

e-Government and Smart Cities

Contexts and Challenges Taking from Digital Usage and Exploration

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***TRS (Technology, Networks and Society), Universidade Fernando Pessoa**

18 de Fevereiro de 2020

UNU-EGOV | UM DSI PDSI

DSI Auditorium, University of Minho

Azurém, Guimarães, Portugal

e-Government and Smart Cities: Contexts and Challenges

Taking from Digital Usage and Exploration

The current context is both complex and challenging. Also, considering the usage and exploration of the digital this includes an even greater complexity resulting from time space alternatives. For both nations and states, such challenges are in place and force digital transformation. Such challenges are critical for their existence as we known them. As so, we are on need of further knowledge in order to develop new solutions for old and new problems.

*This seminar proposes a visit to conducted research from the *TRS group since 2013 related with e-Government and smart cities and to discuss potential new projects. It starts by discussing the context and the road done to provide insights on the road ahead.*

*TRS – Technology, Networks and Society

More info at <https://tecnologiaredesesociedade.wordpress.com/>

*TRS – Technology, Networks and Society

- Its an internal group at University Fernando Pessoa to aggregate PhD students from the Information Sciences PhD program, Systems, Technology and Information Management specialty
(<https://www.ufp.pt/inicio/estudar-e-investigar/doutoramentos/ciencias-da-informacao/>)
- It is an informal gathering and its members are organised based on projects where they collaborate and also works as a support for the PhD projects
 - *24 PhD members from Portugal, Brasil, Mozambique, Angola, Pakistan, and Jordan*
 - *43 PhD students are involved in PhD projects within the lines of the *TRS group*

*TRS – Technology, Networks and Society

- Aggregates R&D from multiple origins and knowledge areas, focused on ICT usage and its application to the fostering of human life
 - Acts as a networked group, multidisciplinary and geographically dispersed to enhance the discussion and its communication
 - The group aims to be open and provide a common ground to discuss research opportunities related with networks, digital technology and its impacts in society within an information sciences context
 - Focuses on the territory, networks and society to promote the potential that the digital may have to impact human life
 - *TRS group research lines: e-planning; networks; e-learning; e e-government
- Twitter *trs: http://twitter.com/Grupo_TRS
- Digital library *TRS collections: <http://bdigital.ufp.pt/handle/10284/3787>
- Facebook group: <https://www.facebook.com/groups/308866965910591/>

Phd in Information Sciences

Context information about UFP program on Information Sciences

PhD in Information Sciences (SiTeGi)

The specialty Systems, Technology and Information Management in Information Sciences PhD program take as its ground, the digital and the use of computer based systems and networks to study the development, the adoption, the impact and the creation of new proposals to provide new conditions and foster life quality of both people and organisations.

Among work areas are the study and modeling of data and information to support applications or the understanding of human activity, as well as the focus on usage and models to support information management that dealt with information excess and the growing complexity of digital based systems

Brief Timeline

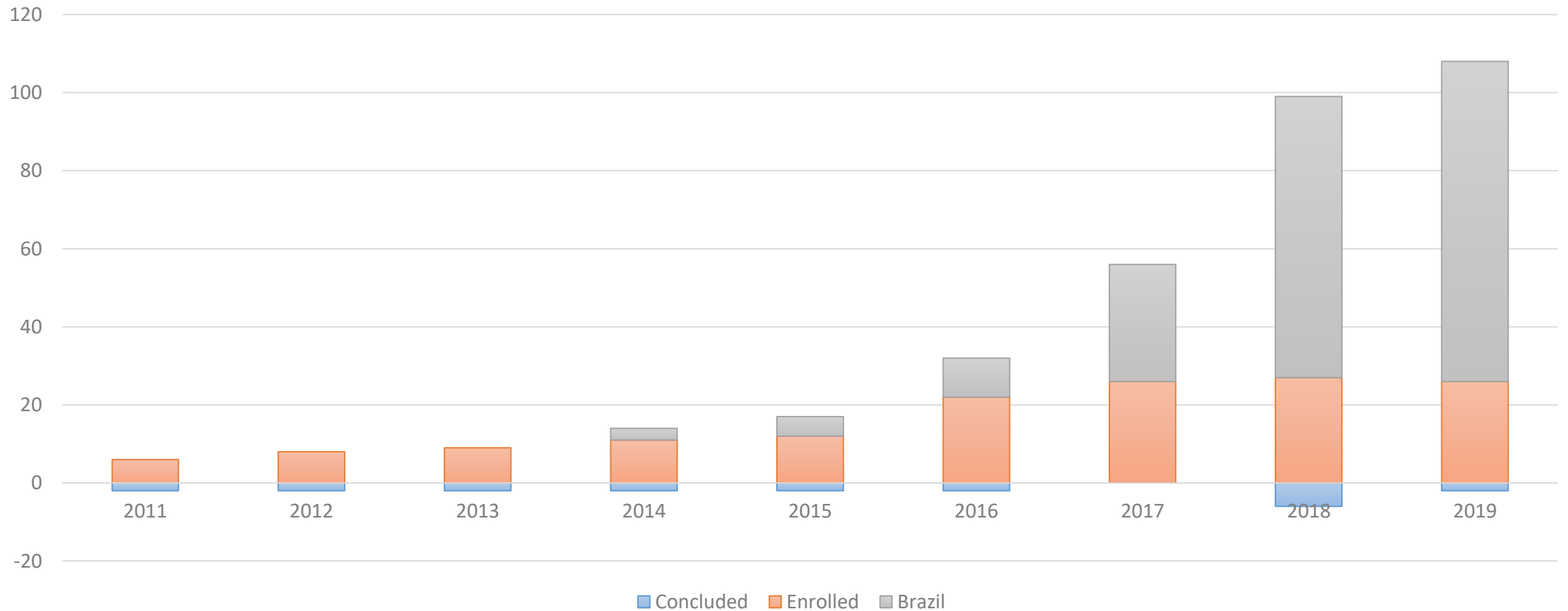
(PhD Information Science, SiTEGI)

- **2005:** Official start (DR, Portaria nº 171/2005): 11 february
- **2006:** First student SiTeGi enrolled: 17 may
- **2011:** First student that completed its Phd: 29 june
- **2012:** First thesis in English: 4 de june
- **2014:** PhD IS SiTEGi coordination was formally created: 30 september
- **2015:** First non portuguese student to finish its PhD: 9 de fevereiro (Angola) and 10 graduate students on PhD CI Sitegi
- **2019:**
 - Start of a new selection process to enroll in the PhD (number of candidates outpasses the number of available positions)
 - Established an high level protocol with UFPR (Brasil)
 - The number of concluded PhDs rises to 21

PhD CI SiTeGi (Dez, 2019)

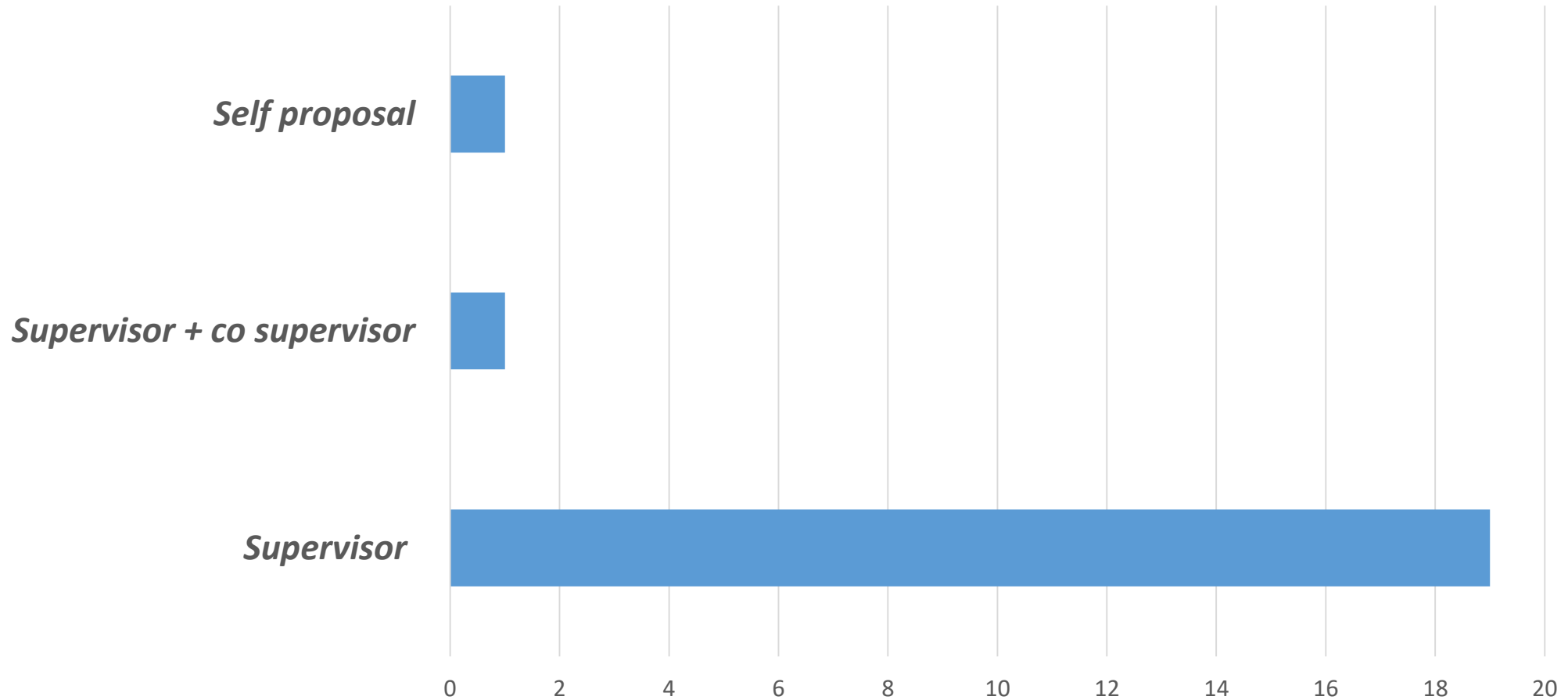
(concluded, enrolled, Brazil)

Students statistics in PhD IS, SITEGI



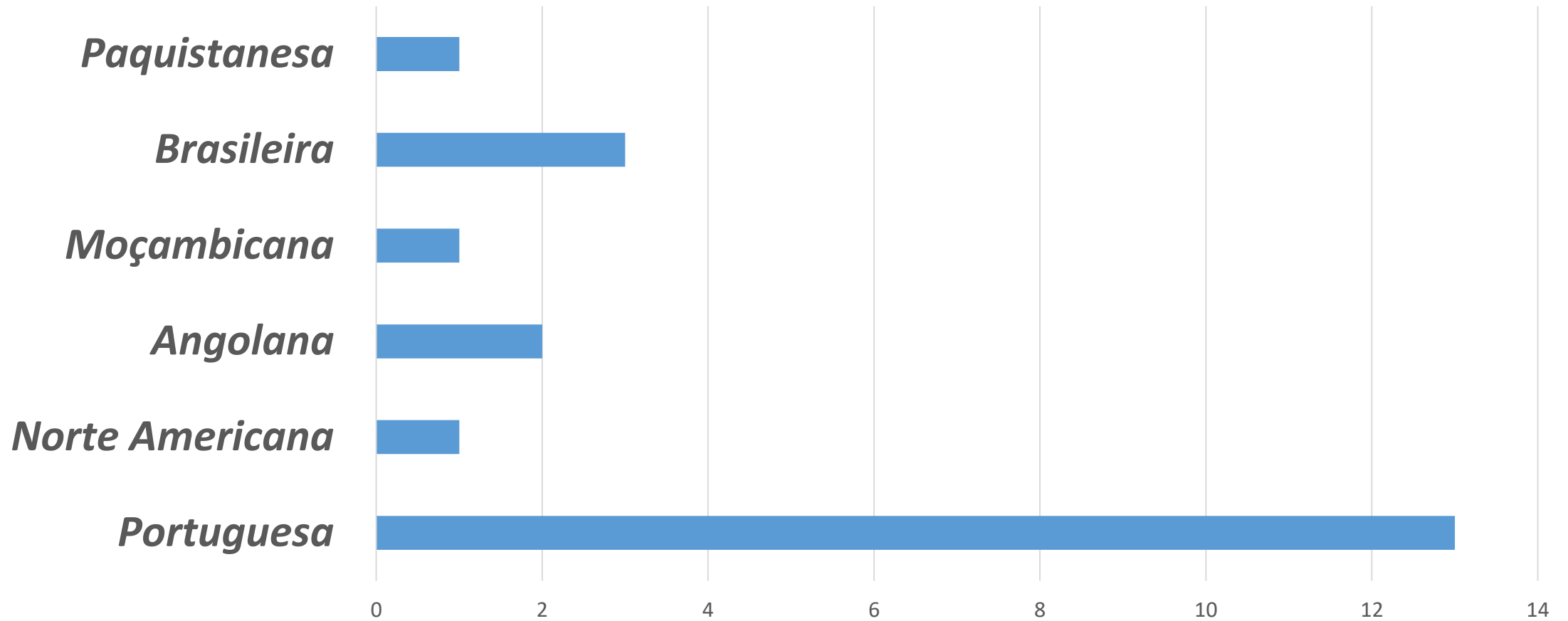
Supervision alternatives

PhD IS, SITEGI (Dez 2019)



Concluded PhD CI

PhD IS, SITEGI (Dez 2019)



Annual event to share PhD IS, SITEGI related work

A poster for a seminar. The background is teal with silhouettes of four people in various colors (purple, green, blue) and a network of white dots and lines. The text is in white and yellow.

Seminário
**DOUTORAMENTO
EM CIÊNCIAS DA
INFORMAÇÃO**

- Especialidade **Sistemas,
Tecnologias e Gestão da
Informação (SITEGI)**

4 e 18 julho 2019
09:00 às 18:00
Salão Nobre
da Universidade
Fernando Pessoa

**ENTRADA
LIVRE**
Para obtenção
de certificado de
presença deve
inscrever-se
online

- **Goals**

- Sharing experiences
- Project discussion
- Proposals validation

A poster for a seminar. The background is orange with silhouettes of four people in various shades of orange and a network of white dots and lines. The text is in white and blue.

SEMINÁRIO
**DOUTORAMENTO
EM CIÊNCIA DA
INFORMAÇÃO**

Especialidade **Sistemas,
Tecnologias e Gestão
da Informação (SITEGI)**

10 e 17 julho 2020
09:00 às 18:00
SALÃO NOBRE
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FERNANDO PESSOA

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A (quick) idea of the approach

Information and information management (for the people and by the people)

Challenges and opportunities for information management

1

- The availability of information that Internet brings, in particular, the World Wide Web, produced a huge impact in the way we collect and access information. This also impacts the strategies followed to organize and manage information. It is clear by now, that each individual, by its own and without adequate training is on trouble to manage its information, the information he or she needs and even to secure it

2

- Recent developments provide a new context that wants to protect data from individuals and some sensitive information, putting a new focus not in the data possibilities but on the individual rights, such as the General Regulation for Data Protection (GRPD) implies, with real changes not easy to implement with current information systems and applications. But such issues related with the use of personal data are not restricted to GRPD. Also security issues, and information readiness or the quality and veracity of information are at stake – thus turns reference and information support as an important role for any information service

3

- Additionally, we are in a fast, complex, and information sophisticated world. As so, open access and social media, two the trending phenomena when dealing with information management place a number of challenges but also opportunities for those who are responsible for manage information within organizations

1

Welcome to a digital world

The availability of information that Internet brings, in particular, the World Wide Web, produced a huge impact in the way we collect and access information. This also impacts the strategies followed to organize and manage information. It is clear by now, that each individual, by its own and without adequate training is on trouble to manage its information, the information he or she needs and even to secure it

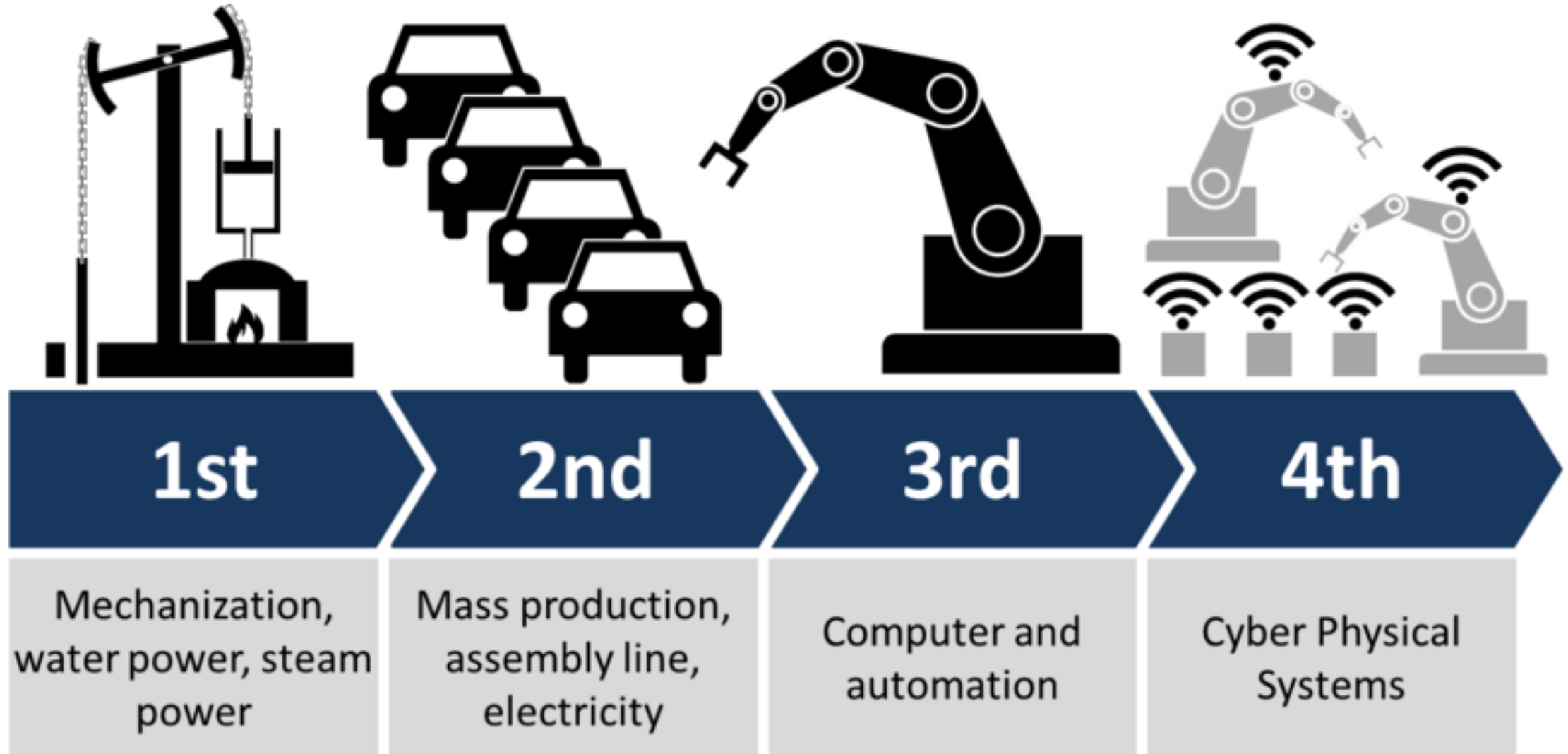
The digital is everywhere like a fog...



Digital blends the old with the new

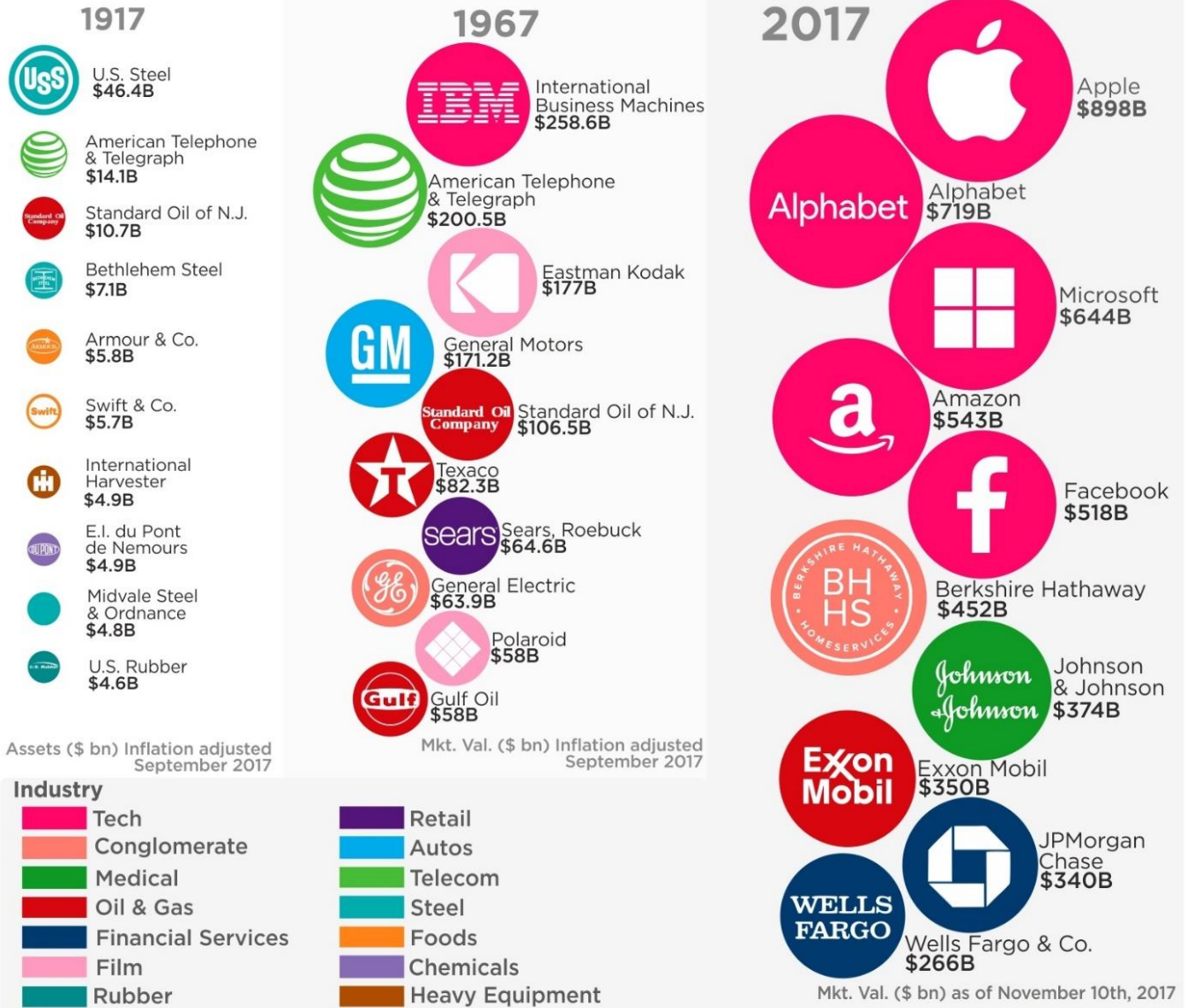


Create new environments (with their own space and time to blend with the physical world one)



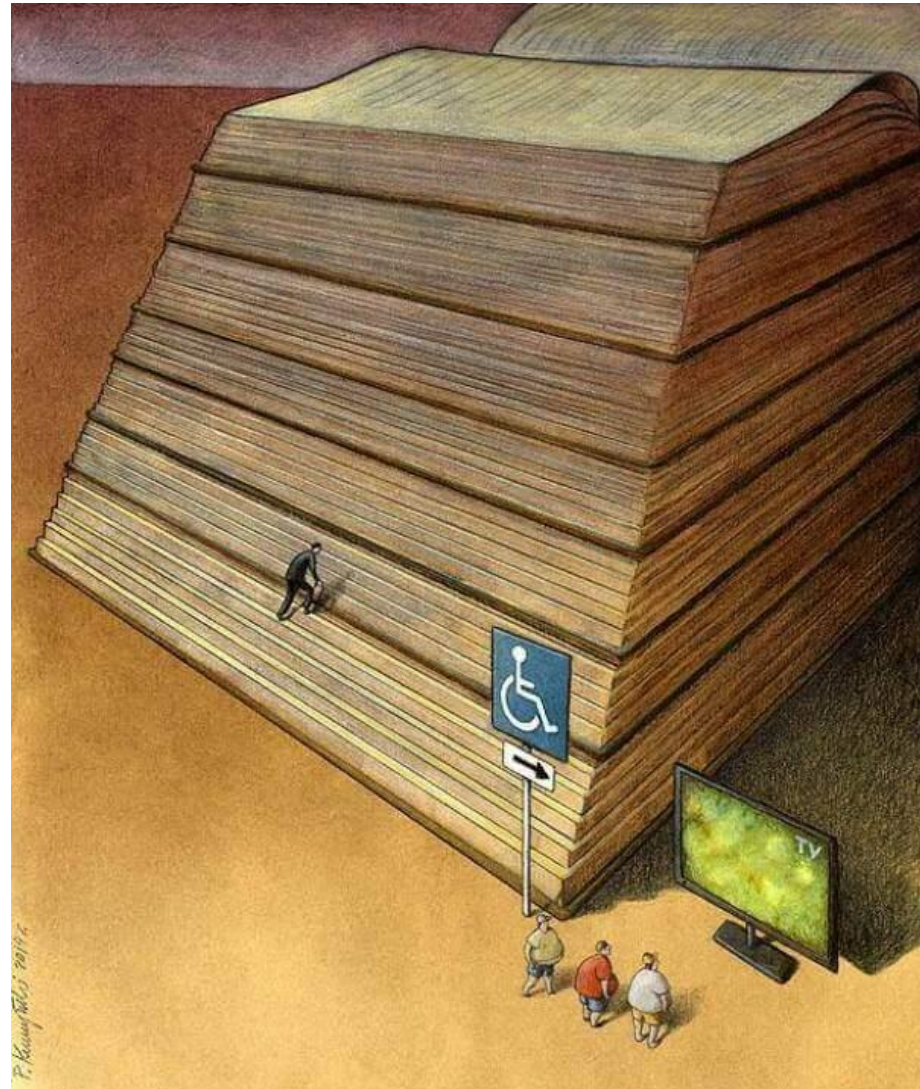
Not new, but the digital is on charge (not ICT, neither technology)

100 Years of America's Top 10 Companies

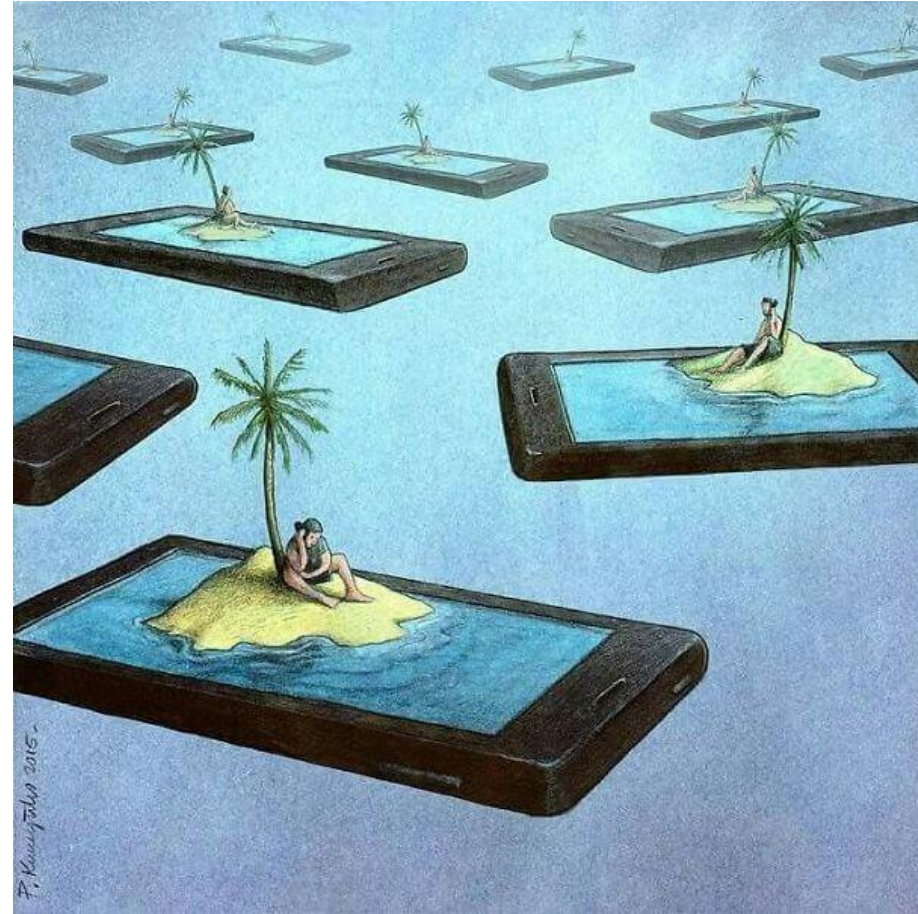


Source and Article:
<https://howmuch.net/articles/100-years-of-americas-top-10-companies>
<https://forbes.com>

Work hard is not work smart. However learning hurts and must be a process (read a book til the end principle)



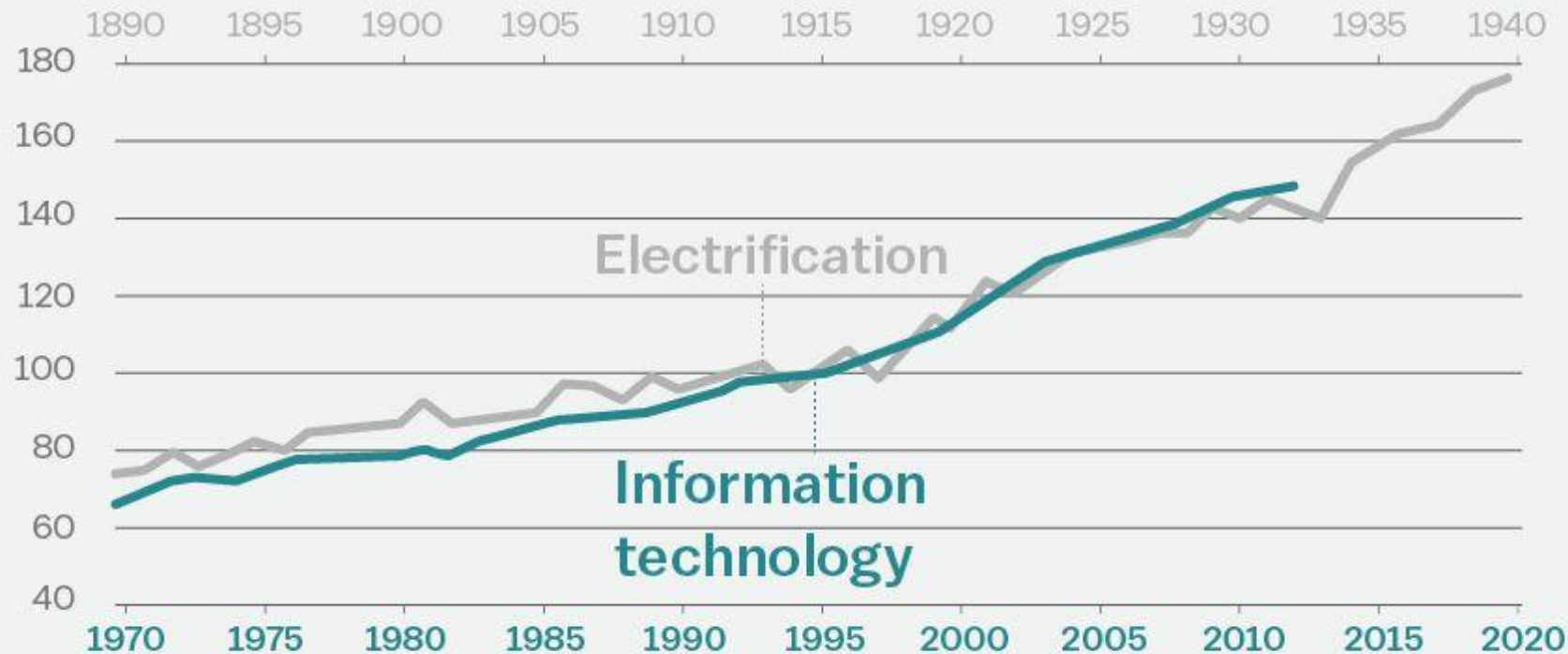
No one is an Island (a basic principle to our times is cooperation between people)



The current way we work & organisations are reaching its limits (thus information management – among other issues – need to be reinvented)

Labor productivity growth

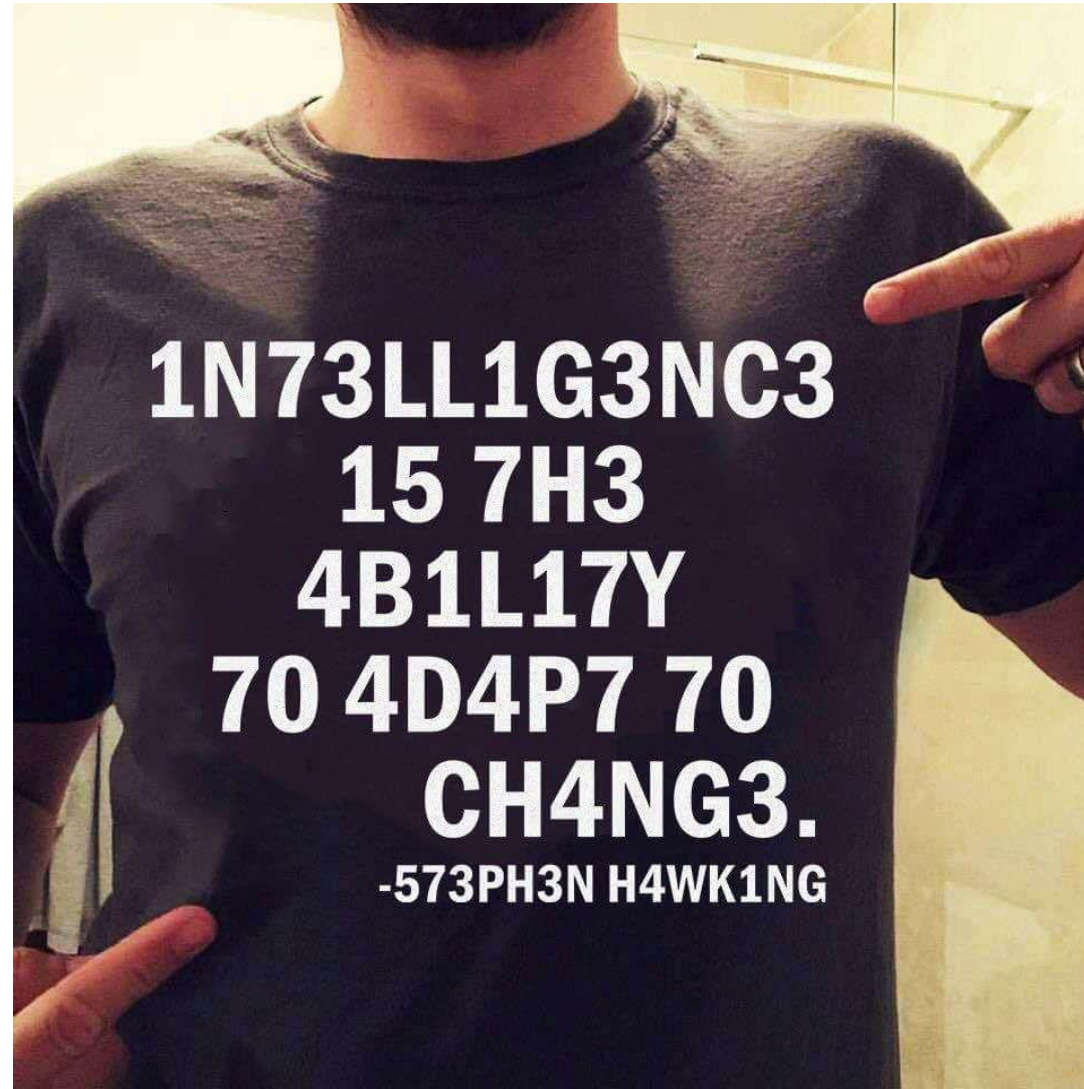
During the electrification era (1890-1940) and the IT era (1970-2012)
in the US (1915=100 and 1995=100)



SOURCE: Kendrick (1961); Byrne, Oliner, and Sichel (2013)

Vox

Those who survive are the ones who adapt (both valid to intelligence as for evolution)



Tackling the Digital World

Recent developments provide a new context that wants to protect data from individuals and some sensitive information, putting a new focus not in the data possibilities but on the individual rights, such as the General Regulation for Data Protection (GRPD) implies, with real changes not easy to implement with current information systems and applications. But such issues related with the use of personal data are not restricted to GRPD. Also security issues, and information readiness or the quality and veracity of information are at stake – thus turns reference and information support as an important role for any information service

Impact is everywhere...

 = 5 min

 +  = 15 min

 +  +  = 55 min

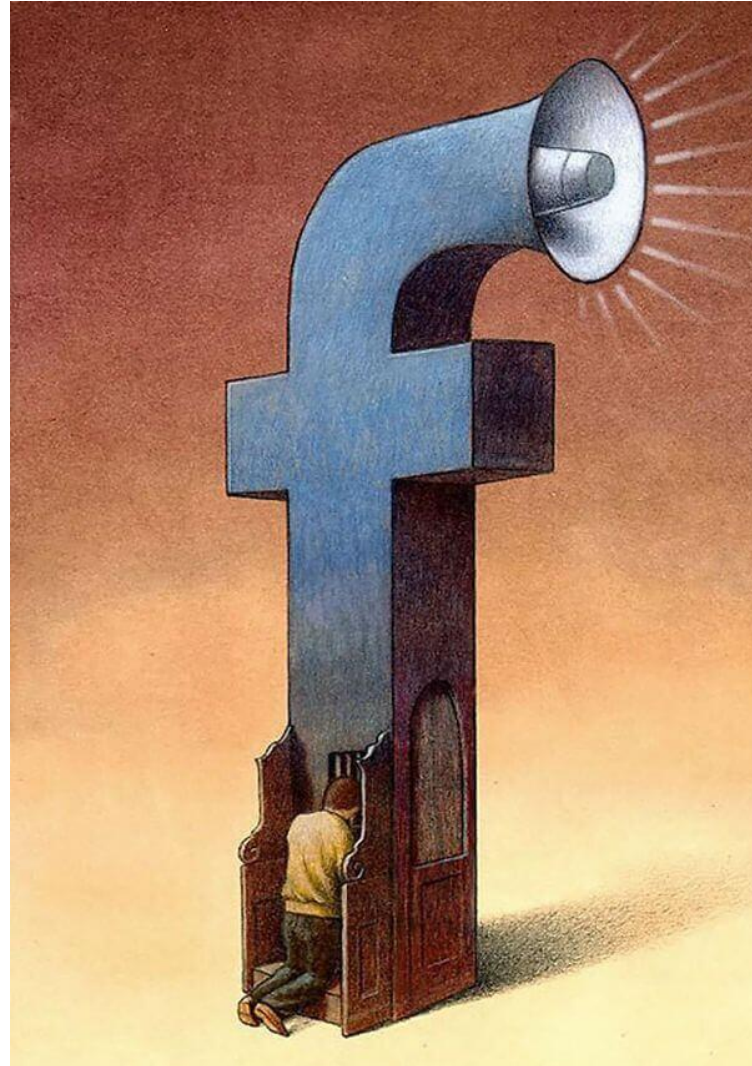
 +  +  +  = ∞

VIA 9GAG.COM

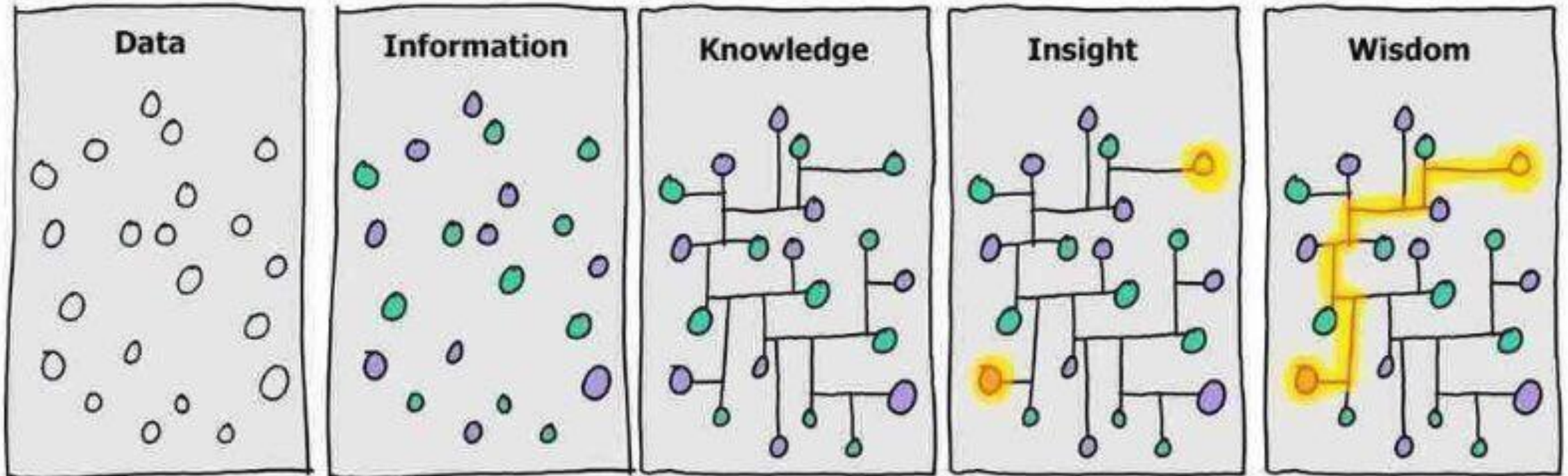
Changing human values and social structures in a sensible way



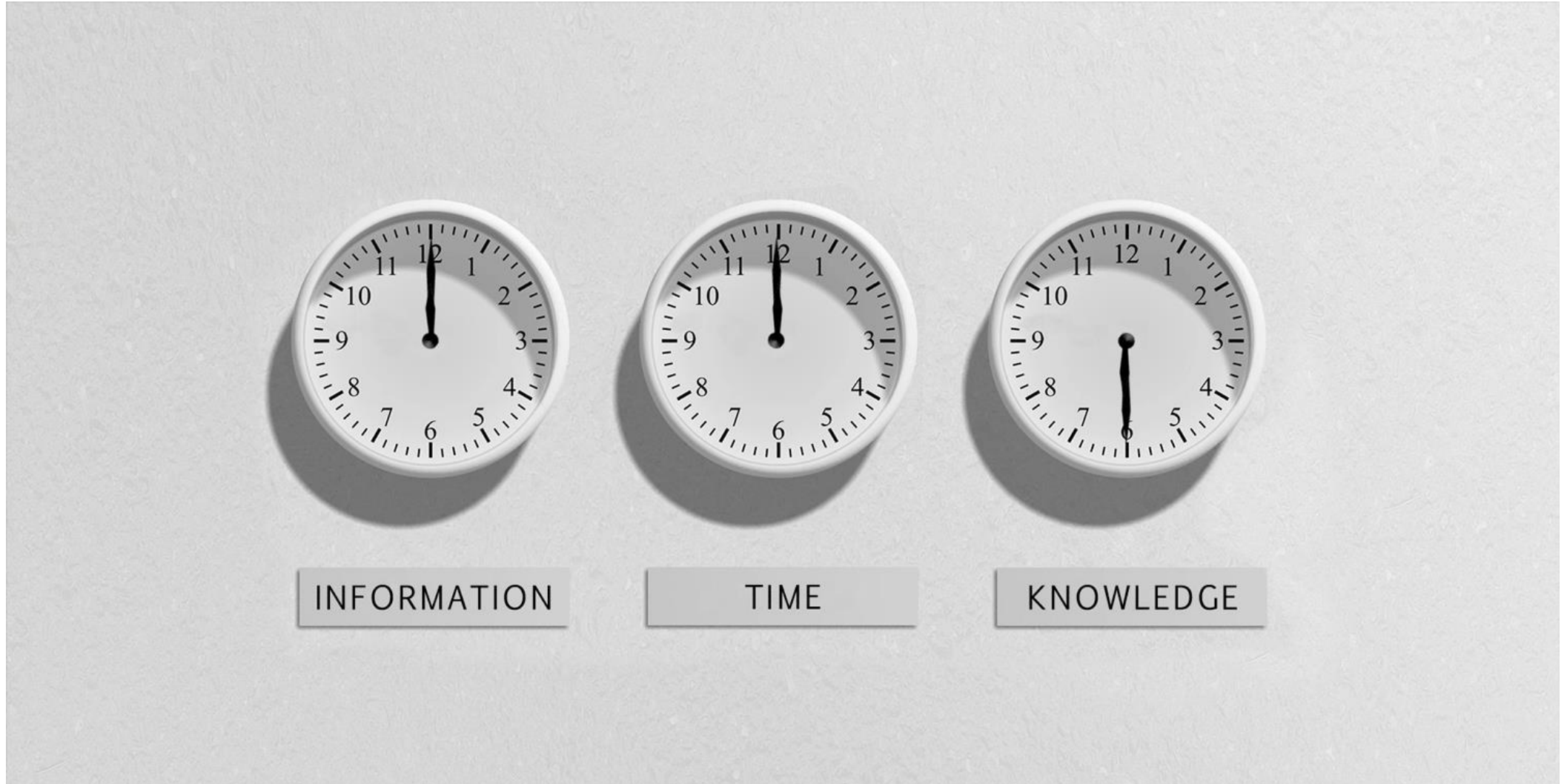
It gives to privacy and proximity (and intimacy)
other meanings



The raw materials of such transformation



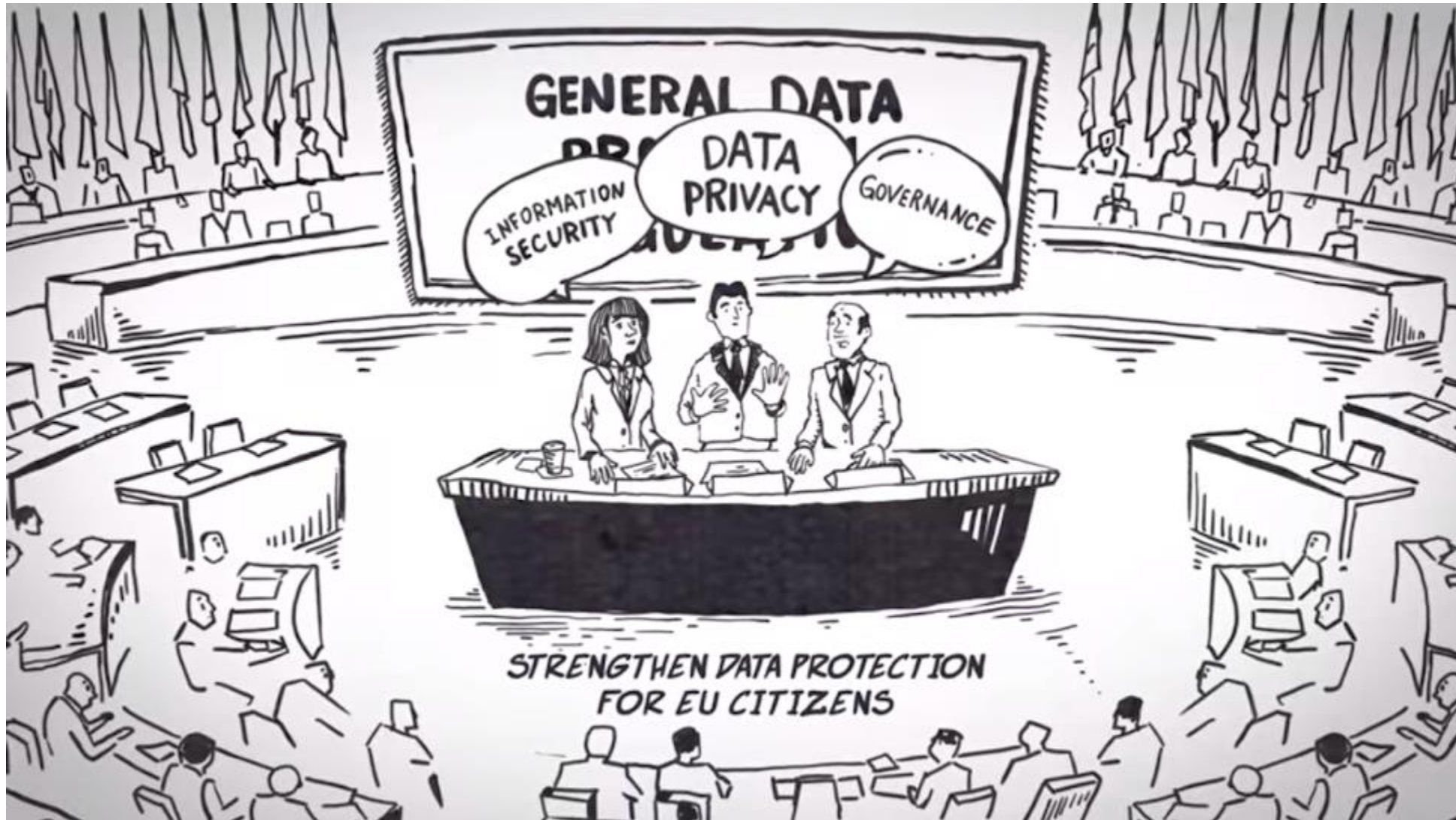
The time and need of new knowledge is now not a must, but a basic requirement



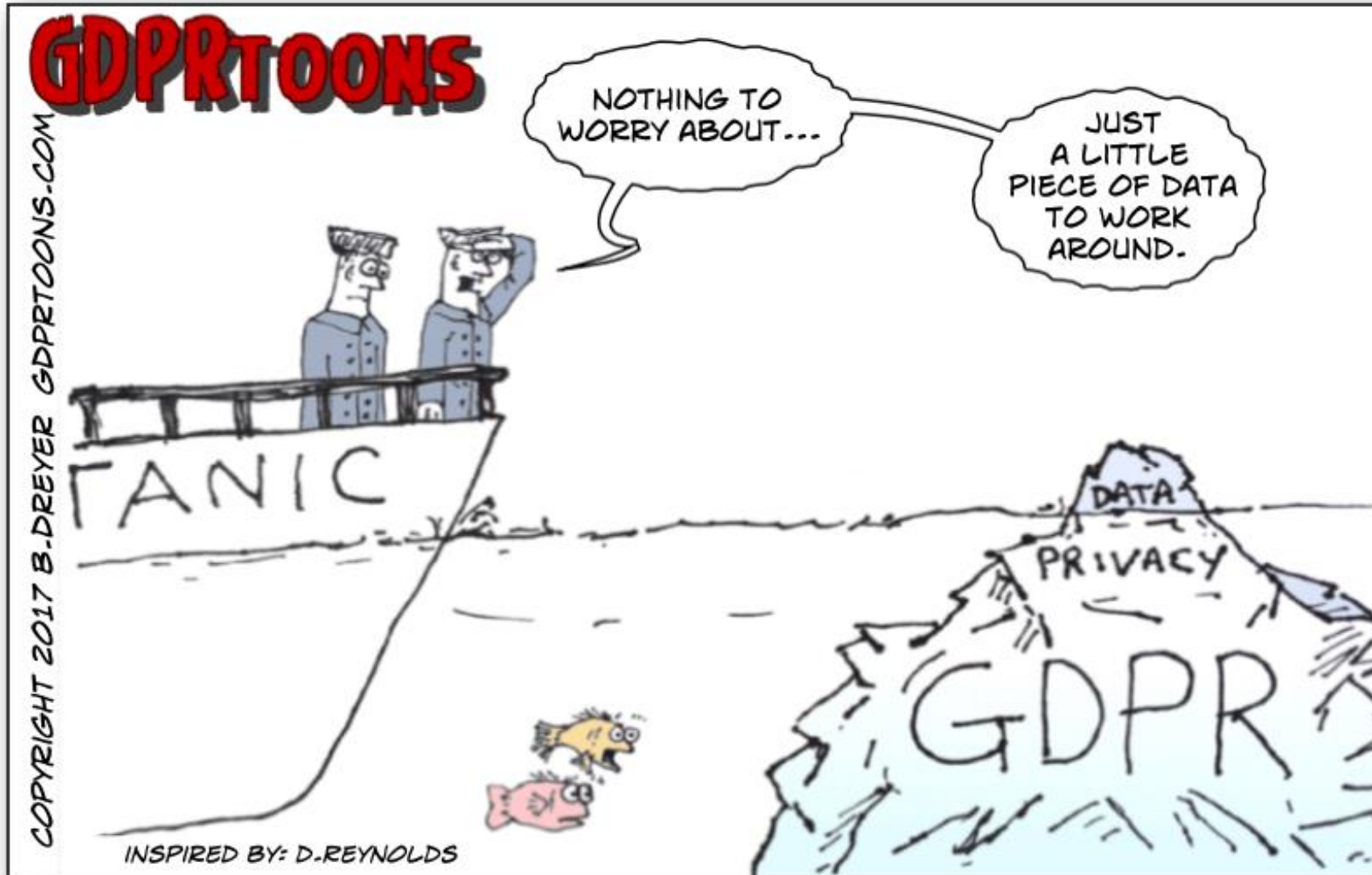
The digital brings a number of changes, stronger than the resistance of traditional institutions



A number of issues are on high, when dealing with information (current systems are in trouble to cope with)



Some, as a result of the effort from government control of digital transformation, will be transformed in unknown ways



Among such challenges, the new data protection regulation impacts a lot the way we use data and how we organise economic value from it



3

Challenges for organisations and its services

Additionally, we are in a fast, complex, and information sophisticated world. As so, open access and social media, two the trending phenomena when dealing with information management place a number of challenges but also opportunities for those who are responsible for manage information within organizations

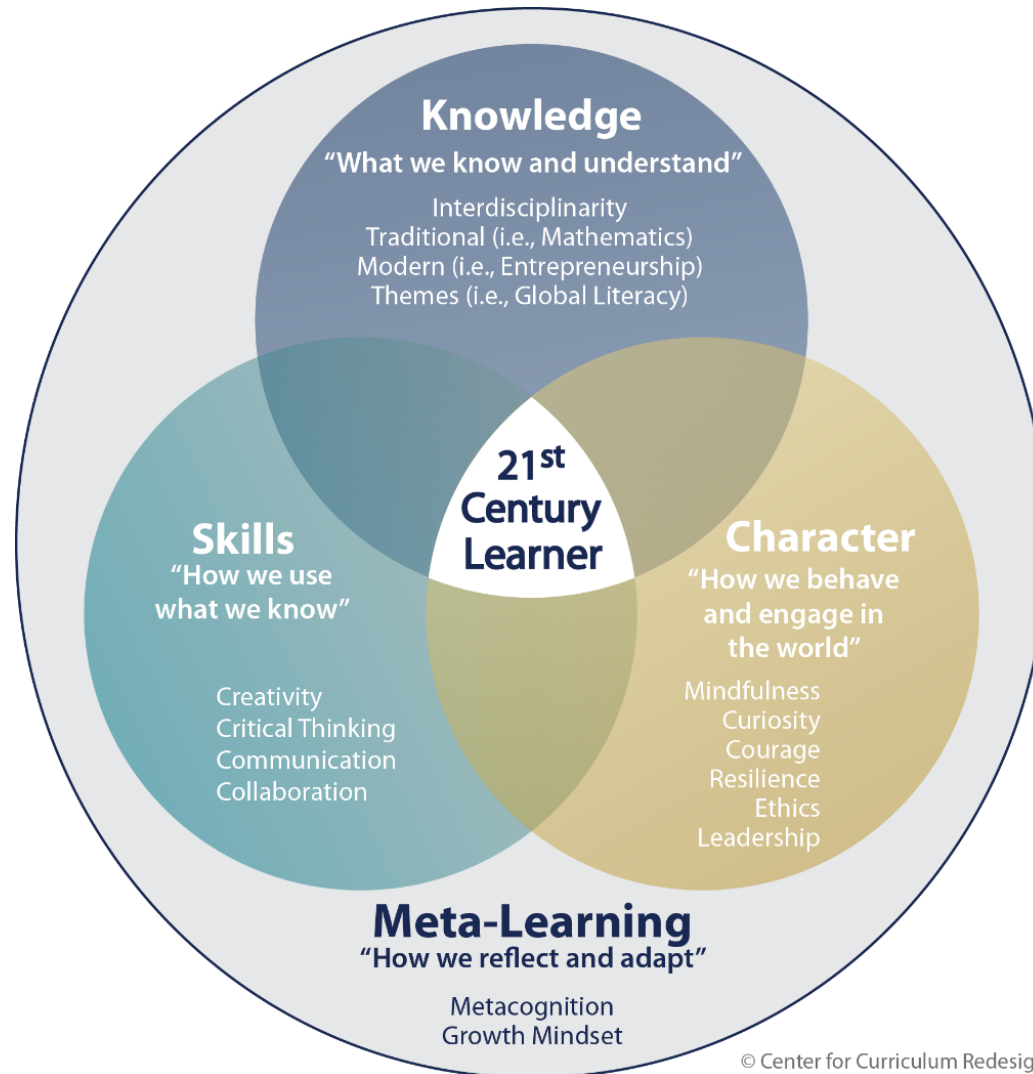
In a complex world, lot of innovative events emerge (bring to us a more uncontrolled and stable environment)



Most of what will be the future is not yet presented to us



The business of our times (or each individual person as a business unit)



The new common will be variation, diversity and change (at least for the rest of the “before X generation” work lifes)

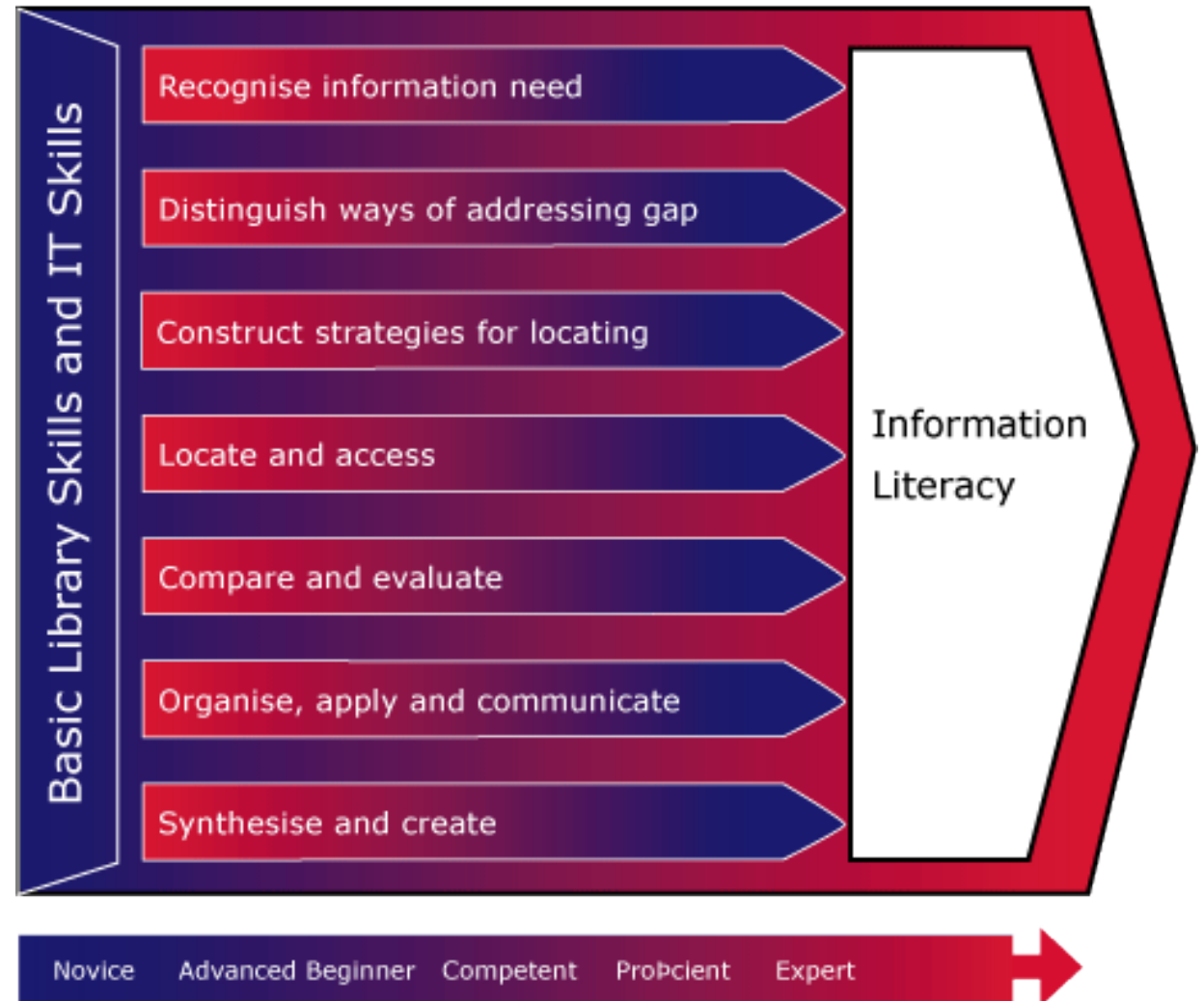


SCONUL Seven Pillars Model for Information Literacy

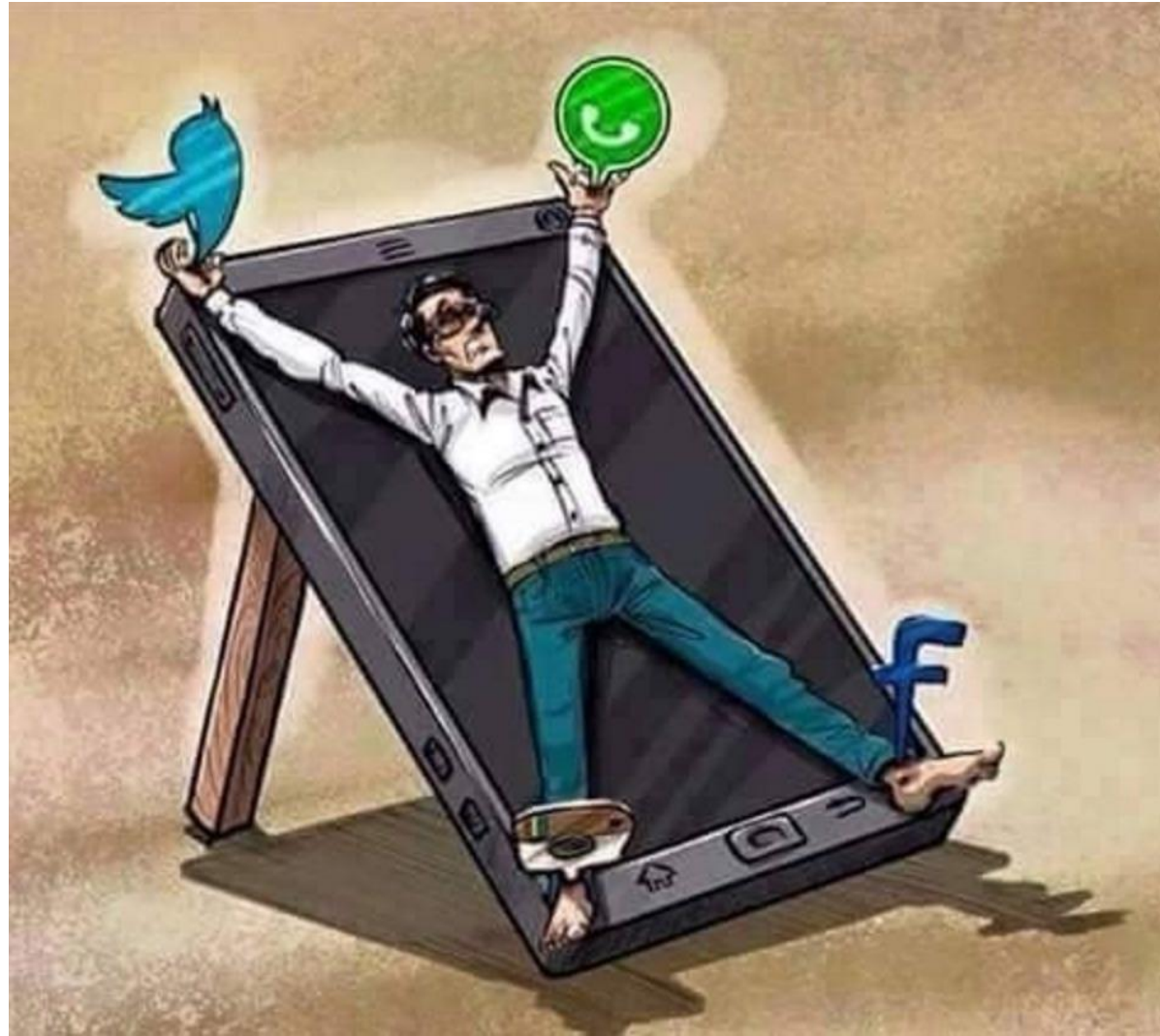
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Individuals must rethinking their relationship with information

...and be critical to it, as it does not provide more than the raw material to be processed



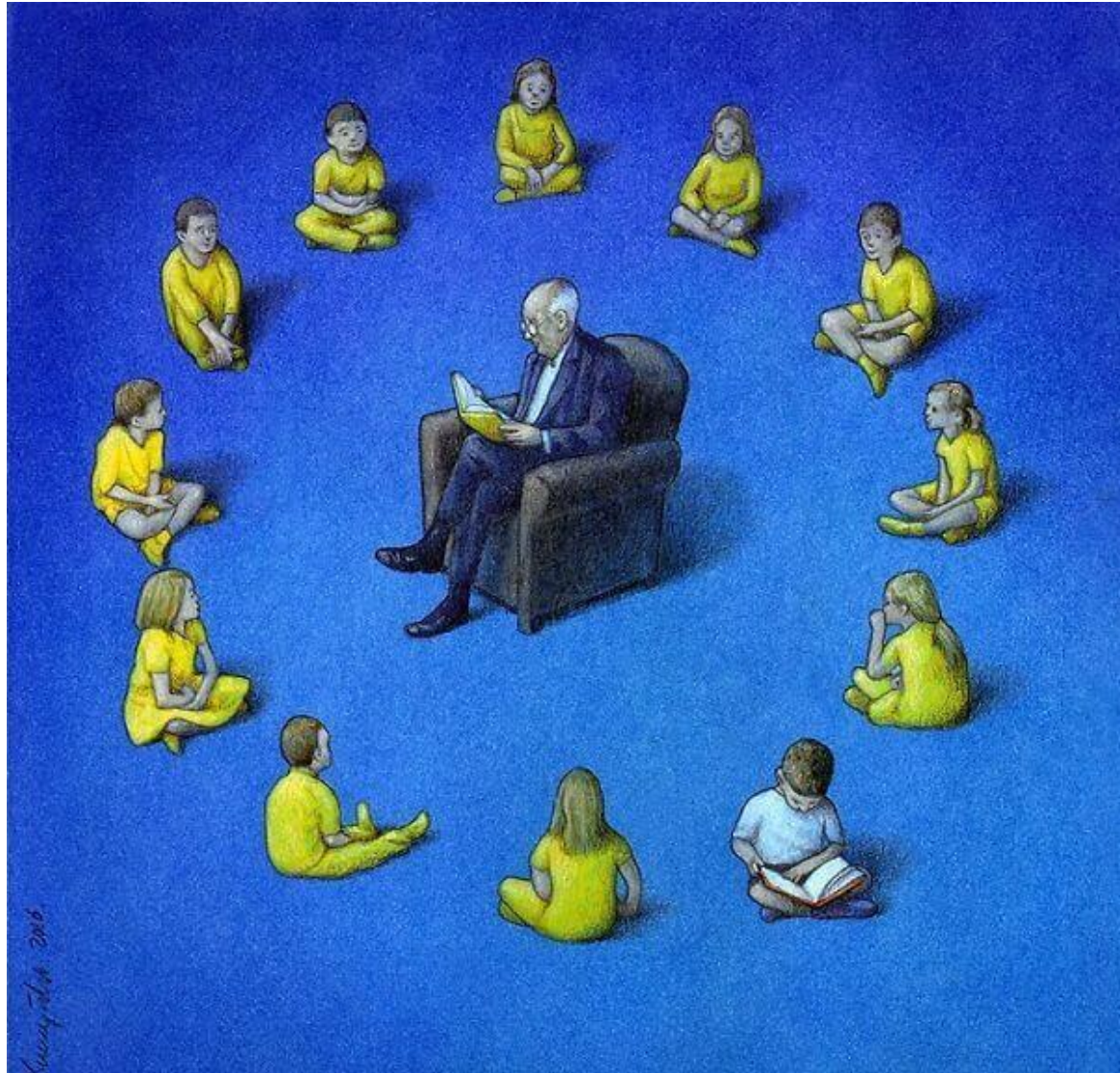
We are now stuck to more intrusions than those who we can cope with (infloglut issues are higher than ever)



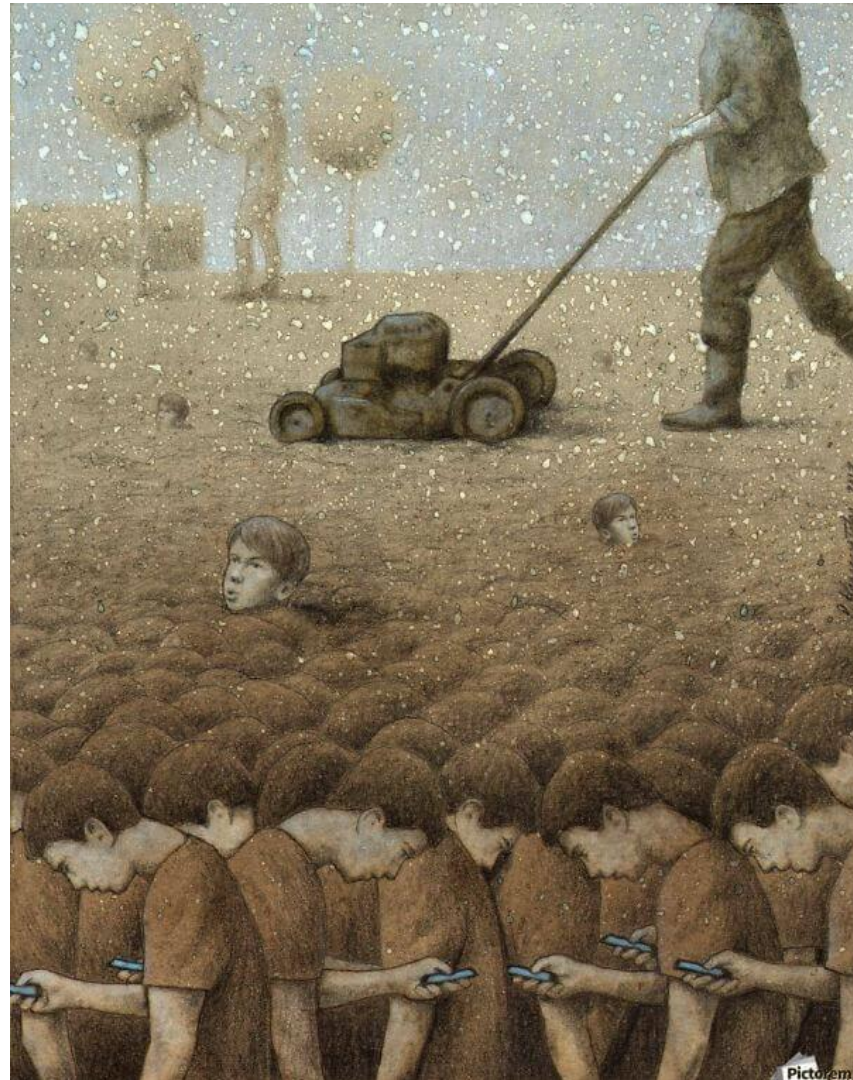
Digital provides a new addition to transfer ourselves to a digital world (digital time do not obey physical space)



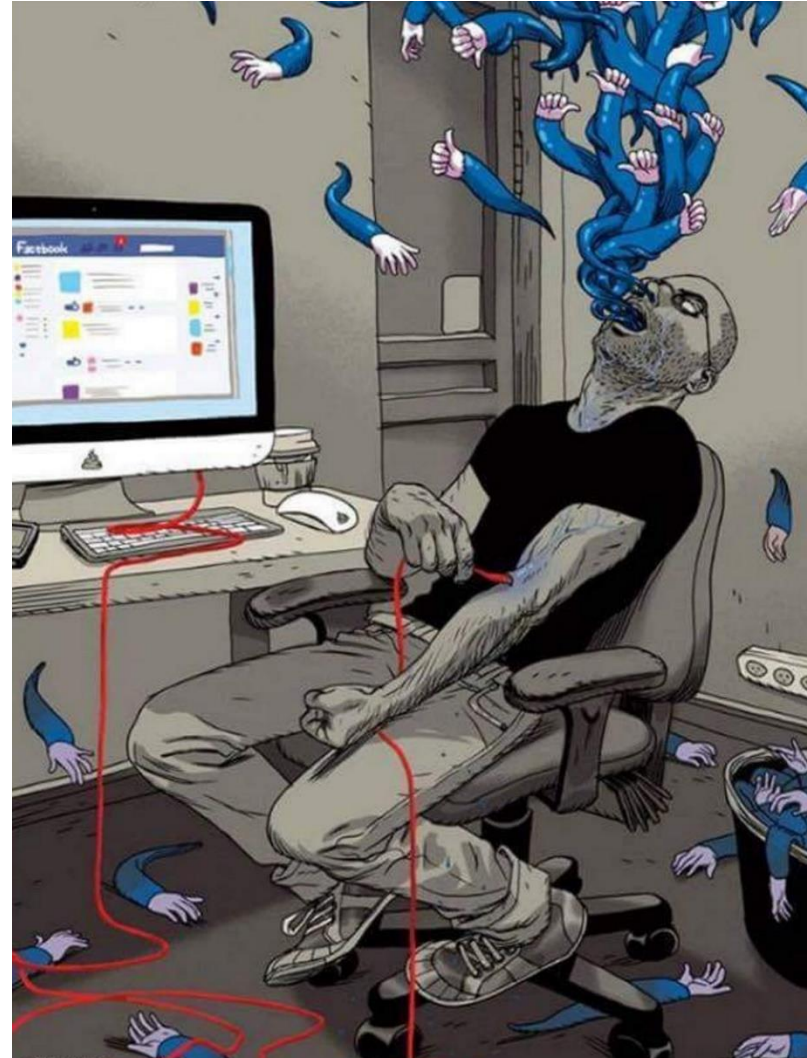
Reading habits provide the cure? (and thus p-books allow to learn about physical place – a new life for p-books emerge)



We are not anymore in an uniform and rule based world were we share common processes to get the same (those who not follow need to be considered and not punished – not what social media exactly do)



We need to use social media, but we need to learn to use it (this is the normal old and know society game with a new digital context, but non digital business as usual apply)



Unexpected challenges
will be ahead (for sure
and some of them quite
strange, provide by our
lack of knowldge of how
to deal with all that
complex world)

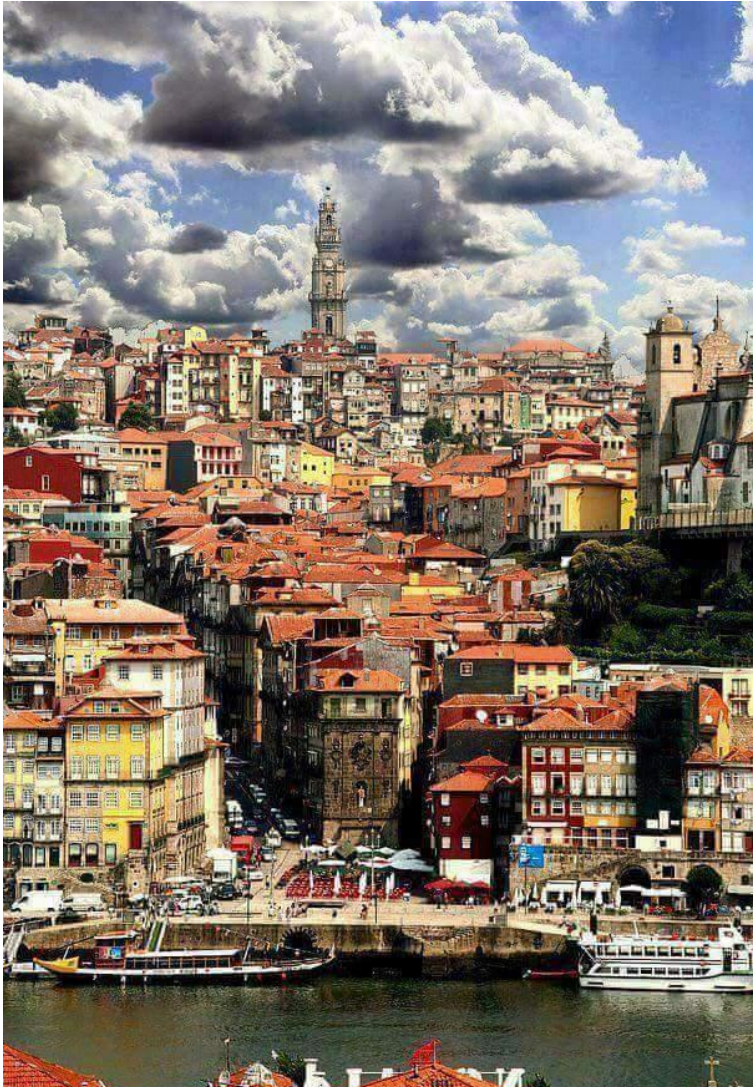


Reality tends to
provide more
surprises than fiction

Let's ride the future,
proving,
experimenting new
forms to turn the
digital into
opportunities to
harness people



Hope this brief talk allow to share that we may have a bright future ahead (and an exciting one)



Some work done

A number of references related with

Digital Cities Concepts & proposals

- Gouveia, J. e Gouveia, L. e Xavier, J. (2003). Gaia Global: o concelho de Gaia no digital. 1º ano de projecto. Conceitos e diferenciação. Câmara Municipal de Gaia, Energaia/POSI. Maio.
- Available at http://homepage.ufp.pt/lmbg/textos/gg_brochura1.pdf



Digital Cities

Mobility issues

- Gouveia, L. (2003). A Mobilidade no Gaia Global. Câmara Municipal de Gaia, Energaia/POSI. Novembro

Available at

http://homepage.ufp.pt/lmbg/textos/gg_brochura2.pdf



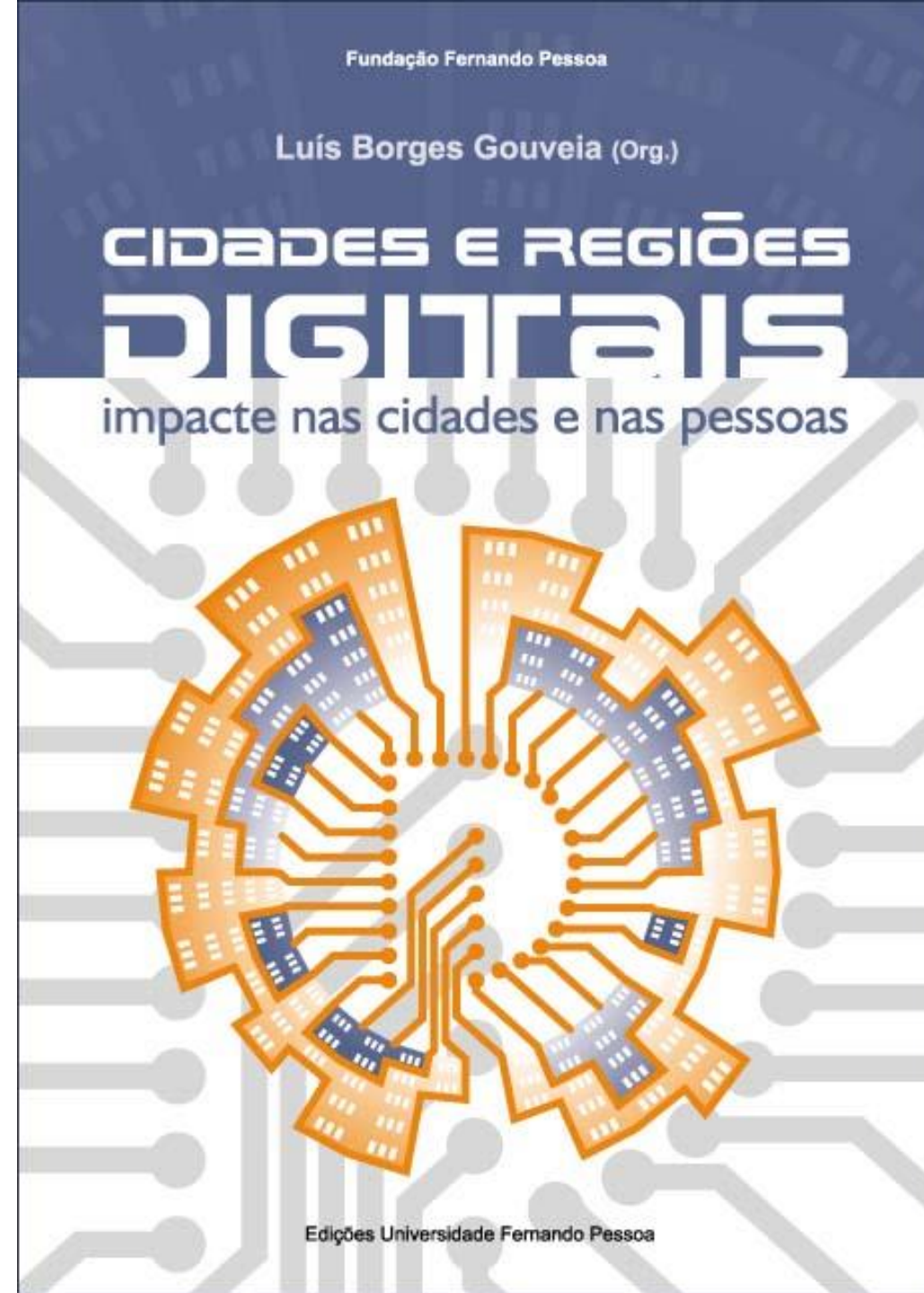
A MOBILIDADE
NO GAIA GLOBAL



Digital Cities

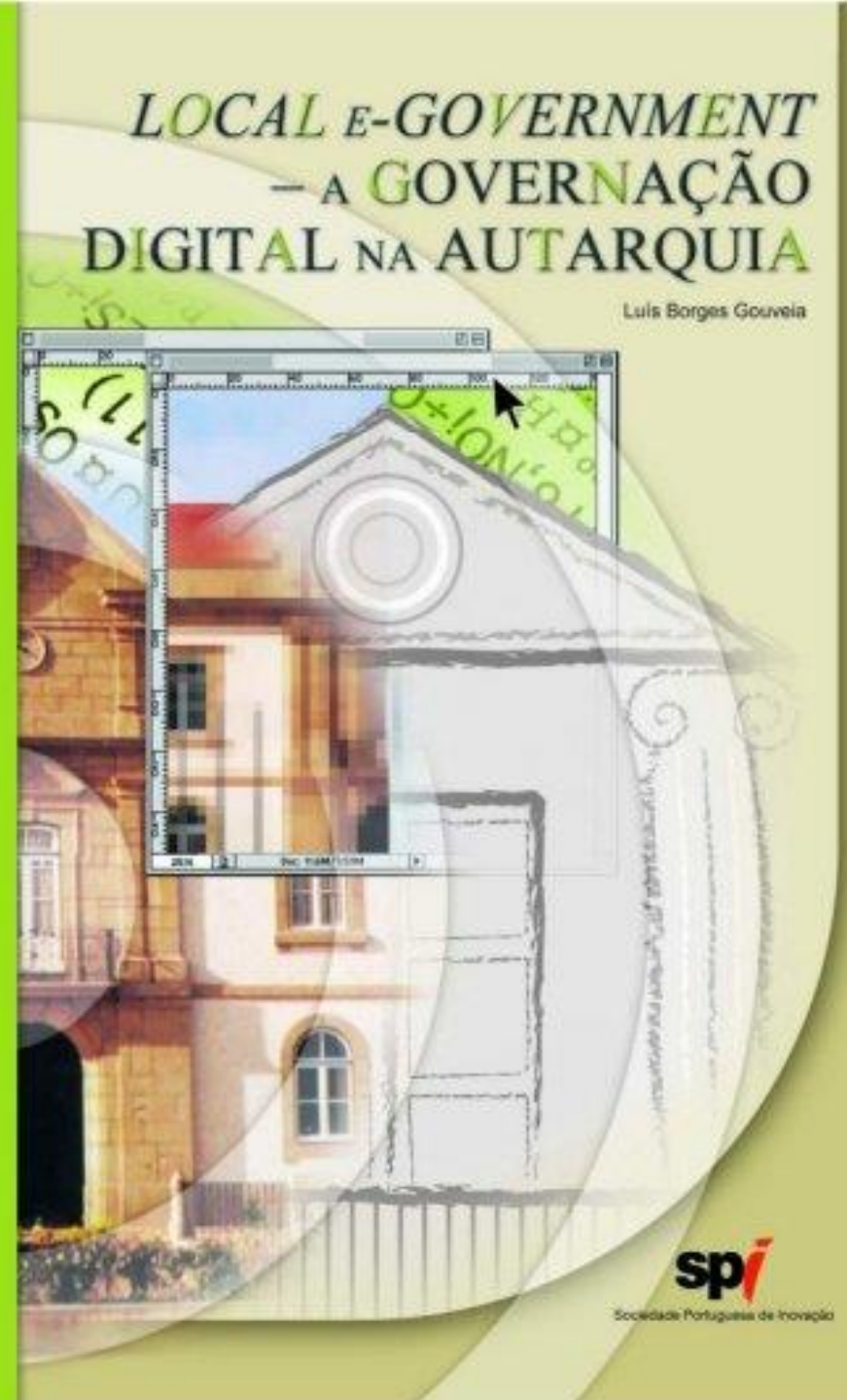
Operational discussion

- Gouveia, L. (editor). (2003). *Cidades e Regiões Digitais: impacte nas cidades e nas pessoas*. Setembro de 2003. Edições Universidade Fernando Pessoa. ISBN: 972-8830-03-3
- Information available at http://homepage.ufp.pt/lmbg/livro_crd03.htm



Local e-Government Concepts and context

- Gouveia, L. (2004). Local e-government: a governação digital na autarquia. Livro V - Colecção Inovação e Governância nas autarquias. Dezembro de 2004. SPI - Principia. ISBN: 972 8589 41 7.
- More information available at http://homepage.ufp.pt/lmbg/livro_egovaut05.htm



World e.gov Awards

Public participation

- Gouveia, L.; Sousa, A. and Agante, P. (2010). Democracy for a New Age. World e.gov Forum. Presentation at the European e-democracy Awards. Hotel de Ville d' Issy-les-Moulineaux. Paris. 14th October.
- A presentation available at <https://www.slideshare.net/lmbg/liberopinion-democracy-for-a-new-age>
- *More information available at* <http://libertrium.com/>



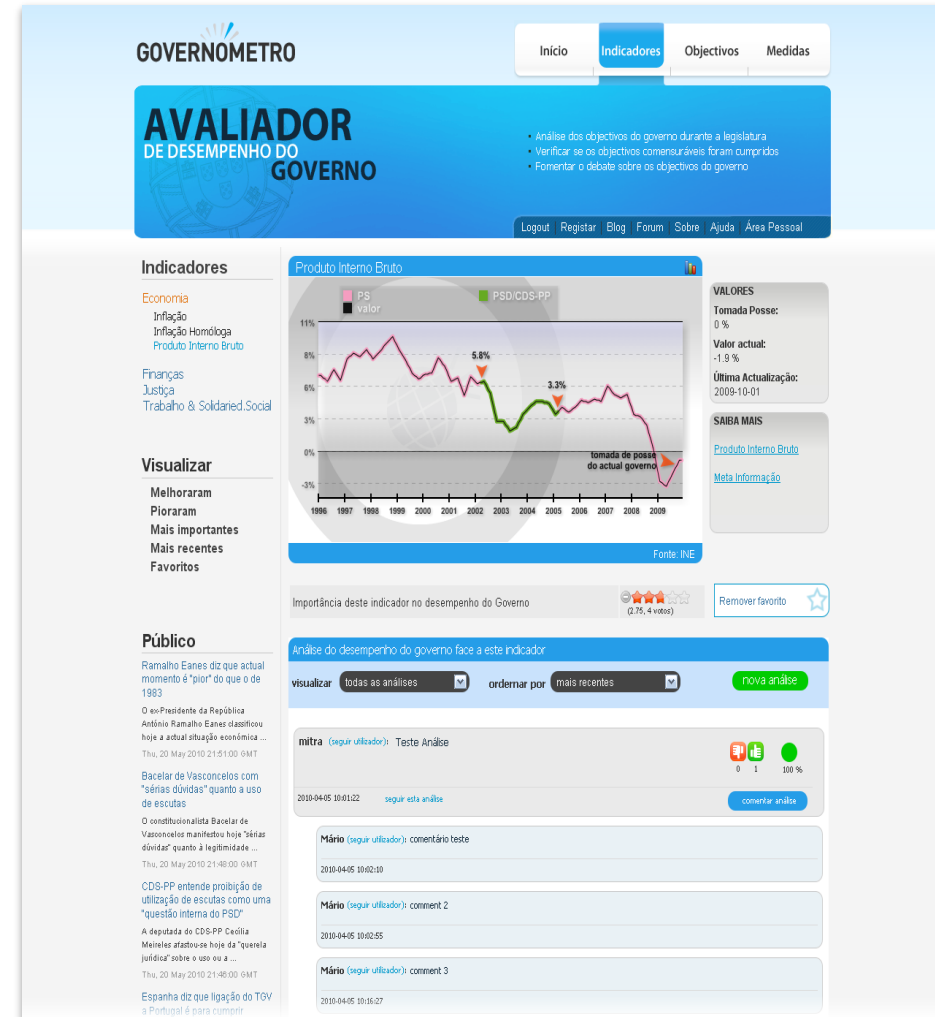
Elections – Main Features

- Citizens **submit** questions and ideas over a range of pre-defined topics
- Citizens **vote their interest** on the questions and suggestions in order to create the Top of the most relevant questions and suggestions
- Candidates **answer** the questions and **comment** the suggestions
- Candidates publish their electoral program organized by topics
- Citizens **compare** the candidates' electoral programs
- Debate zones (**circles of interaction**)
 - For candidates
 - For citizens and candidates



Governmenter – Main Features

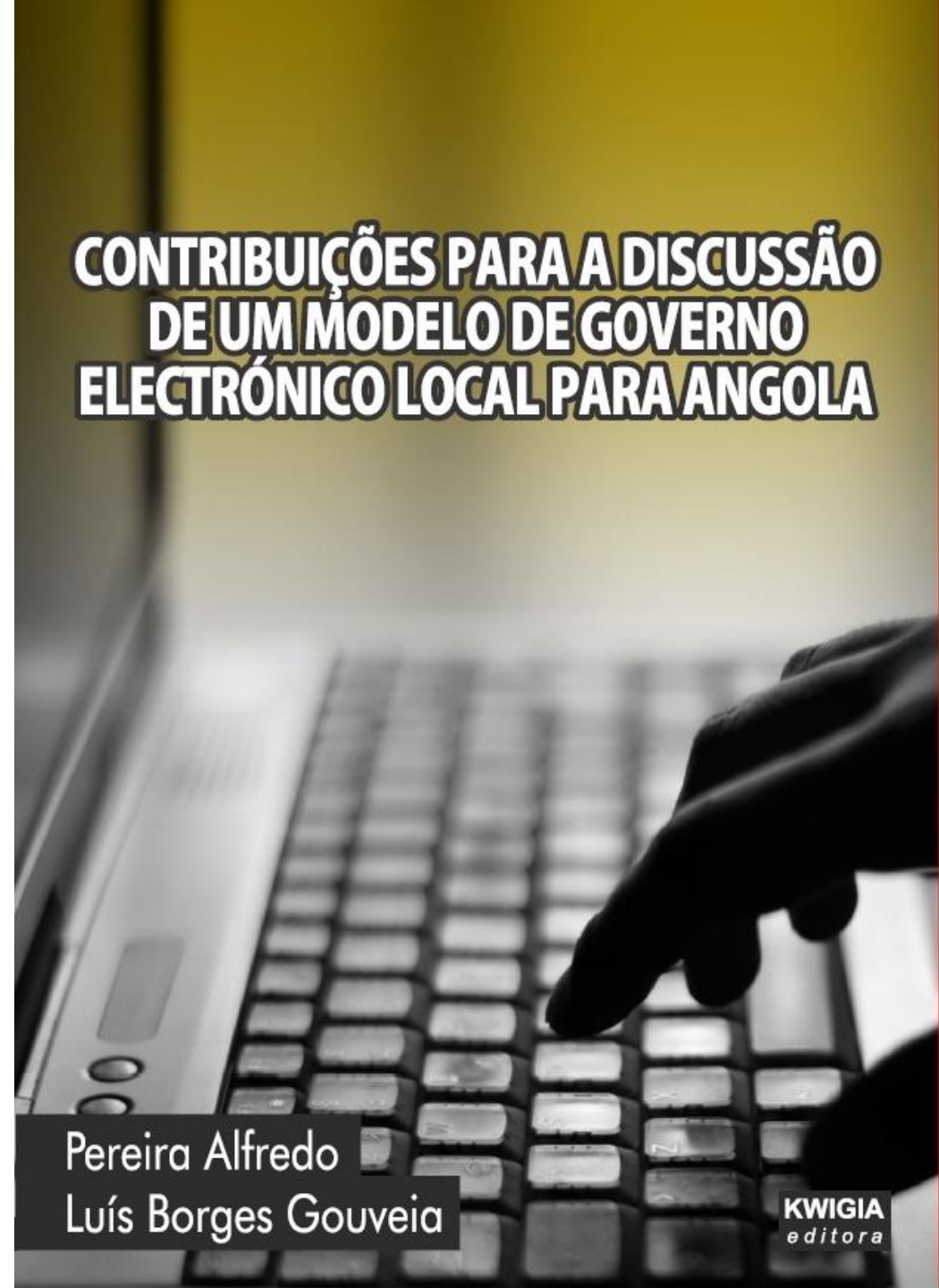
- Graphic display of the main **statistical indicators**
- Citizens submit their own **analysis** about the evolution of the statistical indicators
- Citizens give their **point of view** about whether the Government objectives have been fulfilled
- Citizens **debate** the measures proposed by the Government and Parliament



Local e-Government

A context specific proposal

- Alfredo, P. e Gouveia, L. (2015).
Contribuições para a discussão de um modelo de Governo Electrónico Local para Angola. Porto. Kwigia Editora.
ISBN: 978-989-99332-0-0.
- More information available at http://homepage.ufp.pt/lmbg/livro_pereira.htm



**CONTRIBUIÇÕES PARA A DISCUSSÃO
DE UM MODELO DE GOVERNO
ELECTRÓNICO LOCAL PARA ANGOLA**

Pereira Alfredo
Luís Borges Gouveia

KWIGIA
editora

Smart Cities Discussion & application

- Correia, A. e Gouveia, L. (2019).
Governação e Smart Cities. Estudo do Porto. Lisboa. Chiado Editora.
ISBN: 978-989-52-6487-2.
- More information available at
http://homepage.ufp.pt/lmbg/livro_smp2_019.htm



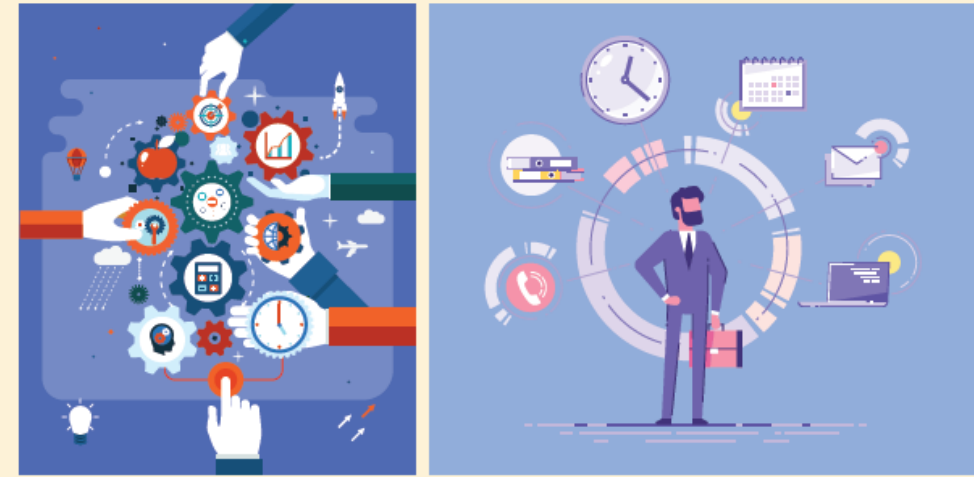
Social Innovation impact Public policies

- Barros, V. e Gouveia, L. (2019). Inovação Social, Impacto, Escala e Desenvolvimento Sustentável. Fevereiro. SEBRAE, Serviço Brasileiro de Apoio às Micro e Pequenas Empresas. Sebrae Nacional. Brasília.
- Available at <http://homepage.ufp.pt/lmbg/textos/NISA-Final.pdf>

Inovação
Social,
Impacto,
Escala e
Desenvolvimento
Sustentável

Social Innovation impact How to measure

- Barros, V. e Gouveia, L. (2019). Por que mensurar os impactos sociais e ambientais dos pequenos negócios eleva a competitividade?. Dezembro. SEBRAE, Serviço Brasileiro de Apoio às Micro e Pequenas Empresas. Sebrae Nacional. Brasilia. ISBN 978-65-5021-052-6.
- Available at <http://homepage.ufp.pt/lmbg/textos/ODSsebrae2019.pdf>



**POR QUE MENSURAR OS IMPACTOS
SOCIAIS E AMBIENTAIS DOS PEQUENOS
NEGÓCIOS ELEVA A COMPETITIVIDADE?**



PhD related concluded works

PhD thesis, Master dissertations and papers

PhD IS, e-government related works

- Sohail Khan, **MSL Framework** (Minimum Service Level Framework) **for Cloud Providers and Users**, dez, 2018
- Amaro Correia, **Cidades Inteligentes**: contribuição da governação e das políticas públicas para o território - uma reflexão sobre a cidade do Porto desde 1985, November, 2018
- Gabriel Salimo, **Os Desafios da Era Digital no contexto do Ensino Superior** em Moçambique, January, 2018
- Carlos Quental, **A mediação digital como suporte para a participação** no contexto dos sindicatos de professores,, February, 2015
- Pereira Alfredo, **O Governo Electrónico Local no Contexto de Angola**: proposta de um modelo conceptual, February, 2015
- Artur Sousa, **Proposta de Utilização de Mediação Digital para a Participação Pública Direta em Períodos Eleitorais**, April, 2013
- Sandra Gaio, **Stakeholders based branding: uma abordagem integradora dos actores locais na gestão de marcas territoriais**, June, 2010

MSc e-government related works

- Patrícia Ticom, **A Importância dos Contratos de Transferência de Tecnologia** nos Laboratórios Farmacêuticos Oficiais no Brasil: O Caso Farmanguinhos / Fiocruz, Ciências Empresariais, Universidade Fernando Pessoa, Outubro, 2019
- Laís Rocha, **Economia Compartilhada e Geração Y: A Troca da Posse pelo Uso - Um Estudo Empírico**, Ciências Empresariais, Universidade Fernando Pessoa, Junho, 2017
- Piret Alvre, **The Impact of Interface Animations on The User Experience: Directing Customer's Attention in Online Shopping Sites'** supervisors. Tallinn University, June, 2017
- Nuno Biltos, **Comportamento organizacional: proposta de um questionário para estudo do Impacto dos Incentivos Comunitários às Empresas. O caso das Microempresas (apresentação)**, Ciências Empresariais, Universidade Fernando Pessoa, Novembro de 2016
- Sebastião Ngúvulo, **Conceção de um Sistema Informático de Gestão do Pessoal** do ISCED – Cabinda, Engenharia Informática, Universidade Fernando Pessoa, Julho de 2016
- Paulo Neto, **O Processo Judicial Eletrónico Brasileiro**, Engenharia Informática, Universidade Fernando Pessoa, Abril de 2015
- Martinho Oliveira, **O Recurso a Tecnologias Web para Suporte da Gestão do Conhecimento Organizacional**, Ciências Empresariais, Universidade Fernando Pessoa, Março de 2014

MSc e-government related works

- Teresa Cardoso, **As Bibliotecas e as redes sociais no digital**. Quem usa e como usa no Distrito de Aveiro, Ciências da Informação e Documentação, Universidade Fernando Pessoa, Abril de 2012
- Paula Moura, **A gestão da oferta cultural nos museus**: o uso do digital na gestão integrada da informação. Gestão da Informação, Universidade de Aveiro, Outubro de 2009
- Marco Pereirinha, **Contribuição para o desenvolvimento de um modelo de cartão do munícipe**. Gestão da Informação, Departamento de Economia, Universidade de Aveiro, Novembro de 2006
- Paulo Teixeira, **Estudo da adopção do local e-government**. O caso das Juntas de Freguesia do concelho de Vila Nova de Gaia. Gestão da Informação, Universidade de Aveiro, Novembro de 2005
- Jorge Graça, **Avaliação da adopção da formação a distância**: o caso de estudo da GNR. Gestão da Informação, Universidade de Aveiro, Novembro de 2005
- Jorge Xavier, **O Impacto das Cidades Digitais na Sociedade da Informação**. O caso Português, Gestão da Ciência, Tecnologia e Inovação, Universidade de Aveiro, Julho de 2004

Selected papers on related work

- Pinho, M.; Gouveia, L. (2019). **O uso do Governo Digital pelo controle social no combate à corrupção pública brasileira.** Revista Controle – Doutrina e Artigos. V. 17, n. 2, pp 206-237. e ISSN: 2525-3387. DOI: 10.32586/rcda.v17i2.532
- Gouveia, L.; Mançu, R. e Cordeiro, S. (2019). **Proposed Integration of the Technical Regulations of Systems of Management of Operational Safety and Structural Integrity of Facilities, defined by the ANP of Brazil.** International Journal of Advanced Engineering Research and Science (IJAERS). Vol. 6, Issue 7, pp 197-210. July 2019. ISSN: 2349-6495(P), 2456-1908(O). DOI: 10.22161/ijaers.6724
- Lima, C. e Gouveia, L. (2019). **Interações entre os Agentes envolvidos no Portal da Transparência.** Revista Juris UniToledo. Araçatuba, SP. V. 04, n. 04, pp 46-59. Out/Dez. ISSN: 2526-6500.
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