Arthur D Little

Viewpoint

Digital Inclusion in public services

Enhancing digital literacy, skills and inclusion in public services

Despite investments and efforts, the performance in "connectivity" of different European regions is not homogenous. Moreover, our analysis shows two meaningful trends: first, the more confident individuals are with technology, the more they interact online with public authorities; second, the more public R&D budget is devoted to the ICT dimension, the more businesses appear positively "dominated" by technology. This means having a digital infrastructure is necessary, but not an adequate condition to succeed. European governments should focus on enhancing "digital confidence." A Digital Competence Center represents a possible way to increase digital competences as well as public services' "inclusion" in peoples' lives and businesses' operations.

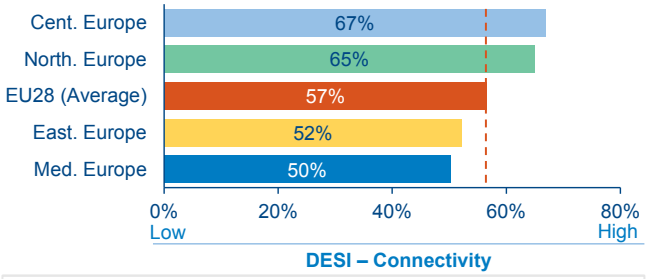
The European Landscape

Enhancing digital literacy is one of the priority issues that European public administrations are addressing. Despite their investments and efforts, some European governments are still far from reaching their objectives.

Relevant EU Initiatives for Enhancing Digitalization

- **eGovernment Action Plan 2016–2020:** This will modernize digital public services, enabling people to get the full benefits from digital public services that should be available seamlessly across the EU
- **Horizon 2020:** This promises more breakthroughs, discoveries and world "firsts" by taking great ideas from the lab to the market
- **The fourth industrial revolution (Industry 4.0):** This aims to leverage differences between the physical, digital and biological sphere, and integrate cyber-physical systems, the Internet of Things, big data and so on

The actual question is this: "Is Europe ready to embrace digital?" The answer is not as simple as it seems; in fact, there are many variables to take into consideration. The first is the presence of digital infrastructures. Focusing on the **DESI index**[1] **on "Connectivity"** (i.e. deployment of broadband infrastructure and its quality level), the performance of different European regions is not homogenous.



Cent. Europe: Austria, Belgium, France, Germany, Netherlands, Luxembourg;
North. Europe: Ireland, Estonia, United Kingdom, Finland, Sweden, Denmark, Norway;
East. Europe: Bulgaria, Poland, Croatia, Lithuania, Slovenia, Hungary, Latvia, Slovakia, Czech Republic;
Med. Europe: Greece, Italy, Portugal, Cyprus, Malta, Spain

Source: The Digital Economy & Society Index – DESI (http://ec.europa.eu/digital-single-market)

However, the deployment of digital infrastructure is just one piece of the entire puzzle. To have a better understanding of Europe's digital landscape, Arthur D. Little has developed two aggregate indicators:

- **Citizen Digital Confidence Index (CDCI)**[2]: measure of citizens' familiarity and confidence with technology

1 DESI (Digital Economy & Society Index) is an official and reliable source which summarizes relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness.

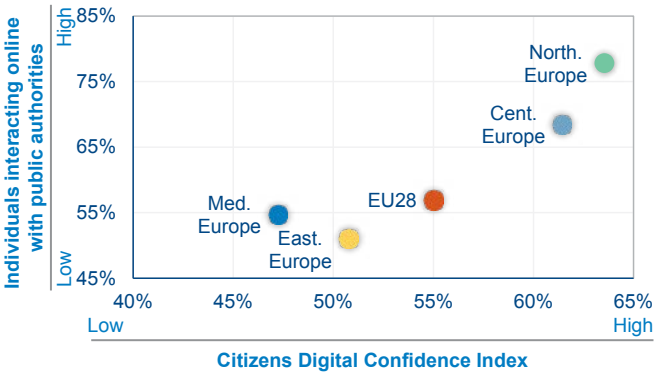
2 CDCI Index was developed taking in consideration four different variables (source: European Commission – Digital Scoreboard): % Individuals who have never used the internet, % Individuals ordering goods or services online, % Individuals who have obtained ICT skills through formal educational institutions, % Individuals who have caught a virus or other computer infection resulting in loss of information or time.

- **Corporate Digital Penetration Index (CDPI)**[3]: measure of how much technology positively dominates businesses

Arthur D. Little has found some interesting correlations that go **beyond the infrastructure dimension.**

Citizen Digital Confidence Index (CDCI)

Arthur D. Little found that the **CDCI index** is proportional with the ratio of **individuals interacting online with public authorities.**

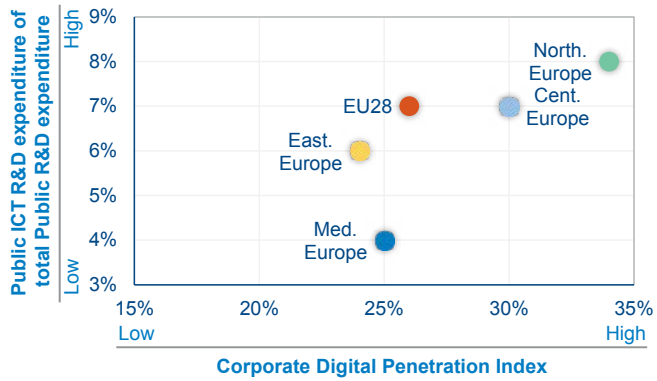


Source: Arthur D. Little analysis

As we see, the more confident individuals are with technology, the more they interact online with public authorities. This means having a digital infrastructure, as well as setting up public online services, is **necessary**, but **not an adequate condition to succeed**. There are other variables, such as "digital literacy," that have to be taken into consideration.

Corporate Digital Penetration Index (CDPI)

Similar considerations also apply to businesses. Arthur D. Little found an interesting correlation between the **CDPI index** and the amount of **public expenditure on ICT R&D**.



Source: Arthur D. Little analysis

As we see, the more public R&D budget is devoted to the ICT dimension, the more businesses appear digital and positively "dominated" by technology.

This means that to ensure a real digital transformation of businesses, it is fundamental for each country to invest in **intellectual capital**, especially in the ICT dimension.

Next steps: Create competences

The Arthur D. Little analysis shows two main problems. On one hand, to fill the gap in **"digital connectivity,"** European countries need to invest in digital infrastructures, allowing citizens and enterprises to be completely "wired."

On the other hand, to fill the gap in **"digital confidence,"** European countries are called to:

- Create wide, specific and long-lasting competences in citizens
- Direct ICT public spending to the most effective R&D projects, to enhance the environment in which enterprises are immersed

But what does "digital competences" really mean?

According to the "DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe,"[4] a "digital citizen" must be able to retrieve information on the internet to communicate and collaborate through digital media, and so on. This confirms that digital competences are one of the key requirements for citizens' achievement of goals and objectives.

According to the "European e-Competence Framework 3.0"[5], there are some areas of competence that every organization should include to be defined as "digitally covered": ability to manage IT strategy, process improvement, business change management, technology trend monitoring and so on.

The Digital Competence Center

One action to facilitate the creation of digital competences is the setup of a Digital Competence Center (DCC).

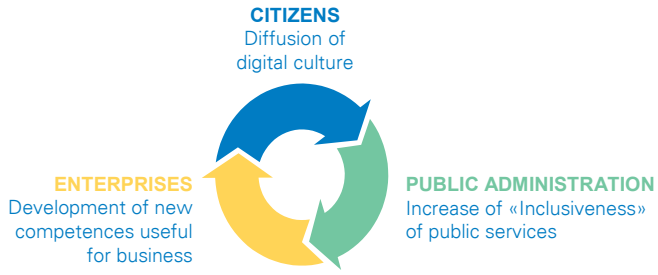
A Digital Competence Center is a coalition of experts that facilitate collaboration (physical or digital) in order to share knowledge and increase the possibility that innovative projects involving digital public services become widespread and successful.

It is an operational framework which includes:

- **Organization & processes:** resources and operating models to structure and lean the information flow
- **Methodologies:** structured methodologies to homogenize competences
- **Tools:** appropriate tools to support collaboration and knowledge sharing

3 CDPI Index was developed taking in consideration four different variables (source: European Commission – Digital Scoreboard): % Enterprises having a website with some sofisticated functionalities, % Enterprises employing ICT specialists, % Enterprises provided training to their personnel to develop/upgrade their ICT skills, % Enterprises providing portable devices to more than 20% of their employed persons.
4 For further details: "DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe", Joint Research Centre, 2013.
5 For further details: "European e-Competence Framework 3.0, CEN (European Committee for Standardization), 2014 (updated in 2016).

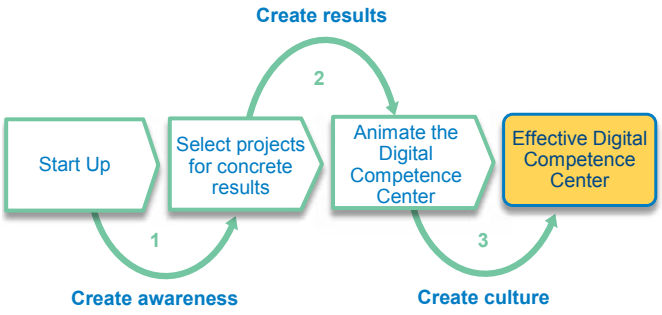
The long-term objective of a Digital Competence Center is to create a **"virtuous circle"** among citizens, enterprises and public administrations:



A Digital Competence Center represents a way to increase the level of digital confidence in citizens and enterprises, as well as public services' "inclusion" peoples' lives and businesses' operations.

How to build an effective Digital Competence Center

Arthur D. Little has identified a framework to build an effective Digital Competence Center.



The biggest risk in the **start-up phase** of a Digital Competence Center is quick loss of commitment. To avoid this kind of "false start," Arthur D. Little recommends the following key enabling factors:

- Ensure that the DCC has a concrete scope and the right amount of dedicated resources
- Give the DCC a unique identity which everyone can recognize, for instance, through a brand-new logo
- Create enabling tools for collaboration and knowledge sharing. The DCC web portal represents both a contents window and a working tool containing news, objectives, contacts and publications

To obtain **concrete results in reasonable time**, it is necessary to focus on a restricted number of innovative projects on public services. Some key enabling factors are:

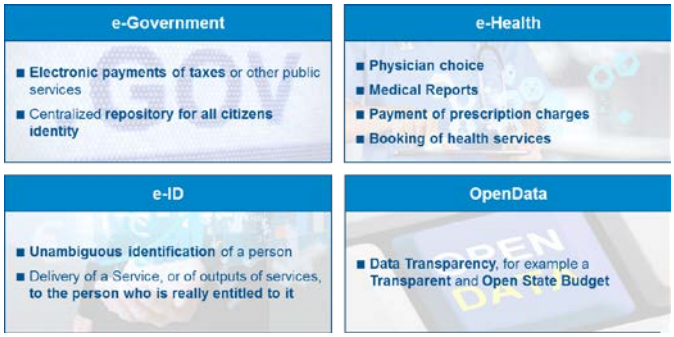
- Identify some innovative projects aimed at increasing digital confidence in public services: explain how things that were analog could now be used in digitally
- Provide a neutral platform for stakeholders to work together and collaborate. Every project is contained in a dedicated digital forum, enabling users to share questions and information with other users and domain experts
- Design a dashboard to monitor the level of digital competence achieved
- Share knowledge-conducting workshops, both physical and digital
- Share concrete results: on the completion of a single project, Arthur D. Little advises writing a case study on it

Projects should be updated periodically to empower confidence in public digital services.

Some enabling factors to **"animate" the Center of Competence** are:

- Share knowledge which the Digital Competence Center has created through educational and technical studies, and stimulate collaboration and debates among participants
- Communicate innovations and forthcoming regulatory requirements
- Expand the network, creating interest in a wide audience

Some **examples** of innovative **public services** for citizens and enterprises include:



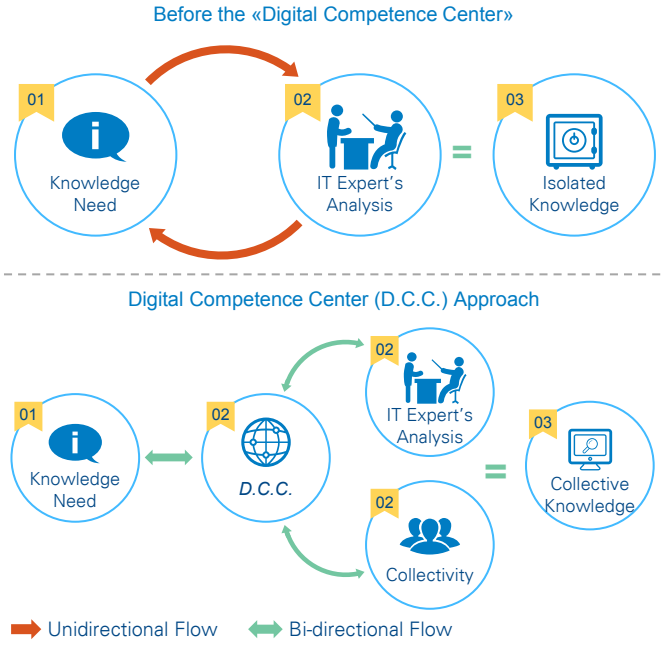
Actual Case: Digital Competence Center for a Regional IT Agency

A regional IT agency's Digital Competence Center was born from the need for a limited number of IT experts to overcome a slow and often ineffective advisory process with public authorities and institutions.

The key aspects that have led to the Digital Competence Center are:

- **Voluntary initiative** of a limited number of IT experts
- Periodic and **high frequency of meetings**
- Use of a **structured** and **recognizable approach**
- Spread of a **collaborative culture**, with the aim of sharing competences and stimulating discussion
- Creation of a **"visual identity"** (e.g. a unique logo)
- Setup of the DCC's communication/interaction channels (dedicated mailbox and **web portal**)

The implementation of the Digital Competence Center has led to a radical **change in the approach** to how **knowledge is handled**. With the advent of the Digital Competence Center, in fact, the creation and management of knowledge has become a **collective** and **bidirectional** process.



The Digital Competence Center's Web Portal

The **web portal** has played a major role in the success of the Digital Competence Center.

The key aspects of the web portal are:

- **Cooperation asset** between members and stakeholders of the DCC
- **"News" section** which can serve as a marketing tool
- Built-in **user management module** which can grant access to certain sections (or projects) of the website, only for specific types of users
- **"Projects" section** to monitor and gather information on active projects
- **"Training" section** to help spread knowledge between members
- **Social capabilities**, such as: blog commenting feature, social forum feature, social sharing buttons

Conclusion

The analysis of indicators shows that differences among European regions are caused by both infrastructure divides and gaps in competences and digital confidence. Concerning infrastructures, EU countries should continue to invest in reducing this important divide and provide themselves with more efficient connectivity assets. To address the gaps in "digital confidence," EU countries need to create "digital culture," transmitting the real value of digital competence.

One possible solution is to support the creation of Digital Competence Centers. The center must become a powerful hub, leading to real digital inclusion of public services.

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Arthur D. Little

Arthur D. Little has been at the forefront of innovation since 1886. We are an acknowledged thought leader in linking strategy, innovation and transformation in technology-intensive and converging industries. We navigate our clients through changing business ecosystems to uncover new growth opportunities. We enable our clients to build innovation capabilities and transform their organizations.

Our consultants have strong practical industry experience combined with excellent knowledge of key trends and dynamics. Arthur D. Little is present in the most important business centers around the world. We are proud to serve most of the Fortune 1000 companies, in addition to other leading firms and public sector organizations.

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