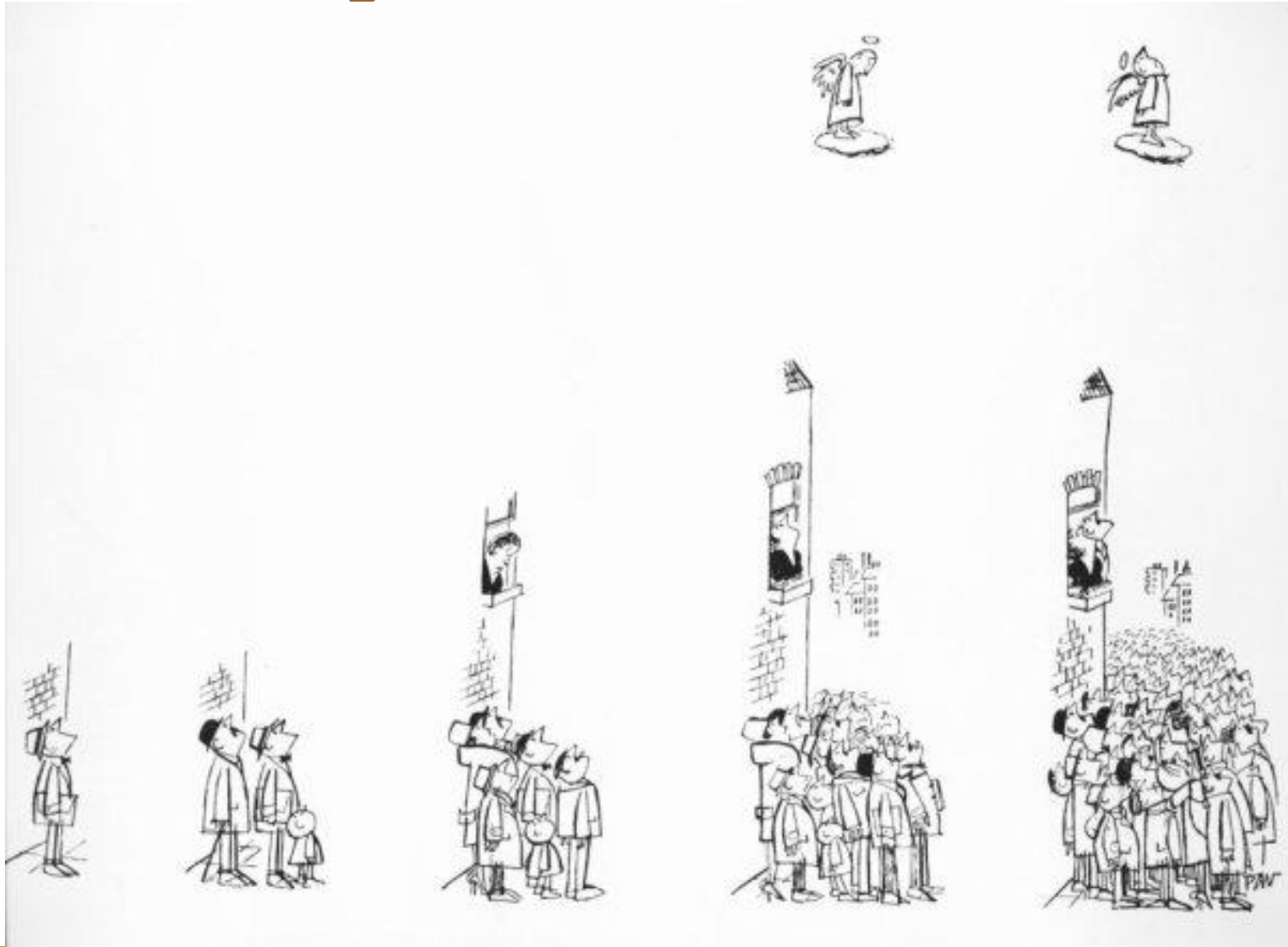# Digital library trends: Unfinished work

Tefko Saracevic, Ph.D.

How thinking about trends is established

From: Robert B Cialdini (1993). Influence: the psychology of persuasion

Futurists

- Some are envisioning the future professionally e.g.

[Thomas Frey](#) (Executive Director and Senior Futurist at the DaVinci Institute): [The Future of Libraries](#) - Beginning the Great Transformation
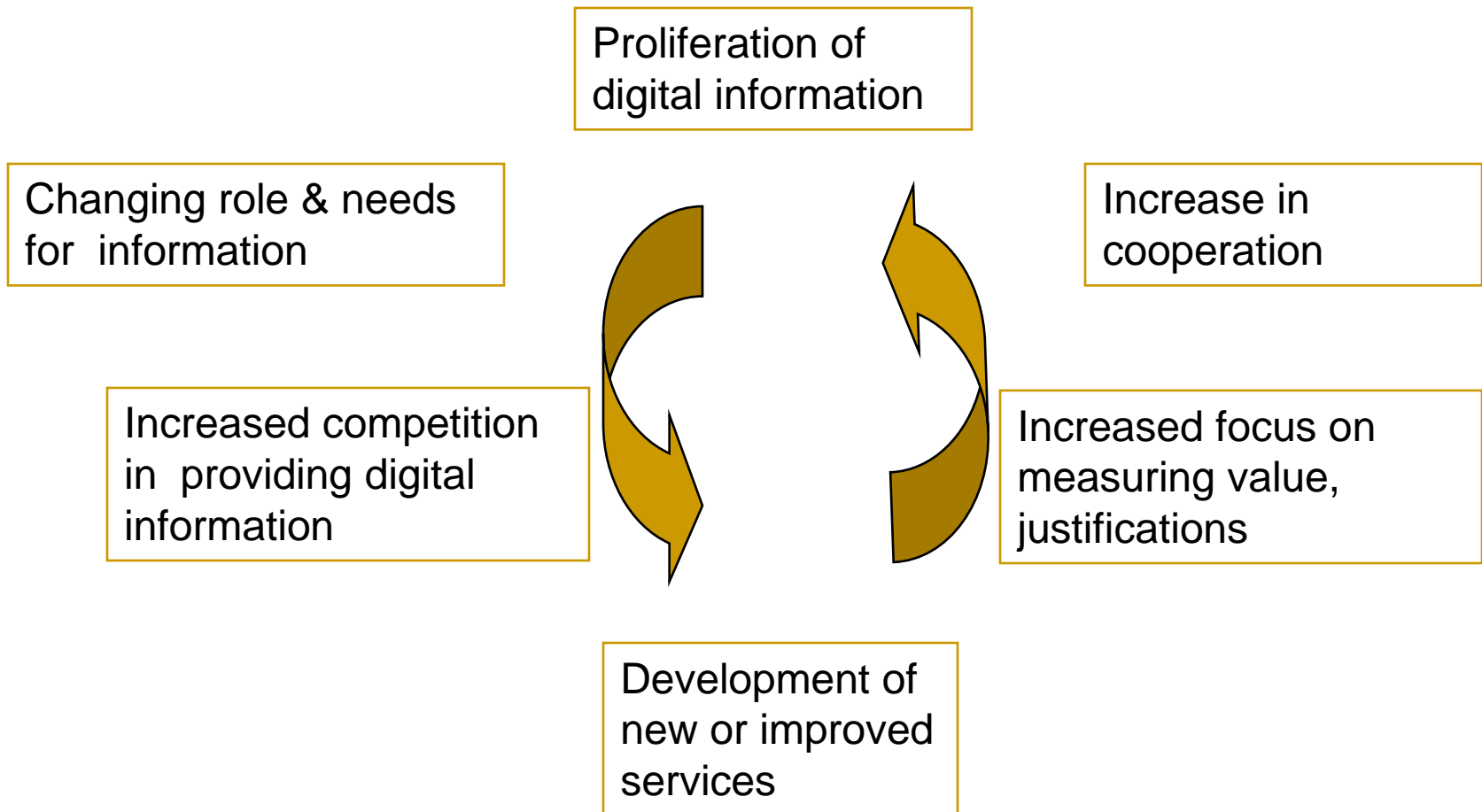
- But we will not "futurize"

- Here we will examine some immediate things that affect digital libraries from the viewpoint of their
  - general (macro) environment &
  - specific (micro) environment

ToC

- Six trends in general digital information environment
- Four changes in specific environment

With implications for digital libraries throughout

Digital information:
General trends & mutual effects

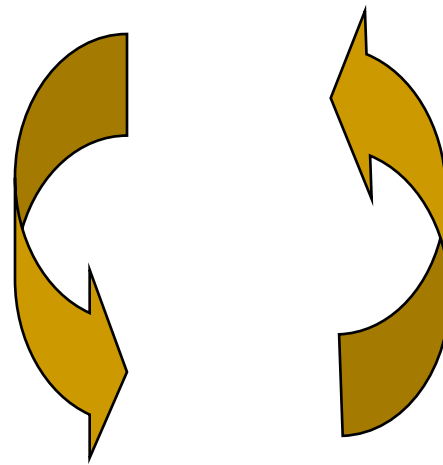Proliferation of digital information

Changing role & needs for information

Increase in cooperation

Increased competition in providing digital information

Increased focus on measuring value, justifications

Development of new or improved services

Digital libraries:
Plus changes in specific environments

Changes in immediate **institution or community**

Changes in D-lib **users** & uses

Changes in **legal, policy & political** contexts

Changes in D-lib **technology** developments

Summary: Effects of trends in D-lib environments (plural)

- D-libs are affected by trends in digital information in general:
  - **proliferation** of digital information
  - changes in **needs for & role of** d-information
  - increased **competition**
  - new **services**
  - **measuring, justification**
  - **cooperative activities**

as listed in the **first** slide

- Plus they are affected by specific changes in their
  - immediate **institutional or community** environment
  - **users** & **use**
  - **technology** developments
  - **legal, policy and political** contexts

as listed in the **second** slide

Tefko Saracevic

Effects on D-libs of

Proliferation of digital information

- Everything about digital information follows, so far, <u>Moore's law</u> (which is not about information but computer hardware: capacity of chips doubles every two years)

- Seems that digital information is also growing exponentially

- Many implications for digital libraries
  - among important ones are $$$$

... effects of proliferation (cont.)

- As budgets of libraries are not increasing, higher & higher proportions will go for digital resources & services
  - necessitating cuts for others
  - & changes in professional deployment of librarians
  - somebody has to run and manage these things - YOU

… effects of proliferation (cont.)

- Many libraries are increasing own digitization & playing an active role in proliferation
    - digitization of heritage (old stuff) & outputs of own institutions (new stuff) will increase
    - born digital from libraries will go up as well
- Many libraries are joining & even leading in preservation of digital records
    - & with it libraries are becoming an important social & cultural player in information society

… effects of proliferation (cont.)

- In turn these trends are creating needs for properly educated and trained digital librarians
  - curricula, distant (online, webinars) education, workshops … are adjusting to those needs & will adjust even more
  - professional life-long learning becomes imperative
  - you will constantly need to change & increase your professional competencies & keep up
    - this is a 100% sure trend

Effects on D-libs of

- Digital information is also distributed (role of the Internet) and accessed & used in a number of differing ways (role of the Web)
  - plus creation became relatively easy & sharable
- All continue to affect what information is needed and how it is used
  - the study of these needs & uses are proliferating in many fields & commercially
  - important for finding ways & means to satisfy changing needs & uses

... effects of changing use, needs (cont.)

- **D-libs are being accessed & used by users that are never setting a foot in the library physically, only virtually**
  - inspiring studies (or guessing) of needs and access ways of these virtual users
  - users studies of digital libraries & resources are on the rise & more are under way
  - involvement of librarians in such studies and in interpretation & translation of findings should become a trend
    - (but will it?)
  - to translate into appropriate responses

Effects on D-libs of

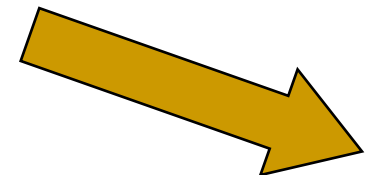Increased competition in providing digital information

- **A number of players got involved in digital information taking advantage of technology**
  - many new ones (Google, Amazon...) many old ones reconfigured (publishers e.g. Elsevier)
  - stakes are enormous & increasing
  - a major & rapidly growing industry
- **Competition is cutthroat**
  - national & global
  - with strategic significance for all

… effects of competition (cont.)

- **Libraries are finding themselves in unfamiliar territory – never had such competition**
  - positive trend: increasingly searching for and defining a constructive (and winning) role in that environment

… effects of competition (cont.)

- Negative contrast: gloomy pronouncements on increased irrelevance of libraries (or books, or print, or newspapers, or …)
  - percent of people reading any book or newspapers a year is falling – one trend
  - yet more books and a variety of magazines are made and sold a year then ever before – another trend

- Talking about books (one of the mainstreams of libraries)

Books & the old assumptions: Are they under siege?

- A lot of stuff is read now from the screen
  - so far books not that much
  - paper for books (i.e. analog) is still high
- However, will that change?
  - with a lot of **digitization** – ever more books are digital – effect of scale & variety
  - with new digital reader **technology** – ever more user friendly (e.g. Amazon's Kindle, Apple's iPad)
  - with new downloading & charging **methods** (e.g. Amazon, iBooks, ebrary for books, magazines, newspapers)
  - with new, wired, screen-oriented **generation**

Effects: New digital book & libraries

- Doomsday scenario:
  - users will bypass libraries in getting books
  - libraries will slowly get irrelevant as book holders
- Rethinking doomsday scenario:
  - libraries will adjust digital collections & services & offer "circulation" of digital books in new ways – value is added
  - services are free to own patrons – others are not
- Libraries will get a new and different life
  - if they adjust

Effects on D-libs of

Development of new or improved services

- ## On the Web new services, capabilities, products related to e-information are mushrooming
- ## Even established ones are improving & evolving in new directions
  - just think of paths taken by digitization of Google books & others

… effects of new services (cont.)

- **Libraries are participating in a number of new Web services**
  - e.g. Google book digitization involves many libraries, even national ones … going up & up
  - library catalogs & circulations are becoming a part of search engines
    - getting integrated into the online search experiences

... effects of new services (cont.)

- Also developing own new services, e.g.
  - e-reference: ask-a-librarian; chat reference
  - searching: incorporation of cross-database searching; filter options for refining searches; advanced searching by place, time, broad subject, & category; recommender services
    - geared toward "Less Searching, More Finding."
  - offering access to bibliography management software (e.g. RefWorks at RUL)
  - providing webcasts of events in the library

Effects on D-libs of

RUTGERS

- For commercial organizations measuring exchange value fairly straight forward: Return on investment (ROI), profits
  - even willing to take long term gamble, losses
- But indicators of use value new & in flux
  - tracking online visits: clicks, what words, phrases used most, ("bangs for the buck"), from where use came (addresses...); ranks in visits ...
  - instead of subscriptions measure downloads
  - use of tracking tools on the rise to justify value

... effects of measuring (cont.)

- **Measuring & interpreting access & use in digital libraries is complex**
  - standards slowly developing
    - ROI & value in exchange not appropriate
- **Use measures are often equated with value in use – similarly as circulation measures**
  - statistics measures used as performance measures
    - e.g.: visits; fill rate; downloads; percent of population (students, patrons) actually using; use level for titles

... effects of measuring (cont.)

- **New measures of value are constantly sought**
  - some are user-centric
    - e.g. experiences; outcomes - what did the user get out of the service; impact; scorecards
  - some within broader economic theory
    - considering libraries as <u>social capital</u>
  - some with arguments of value added by libraries to information & inf. objects
- **Pressure to justify is rising & rising**
  - yet actually finding ways to do so is not
  - what would be loss in terminating a library?

Effects on D-libs of Increase in cooperation

- **Connectivity coupled with cooperation becoming a major aspect of e-information**
  - benefit of feedback & contributions from a community - "wisdom-of-the-crowds"
- **Besides blogs & Wikipedia many examples**
  - arts and sciences collaboration
  - bookmarks with folksonomy: Delicious
  - many cooperative activities involving libraries

… effects of cooperation (cont.)

- Libraries have a long history of cooperation – continues in d-libraries
  - e.g. cataloging, consortia, OCLC, networks
  - cooperation on the rise because of necessity
- But there is also library type cooperation aimed at general public
  - all about books: cataloging your books, recommendations … LibraryThing
    - e.g. their entry for Librarians who LibraryThing
- More like that are appearing involving public
  - including social networking sites

Digital libraries & changes in specific environments

- **Role of changes in immediate context**
    - institution or community
    - users & use
    - technology
    - legal, policy, politics

- **Several large gravitational hubs of information infrastructure dominate**
    - Google, Amazon, Yahoo...

- **Trends in these environments impact digital libraries a lot**

Effects on D-libs of

- Educational institutions
  - trend: searching for role in digital environment
    - e.g. online offerings, open course materials (MIT)
- Public communities & governments
  - trend: e-government, e-communication
- Commercial organization
  - trend: increased participation in digital anything
- Libraries are trying to increase their participation in new or changing aspects of their institution, organization, community
  - if not they face being irrelevant to new directions

Effects on D-libs of

- **In many areas substantive changes**
  - e.g. tools & ways of research are changing dramatically
- **Open access movement continues to gain ground – but not without struggle**
  - significant support but also opposition rising
- **Social connections on the Web – big (for now)**
  - social media – libraries are joining them in droves
  - but also individualization - myXXXX
- **This keeps effecting d-libraries**
  - expectations & requirement of users changing
    - e.g. full texts required & expected

Effects on D-libs of

- Technologies have reconstructed or changed social structures including institutions – libraries as well – think of digital libraries
  - ❑ & have a potential to do so further
- In turn, social structures shape how we think about & use technology – digital libraries are a part of that as well
- Technologies change stuff & the changed stuff affects how we use & consider technology
    - ■ derived somewhat from <u>Giddens' structuration theory</u>

Effects on D-libs of technology (cont.)

- Constant appearance of new technologies – hardware & software – is a constant trend
- D-libraries are totally technology dependent & their users are becoming so
  - and will constantly keep chasing it
    - interaction with technology suppliers particularly of integrative & advanced software is becoming more sophisticated & knowledgeable on part of libraries
  - new access methods, hardware on the horizon
    - libraries & iPads or some such & users will probably expect that they can get to library that way

Effects on D-libs of

Changes in **legal, policy & political** contexts

- ## New forms of intellectual property rights for emergent information architectures of the 21st century are needed & sought

- ## Significant asymmetries in access to information have socioeconomic consequences – remedies are sought

- ## D-libraries (as libraries in general) will continue to try to affect these changes
  - voicing through a number of channels

Conclusion on d-lib trends

- **A proper borrowing on how to act:**

"Think globally, act locally."

- ❑ an environmentalist slogan
- ❑ coined by David Brower, founder of Friends of the Earth

But then …

"I only use email to get a hold of old people like you"

Email is for old people…new generations need something else!

On a different note -
not connected to d-libraries, but to all of us

The last lecture -

Randy Pausch
1960-2008