

2021

Digital (Re)Evolution In An Italian Public Administration: Some Implications In Pandemic Era

Anna Maria Melina

Università degli Studi "Magna Graecia", amelina@unicz.it

Concetta Lucia Cristofaro

Università degli Studi "Magna Graecia"

Walter Vesperi

Università degli Studi "Magna Graecia"

Rocco Reina

Università degli Studi "Magna Graecia"

Follow this and additional works at: <https://aisel.aisnet.org/itais2021>

Recommended Citation

Melina, Anna Maria; Cristofaro, Concetta Lucia; Vesperi, Walter; and Reina, Rocco, "Digital (Re)Evolution In An Italian Public Administration: Some Implications In Pandemic Era" (2021). *ITAIS 2021 Proceedings*. 17. <https://aisel.aisnet.org/itais2021/17>

This material is brought to you by the Annual conference of the Italian Chapter of AIS (ITAIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ITAIS 2021 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Digital (Re)Evolution In An Italian Public Administration: Some Implications In Pandemic Era

Anna Maria Melina¹[0000-0001-6725-7992], Concetta Lucia Cristofaro²[0000-0001-9839-7613],

Walter Vesperi³[0000-0002-3388-184X] and Rocco Reina⁴[0000-0002-0788-2996]

¹ Università degli Studi “Magna Graecia”, Viale Europa 88100 Catanzaro, Italy

² Università degli Studi “Magna Graecia”, Viale Europa 88100 Catanzaro, Italy

³ Università degli Studi di Messina - Piazza Pugliatti 98122 Messina, Italy

⁴ Università degli Studi “Magna Graecia”, Viale Europa 88100 Catanzaro, Italy

amelina@unicz.it

Abstract. Nowadays, the COVID-19 pandemic condition has generated an acceleration of change in public administration. The challenges around the COVID-19 pandemic have further spurred public organizations into action by increasing their awareness of the need to accelerate digital transformation. The digital revolution in public administration is defined as "e-government". The context of public administration appears to be increasingly complex and requires skills able to better manage the digital transformation under-way. The role of the Human Resources Manager, in this particular historical phase, in which the work is digitalized, is transformed. The figure of the Human Resources Manager (HR Manager) overlaps with that of the Chief Digital Officer (CDO). In recent years, the role of the Chief Digital Officer has emerged and attracted scholars' attention. However, the role of the CDO is still in its nascent and not well-defined stages, the role means different things for different organizations. On this basis, the main objective of the research is understanding if the HR manager is also a CDO in this historical phase in public organizations; trying to understand if the CDO is going to play the role of change agent in these organizations. This study is based on qualitative analysis.

Keywords: Digital Transformation; Public administration; New Digital Skills; E- government; Chief Digital Officer

1. Introduction

Public administrations - like any organization - are subject to pressures to change from the external environment. Nowadays, the COVID-19 pandemic condition, has generated an acceleration of change in public administration. The challenges around the COVID-19 pandemic have further spurred public organizations into action by increasing their awareness of the need to accelerate digital transformation (Hanelt et al, 2020; Gabryelczyk, 2020). The digital transformation represents a theme transversal to the various business areas, the types of organizations and the corporate roles themselves; it is a theme that closely concerns all organizational figures (Richini P. et al, 2018). As digital transformation has an impact on every sector. The digital evolution in public administration is defined as "e-government" (Silcock, 2001).

The context of public administration appears to be increasingly complex and requires skills able to better manage the digital transformation underway. The various economic transformations that in history have been identified in industrial revolutions, are accompanied by great technical-scientific discoveries and have changed the way of producing and working by making positive innovations in economic, social and political systems. Big Data, Internet of Things, Cloud Computing, Artificial Intelligence (AI), Augmented Reality, are the most commons indicator of the digital transformation that is affecting organizations (Temperini et al., 2017). The use of all these innovations is changing the way of producing within organizations, forcing them to have agile and rapid process and more productive employers. According to Frishammar et al. (2018) the success of an organization's digital transformation depends heavily on the presence of human capital with the appropriate skills. The gradual decrease in the cost and complexity of technology implementation will generate what is called the "Skills Revolution"(Pedron, 2018) and the skills considered adequate today will soon become obsolete, in fact the skills life cycle, i.e. the useful time for which these skills are still usable and effective, is the shortest ever and will tend to shrink further due to rapid technological progress. This therefore requires training and continuous improvement of the skills of the organization's human resources (Frishammar et al., 2018). Even training must be presented with a set of innovative tools that allow you to create a learning environment consistent with the content covered. To response these digital evolution of public administration new skills is needed. The role of Human Resources Manager, in this particular historical phase, in which the work is digitized, is transformed. The figure of the Human Resources Manager (HR Manager) overlaps with that of the Chief Digital Officer (CDO). In recent years, the role of the Chief Digital Officer has emerged and attracting the scholars' attention. However, the role of the CDO is still in its nascent and not well-defined stages, the role means different things for different organizations (Tumbas et al., 2017). From the role that the CDO is assuming derives from itself the need to understand the impact of digital transformation on the position

of this corporate figure and on the skills required. Chief Digital Officer is a person who helps an organization or a public administration to face the digital transformation, using new technologies and big data (Tumbas et al, 2020; Haffke et al, 2016; Horlacher et al, 2016). The goal is to achieve business improvement and growth objectives more quickly. The Chief Digital Officer is called upon to bring about a change within the organization. On this basis, the main objective of the research is to understanding the phenomenon to verify its impact on public organizations. Given the pandemic situation that pushes towards ever greater digital transformation, the objective of the analysis is to understand if the HR manager is also a CDO in this historical phase in public organizations; trying to understand if the CDO is going to play a role of change agent in these organizations. This study has an exploratory nature. The methodological process followed for the literature review makes use of the Vos Viewer software to try to better understand the links between the CDO and the world of public administration, analyzing the various correlations between the issues.

The article is structured as follows: an introductory part that summarizes how digital transformation has required the introduction of new managerial figures within organizations with digital skills; the part relating to literature that deals with the issue of e-government and the importance of the use of digital technologies in the various processes of public administration, analyzing, through the little literature found, the emerging figure of the CDO. The work continues with the methodological process carried out to obtain the first results.

2. Theoretical Background

2.1 E-government and Organization design parameters

The public sector - and consequently public administrations - are under constant pressure to change. In particular, the citizen / user increasingly requires greater transparency of administrative procedures and greater speed of response to their needs. In addition to these external pressures, public administrations must face internal pressures aimed at increasing the efficiency of their services to citizens and businesses. Consequently, in recent years, public administrations, at all levels, have started an "e-government" process (Di Maria and Micelli, 2004; Arpaia, et al.,2013; Twizeyiman and Andersson, 2019). E-government, is based on the use of digital technologies in the processes of the Public Administration. The introduction of e-government logics in public administrations has imposed a radical change in

organizational processes. E-government represents a crucial element in the modern debate of managerial studies and organizational theory. In fact, several studies have focused on the adoption of digital technology in services provided by public organizations (Homburg, 2018; Panagiotopoulos, et al., 2019). It emerges from these studies that - even with similar organizational characteristics - there is a considerable heterogeneity between public administrations of different countries or regions. In other words, PAs are a set of competences influenced by the context. Technical skills, competences and contextual factors are the factors that help scholars most to explain the evolution of PAs and the rate of innovation.

An interesting line of studies on e-government focuses on the role of the HR manager (Phang, et al., 2008; Glyptis, et al., 2020). This line of studies, based on the RBV, considers the figure of the HR manager as a repository of knowledge - such as routines, skills, technical and organizational skills - but above all as a promoter of innovation within the organization. In this line of studies, the term “skills” is used to indicate the investments made in human capital training and institutionalized R&D. Digital skills - therefore in the PA - derive from institutionalized learning processes associated with the production, use of technology and interaction with external subjects. Digital skills are subject to rapid change and a high rate of obsolescence. For this, the HR manager must start identifying different sources of knowledge, both internal and external to the organization (Cohen and Klepper, 1996). Furthermore, the PAs must be able to activate processes of acquiring knowledge and coordinating resources. The results of the study by Clark et al. (2008), highlight that the ability of PAs - and organizations in general - to innovate is determined by their ability to adopt and apply knowledge produced elsewhere.

It is increasingly emerging that the HR manager in the PA must also take on the role of promoter of digital innovation, often associated with the CDO. It is necessary to observe - through indicators - how the PAs are introducing e-government logics. An interesting indicator to consider is the Digital Economy and Society Index (DESI).

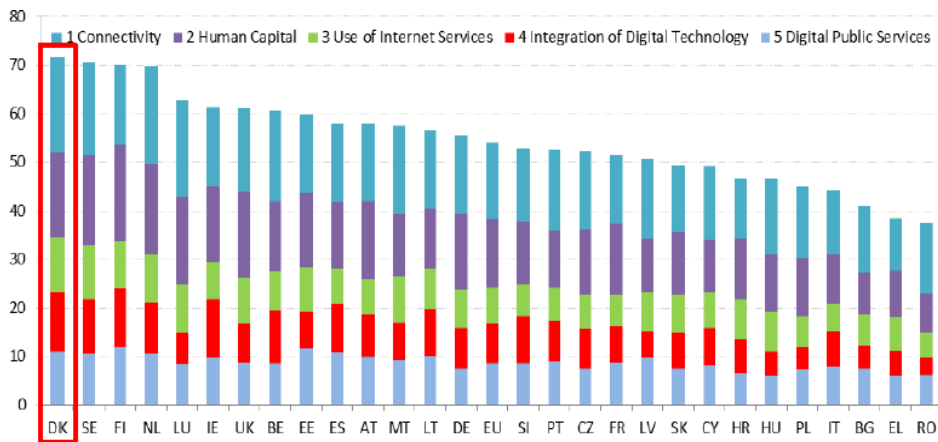


Fig. 1. Digital Economy and society Index (DESI) 2018 ranking

Source: Digital Economy and Society Index (DESI)1 2018 Country Report Denmark - <https://ec.europa.eu/digital-single-market/en/desi>

The graph above shows - at the European country level - how PAs incorporate the digital evolution process. The digital transformation process is based on structural parameters have two dimensions: vertical and horizontal mechanisms.

2.2 Chief Digital Officer in Public Administration

The main stream of studies analyzed the impact of COVID-19 in digital transformation terms in public sector. The digital transformations in public sector (e-government) impact on the expectations of citizens concerning the services provided by their governments and in the context of the rapid leapfrogging of public servants into remote working (Gabryelczyk, 2020). Today, the exploitation of new digital technologies is one of the most pressing challenges for organizations in all sectors. In particular, in complex organizations - such as public administration - the digital transformation has had a high impact. Growing pressures make their digital transformation a strategic priority necessary to embrace the opportunities offered by recent digital technologies. As organizations of all kinds face unrelenting changes in their environment, the need for individuals who are capable of turning strategy into reality has created a new legitimacy for the Chief Digital Officer (CDO) a change agent role.

Until a few years ago, IT led change within organizations was in the hands of the CIO. In line with Gonzalez et al (2019), its main tasks are: guaranteeing technical capacity, managing the outside world deliver, solicit and meet e-business requirements and governance and leadership. Despite these CIO-related skills and responsibilities, recent research has stated that CIOs have failed to gain strategic leadership positions in their organizations as their role is perceived as more technological rather than business-oriented, thus leaving out the strategic part. This could therefore explain the emerging role of CDO in organizations affected by digital transformation. The role of CDOs presents the organization's intention to embrace digital transformation. Existing literature has highlighted the strategic involvement of CDOs during digital transformation (Engesmo et al, 2019).

Digital transformation therefore becomes a critical management problem that requires new ways of managerial thinking and the CDO, is part of this rapidly growing environment. According to Horlacher and Hess (2016), the CDO is

responsible for the "proactive digitalization" but, must have adequate skills to fulfill his role within the organization. CDO could act within organizations, as a "change agent". In according with Ulrich (1995) the managerial skills that a "change agent" must possess are (Table n.1):

Table 1. Managerial Skills

Diagnose problems	Understanding both the business drivers and the organization well enough to identify performance issues and analyze their impact on short and long term business results
Build relations with clients	Forming partnerships with mutual responsibility for the outcomes of the change effort. Because the risk is higher than with most other HR roles the level of trust required is much higher.
Ensure that the Vision is Articulated	Interpreting the hopes and motivations of the workforce through the Vision statement.
Set a Leadership Agenda	Defining the ongoing role for leaders, such as communications, role modeling, reinforcement of desired behaviours etc.
Solve Problems	Recommending solutions. The change agent must possess the insight to recognize the problem, the sensitivity to see its importance to those involved, the courage to take honest and often difficult measures to resolve it and the credibility to be heard.
Implement Plans to Achieve Change Goals	Successful organizational change on any significant scale can be attributed to the right strategy and appropriate change in organization culture.

Source: Ulrich (1995- 2016)

In line with Horlacher and Hess (2016) the CDO is increasing its popularity in organizations that are planning a digital transformation. The CDO plays the role of "Spokesperson". This role involves the communication of information or ideas to people outside the own function. The spokesperson acts as an information and knowledge disseminator and politician, ensuring that the office is properly connected to the top level of the organization and to key decision makers in other departments. The role of "manager" that identifies business needs and develops solutions that change business situations. As such, he acts as an initiator and designer of change in the organization. The role of "Allocator" is responsible for the allocation of human, financial, and information resources. The role of leader is responsible for supervising, hiring, training and motivating subordinates. And the last of "Liaison" establishes a personal external network of relationships and develops contacts with important people outside his department. He communicates with the external environment

including the exchange of information with suppliers, customers, etc. (Hess, 2016, p. 5127).

CDO is therefore seen as someone who can give a digital footprint of an organization. The skills of a Chief Digital Officer are very different from those of other senior executives. According to Dumeresque (2014) the focus of CDO is customer / user centric technologies so this requires someone who has the skills to integrate social, mobile and big data throughout the organization. CDO is ideally placed to lead the digital agenda and to be the thread conductor between the IT department and all other departments. CDO is responsible not only for the development of corporate digital strategies, but also ensure that the organization is in step with the evolution of technologies. CDO do need some IT knowhow, but mainly strong skills in strategy development, change management and communication.

CDOs need to have organizational, strategic, and digital technology experience. Singh et al (2020)'s study has shown that CDOs need to combine different formal and informal activities to coordinate who work on digital transformation activities in different units and at different hierarchical levels.

3. Research Method

This study has a qualitative and exploratory nature. This study has the aim of offering a brief review of the main academic contributions on the studied topics. In particular, the research is based on a brief overview of the literature with the aim of understanding how public administrations have reacted to COVID-19. The review process was divided into the following phases. A search string was constructed, with the keywords "Digital Transformation", "Public Administration", "New digital skills" and "CDO". We used these words because they were the ones that could offer us food for thought to answer our research question. Two academic databases were used to identify the studies: SCOPUS and WoS. The search includes all scientific journal publications with no restrictions on the year of publication. The substantial relevance of the contributions to the topic was guaranteed by requiring that at least one of the keywords be contained in the title or abstract. The resulting articles were scanned reading all abstracts to ensure their substantive context. Thus, the work was divided into two parts. In the first part, a brief review of the literature was provided and this defines the term CDO, professional aspects and competences and skills that monitor new roles and jobs in ICT. The second part was focused on reviewing the little literature dealing with the issue of CDO in public organizations. The scientific articles were selected on the basis of the results of the bibliometric software, which allowed to highlight the evolution of the theoretical framework. The analysis was carried out on

Vos Viewer to show a connection between main documents and authors in the world of the “Chief Digital Officer”. VOSviewer is a software tool for constructing and visualizing bibliometric networks. These networks may for instance include journals, researchers, or individual publications, and they can be constructed based on citation, bibliographic coupling, co-citation, or co-authorship relations. VOSviewer also offers text mining functionality that can be used to construct and visualize co-occurrence networks of important terms extracted from a body of scientific literature. According to Van Eck et al (2010), it can display a map in various different ways, each emphasizing a different aspect of the map. It has functionality for zooming, scrolling, and searching, which facilitates the detailed examination of a map.

4. First results

This study is in a preliminary phase. The aim is to start reflections on the acceleration that the COVID-19 emergency has had on digital transformation in public administrations. This explorative article is a fascinating starting point for further in-depth analysis of the phenomenon. The results of this study highlight some concepts. In particular, digital transformation can be defined as “the process of aligning digital technology, skills, organizational processes and business models, aimed at creating new value for stakeholders and maintaining the sustainability of the organization in a constantly changing digital ecosystem” (Venier 2017, p.24). The evolution of digital technologies places companies facing a phase of change that allows for greater interconnection and cooperation between their resources, with advantages in terms of greater efficiency of production processes and greater competitiveness of the system. Thus, following the thought of Tumbas et al (2018), in recent years, the word “digital” is increasingly used in organizational discourse. Public administrations scholars and practitioners are increasingly interested in digital innovation and digital transformation, which are not only important for technological organizations, but are increasingly critical for each sector and functional unit, as a source of organizational change. According to Haffke et al (2016) and Rickards et al. (2015), to respond to these new trends, some organizations have thus implemented digitalization initiatives in recent years, but also revised their organizational structure and executive roles. In particular, a growing number of organizations have introduced a role as Chief Digital Officer to deal with the digital transformation of businesses. As the new role is still emerging, it means different things from different organizations. Unlike the Chief Information Officer (CIO) who directs the IT function and takes responsibility for the traditional IT strategy and its execution, the CDO plays a business role that addresses

skills required to better face the change underway. The figure of the CDO in these organizations, however, still appears to be little explored.

5. Conclusions

CDO is considered to be a digital transformation specialist, responsible for digital initiatives, and cooperation with key business and technology domain experts, both within and outside the organization. This preliminary research is based on a brief overview of the literature with the aim of understanding how public administrations have reacted to COVID-19 through CDO's figure.

This study is not without limitations. The main limitation of this study is that it is in a preliminary stage. Some aspects are still in an embryonic stage and deserve further study. In particular, this study does not highlight which organizational aspects of public administrations are affected by the COVID-19 emergency. At the same time, more insights are required on the skills that the CDO must have in the PAs. Further empirical insights are needed. In particular, if the COVID-19 emergency has accelerated the digital evolution of PAs, especially which services have been subject to digital transformation.

The next step of this study will focus on the analysis of a case study and the deepening of the theoretical part. In fact, more insights must be made on the concepts of: e-government, the difference between CDO and CIO, methodology for analyzing the phenomenon used in the literature.

References

- Arpaia, C. M., Doronzo, R., Ferro, P.: Innovation and government payments in the Italian digital agenda. Bank of Italy Occasional Paper, 169, (2013)
- Carter, M., Grover, V., Thatcher, J.B.: "The Emerging CIO Role of Business Technology Strategist", MIS Quarterly Executive, 10(1), pp. 19-29, (2011).
- Casalino, N., Rubichi, V., Gasparri, C., Pizzolo, G.: Organizational Aspects of Innovative Paper Digitization and E-Invoicing Services in the Public Sector. DigitCult-Scientific Journal on Digital Cultures, 2(1), 53-62, (2017).
- Clark, T.: We're Over-Researched Here!' Exploring Accounts of Research Fatigue within Qualitative Research Engagements. Sociology, 42(5), pp. 953-970, (2008).
- Cohen, W. M., Klepper, S.: Firm size and the nature of innovation within industries: the case of process and product R&D. The review of Economics and Statistics, pp. 232-243, (1996).

- Di Maria, E., Micelli, S.: *Le frontiere dell'e-government: cittadinanza elettronica e riorganizzazione dei servizi in rete*, Vol. 243, FrancoAngeli, (2004).
- Dumeresque, D.: The chief digital officer: bringing a dynamic approach to digital business. *Strategic Direction*, 30(1), pp. 1–3, (2014).
- Engesmo, J., Panteli, N.: Chief Digital Officers as Protagonists in Digital Transformation. In *Conference on e- Business, e-Services and e-Society*, pp. 730-737, (2019).
- Frishammar, J., Ericson, Å.: *Introduction: Addressing societal challenges*, (2018).
- Gabryelczyk, R.: Has COVID-19 Accelerated Digital Transformation? Initial Lessons Learned for Public Administrations. *Information Systems Management*, 37(4), pp. 303-309, (2020).
- Glyptis, L., Christofi, M., Vrontis, D., Del Giudice, M., Dimitriou, S., Michael, P.: E-Government implementation challenges in small countries: The project manager's perspective. *Technological Forecasting and Social Change*, 152, 119880, (2020).
- Gonzalez, P. A., Ashworth, L., McKeen, J.: The CIO stereotype: Content, bias, and impact. *The Journal of Strategic Information Systems*, 28(1), pp. 83-99, (2019).
- Grover, V., Jeong, S.-R., Kettinger, W.J., Lee, C.C.: "The Chief Information Officer: A Study of Managerial Roles", *Journal of Management Information Systems*, 10(2), 1993, pp. 107-130, (2019).
- Haffke, I., Kalgovas, B. J., Benlian, A.: *The Role of the CIO and the CDO in an Organization's Digital Transformation*, (2016).
- Hanelt, A., Bohnsack, R., Marz, D., Antunes Marante, C.: A systematic review of the literature on digital transformation: insights and implications for strategy and organizational change. *Journal of Management Studies*, (2020).
- Homburg, V.: *ICT, e-Government and e-Governance: Bits & bytes for public administration*. In *The Palgrave handbook of public administration and management in Europe*, Palgrave Macmillan, London, pp. 347-361, (2018).
- Horlacher, A., Hess, T.: What does a Chief Digital Officer do? Managerial tasks and roles of a new C-level position in the context of digital transformation. In *2016 49th Hawaii International Conference on System Sciences (HICSS)*, pp. 5126-5135, (2016).
- Hütter, A., Riedl, R.: Chief information officer role effectiveness: literature review and implications for research and practice. In *Chief Information Officer Role Effectiveness*, Springer, Cham, pp. 1-30, (2017).
- Karanja, E., Rosso, M. A.: The Chief Risk Officer: a study of roles and responsibilities. *Risk Management*, 19(2), pp. 103-130, (2017).
- Kutnjak, A., Križanić, S., Pihir, I.: Educational and practical view of knowledge, skills and experience needed by a Chief Digital Officer. In *11th International Conference on Education and New Learning Technologies*, (2019).
- Mintzberg, H.: "The Manager's Job: Folklore and Fact", in Levinson, H., *Designing and Managing Your Career*, Harvard Business Press, Boston, MA, pp. 47- 63, (1989).
- Panagiotopoulos, P., Klievink, B., Cordella, A.: *Public value creation in digital government*, (2019).

Pedron, Z.: The skills revolution of the 21st century: It's time to re-calibrate. On Research (Journal of EU Business School), 1, pp. 20-28, (2018).

Phang, C. W., Kankanhalli, A., Ang, C.: Investigating organizational learning in eGovernment projects: A multi- theoretic approach. The Journal of Strategic Information Systems, 17(2), pp. 99-123, (2008).

Reis, J., Amorim, M., Melão, N., Matos, P.: Digital transformation: a literature review and guidelines for future research. In World conference on information systems and technologies, Springer, Cham, pp. 411-421, (2018).

Richini P., Savini Zangrandi R.: Il middle management del terziario di fronte alle nuove sfide organizzative. Nuove competenze e modelli. Guerini Next, (2018).

Rickards, T., Smaje, K., Sohoni, V.: Transformer in Chief: The New Chief Digital Officer, McKinsey&Company, (2015).

Silcock, R.: What is e-government. Parliamentary affairs, 54(1), pp.88-101, (2001).

Singh, A., Klarner, P., Hess, T.: How do chief digital officers pursue digital transformation activities? The role of organization design parameters. Long Range Planning, 53(3), 101890, (2020).

Tahvanainen, S., & Luoma, E.: Examining the Competencies of the Chief Digital Officer, (2018).

Temperini, V., & Federica, P.: Trasformazione digitale e sviluppo delle PMI: Approcci strategici e strumenti operativi. G Giappichelli Editore, (2017).

Tumbas, S., Berente, N., Brocke, J. V.: Digital innovation and institutional entrepreneurship: Chief Digital Officer perspectives of their emerging role. Journal of Information Technology, 33(3), pp. 188-202, (2018).

Tumbas, S., Berente, N., vom Brocke, J.: Three types of chief digital officers and the reasons organizations adopt the role. In Strategic Information Management, Routledge, pp. 292-308, (2020).

Twizeyimana, J. D., Andersson, A.: The public value of E-Government–A literature review. Government information quarterly, 36(2), pp. 167-178, (2019).

Ulrich, D., Brockbank, W.: HR Business Partner model: past and future perspectives: international waters-HR strategy. HR Future, pp. 16-21, (2016).

Ulrich, D., Brockbank, W., Yeung, A. K., Lake, D. G.: Human resource competencies: An empirical assessment, Human resource management, 34(4), pp. 473-495, (1995).

Venier, F.: Trasformazione digitale e capacità organizzativa. Le aziende italiane e la sfida del cambiamento. EUT Edizioni Università di Trieste, (2017).