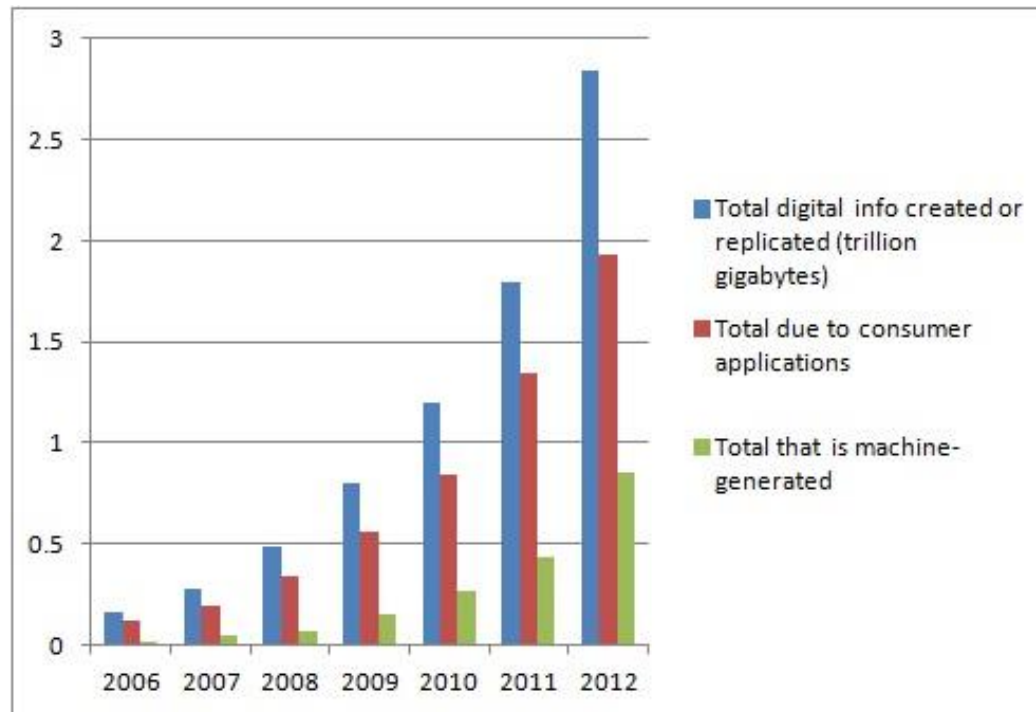
Data created in 2012 by Source

...Source: IDC



Data created in 2012 by Source

...Source: IDC



Data created in 2012 by Source

- The numbers show us that the world's supply of what is commonly called "big data"—pools of analysable and potentially useful digital information—is still relatively small
- Much of the data generated by consumers, like that episode of your favourite sitcom saved on your Sky+ box, isn't very useful for analysis and is eventually deleted
- More promising for big-data analysis are the readings from machines monitoring our world, from surveillance equipment and medical devices. And that's just getting started!

The Digital Intermediate Process

...from celluloid to digital to celluloid:

- 24fps images
- 2K = 2048x1556 pixels or 12.54MBps frames
 - $12.54 * 24 * 60 * 120 = 2166912$ MB or 2116GB or 2.0TB
- 4K = 4096x2048 pixels or 50.26Mbps frames
 - $50.26 * 24 * 60 * 120 = 8684928$ MB or 8481GB or 8.28TB

The Digital Intermediate Process

...from celluloid to digital to celluloid:

- Telecine from rushes, to picture lock
- Manual film scanning and editing (splicing, conforming, dust busting)
- Data Management (2.06TB per 6 reel 2K film requires 330Mbps jitter free playback per suite)

The Digital Intermediate Process

...Colour science and digital film recording:



Capital FX and 'Smart Thinking'

...how 'Smart Thinking' changed an industry:

- ARRISCAN Film Scanning
- Barcode reader
- Automating the splicing and conforming of reels
- Automating editing and shot selection
- Automating dust busting and scratch repair

Capital FX and 'Smart Thinking'

...how 'Smart Thinking' changed an industry:

- Data Management
 - Achieving 2.06TB per 6 reel 2K film
 - requires 330Mbps jitter free playback per suite
 - SGI GRIO SAN (NASA technology)
 - DMF and BETA testing

(Vodafone Maclaren Formula 1 and CERN)

The Digital Intermediate Process

...Colour science and ARRILASER film recording:

- Peter Doyle and his colour memory
- The spectrometer workflow approach
- Look up tables and colour cubes
- The new workflow proven with:
 - Deluxe Acquisition
 - Atonement and the Cinematography BAFTA
 - Children of Men (first remote colour grading)
 - EFILM London was born

The Digital Cinema Initiative

...how 'Smart Thinking' evolved an industry:

- Air/Sea/Land and language logistics for D&D release
- \$1BN annual cost
- “Have you ever heard of the DCI?”
- “What are you doing this afternoon?”
- Michael, Ali, Jim and JPEG2000 lossless compression
- DCP creation and distribution as an evolution of DI
- An industry first...
 - Ice Age 2:The Meltdown (and the Mammoth’s tail)
 - Casino Royale and piracy

How Oil and Gas could benefit from a
'Smart Thinking' approach



From the Silver Screen to Black Gold

...G&G challenges are very similar to film

- G&G data management challenges have been solved using Tiered storage architectures
- Remote playback of large G&G image sets is entirely possible using techniques pioneered to deliver 24fps 2K/4K
- Remote access to G&G workstations via Citrix Modular Architecture ThinClient and XenClient
- De-duplication and replication for business continuity (learn from Kodak's mistakes)

From the Silver Screen to Black Gold

...Oil and Gas is very slow to adopt new technologies

- Microsoft BPOS launched in 2008
- Flex LM licensing practices
- InfiniBand data networking
- Fibrechannel data networking (FCoE)

- *IT needs to be effective, not busy*

From the Silver Screen to Black Gold

At ISN, we're helping our clients to innovate and leading the way with 'Smart Thinking'...

- Geoscience challenges are very similar to film
- Many technical issues are already resolved (which mitigates your risk)
- Employ Citrix HDX and WAN optimisation (for competitive advantage)
- Embrace consultants with Citrix XenDesktop modular reference architecture experience
- Embrace consultants with High Availability and Citrix XenDesktop architecture experience
- We have existing case studies and are delivering smart thinking solutions in production environments to Oil and Gas multinationals

Summary

“Everybody gets so much information all day long that they lose their common sense”

Gertrude Stein

- Develop organisational ‘Smart Thinking’
- Research how other industries use technology
- Just because you’ve always done things the same way, doesn’t mean it’s the best way
- Employ consultants with expert base domain and target domain experience

Thank you
Any Questions?

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