Chapter N 112

Digital transformation in companies and human resource management

**Abstract.** The last thirty years have seen an evolution in the implementation of ICT in companies. In a first phase, the main use was to support purely operational functions, such as logistics management, inventory organization and purely administrative tasks. In a second phase they were used to stimulate the flow of information, making a contribution in the Middle Management range, up to the third and last phase which corresponds to the use of technologies as fundamental levers for the definition of strategies in favor of the top. management. Therefore, new business models have been developed and the Multi - Sided Platform (MSP) represents the new paradigm for setting business models. In this process of Digital Transformation in companies, Human Capital plays a fundamental role: in managing change it is necessary, at a team level but also as a single resource. Human resources are a key resource in digital transformation processes, but strategic alignment is necessary to guide the company towards these goals and therefore e- leadership becomes a key element in the digitalization and innovation process of companies.

This article analyzes the current digital transformation of companies, identifying the new models of human resource management and the new skills required.

**Keyword.** Digital Transformation, Human Resources, Digital Skills

**Introduction**

In the last thirty years there has been an evolution in the use of ICT within companies, first as a support tool for purely operational functions (logistics management, inventory organization and purely administrative tasks), then as a tool to stimulate the flow of information, and therefore as fundamental levers for defining corporate strategies in favor of top management.

**1.Digital transformation**

Digital transformation is a constantly evolving process which uses technology to bring a competitive advantage in operations, marketing, sales and in the production / delivery of products and services: technology is the sine qua non for the adoption of digital and the introduction of smart working models within organizations.

The digital transformation is a holistic approach which integrates the technology and models of digitalization in all areas of the business to offer customers a better experience, to change the way companies and staff operate.

The foundations of digital transformation can be summarized in the following pillars, linked together (Fracasso, 2018):

* Corporate culture, essential for creating an environment in which change is accepted by the entire corporate ecosystem, while maintaining the corporate vision;
* Customer Experience, since the ultimate goal is always to ensure a value creation process for customers, planning buyer’s journey processes carefully, ensuring synergy in the company / customer relationship;
* People and Innovation because the company aims to ensure the right human resources within it, capable of promoting the future through proactivity and an ability to transform ideas into concrete actions;
* Leadership, the main element found in the CEO, because the ability to know how to guide and inspire change in every resource is fundamental.

**2 . Business Model Innovation : the strategic factor of ICT**

The new business models deriving from integrations with ICT are more transversal, obtaining more flexibility and efficiency. In addition to the contribution of innovation and the enhancement of existing business structures, the introduction of digital technologies also creates new business models from scratch. The multi sided platform (MSP), perfectly embodies the new paradigm for setting business models. The main strength of an MSP is its cost-effectiveness because access to the platforms does not involve large costs either for the customer or for the company. The MSP can be described and represented by the following components (G.Elia et al., 2020):

* Focus (What): It helps to define the purpose of the platform by defining the why of its existence, it is important to establish mission and vision;
* Side (Who): It groups the category of users participating in the platform and at the same time helps to define the class of stakeholders;
* Actions (How): These are the set of activities aimed at coordinating interactions between users within the platform, and not only that, because they also encompass all the logics of operation (e.g. matchmaking), thanks to which users can make the most of the full potential of the network, and also concern the monetization logics of the platform;
* Driver (Why): represents the underlying motivation that must entice you to increase participation in the platform, therefore it is essential to establish an effective Driver, like a magnet that manages to stimulate and entice users' "call to action";
* Governance: a fundamental element to control the smooth flow of activities within the platform, as it represents the set of ethical and behavioural rules to be respected to ensure a high level of quality.

**3. The impact of digital transformation on the HR function**

The structure of the company and the way it is designed is not the only element involved in the innovation process. To ensure adequate success, it is important that the resources within the company have characteristics that help to create a business ecosystem that is inclined to change. In this perspective, e-Leadership is a key element in the digitalization and innovation process of companies and can be classified according to three types of Digital Leader (Kane G.C .et al., 2018): Digital Investor, Digital Pioneer, Digital Trasformer . But only with the presence of the right human capital can we speak of innovation, because investing only in technological capital, neglecting investments in human resources is counterproductive. The European Competence Framework (e-CF 3.0) defines ICT competence as “a demonstrated ability to apply knowledge, skills and attitudes for achieving observable results”. Furthermore, the European framework uses a common and understandable language throughout Europe. The UNI EN 16234-1 standard provides safe guidance in the process of evaluating and selecting human resources and above all in the process of training ICT professionals. The e-Competence Framework 3.0 (UNI EN 16234-1: 2020) is structured in four dimensions, which represent the different business and human resources planning requirements and complement the guidelines used to define job skill levels. The dimensions are structured as follows (ACCREDIA, 2020):

* Dimension 1: it includes 5 areas of digital skills, derived from ICT business processes such as plan, build, run, enable, and manage;
* Dimension 2: it includes a set of reference digital competences for each area, with a generic description for each competence, for a total of 40 identified competences;
* Dimension 3: it indicates the five different levels of ability for each digital competence;
* Dimension 4: it presents some examples of knowledge and skills related to the model.

In an increasingly competitive environment, businesses recognize that employees are a major source of sustainable competition.

It is crucial for companies to have unique resources to maintain their competitive advantage (Gözen, 2016). In other words, they must have a skilled workforce, be able to retain it and use it in line with their business goals. Due to increased global competition, working life has become more skill-intensive and recruiting and attracting the right candidates at the right time has also become more important and more difficult than ever before (Tong and Sivanand, 2005).

The development of the new managerial model will therefore require a change in the way managers conceive their role, becoming the orchestrators of a flexible and dynamic behavioural system. In a more dynamic and fluid corporate environment, the very important framing that managers do must take place through their continuous intervention in the organisation's behavioural system.

The assumption is the organisation understood as a system of interdependent behaviours, based on specific characteristics of the following elements (Table 1) (Freeland et al., 2018): Theory of Behaviour, Role of Management, Source of Managerial Power, General Principle of Managerial Action.

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| Table 1 - Organization as a system of interdependent behaviors |
| Behavior Theory | Role of Management | Source of managerial power | General principle of managerial action |
| People devise strategies to achieve their goals based on resources and constraints | Promotion of autonomy in order to make people responsible for the consequences | Power is the ability to influence the issues at stake | Definition of the role in continuous change, according to the actions carried out |
| Source: ( Freeland et al., 2018) |

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As regards the way in which Italian companies are facing and managing the Digital Transformation, the results of the research conducted by the Talent Garden are significant (Sola, 2019). The research is conducted on a sample of over 500 People Managers of as many Italian companies and highlights the expected advantages related to the integration of agile approaches within companies: adaptation to change (61%), optimization of time and resources (51 %), improvement to coordinate people and manage business processes, for the quality of the final outputs in terms of the effectiveness of the product on the market, and in general for the ability to innovate, the quality of the outputs (30%).

**Conclusions**

In the digital transformation process in Italy, companies operate in synergy with the third platform, conceived by the IDC (International Data Corporation) and characterized by four pillars: Cloud Computing, Big Data Analytics, Mobility, Social Business. Considering the three phases of Digital Transformation strategies, today Italian companies are in the Multiple Innovation phase, where Cloud, Social, Big Data and Mobility technologies are joined by the so-called Innovation Accelerators, in particular Artificial Intelligence, the IoT, the Blockchain and natural interfaces.

These technologies support companies in creating new products and services, through the dynamic and immersive interaction with their customers and the substantial and innovative review of IT and business processes (Assintel, 2020). However, the objectives pursued by the companies according to their geographical positioning are different: new forms of automation in operations and much less on the redesign of the business model for companies in Southern Italy and the islands; redesign of the business model and on the enhancement and monetization of data for companies in the North and Center. The most "virtuous" sectors in the definition and implementation of a Digital Transformation strategy are Finance and PA. The challenges in place for Digital Transformation are related to the following factors: lack of a single strategy shared at company level, lack of corporate culture towards continuous change, lack of economic resources, lack of skills. In relation to this last factor, the Italian government drafted with DCM of 21.07.20 the National Strategy for Digital Skills (Agid , 2020) whose pillars are: Education and higher training, Presence of an active workforce, Skills development ICT specialists, Development of basic digital skills necessary to exercise citizenship rights and conscious participation in democratic life. For the future, Italian companies have a concrete opportunity in their hands to increase their technological efficiency and give a concrete change to the business thanks to the PNRR and the Transition Plan 4.0 ( Anitec-Assinform , 2021).

The funds allocated by the PNRR to Italian companies for investments in digital innovation will favor a very important technological restructuring of national companies. The PNRR is divided into six missions, and allocated €40.32 billion for the first and most important mission (digitization, innovation, tourism and competitiveness). A large part of the funds allocated in the first mission is for innovation and digital improvement of Italian companies. In percentage terms, this is 60% of the Plan's resources provided for in the Plan, approximately € 30.6 billion.

Considering that, according to the DESI 2021 (Digital Economy and Society Index), Italy is in the twentieth position among the EU Member States, in terms of technological and digital maturity, an investment in this sense is necessary.

The PNRR is a very important opportunity to increase the investments that SMEs in particular can devote to digital innovation. Furthermore, in the context of the recent legislation approved by the Italian Parliament and aimed at disbursing funds in favor of SMEs, the New National Transition Plan 4.0 (Mise, 2020) is inserted. The Transition Plan 4.0 replaces the previous Enterprise 4.0 and Industry 4.0 and represents the direction of Italian industrial policy. It consists of a single measure, with different rates for different categories of goods. The new tax credit provided for by the Transition Plan 4.0 replaces the measures available up to the previous year from 2020, including hyper- amortization and super-amortization. Compared to the Industry 4.0 Plan, prior to the Transition 4.0 Plan, the latter is characterized by some precise elements: the range of beneficiary companies is more extensive; the amount of the tax credit will be variable; the recognition that companies will enjoy in relation to credit will be over a time horizon of 2021/2022. Therefore, the companies are encouraged to define a new organization archetype and a new cultural and value system capable of integrating digital technologies and managerial approaches.

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