

Information Accessibility, Archiving and Organizational Accountability in a digital age

Dr G.J. van Bussel

Hogeschool van Amsterdam and

University of Amsterdam

g.j.van.bussel@hva.nl

Abstract

The world is changing rapidly. It is becoming an increasingly information-rich and information-dependent platform. Information is easily and (mostly) automatically recorded and stored to be accessed and retrieved on a later date. ICTs contribute to a (seemingly) inescapable loss of privacy, because this information is processed without knowledge or consent from individual people. Companies are building new ecosystems online, and are building online shops, communities, user groups, and other ways to promote their products. The economy is developing into a digitized economy. All boundaries between the virtual and the real worlds are blurring. The digital universe is expanding in unprecedented ways. But there is so much information generated, stored, and used, that its accessibility is in jeopardy, because the possibilities to identify information are becoming more difficult. To protect privacy and to enhance accessibility, the global legal frameworks are expanding, creating problems in implementing compliance frameworks for public and private organizations alike. Organizational accountability is dependent on accessible information. Public expectations do want objectives as transparency, privacy, due process, compliance, and security of organizational information implemented within legal frameworks. Not meeting those objectives is extremely 'bad for business'. For realizing information access, archiving is extremely important. Archiving is managing information over time using the 'information value chain' to guarantee the four dimensions of information (quality, context, relevance, and survival). It is quite surprising that there is almost no research done about the relationship between information accessibility, archiving, and the public demand for organizational accountability. For eGovernment to succeed, those three subjects are of vital importance.

Keywords

Accountability; Information access; e-government; information value chain; social dynamics.

Lecturer

From 1997 onwards, Dr Geert-Jan van Bussel is senior lecturer at the Hogeschool van Amsterdam and assistant professor at the University of Amsterdam, specialized in information and archival science. He was lecturer at the Dutch School for Archives from 1994 until 2009 and professor of Digital Archiving & Compliance at the Hogeschool van Amsterdam from 2012-2016. He is one of the most prominent auditors of archiving standards in the Netherlands. He is owner and director of an international auditing and management consultancy firm, specialized in enterprise information management, information governance and compliance. He is also member of the board of several ICT and consultancy firms. He has written six books (in Dutch) and more than 200 papers and journal contributions (several in English).

Introduction (Slide 1)

The United Nations E-government Survey 2016 gives an overview of the worldwide initiatives to use the World Wide Web for digital services and citizen participation¹. It covers the *status quo* and elaborates on results, challenges and ‘things-to-do’. It pays a lot of attention to rankings, to online service delivery, e-participation, government and collaborative governance, open data, and the digital divide. There is not much attention for what are, I think, the most essential subjects for the ultimate success for e-government: organizational accountability, archiving, and access to information. In this lecture, I will discuss these issues and the challenges they entail.

Online (Slide 2)

Our world is changing rapidly. Business practices and existing technologies, ways, and methods of communication are transforming. Information and communication technologies (ICTs) move quickly in and out of fashion. We have become users of mobile, wirelessly interconnected devices, using web-based communities and social networking sites as channels for socializing, sharing with friends and colleagues, collaborating, interacting, and participating in processes

¹ Department of Economic and Social Affairs, *The United Nations E-government Survey 2016. E-Government in Support of Sustainable Development* (New York: United Nations, 2016).

of innovation, production, government, and creating value². Companies are building online shops, communities, user groups, and other ways to promote their products. They are using and analysing the data they are gathering from their customers and the users of their online services to personalize their adverts, and to quickly develop new services. Governments try to do the same when communicating with their citizens. Libraries, archives, and other repositories are digitizing their collections and are making them available using the Internet.

(Slide 3) The semantic web allows applications and devices to understand the meaning of natural language and to communicate without human interference³. The technologies that let machines 'talk' to each other (machine-to-machine communication) are evolving fast, enabled by the development of (wireless) networks without human or centralized components. These (let's call them) 'talking machines' include everything from power and energy meters that report usage data automatically, to wearable heart monitors and to cars that automatically report their position and condition in the event of an accident.

Information is easily and (mostly) automatically captured, recorded, and stored to be accessed and retrieved on a later date. That becomes a problem

² Akamai, *The Hyperconnected World. A new era of opportunity* (Cambridge (Ma): Akamai, s.d.).

³ J. Davies, F. van Harmelen, D. Fensel, *Towards the semantic web: ontology-driven knowledge management* (New York: John Wiley & Sons, 2002).

when the collection, recording, and use of data about users happen (as it is often) without their knowledge or consent. ICTs contribute to an (seemingly) inescapable loss of individual privacy⁴. Most of this behaviour takes place behind the scenes, is barely noticed by users, and is done with only our tacit consent. The ‘ease’ of access to information in ‘the cloud’ (on a third-party device remotely located from the user) makes a users relationship with his or her information more tenuous⁵. In short: we are living in an information-rich and information-dependent world, collecting, creating, and using a lot of information with our online activities every day. We may call it ‘World 2.0’⁶.

(Slide 4) Physical objects, devices, and machines acquire artificial intelligence. They create the ‘Internet of Things’ as a connected intelligence that augments individual actions, automates processes, and integrates ‘intelligent’ machines into people’s lives⁷. The ability to analyse these ‘big data’ in real time

⁴ The problem of personal privacy in an information age is a much-debated and highly-controversial subject. There is a large body of literature. As an introduction: H. Nissenbaum, ‘Protecting privacy in an information age. The problem of privacy in public’, *Law and Philosophy* 17 (1998), no. 5-6, pp. 559–596; H. Nissenbaum, ‘Privacy as contextual integrity’, *Washington Law Review* 79 (2004), no. 1, pp. 119–158. About the effects of technological determinism on privacy: K.K. Stylianou, ‘Hasta La Vista Privacy, or how technology terminated privacy’, C. Akrivopoulou, A. Psygkas (eds.), *Personal Data Privacy and protection in a surveillance era. Technologies and practices* (Hershey (Pa.): IGI Global, 2010), Ch. 3, pp. 44-57. About the effects of Privacy Enhancing Technologies (PET): J. van de Pas, G.J. Van Bussel, ‘Privacy lost - and Found? Some aspects of regaining citizen's privacy by means of PET in the age of Big Data’, J. Devos, S. De Haes (eds.), *Proceedings of the 8th European Conference on IS Management and Evaluation. ECIME 2014. University of Ghent, 11-12 September 2014* (ACPI: Reading, 2014), pp. 278-285.

⁵ About the moral aspects of the use of ICTs and the gathering of personal information: J. Sullins, ‘Information technology and moral values’, E.N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Stanford: Stanford University 2014). Available online at: <http://plato.stanford.edu/archives/spr2014/entries/it-moral-values/>. Archived at: <http://www.webcitation.org/6buXaiRFL> (September 29, 2015).

⁶ F. Karakas, ‘Welcome to World 2.0: the new digital ecosystem’, *Journal of Business Strategy* 30 (2009), no. 4, pp. 23-30.

⁷ The Internet of Things is a popular subject, especially in combination with data mining and artificial intelligence. See for a critical review: D. Helbing, ‘Societal, economic, ethical and legal challenges of the digital revolution. From Big Data to Deep Learning, Artificial Intelligence, and Manipulative Technologies’, *Jusletter*, 21 mei 2015. Archived at: <http://arxiv.org/ftp/arxiv/papers/1504/1504.03751.pdf>.

makes it possible to loop insights immediately back into decision processes and allows for automation of responsive actions. Organizations should be extremely careful; ethics, transparency, and accountability should be assured, for these manipulative technologies could be disastrous for trust.

This hyperconnected world presents many possibilities for innovation and evolution, but only when companies and governments understand the dynamics of the online world⁸. There is very little time to address these changes: the rate technology is adopted continues to accelerate. Google+, for example, the social media tool from Google, took sixteen days to reach ten million users, compared with 780 days for Twitter and 852 days for Facebook⁹.

Information literacy (Slide 5)

Young people especially are said to be embracing the dynamic reality of World 2.0. They are said to be hyperconnected, having had life-long use of ICTs, earning them nicknames as 'net generation', 'digital natives', or 'homo-zappiens'¹⁰. Literature ascribes young people with special technological capabilities that distinguish them from older people. Young people are according to

⁸ For a comprehensive view about the relationship between ICTs and innovation: C. Antonelli, *The economics of innovation, new technologies, and structural change* (Oxford-New York: Routledge, 2014).

⁹ *The digitisation of everything. How organisations must adapt to changing consumer behaviour* (London: Ernst & Young, 2011), p. 4.

¹⁰ D. Tapscott, 'Educating the net generation', *Educational Leadership* 56 (1999), no. 5, pp. 6-11; M. Prensky, 'Digital Natives, Digital Immigrants', *On the Horizon* 9 (2001), nr. 5, pp. 1-6; W. Van Veen, B. Vrakking, *Homo Zappiens. Growing up in a digital age* (London: Continuum, 2006).

Marc Prensky ‘fluent in the digital language of computers, video games and the Internet’¹¹. But the ‘digital native’ literature is not about documenting young people’s use of ICTs, but more about the practices that ICTs support and facilitate in their lives¹². It does not provide an accurate or objective account over the digital skills and abilities of young people¹³. The abilities of young people to access ICTs are determined by socio-economic status, social class, gender, and geography¹⁴. Some groups of young people are just as excluded from access to ICTs as older people are. While more young people use the Internet and other technologies than older people, there are differences in how effectively they use ICTs¹⁵. There is a predominance of gaming, text messaging, retrieval of online music, movies, or information, and use of social media, especially Snapchat, Facebook, Instagram, Twitter, Vine, and Pinterest¹⁶. The engagement of young

¹¹ M. Prensky, ‘Listen to the natives’, *Educational Leadership* 63 (2005), no. 4, pp. 8-13. Citation: p. 8.

¹² N. Selwyn, ‘The digital native - myth and reality’, *Aslib Proceedings: New Information Perspectives* 61 (2009), no. 4, pp. 364-379, esp. p. 366; N. Selwyn, ‘Doing IT for the kids’, *Media, Culture & Society* 25 (2003), no. 3, pp. 351-378.

¹³ Selwyn, ‘The digital native’, pp. 370-371. For other critical reviews of Digital Native literature: S. Bennett, K. Maton, L. Kervin, ‘The ‘digital natives’ debate: A critical review of the evidence’, *British Journal of Educational Technology* 39 (2008), no. 5, pp. 775-786; E. Helsper, R. Enyon, ‘Digital natives: where is the evidence?’, *British Educational Research Journal* 36 (2010), no. 3, pp. 503-520; and especially: R. Schulmeister, ‘Vom Mythos der Digital Natives und der Net Generation’, *Berufsbildung in Wissenschaft und Praxis* 41 (2012), no. 3, pp. 42-45.

¹⁴ For the determinants of ICT accessibility: P. Golding, ‘Forthcoming features: information and communications technologies and the sociology of the future’, *Sociology* 34 (2000), no. 1, pp. 165-184; and E. Hargittai, ‘Digital na(t)ives? Variation in Internet skills and uses among members of the net generation’, *Sociological Inquiry* 80 (2010), no. 1, pp. 92-113.

¹⁵ Selwyn, ‘The digital native’, p. 372. Also: S. Livingstone, E. Helsper, ‘Gradations in Digital Inclusion: children, young people and the Digital Divide’, *New Media & Society* 9 (2007), 671-696; E. Hargittai, A. Hinnart, ‘Digital Inequality: differences in young adults use of the Internet’, *Communication Research* 35 (2008), no. 5, pp. 602-621; and N. Selwyn, K. Facer, ‘Beyond digital divide: towards an agenda for change’, E. Ferro, Y. Dwivedi, R. Gil-Garcia, M. Williams (eds.), *Handbook of research on overcoming Digital Divides. Constructing an equitable and competitive Information Society* (Hershey (Pa.): IGI Global, 2009), Ch. 1, pp. 1-20.

¹⁶ S. Colwyn, ‘Which social networks are most popular with teenagers? [#DigitalInsights]’: <http://www.smartinsights.com/social-media-marketing/social-media-platforms/teen-usage-of-social-media/>. Online source. Archived at: <https://web.archive.org/web/20160405170624/http://www.smartinsights.com/social-media-marketing/social-media-platforms/teen-usage-of-social-media/> (May 31, 2016).

people with technology is passive, sporadic, unspectacular, and oftentimes solitary. It is most often passive consumption of information¹⁷. There is little evidence that young people are different in the ways they use and process information¹⁸. That does *not* mean, there are no problems. There is a 'digital divide' and there is a problem with digital literacy.

We must be honest: a digital divide is a *symptom*, not a *cause* of socio-economic inequalities. It reflects (often deep) social, cultural, racial, economic, and educational divides in society. To have access to ICTs and the Internet is *not* a solution for those problems¹⁹. Beyond access to technology, people need to know *how* to employ that technology²⁰. Or, as Paul Gilster said, 'Digital literacy is about mastering ideas, not key-strokes'²¹. As a consequence, it is better to talk about information literacy, the ability, competences, and skills needed to find, obtain, access, comprehend, and contextualize information *itself*, using every ICT available to reach that objective²².

And it is here that we engage serious problems. The social and economic

¹⁷ M. Madden, A. Lenhart, S. Cortesi, U. Gasser, M. Duggan, A. Smith, M. Beaton, *Teens, Social Media, and Privacy* (Washington, DC: Pew Research Center, 2013). Available online: <http://www.pewinternet.org/2013/05/21/teens-social-media-and-privacy/>. Archived at: <http://www.webcitation.org/6bw5IMLjn> (September 30, 2015).

¹⁸ Bennett, Maton, Kervin, 'The 'digital natives' debate', pp. 775-786.

¹⁹ A.B. Potter, 'Zones of silence. A framework beyond the digital divide', *First Monday* 11 (2006), no. 5 (May). Available online: <http://firstmonday.org/ojs/index.php/fm/article/view/1327/1247>.

²⁰ Gunkel, 'Second thoughts', p. 504.

²¹ P. Gilster, *Digital Literacy* (New York, Chichester: Wiley Computer, 1998), p. 15.

²² M.B. Eisenberg, 'Information literacy: Essential skills for the information age', *Journal of Library & Information Technology* 28 (2010), no. 2, pp. 39-47. See also: D. Bawden, 'Information and digital literacies: a review of concepts', *Journal of Documentation* 57 (2001), no. 2, pp. 218-259. An early proponent of information literacy as a mindset: P. Drucker, 'Be data literate - know what to know', *Wall Street Journal*, 1992, 12 (1), A16.

impact on society of digital exclusion, the situation that parts of the population are not literate enough (or do not have the economic and social possibilities) to access, retrieve, or make use of information using the ICTs of this time, are enormous. Parts of the population cannot cope with World 2.0 because they do not utilize the technical and cognitive skills needed. The accessibility of information reflects both existing inequalities in society and deficiencies in information literacy. In 2014, thirty per cent of all Europeans lacked the digital skills to perform online tasks²³. Literacy is an essential life skill, viewing the enormous amounts of digital information. It will, in the end, define success for e-government.

Expanding data (Slide 6)

The digital universe is doubling in size every two years²⁴. The growing amounts of information are created by the seemingly infinite opportunities to publish on the Internet, by global electronic communications, by an explosion in devices located at the periphery of the network like embedded sensors, smartphones, and tablet computers, by aerial sensory technologies, software

²³ G. Vitiello, M. Sebillio, G. Tortora, P. Di Giovanni, A. Ginige, 'Overcoming the Digital Divide in Europe: Let's learn from emerging countries', L. Mola, F. Pennarola, S. Za (eds.), *From Information to Smart Society* (Berlin, Heidelberg: Springer, 2015), pp. 209-220. Eurostat states that eighteen per cent of the Europeans never uses the internet ('Internet and cloud services - statistics on the use by individuals', H. Seybert, P. Reinecke, *Statistics in Focus* (Brussels: Eurostat, 2014), 16/2014. Available online at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Internet_and_cloud_services_statistics_on_the_use_by_individuals). Archived at: <http://www.webcitation.org/6bxBNPZEx> (October 1, 2015).

²⁴ V. Turner, D. Reinsel, J. F. Gantz, S. Minton, *The Digital Universe of opportunities. Rich Data and the increasing value of the Internet of Things* (Framingham (Ms.): IDC, 2014), Executive Summary, p. 1. Available online at: <http://www.emc.com/leadership/digitaluniverse/2014iview/index.htm>. Archived at: <http://www.webcitation.org/6bxBgaxbB> (October 1, 2015).

logs, cameras, microphones, radio frequency identification readers, wireless sensor networks, and by large-scale digitization of organizational processes²⁵. It creates new opportunities for analytics²⁶, but without being information literate, it will be almost impossible to gain access to the information needed to live your life.

Some examples.

In September 2013, on average 350 million pictures were uploaded on Facebook every day²⁷. Twitter processed 7,127 tweets every second in February 2016, almost 616 million a day²⁸. YouTube users are uploading one hundred hours of new video every minute of the day²⁹. The University of Ontario collects nearly one hundred million data points per day from premature babies, analyses them in real time, and stores them for re-use³⁰. In 2014 and 2015, 205 billion emails were sent every day, of which almost 54 billion were spam messages and 973 million malware emails³¹. And so on, and so on.

²⁵ J. Armitage, J. Roberts (eds.), *Living with cyberspace. Technology and society in the 21st century* (London, New York: Continuum, 2002); J. Manyika (ed.), *Big Data. The next frontier for innovation, competition, and productivity* (McKinsey Global Institute, 2011).

²⁶ B. Golden, 'Cloud computing: How big is big data? IDC's answer', *CIO*, May 7, 2010.

²⁷ For Facebook: *A focus on efficiency. A white paper of Facebook, Ericsson, and Qualcomm* (Internet.org, 2013), p. 33. Available online at: https://fbcdn-dragon-a.akamaihd.net/hphotos-akxpa1/t39.23656/12057133_958179554220316_12360-52925_n.pdf. Archived at: <http://www.webcitation.org/6bxOVnFFg> (October 1, 2015).

²⁸ Twitter Usage Statistics: <http://www.internetlivestats.com/one-second/#tweets-band>. Online source. Archived at: <http://www.webcitation.org/6ffBYggwN> (February 29, 2016).

²⁹ YouTube statistics, <https://www.youtube.com/yt/press/statistics.html>. Online source. Archived at: <https://web.archive.org/web/20141208221847/https://www.youtube.com/yt/press/statistics.html> (October 2, 2015).

³⁰ B. Hopkins, B. Evelson, *Expand your digital horizon with Big Data* (Cambridge (Ms.): Forrester Research Inc., 2011), p. 2.

³¹ S. Radicati, J. Levenstein, *Email Statistics Report, 2015-2019* (Palo Alto (Ca.): Radicati, 2015). Available online at: <http://www.radicati.com/wp/wpcontent/uploads/2015/02/Email-Statistics-Report-2015-2019-Executive-Summary.pdf>. Archived at: <http://www.webcitation.org/6c0BsKScK> (October 3, 2015); *Internet Threats Trend Report* (Palo Alto (Ca.):

To quantify the global growth in the amount of information is almost impossible. Research results differ because of the different definitions and methods used. Research agrees on one basic fact: the astonishing growth-rate in the amounts of information in the world. IDC expects the Zetabyte era to start somewhere around 2020. It illustrates the rapid evolution of digitization in the first fifteen years of the 21th century³².

There can be no doubt that the expanding digital universe has an impact on society. A practical indication, for instance, of the consequences of the growing amount of information are the rising amounts in spending on ICTs for document-, content- and records management, information retrieval, ediscovery, capture, classification, and storage, despite (large) economic problems³³. The growing mass of information is influencing the way many organizations manage and operate their business processes, approach their customers, unlock economic value, analyse their markets, spot business trends, and add value for their

Cyberoam, 2014). Available online at: <http://www.cyberoam.com/downloads/ThreatReports/CyberoamCYREInternet-Threats2014April.pdf>. Archived at: <http://www.webcitation.org/6c0CuG8Lx> (October 3, 2015).

³² P. Lyman, H.R. Varian, *How much information?* (Berkeley: School of Information Management and Systems, University of California, 2003). For the executive summary of this research: <http://groups.ischool.berkeley.edu/archive/how-much-info-2003/execsum.htm>. Archived at: <http://www.webcitation.org/6c0IPx1NH> (October 3, 2015); J.F. Gantz, D. Reinsel (eds.), *The expanding digital universe. A forecast of worldwide information growth through 2010* (Framingham (Ms.): IDC, 2007), Executive Summary, p. 2. Available online, and archived at: <https://web.archive.org/web/20141023090736/http://www.emc.com/-collateral/analyst-reports/expanding-digital-idc-white-paper.pdf> (October 4, 2015). Other IDC reports used: J.F. Gantz, (ed.), *The diverse and exploding digital universe. An updated forecast of worldwide information growth through 2011* (Framingham (Ms.): IDC, 2008); J. Gantz, D. Reinsel (eds.), *As the economy contracts, the digital universe expands* (Framingham (Ms.): IDC, 2009); J. Gantz, D. Reinsel (eds.), *The digital universe decade. Are you ready?* (Framingham (Ms.): IDC, 2010); J. Gantz, D. Reinsel (eds.), *Extracting value from chaos* (Framingham (Ms.): IDC, 2011); and J. Gantz, D. Reinsel, *The Digital Universe in 2020: Big Data. Bigger digital shadows, and biggest growth in the Far East* (Framingham (Ms.): IDC, 2013); and, of course, M. Hilbert, P. López, 'The world's technological capacity to store, communicate, and compute information', *Science* 332 (2011), no. 6025, pp. 60-65. See esp. p. 63, table 1.

³³ *Quarterly Statistics: disk array storage, all regions, all countries, 4Q13 update* (Stamford (CT): Gartner, 2014).

stakeholders. Information provides insights into public and private accountability. The globally expanding legal frameworks are making organizational accountability extremely important. These frameworks are making increasing demands for organizational ICTs to process information secure and transparent, to generate trusted information, to protect privacy, and to realize the accessibility of information³⁴.

Expanding regulations (Slide 7)

World 2.0 is changing requirements for organizational behaviour, mostly as a result of antiquated legislation and public and governmental expectations. Both have been violated many times in the past decades, resulting in a global increase in the number of regulations, guidelines, and standards to enforce public accountability and transparency.

Although there are many examples of misconduct, fraud-like fictitious transactions, and falsifying financial results before, the business scandal that really resulted in stringent new regulations was the American energy company Enron, revealed in 2001. This scandal also resulted in the dissolution of the ac-

³⁴ M. Stefik, *The Internet Edge. Social, technical, and legal challenges for a networked world* (Cambridge (Ms.): The MIT Press, 2000). Also: K. Cukier, 'Data, data everywhere', *The Economist. A special report on managing information*, February 27, 2010, pp. 1-3.

countancy and audit company Arthur Andersen³⁵. As a consequence, new legislation was introduced to increase penalties for destroying, altering, or fabricating information, for defrauding shareholders, and to increase accountability of accountancy and auditing firms (Sarbanes-Oxley Act (SOX), and equivalent legislation in other countries around the world)³⁶. The Enron scandal was followed with other examples of grave misconduct of publicly traded companies and banking and financial systems. Examples are Swissair (2001), WorldCom, Kmart, Merck, Qwest, AOL (all in 2002), Royal Ahold, Parmalat (2003), Chiquita Brands International (2004), Bernard L. Madoff Investment Securities, Anglo Irish Bank (2008), Lehman Brothers, Goldman Sachs (2010), LIBOR (2012), Volkswagen (2015), and many more³⁷. Following those scandals, a public desire for greater accountability and transparency in the conduct of public and private organizations lead to an expanding legal framework to enforce just that. Kimberly Barata and Piers Cain proved that accountability and transparency without access to

³⁵ For Enron and Arthur Andersen: M.S. Salter, *Innovation corrupted: the origins and legacy of Enron's collapse* (Boston: Harvard University Press, 2008) and B.L. Toffler, J. Reingold, *Final Accounting: ambition, greed, and the fall of Arthur Andersen* (New York: Broadway Books, 2003). For other cases: P. Patsuris, 'The corporate scandal sheet', *Forbes*, August 26, 2002: <http://www.forbes.com/2002/07/25/accountingtracker.html>. Online source. Archived at: <http://www.webcitation.org/6c1a425E1> (October 4, 2015).

³⁶ J.C. Coates, 'The goals and promise of the Sarbanes-Oxley Act', *The Journal of Economic Perspectives* 21 (2007), no. 1, pp. 91-116. For the European equivalents: L. Enriques, P. Volpin, 'Corporate governance reforms in continental Europe', *The Journal of Economic Perspectives* 21 (2007), no. 1, pp. 117-140.

³⁷ Patsuris, 'The corporate scandal sheet', cf. note 73. For general descriptions of corporate scandals, fraud and/or organizational misconduct see: J.C. Coffee, 'A theory of corporate scandals: Why the USA and Europe differ', *Oxford Review of Economic Policy* 21 (2005), no. 2, pp. 198-211; K.R. Gray, L.A. Frieder, G.W. Clark, *Corporate scandals. The many faces of greed: the great heist, financial bubbles, and the absence of virtue* (St. Paul (Min.): Paragon House, 2005); J.W. Markham, *A financial history of modern US corporate scandals. From Enron to reform* (Armonk (NY): ME Sharpe, 2006). For the Volkswagen emission scandal: T.K. Burki, 'Diesel cars and health: the Volkswagen emissions scandal', *The Lancet Respiratory Medicine* 3 (2015), no. 11, pp. 838-839. For moral aspects of this misconduct see: M.O. Benediktsson, 'The deviant organisation and the bad apple CEO. Ideology and accountability in media coverage of corporate scandals', *Social forces* 88 (2010), no. 5, pp. 2189-2216.

trusted information as evidence of (past) organizational policies, decisions, products, actions and transactions is impossible³⁸. It should not be surprising that most of this new legislation is in essence about the accessibility of information.

(Slide 8) Most organizations are attempting to meet public expectations and try to comply with laws, regulations, standards, and other frameworks to enforce accountability, transparency, accessibility of information, security, and privacy³⁹. Most organizations try to comply to the *meaning* they have constructed of public expectations, laws, and compliance. Compliance is based on the *institutionalized interpretations* of society's beliefs about legality, morality, and rationality. It is quite possible that such an interpretation differs from interpretations in other organizations⁴⁰. This initiates the way compliance is implemented in daily organizational practice.

Boards may choose between two general strategies for implementing compliance. Both strategies are oftentimes combined. The first approach is the 'enforcement strategy', by which an organization pledges (and works) to meet

³⁸ K. Barata, P. Cain, 'Information, not technology, is essential to accountability: electronic records and public-sector financial management', *The Information Society* 17 (2001), pp. 247-258.

³⁹ M. El Kharbili, S. Stein, I. Markovic, E. Pulvermüller, 'Towards a framework for semantic business process compliance management', S. Sadiq, M. Indulska, M. zur Muehlen (eds.), *Proceedings of the Workshop on Governance, Risk and Compliance for Information Systems (GRCIS 2008)*, CEUR, Workshop Proceedings, Vol. 339 (Montpellier, 2008), pp. 1-15. An interesting collection of papers about the response of business organizations to the expectations of compliance is: C. Parker, V. Lehmann Nielsen (eds.), *Explaining compliance: Business responses to regulation* (Cheltenham (UK): Edward Elgar Publishing, 2011). Why regulatory compliance is oftentimes very difficult to realise: E. Bardach, R.A. Kagan, *Going by the book: The problem of regulatory unreasonableness* (Piscataway (NJ): Transaction Publishers, 2002). Compliance is made extremely difficult by 'regulatory unreasonableness', according to Bardach and Kagan, governmental requirements that seem sensible in principle but that make little sense in particular situations, in which those requirements are quite difficult to operate.

⁴⁰ L.B. Edelman, S.A. Talesh, 'To comply or not to comply – that isn't the question: how organizations construct the meaning of compliance', C. Parker, V. Lehmann Nielsen (eds.), *Explaining compliance: Business responses to regulation* (Cheltenham (UK): Edward Elgar Publishing, 2011), pp. 103-122.

the requirements of (their interpretation of) public expectations, local law, and the (quality) standards it has accepted. The second approach is a 'business ethics strategy', by which an organization defines a program of company ethics to meet public expectations. These values indicate how it wants to treat its employees, customers, stakeholders, shareholders, suppliers, business partners, citizens, and governments. This strategy manages organizational behaviour and organizes the way organizations will try to be compliant. The difficulties in implementing both strategies differ, varying from poorly developed 'rule of law', non-consistent legislation, not addressing crucial areas of organizational behaviour, an organizational culture not focused on changing organizational behaviour, and more⁴¹.

Information is needed to enable organizations to deliver objectives such as transparency, privacy, due process, regulatory compliance, and information security. They are a direct result of the social quest for organizational accountability. Not meeting these public expectations is extremely 'bad for business'⁴². Without accessible information as evidence for organizational compliance to laws, regulations, standards, and frameworks, claims of being compliant cannot

⁴¹ K.O. Hansen, 'Beyond compliance. Globalization demands more effective programs'. Markkula Center for Applied Ethics, Santa Clara University: <http://www.scu.edu/ethics/practicing/focusareas/business/beyondcompliance.html>. Online source. Archived at: <http://www.webcitation.org/6c1aKBPG1> (October 4, 2015). For evaluating these strategies: T.R. Tyler, 'The psychology of self-regulation: normative motivations for compliance', C. Parker, V. Lehmann Nielsen (eds.), *Explaining compliance: Business responses to regulation* (Cheltenham (UK): Edward Elgar Publishing, 2011), pp. 78-101.

⁴² A. Willis, 'Corporate governance and management of information and records', *Records Management Journal* 15 (2005), no. 2, pp. 86-97. See also: Barata, Cain, 'Information - not technology'.

be upheld. Organizations may face increased operating cost from the inability to access and retrieve information. The right of individual people of access to entitlements may be in jeopardy. The organizational capacity for decision-making may be weakened. And, last but not least, transparency, accountability, privacy, and trust may be reduced, possibly beyond repair⁴³. It is amazing, especially considering the costs of compliance, that there is hardly research done about the relationship between the accessibility of information and the social demand for organizational accountability.

Information accessibility (Slide 9)

Let us concentrate, first, on information access.

Information accessibility is hardly conceptualized⁴⁴. In information science, two theories modelling the concept of information access have been developed. Both theories have contributed to the understanding of the dimensions of information access. I will not go into them now, but none of these theories have explained what the requirements of access are⁴⁵.

⁴³ A. Dikopoulou, A. Mihiotis, 'The contribution of records management to good governance', *The TQM Journal* 24 (2012), no. 2, pp. 123-141.

⁴⁴ M.K. Buckland, *Information and information systems* (Greenwood Publishing Group: Westport, 1991), p. 77. In 2008 it was stated that 'explorations of the conceptual nature of information access have been limited', by: G. Burnett, P.T. Jaeger, K.M. Thompson, 'Normative behavior and information: the social aspects of information access', *Library & Information Science Research* 30 (2008), no. 1, pp. 56-66. Citation: p. 56.

⁴⁵ M. McCreddie, R.E. Rice, 'Trends in analyzing access to information. Part I. Cross-disciplinary conceptualizations of access. Part II. Unique and integrating conceptualizations', *Information Processing & Management* 35 (1999), nr. 1, pp. 45-76, pp. 77-

Information access has to be realized regardless of technology, language, disability, or personal capabilities. Because of its complexity, it can 'be a burden'⁴⁶. I recognize five requirements for information access that *together* define if (potential) users have access to information (Slide 10).

The first requirement is '*findability*', the possibility an individual has to discover *where* information is created, published, blogged, kept, stored, or preserved. Finding something refers to locating something in a known space. So finding information is not a search problem (which locates information in unknown spaces), but an information management problem⁴⁷. Findability is an essential part of both social and organizational information architectures. These architectures try to ensure that users can find information easily in spaces where complexity, information overload, and unfamiliarity hamper findability⁴⁸. Such architecture is necessary because the inter-subjectivity between the person or organization that organized information and the persons looking for that information complicates finding it⁴⁹. Finding-aids are of the utmost importance for users to

99. For the conceptualizations of access: l, pp. 49-57. For the influences on access: pp. 61-71; Burnett et al, 'Normative Behavior', pp. 56-66.

⁴⁶ R.O. Mason, 'Four ethical issues of the information age', *MIS Quarterly* 10 (1986), March, pp. 5-12. Citation: 10-11.

⁴⁷ M. Baker, 'Findability is a content problem, not a search problem' (May 28, 2013): <http://everypageispageone.com/2013/05/28/findability-is-a-content-problem-not-a-search-problem/>. Online source. Archived at: <http://web.archive.org/web/20160405191132/http://everypageispageone.com/2013/05/28/findability-is-a-content-problem-not-a-search-problem/>.

⁴⁸ A. Resmini, L. Rosati, 'From physical to digital environments (and back). Seven laws of findability', *Translating Information Architecture: proceedings of Europe's third Information Architecture summit (EuroIA)* (Barcelona: ASIS&T, 2007), pp. 162-170.

⁴⁹ L.M. Berlin, R. Jeffries, V.L. O'Day, A. Paepcke, C. Wharton, 'Where did you put it? Issues in the design and use of a group memory', B. Arnold, G. Van der Veer, T. White (eds.), *Proceedings of the INTERACT'93 and CHI'93 conference on Human factors in computing systems* (New York: ACM, 1993), pp. 23-30; and B. Narayan, M. Olsson, 'Sense-making across space and time. Implications for the organization and findability of information', F. Bouthillier, B. Yu, A. Grove (eds.), *Proceedings of the*

find the information they need.

The second requirement is *'availability'*, which means that even if information is *'findable'*, that does not mean it can be retrieved and be made *'available'* at a certain moment in time. There may be barriers that could make obtaining it difficult or, even, impossible. There may be legal ownership restrictions that do not allow the availability of specific information. The information may be deemed confidential by the organization that preserves it. It may have been irreparably destroyed. Websites or blogs may have disappeared. Recorded information may be in a repository that is hosted behind a pay wall. The ICTs needed to obtain the information may not be available. Even if ICTs are available, it is not unlikely, especially when trying to retrieve *'older'* information, that software cannot decipher the data formats originally used. Recorded information may be deemed as not of historical importance and not be captured in archives. So, although a user knows where information is (*'it is findable'*), he or she cannot obtain it (*'it is not available'*).

When information is findable *and* available, it should be *perceivable*, it should be possible to perceive it, to hear, feel, smell, taste, or view it. If potential users are disabled in ways that prohibit hearing, feeling, smelling, tasting, or viewing, there should be assistive and interactive technologies in operation that

allow them to perceive information⁵⁰. When information is heard, felt, smelled, tasted, and/or viewed, the user has the *possibility* to gather its meaning⁵¹. It is only *possible*, for even if information is findable, available, and perceivable, that does not mean it is ‘comprehensible’. To ensure accessibility and usability at both perceptual and cognitive levels of human-computer interaction, designers of e-government services need to be constantly aware of such design issues and should integrate those issues in evaluating their designs⁵².

The fourth requirement is, thus, ‘*comprehensibility*’. Understanding is only possible if the information literacy capabilities of users enable them to do so. Facilitating comprehensibility may be a burden for organizations, because even in very literate countries large minorities of the population can only read simple texts in their own language⁵³. Much above the level of ‘simple text’ is for most of those people *incomprehensible*. For that reason, for large minorities of the population accessing information will be problematic. To have access to ICTs will not solve the problem, which makes the dissemination of knowledge quite difficult.

Information may be findable, available, perceivable, and comprehensible,

⁵⁰ H. Hill, ‘Disability and accessibility in the library and information science literature: A content analysis’, *Library & Information Science Research* 35 (2013), no. 2, pp. 137-142.

⁵¹ W. Jones, ‘No knowledge but through information’, D.J. Pauleen, G.E. Gorman (eds.), *Personal knowledge management: Individual, organizational and social perspectives* (Farnham: Gower Publishing, Ltd., 2011), pp. 143-166.

⁵² T. Kato, M. Hori, ‘Beyond Perceivability. Critical requirements for universal design of information’, *Proceedings of the 8th International ACM SIGACCESS Conference on Computers and accessibility* (Portland (Or.): ACM, 2006), pp. 287-288.

⁵³ *OECD Skills Outlook 2013. First Results from the Survey of Adult Skills* (Paris: OECD, 2013).

but if the fifth requirement of access, 'contextuality', is in jeopardy, it may be impossible to reconstruct the context in which information is generated, used, and managed. Information is contextual; it has a specific meaning in the context in which it is generated and used. If context cannot be reconstructed by a user, the meaning information was meant to have at the moment of its creation or as a consequence of its use, will be lost. At that moment, information loses its function as reference, as evidence of actions and transactions, or as source of knowledge. If that context is unavailable or impossible to reconstruct, information may be interesting for users, but only in their own context of information seeking⁵⁴. This is what open data are at this moment in time: interesting, but de-contextualized and as such quite useless for reaching many e-government objectives.

Archiving (Slide 11)

Archiving concerns, in short, the generation, processing, use, access, disposal, and preservation of trusted information. It emphasizes the fact that some information will be kept forever and its management will be an infinite continuum. Especially in digital environments, collections of information (like archi-

⁵⁴ C.C. Kuhlthau, 'Kuhlthau's Information Search Process', K.E. Fisher, S. Erdelez, L. McKechnie (eds.), *Theories of Information Behavior* (New Jersey: Information Today, 2006), pp. 230-234.

ves) are *constructed* bodies, *configured* to retain all the information organizations or persons choose to retain and enriched with all the metadata that are allowed to be included in organizational or personal metadata schedules. They are critical for business process performance⁵⁵. They are used to reconstruct the past for organizational or personal accountability and retain (at a minimum) all information organizations and persons are legally obliged to keep for specified periods of time⁵⁶. These constructs show the preoccupations, moral codes and preconceptions embedded in procedures, business processes, legislation, and social environments. As a construct, it is a subjective body⁵⁷. Not all information is captured in an archive: employees of an organization may decide to delete it prematurely. New information is added daily to those constructs, metadata are added or changed, and information that has reached the end of its retention period is irreparably destroyed. Only a (small) part of the information generated by an organization or a person is preserved indefinitely for its 'historical value'⁵⁸. Its business importance means that it needs to be identified and controlled⁵⁹.

⁵⁵ D.A. Marchand, W.J. Kettinger, J.D. Rollins, *Information Orientation: The Link to Business Performance* (New York: Oxford University Press, 2001), Chapter 6.

⁵⁶ G.J. van Bussel, 'Reconstructing the Past for Organizational Accountability', *The Electronic Journal of Information Systems Evaluation*, 15 (2012), No. 1, pp. 127-137.

⁵⁷ D. Greetham, 'Who's in, who's out. The cultural politics of archival exclusion', *Studies in the Literary Imagination*, 32 (1999), No. 1, pp. 1-28.

⁵⁸ Many of the ideas proposed here are expressed in: G.J. van Bussel, 'Archives in the Digital Age. The theoretical framework for the Archive-as-Is', R. Jonker, A. Glaudemans, F. Smit (eds.), *Archival Science and Information Philosophy* (working title). Manuscript, to be published in 2017.

⁵⁹ J. Van de Pas, G.J. van Bussel, M. Veenstra, F. Jona, 'Digital Data and the City. An exploration of the building blocks of a Smart City Architecture', D.P. Baker, W. Evans (eds.), *Digital Information Strategies. From Applications and Content to Libraries and People* (Waltham, MA USA: Chandos Publishing, 2015), Chapter 13, pp. 185-198.

Transparency in management, processing and access of (personal) information is extremely important for customers and citizens to trust organizations they are bargaining with. It is essential for both organizational accountability as e-government.

In complex computerized environments, this trustworthiness of information is constantly challenged. Four dimensions of information allow for a reliable reconstruction of organizational policies, decisions, products, actions and transactions: quality, context, relevance and survival⁶⁰.

(Slide 12) The dimension *Quality* is about the quality requirements of information. We can distinguish four quality requirements: *integrity* (information cannot be manipulated), *authenticity* (information presents the required (and original) content and structure), *controllability* (information can be tested on integrity and authenticity), and *historicity* (the content, context and structure of information can be reconstructed at any moment in time)⁶¹. These four requirements realize the *fixity* of information. This means that it is (or can be reconstructed as) an 'immutable mobile'⁶². Fixity is a necessity because information is meant for *later* consultation and is used repeatedly for the reconstruction of

⁶⁰ G.J. van Bussel, *Archiving should be just like an apple, en acht andere (nuttige?) stellingen* (Amsterdam: Amsterdam University Press, 2012).

⁶¹ G.J. van Bussel, F.F.M. Ector, *Op zoek naar de herinnering. Verantwoordingsystemen, content-intensieve organisaties en performance* (Helmond: Van Bussel Document Services, 2009), pp. 181-214.

⁶² B. Latour, 'Postmodern? No, simply amodern! Steps towards an anthropology of science', *Studies In History and Philosophy of Science*, 21 (1990), No. 1, pp 145-171.

past happenings. Fixity enables users to trust information and to use it as evidence⁶³.

(Slide 13) The second dimension, *Context*, is needed for sensemaking of social situations and the information generated within that social situation. Context provides meaning for information itself⁶⁴. Knowledge of the individual or organizational policies, decisions, products, actions or transactions for which information was generated (and their relationships) is necessary for extracting meaning out of situations (cases, process flows, decisions, etc.)⁶⁵. This knowledge applies to the existing regulation for the business process it is part of, the business process itself, the structure of the specific case, the procedures by which recorded information is generated, processed, and used, and its place in the information structure it belongs to. The context of information objects is captured in metadata, when they are configured to do so. These metadata try to generate an image of the specific action or transaction information is part of, the changes therein over time, the processing and use of the information, and its

⁶³ D.M. Levy, *Scrolling forward. Making sense of documents in the digital age* (New York, Arcade Publishing, 2001), Chapter 2.

⁶⁴ K. Weick, *The Social Psychology of Organizing* (New York: McGraw-Hill, 1979); K. Weick, *Sensemaking in Organisations* (London: Sage, 1995). See also: B. Dervin, 'From the minds eye of the user. The Sense-Making Qualitative-Quantitative methodology', B. Dervin, L. Foreman-Wernet (eds.), *Sense-Making Methodology Reader* (New York: Hampton Press, 2003). First published in 1992.

⁶⁵ J. Barwise, J. Perry, *Situations and Attitudes* (Cambridge (Ma): MIT Press, 1983); K. Devlin, 'Situation Theory and Social Structure', M. Masuch, L. Polos (eds.), *Knowledge Representation and Reasoning under Uncertainty* (Berlin: Springer-Verlag, 1994), pp. 197-237.

management⁶⁶.

(Slide 14) The third dimension is *relevance*. Information is only relevant for users if it fits the context in which it is used, managed and retrieved. It needs to be relevant for organizational or personal objectives of performance and accountability⁶⁷. A special kind of relevance is *appraisal*, determining the 'value', relevance, of information over time. It means the complex (and subjective) evaluation of information to determine its economic, organizational, financial, fiscal, juridical, legal, societal, and historical relevance and to develop organizational or personal retention schedules⁶⁸. Disposing of irrelevant information saves (potentially high) costs for retention and accessibility. Besides that, irrelevant information makes organizations vulnerable to legal proceedings, for instance in the context of privacy law, fraud or corruption⁶⁹.

(Slide 15) The fourth dimension, *Survival*, concerns the security and durability challenges, which have to be overcome to realize access, retrieval, and

⁶⁶ G.J. van Bussel, 'An Accountability Challenge: Capturing Records and Their Context in Enterprise Information Systems', P. Silva, R. Quaresma, A. Guerreiro (eds.), *Proceedings of the 10th European Conference on Information Systems Management, The University of Evora, 8-9 September 2016* (Reading: ACPI, 2016), pp. 204-211.

⁶⁷ T. Saracevic, 'Relevance: A review of the literature and a framework for thinking on the notion in information science. Part II: nature and manifestations of relevance', *Journal of the American Society for Information Science and Technology*, 58 (2007), No. 3, pp. 1915-1933 and T. Saracevic, 'Relevance: A review of the literature and a framework for thinking on the notion in information science. Part III: Behavior and effects of relevance', *Journal of the American Society for Information Science and Technology*, 58, (2007), No. 13, pp. 2126-2144.

⁶⁸ R.J. Cox, H.W. Samuels, 'The archivist's first responsibility. A research agenda to improve the identification and retention of records of enduring value', *The American Archivist*, 51 (1988), Winter/Spring, pp. 28-42.

⁶⁹ G.J. van Bussel, H. Henseler, 'Digital Archiving and eDiscovery. Delivering evidence in an age of overload', B. John, M. Nkhoma and N. Leung (eds.), *Proceedings of the 4th International Conference on Information Systems Management and Evaluation. ICIME 2013, Ho Chi Min City, Vietnam, 13-14 May 2013* (Reading 2013), pp. 281-288.

preservation of recorded information over time⁷⁰. It stresses the importance of a reliable and durable ICT infrastructure to enable the continuous and secure storage of information. The features of this infrastructure are fragile and continuously influenced by the restructuring of organizations. The challenge of preservation is almost overwhelming⁷¹.

(Slide 16) Archiving organizes the information value chain⁷². This chain of information processes realizes the five requirements of information access and the four dimensions of information in the business processes of organizations and manages information to reach competitive advantage. The organizational archiving function organizes the information value chain to identify, control, and manage information and ICTs in and between organizations. This chain ensures that the informational and evidential value of information is utilized in and between business processes to improve performance, privacy and security. Implementing the information value chain would improve organizational accountability, access to information, trust and performance. It would allow for an easier implementation of e-government.

But there is one enormous challenge: archivalization.

⁷⁰ D. Bearman, 'Moments of risk. Identifying threats to electronic records', *Archivaria*, 62 (2003), pp 15-46.

⁷¹ F. Boudrez, H. Dekeyser, J. Dumortier (2005). *Digital Archiving. The new challenge* (Mont Saint Guibert: IRIS, 2005).

⁷² First introduced in: Van Bussel, Ector, *Op zoek naar de herinnering*, pp. 181-354.

Archivalization (Slide 17)

Eric Ketelaar introduced 'archivalization', meaning the 'conscious or unconscious choice (determined by social and cultural factors) to consider something worth archiving'⁷³. Understanding of the way people and organizations create and maintain information and how they consciously or unconsciously choose to consider something worth keeping is crucial.

For archiving, but for organizational accountability, too.

It determines whether and how it is possible to reconstruct actions and transactions with information. It determines how people create, process, and use information and archives, and how archivists acquire, contextualize, and appraise them. The 'software of the mind' (Ketelaar borrowed this phrase from Geert Hofstede⁷⁴) is consciously or unconsciously influenced by cultural and social factors. Different organizations are implementing the information value chain in different ways. Professional standards lead to different ways of creating and using information and archives. For understanding information and archives, culture, employees, and archivists of organizations are to be known in their social,

⁷³ E. Ketelaar, 'Archivalisation and archiving', *Archives and Manuscripts*, 27 (1999), pp. 54-61. Quotation: E. Ketelaar, 'Archivistics research saving the profession', *The American Archivist*, 63 (2000), pp. 322-340, p. 329.

⁷⁴ G. Hofstede, *Cultures and Organizations: Software of the Mind* (New York: McGraw-Hill, 1997) (most recent (third) edition: 2010).

religious, cultural, political, and economic contexts⁷⁵. Archivalization impresses the fact archives are not neutral, not complete, and the result of many choices. They reflect morals, preconceptions, and limitations of their social and cultural environment and offer only a distorted view of reality. Or, maybe better, they allow for the construction of realities, excluding, through appraisal and choices, other realities⁷⁶. The information value chain is embedded and largely configured by this behavioural component of archivalization. Reconstructing the past, as is necessary for organizational accountability, is not an easy venture.

Archivalization has detrimental effects on archiving and organizational accountability. Accountability is strongly dependent of the working of organizational systems of controls and the methods and instruments used to strengthen such controls. As Melvin Dubnick and George Frederickson⁷⁷ explain, accountability relationships are mostly in evidence *after an event* ('post factum'). These relationships include 'post factum' attempts to handle responsibility for human or organizational errors, based on 'pre factum' (*before an event*) expectations and assumptions on human or organizational behaviour, configured in ICTs. Such attempts are largely based on information about these facts and on archives.

⁷⁵ Ketelaar, 'Archivistic Research', pp. 322-340. E. Ketelaar, 'Tacit narratives. The meaning of archives', *Archival Science*, 1 (2001), pp. 131-141.

⁷⁶ J. Ihanus, 'The archive and psychoanalysis: Memories and histories toward futures', *International Forum of Psycho-analysis*, 16 (2007), No. 2, pp. 119-131.

⁷⁷ M.J. Dubnick, H.G. Frederickson, *Public accountability. Performance measurement, the extended state, and the search for trust* (Washington, D.C, Kettering Foundation & National Academy of Public Administration, 2011), pp. 7-12,

ICTs are defined and configured 'pre factum' and reflect expectations and assumptions of behaviour, but they do not reflect the activities and behaviour 'per factum', *during the fact*⁷⁸. Organizations try to eliminate this stage by designing ICTs to avoid social relations, to avoid political discussion and debate, and to avoid infringement on rules. These 'per factum' activities are 'spaces of contestation', spaces filled with political discussions, negotiations, and debates, spaces where decisions are reached and where accountability should be prominent⁷⁹. But because 'per factum' is neglected, these activities are not or marginally captured in ICTs. (Slide 18)

The accountability metaphors of the Agora and the Bazaar, proposed by Ciarán O'Kelly and Melvin Dubnick⁸⁰, stress the importance of social relationships in the 'per factum' stage. An Agora is a social environment in which purposes, reasons, and norms are developed. It is 'a fluid, contingent and localised accountability space, founded on an unending cascade of social situations and relationships' in and between organizations⁸¹. This space is linked to collaboration between participants in that space, based on norms that focus on the fairness of aims and procedures. Organizational procedures, managerial power structures,

⁷⁸ R.I. Heidelberg, 'Political accountability and spaces of contestation', *Administration & Society*, April 14 2015, pp. 1-24.

⁷⁹ Heidelberg, 'Political accountability', pp. 10, 18.

⁸⁰ C. O'Kelly, M. Dubnick (2015). 'Accountability and its metaphors. From forum to agora and bazaar', *Paper presented to the PSG VII track (Quality and Integrity of Governance) of the 2015 EGPA Annual Conference August 24-29, 2015, Toulouse, France*, Toulouse, EGPA, pp. 1-25. Online: http://pure.qub.ac.uk/portal/files/13032528/COK_MJD_EGPA_Paper.pdf.

⁸¹ O'Kelly, Dubnick, 'Accountability and its metaphors', p. 9.

and organizational purposes are 'informed' about the standpoints and decisions emerging as results from these collaborative relationships. These results are developed within a context where people combine moral sentiments with ethical requirements and constraints. The defining reasons for action are generated 'per factum'. Within the Agora, the metaphor of the Bazaar describes exchange in mutual pursuit of *each other's interests*. The focus of the Bazaar is on the negotiations that generate results, and the exchanges needed for those negotiations to be successful. These exchanges assist people in developing standpoints and decisions, trying to find a mutual interest and willing to trade favours, information, or esteem to achieve their purposes⁸². It is what is happening in daily organizational practice.

Exchanges within the Bazaar may not be open to description, formal scrutiny, codified rules, or bureaucratic control. Such spaces may involve psychotic and pathological behaviours⁸³. In configuring the information value chain these spaces should be recognized, although much of these exchanges are not captured in information until after the event ('post factum') and, at that moment, according to set procedures and, thus, distorting social and situational reality. Contextualizing such spaces will become very important to minimize the effects of archivalization on the archive's possibility to reflect organizational realities.

⁸² O'Kelley, Dubnick, 'Accountability and its metaphors', p. 9-16.

⁸³ B.D. Singer, 'Crazy Systems and Kafka Circuits', *Social Policy*, 11 (1980), pp. 46-54.

Conclusion

Let's come to a conclusion.

Designing and developing online services and disseminating open data are easy. Those are actions that do not need interaction. Realizing them to work needs citizens that want to use them, do have the literate capabilities to do so, and trust the organization to be transparent about the way information is processed, secured, archived, and managed. They need accessible information. That is, most often, quite a problem.

E-participation, governance, and beating the digital divide are *not* easy. Solving them has nothing to do with access to ICT for citizens. They need information literate citizens. They need information access for every one. And they need accountable organizations that can be trusted to be responsible, transparent, and independent, and that behave in an ethical way.

That is the challenge of e-government.

I thank you for your attention.