



The Google Generation, the mobile phone and the 'library' of the
future: **David Nicholas, CIBER Research**

Introduction

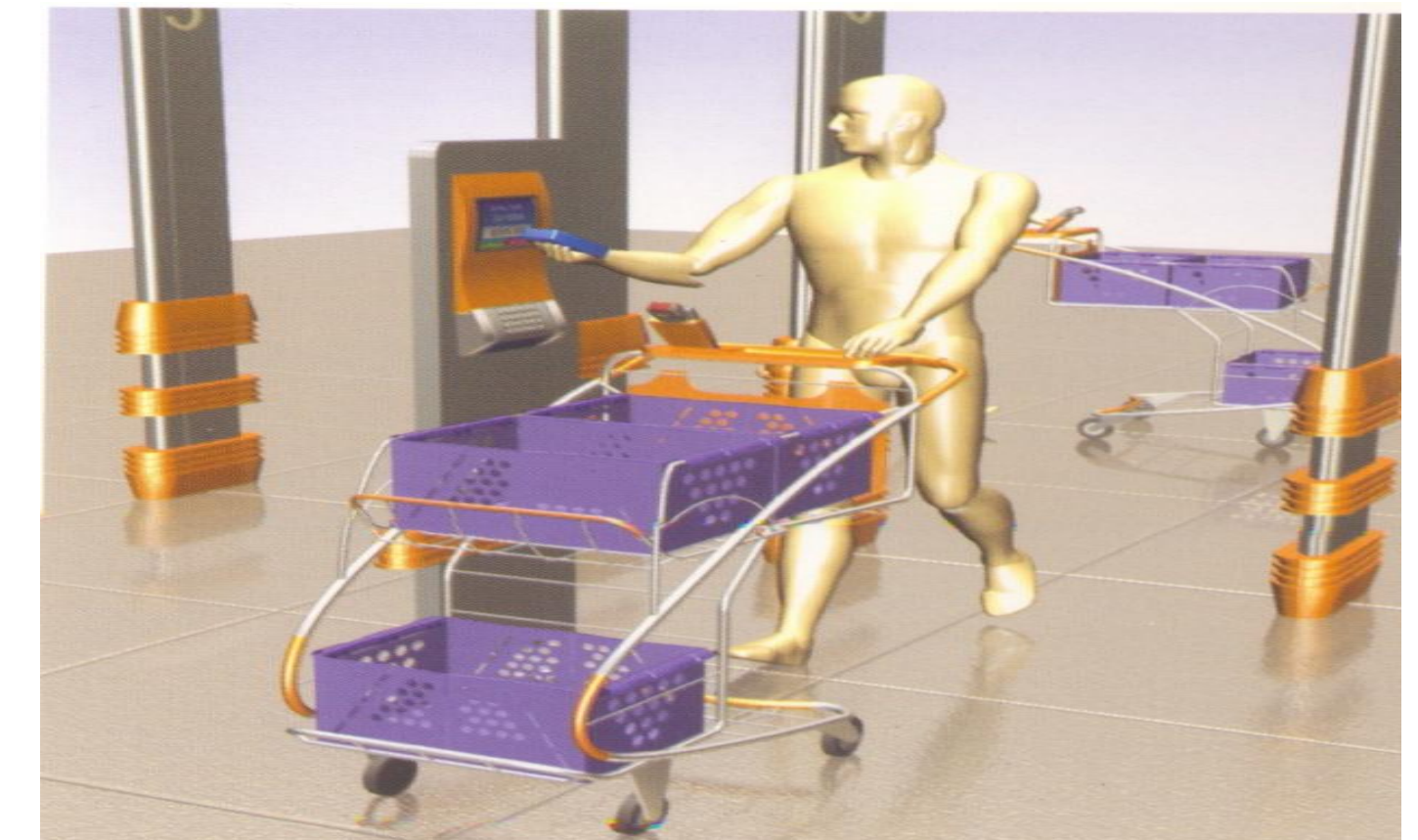
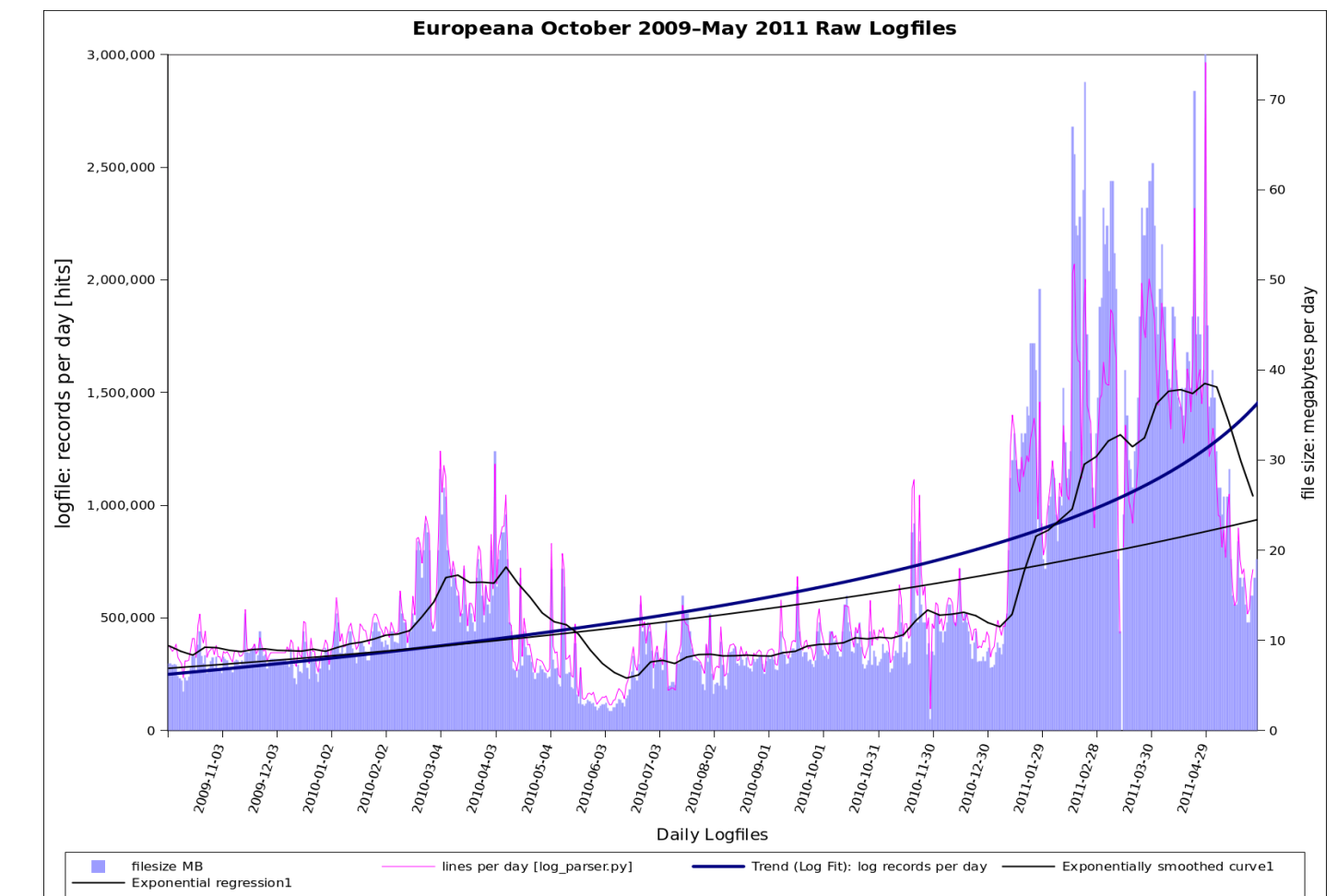
- Studying digital information consumers for 10 years and people thought we were mad talking about *bouncing, one-shots, promiscuity, fast bag pick-up, reading 'lite', digital consumers*
- These words represent the new age information seeking and reading.
- As will demonstrate have all moved to an 'extreme' form of information seeking and reading
- That of the GG, the born digital even more extreme
- And smartphone taking it all to another level completely; another round of disintermediation
- Where will it all end and what are the consequences?
- Talk built mainly on huge evidence base; result of studying the digital footprints of millions of digital consumers on many library/publisher platforms. Never known so much about how researchers find, read and use information.

So how do information consumers behave in the virtual space?



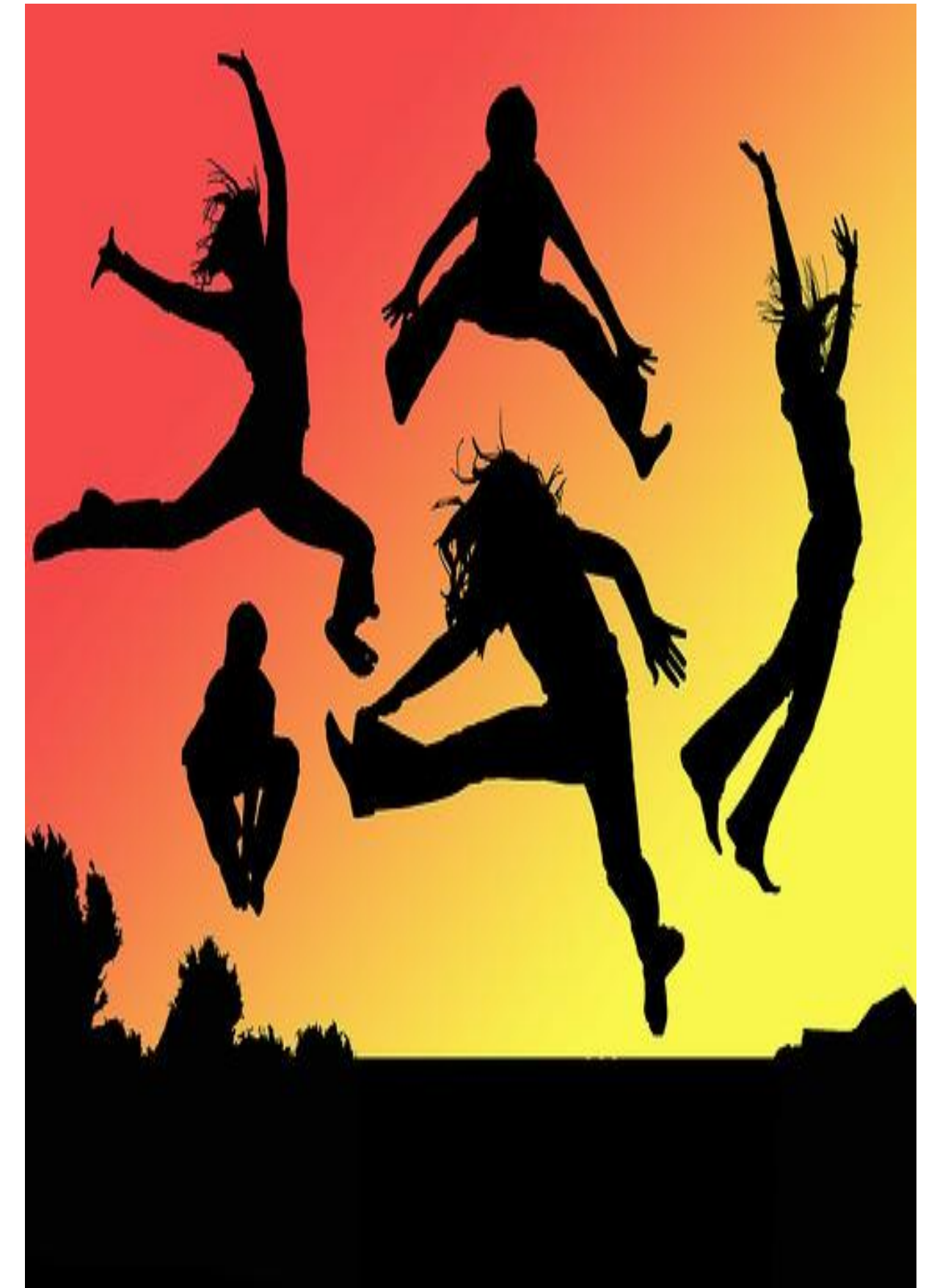
1. Very active, but much activity down to robots

- Staggering volumes of activity. It frenetic
- Access and disintermediation the main drivers:
 - a) new users drawn into information net. All connected to big fat information pipe. Put it up there and it **will** be used.
 - b) existing users can search more freely & flexibly – 24/7 anywhere and on the move
- Huge growth also down to:
 - a) more digitization and visibility; b) preference for everything digital; c) India and China; d) wireless/broadband; e) mobile devices – platform of choice for accessing web content now
- Lots of ‘noise’ (didn’t mean to use) and robots/crawlers - account for 80-90% of activity. Robots good - the new intermediaries?



2. Bounce a lot

- Most people view only 1-2 pages from thousands available; 3 is many
- Around 40% do not come back – they are promiscuous
- ‘One-shots’ abound (one visit, on page)
- Bounce because of:
 - search engine searching (lists) and links (enjoined to go elsewhere)
 - massive and changing choice
 - so much rubbish out there
 - ‘acceptance of failure’ – result of pragmatism, lack of time & overload
 - poor retrieval skills (2.2 words per query and first page up)
 - leave memories in cyberspace, which adds to ‘churn’ rate
 - direct result of end-user checking
 - effective searching strategy



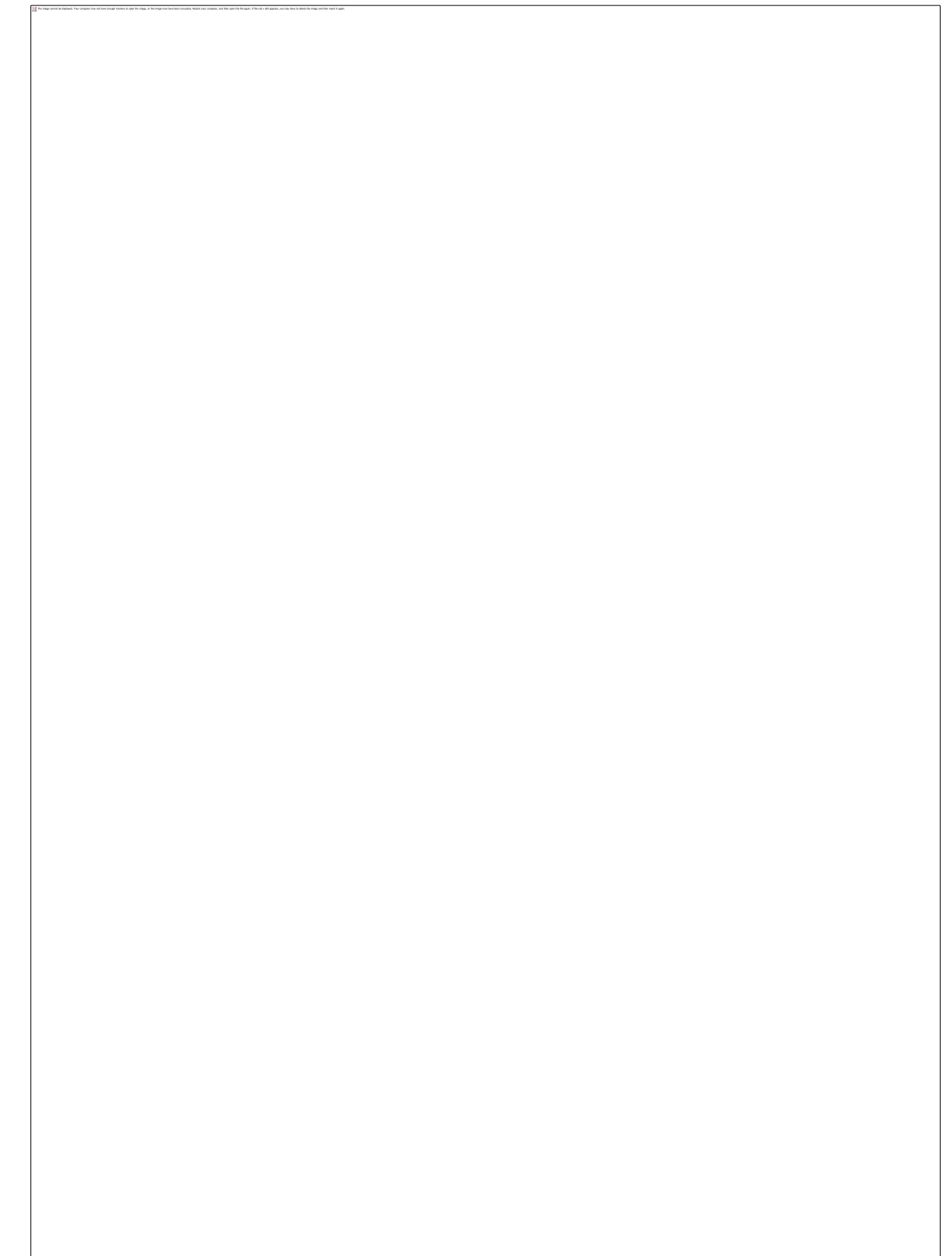
3. The horizontal has replaced the vertical

- In information seeking terms we 'skitter' (moving rapidly along a surface, with frequent light contacts or changes of direction)
- 'Power browse', drive-thru titles, headings, links & summaries at a fast rate. Charge for abstracts and give away PDFs!
- Building digital motorways through and between content means movement itself pleasurable...might be something (more) interesting around the corner. Lots of things never connected before – enter serendipity and nostalgia
- Hence popularity of third party sites, like Google Scholar
- And then there is multi-tasking – always more pleasurable to do several things at once rather than one thing
- Don't do 'deep' or long anymore (more on this later)



a. 4. Fast information

- As in life, the (information) snack/bite has replaced the three course meal (whole book/article)
- Been conditioned by emailing, text messaging, tweeting and PowerPoint to like/produce/want/need fast shots of information
- 'Fast bag pick-up' the gold standard
- Don't come in the front door; courtesy of Google, we deep dive
- Web designers & content providers thought we would dwell and knock on the front door. Do you remember site-stickiness?
- Avoid carefully-crafted discovery systems. Love Google and Scholar; even the very best researchers



5. Viewing has replaced reading

Nobody does much reading or not what is traditionally thought to be reading (reading whole documents). A read can mean 10-15% of a doc

Logs tell us:

- Scholars seem to go online to avoid reading;
- Only a few minutes spent on a visit; 15 minutes is a very long time;
- If it is an article then 3-4 minutes will be spent on it;
- Shorter articles have much bigger chance of being viewed;
- Abstracts have never been so popular 10:1
- If article long, summary will be read or it will be downloaded and squirreled away for another day (when it will not be read!). Something we call 'digital osmosis'
- We spend more time (dwell) on visual pages/sites
- Never wanted it all – batch processed, no choice. Change definition





The Google Generation

Game changers: the Google Generation (born digital ,1993-) and young generally

- Worries about what young were up to, carrying that into adulthood, workplace etc..
So how do they behave:
 - Greatest appetite for fast information and skittering
 - Quickest searchers, spend least time on a visit – fraction of time spent by adults.
 - But least confident about their answers. Lack of confidence explained by their behaviour – first one up, view fewer pages and domains and do fewer searches. First past the post approach endemic.
 - Queries much closer textually to questions posed, making them, not just fast food generation, but also `cut and paste' generation. As for multitasking, at which they `excel', they do it a lot, but not very well.
 - Ease of access sometimes trumps trustworthiness
 - Love smartphones
 - Young fast forwarded from a world where the focus was on knowing one big thing well to a world where you know many things, but not very well.
 - Don't do emails (Universities)





Smartphones and information on the go

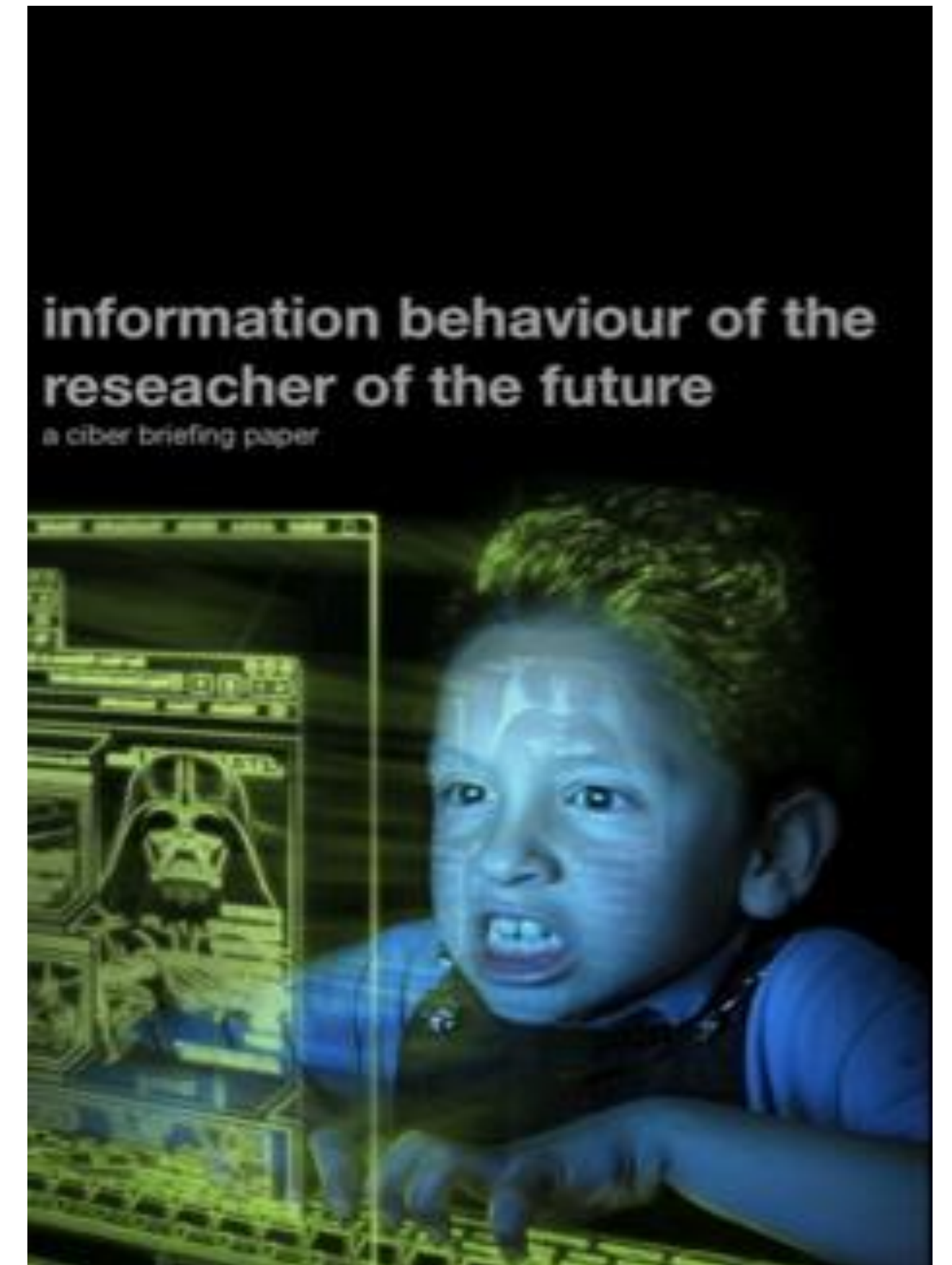
The tsunami hits: the second digital transition

Not seen anything yet, with information professionals (and teachers) barely taken breath and stock, another revolution is on us, and has a greater weight behind it

Google Generation (and the rest of us) have been empowered by a mobile device (smartphone/tablet) that will take a form of behaviour alleged as 'extreme' to a completely different level. **The end of culture as we know it!**

First transition, from physical to digital, transformed the way we seek, read, trust and consume information, but environment in which we conduct these activities had not really changed – still in the library/office, and on a device primarily designed for the desk/office bound.

This year mobile becomes the main platform for accessing the web and this means we are untethered



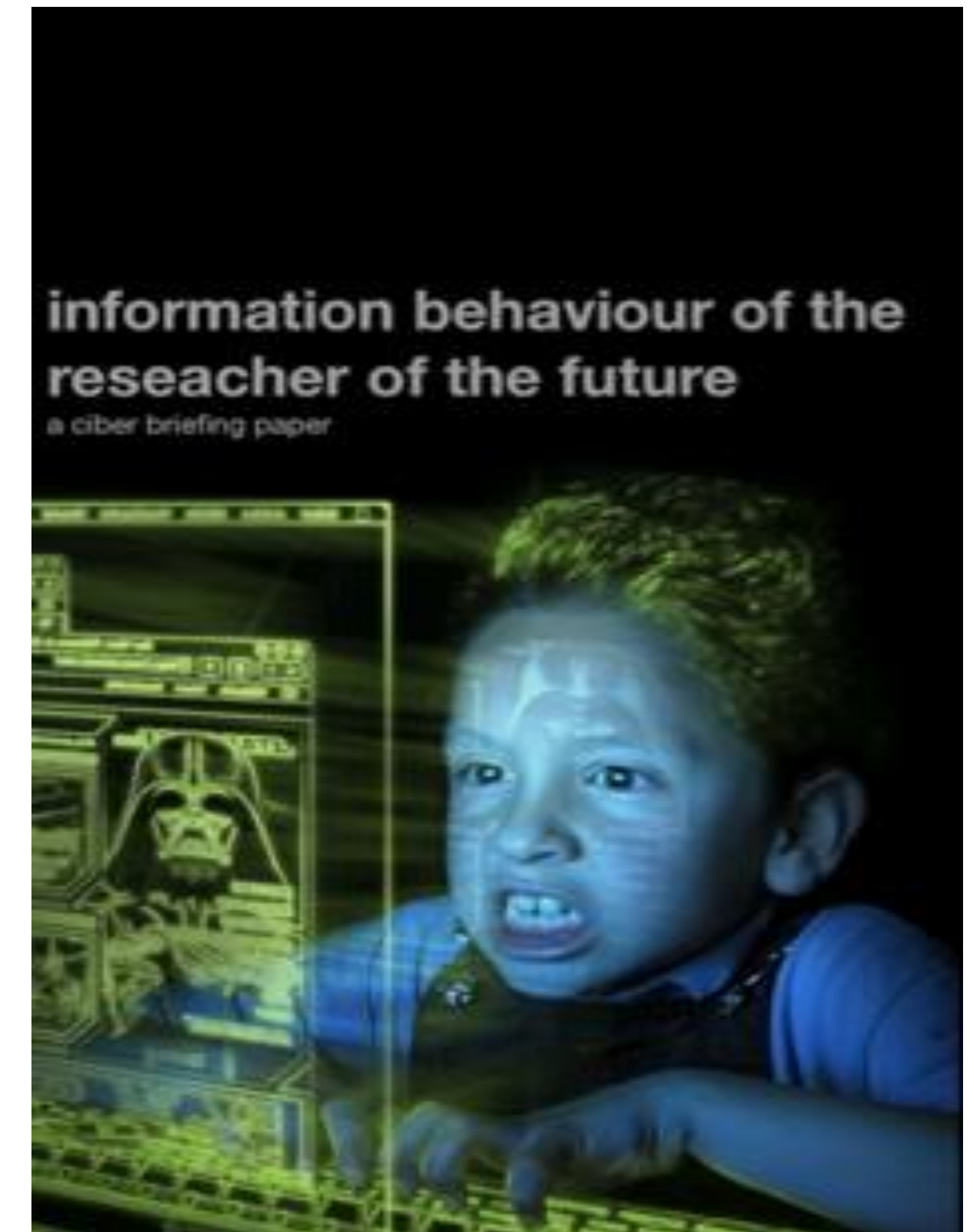
Key characteristics

1. Mobiles mean can meet information needs at time of need, rather than cold store until reach the office, library or home. Mean more needs are met, but perhaps not always that well.
2. 'Big deals' provide fantastic access to information to a privileged few; mobile provides access to masses of information for everyone and anywhere; and, open access increasing the haul;
3. Smartphones social media devices and stride major information worlds, informal & formal;
4. An intrinsic part of the digital consumer purchasing process – used to search for information prior to purchase, during process itself and to make purchase.
5. Trust mobile more than any other information/communication technology.
6. Smaller screens and different ways of interacting (via touch screens and voice recognition rather than keyboards and mice) and this impacts on use.



Key characteristics

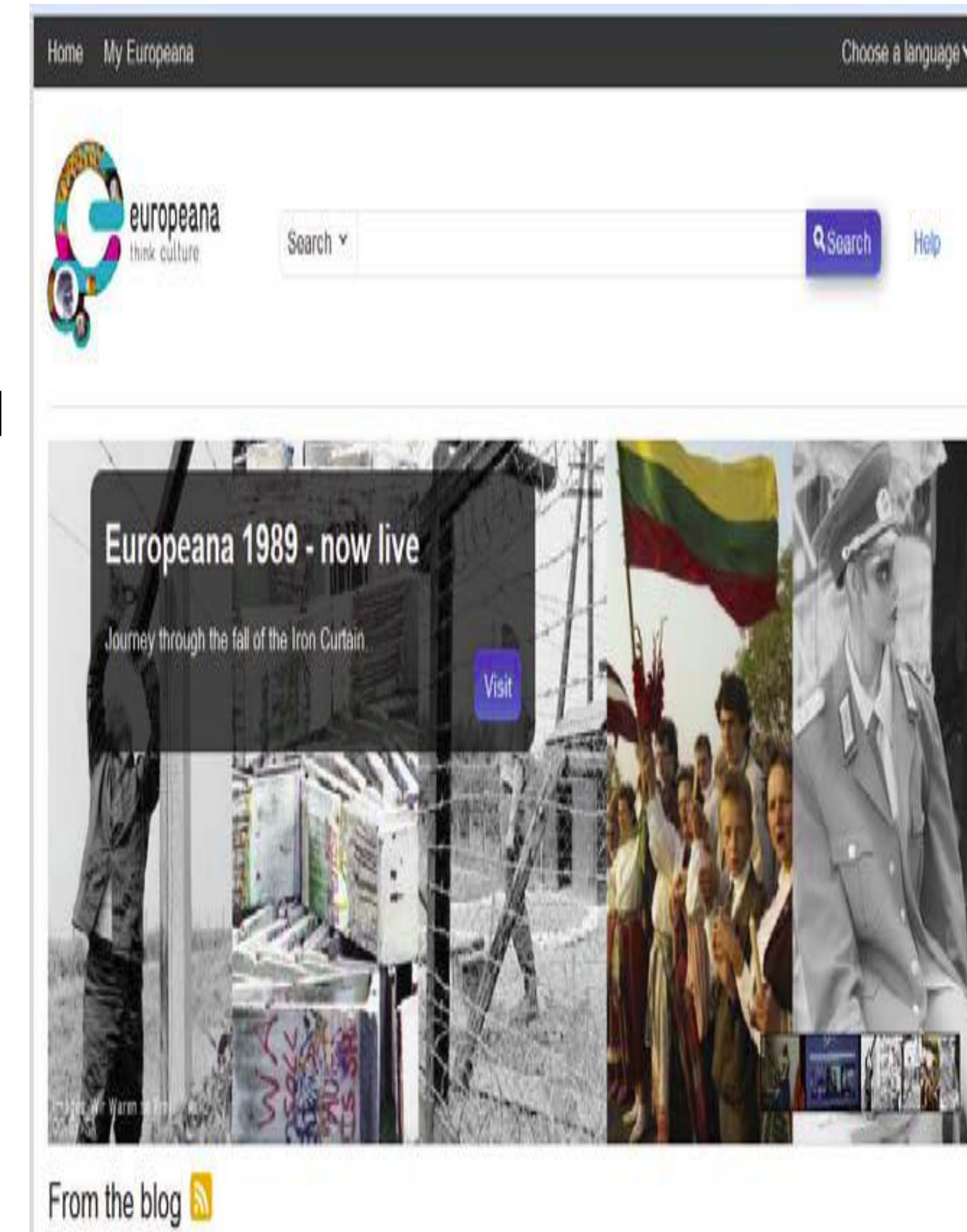
- Not computational devices but access devices; also social, personal, cool and massively popular. A very heady cocktail!
- And 'apps' are changing behavior yet again
- Mobiles devices have huge potential to:
 - a) draw in a larger and more diverse audience for (scholarly@ information
 - b) [further] change the nature of information seeking behaviour and to do this for billions of people,
- Despite the considerable challenges for all stakeholders in information industry know very little about a) how users behave in the mobile environment; b) how differently this behavior is from that associated with laptops and desktops.



Mobile use



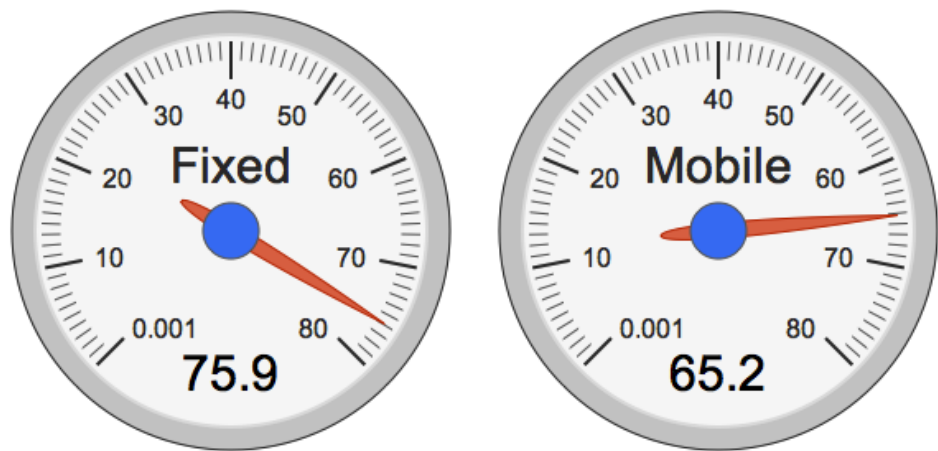
- Mobile usage growing at **5 times** greater than 'fixed' devices
- **Information 'lite.** Visits from mobiles much less interactive: fewer records/pages viewed, fewer searches conducted; less time spent on a visit.'
- **Differences between devices:** limited screen real estate and slowness of Blackberry means use very abbreviated indeed, iPhone quite abbreviated and iPad generates metrics closer to desktops/laptops. Little depth research on show.
- Mobile use peaks at nights and weekends; that from desktops on Wednesdays and late afternoon. Searching and reading has moved into the social space



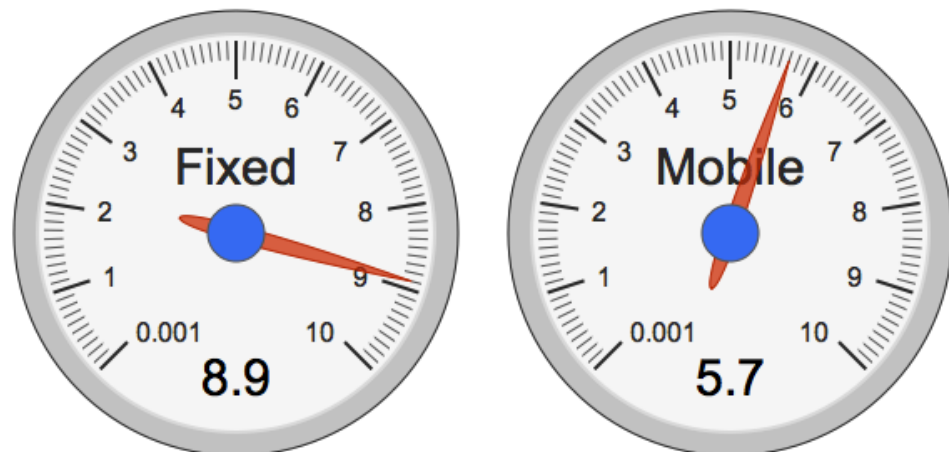
CIBER dashboard: fixed and mobile user information seeking compared



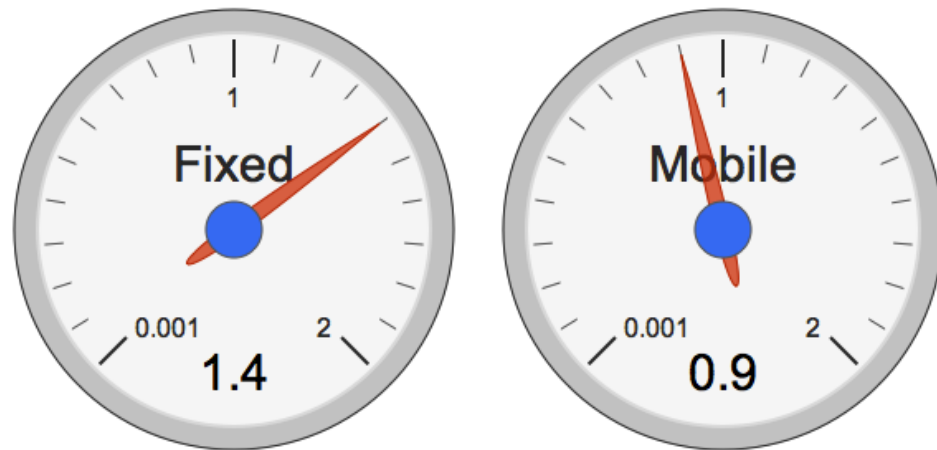
Duration of visit (seconds)



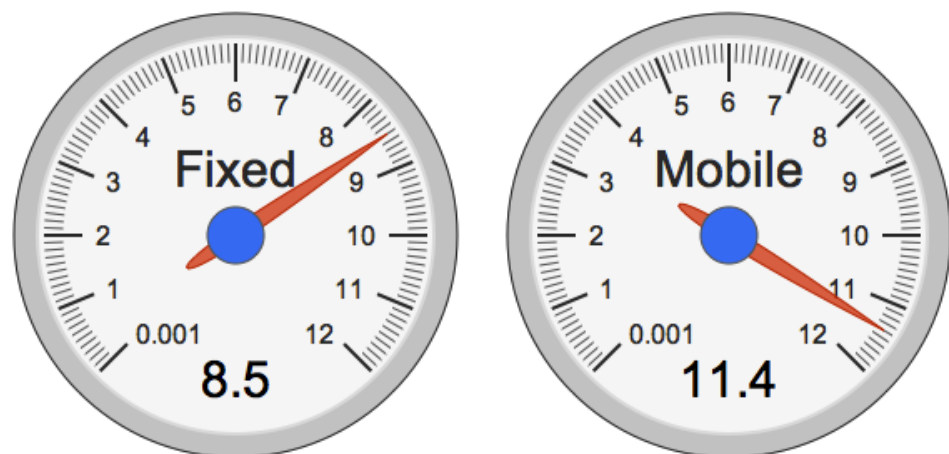
Page views per visit



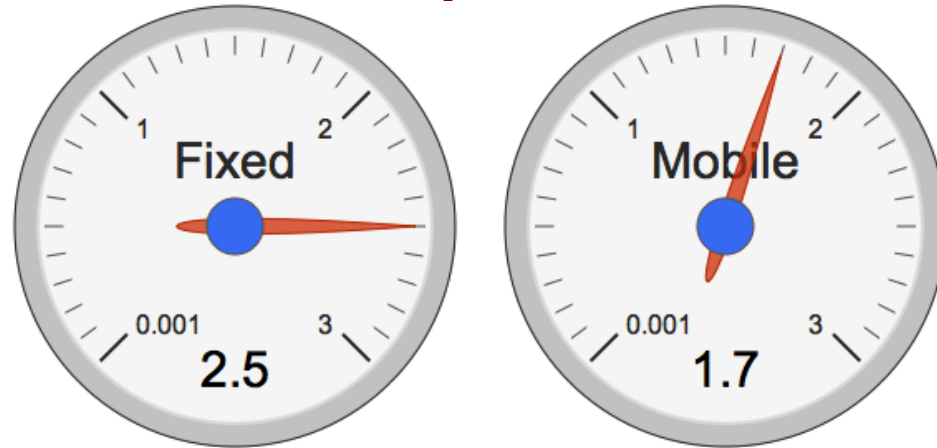
Queries per visit



Time per page (seconds)



Record views per visit



Visits from mobile devices are much less interactive: fewer records/pages viewed, fewer searches conducted; less time spent on a visit but longer on a page

CIBER dashboard: mobile platforms compared

Duration of visit (seconds)



Page views per visit



Queries per visit



Time per page (seconds)



Record views per visit



Big differences: limited screen real estate and slowness of the BlackBerry clearly a limiting factor for in-depth research. On the other hand, the tablet iPad generates usage metrics that are not hugely dissimilar from desktops or laptops.



Conclusions

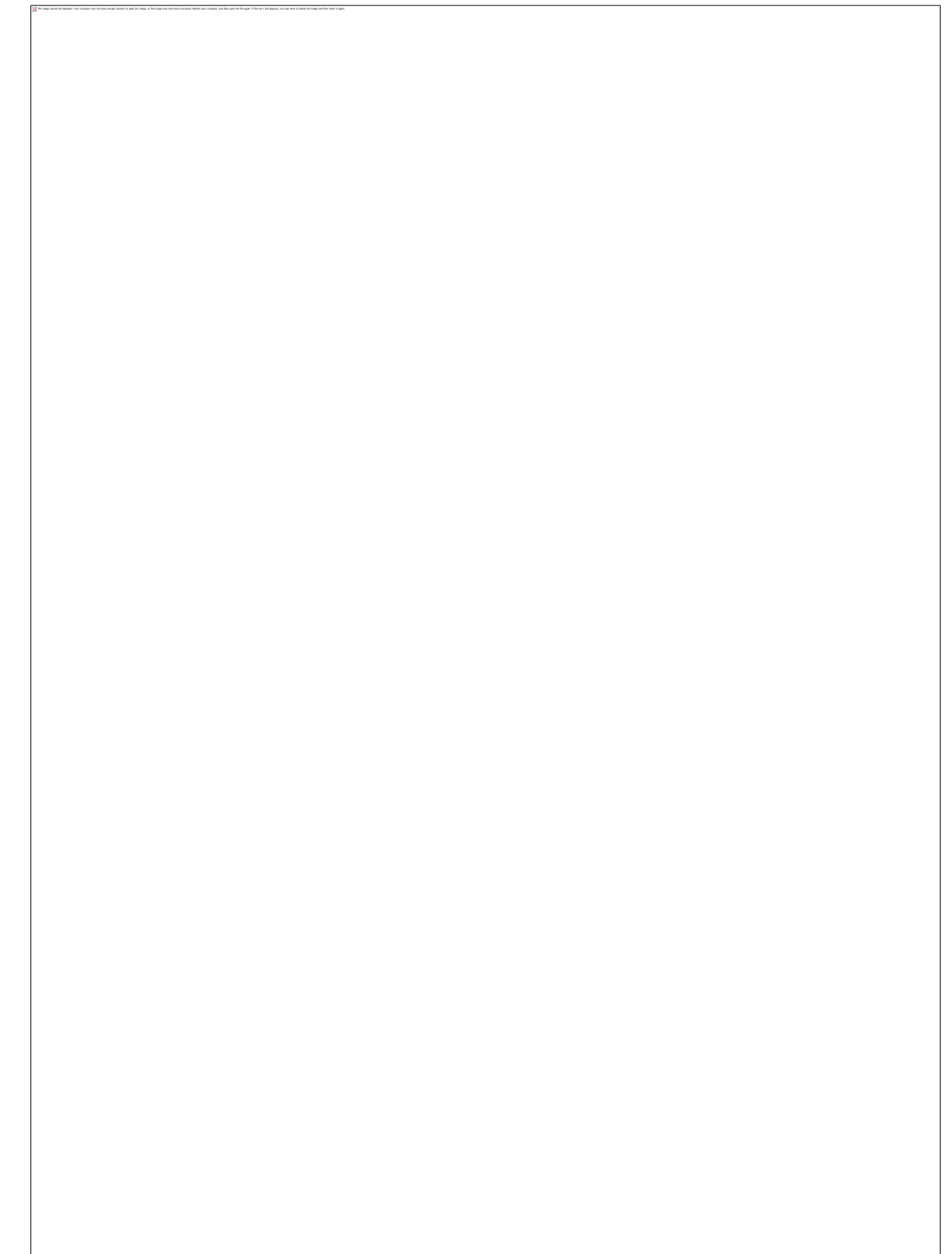
Its here to stay

- Neurologists say digital behaviour changes pattern of connections in brain – introducing new ones/dispensing with old ones; young brains rewire quickly
- Brain gets endorphin rush for finding information. So skittering could impact negatively on established skills as it chips away at capacity to concentrate & contemplate. Digital makes us stupid! Don't bother to remember (shrinking)!
- *Propensity to rush, rely on point-and-click, first-up-on-Google answers, along with unwillingness to wrestle with uncertainties and an inability to evaluate information, could keep us stuck on surface of 'information age'; not fully benefiting from 'always on' information*
- Writing been on wall for years about lack of reflective reading but lulled into complacency by sheer amount of 'activity' taking place in cyberspace



Big issues and reflections

- Maybe McLuhan's universe of linear exposition, quiet contemplation, disciplined reading and study is an ideal which we all bought into and developed services around. But...
- Maybe always wanted to skitter and power browse and did so when we could (out of view). Difference now is that opportunities for skittering are legion and this creates more skittering and pace is not letting-up (twitter)
- But there is just a possibility we are heading for a plane crash (the Google Generation are about to land) and who is going to ensure that we benefit fully from the digital information revolution? Teachers, librarians, parents, government or Google? More on this in the workshop!
- Can it be more abbreviated? Will we ever do deep?



Libraries in a borderless information world

- The smartphone is the library. How ironic
- We could not have come further from the original concept
- Constitutes another MASSIVE round of disintermediation and migration.
- What is the proposition, what is the mission now?

