CIOs at the Centre of a New Humanism

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Abstract This chapter addresses an evolution in corporate organisations that was unthinkable until recently and that represents an important opportunity for changing philosophy and practice in business. We will focus principally on the CIO (Chief Information Officer), who is at the centre of this evolution, and on the characteristics of his/her new central role not only in IT but in all aspects of business. The historical approach at the beginning of the article aims to summarize the key events and turning points in the evolution of the business organisation, which will serve as preparation for the theoretical approach of the second part. Humanistic discourse intersects with and contributes to the development of both the historical and the theoretical approach presented in this chapter. Specifically, the chapter addresses the tendency to simplify the complexity of a real world, a need that should not be completely condemned but rather reassessed for the advantages and disadvantages it brings to the corporation's organisation. The simplification process tends to marginalize human beings and their complexity, while the new approach we propose aims to put people at the centre of the process. Choosing between complexity/complication and simplification means opting for either a traditional or an innovative approach to business and the role of IT, led by the CIO, in a company. We will analyse the impact this re-ordering may have on a company, particularly on productivity and profitability. Furthermore, we will try to understand the implications and consequences of the recent technological evolution and how to benefit

The views expressed in the paper are those of the author and do not necessarily reflect those of the company.

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from it. Among other topics, this chapter will mention the practice of collaboration among workers, the use of big data, and the "Bimodal" approach in light of new humanism. Looking at the future of companies, the authors suggest the evolution of the scientific organisation into a humanistic organisation, where new figures should guide this exciting transformation.

1 Introduction

The evolution of digital technologies presents new challenges and opportunities for organisations. On the one hand, the speed and magnitude of recent technological developments are so unprecedented that they call the well-established foundations of corporate management into question and coerce organisations to change. On the other hand, new technologies provide a needed stimulus for organisations to transform their business and exploit growth opportunities. In this transformational process, the central role is assigned to the company's CIO (Chief Information Officer) who is expected to drive and implement change within an organisation. Prior to initiating the process, however, each CIO needs to decide which "grand" principles he/she intends to follow, as these principles will determine his/her priorities and guide his/her choices throughout the transformation.

In this chapter, we discuss and elaborate on a new philosophical concept that has been recently introduced in business and IT press: digital humanism (DH). As opposed to digital "machinism"—a perspective that regards the automation of human work as a primary focus of technology—digital humanism emphasizes the role of people in technology and views technology as a means for solving human problems and addressing human needs. According to Gartner's DH Manifesto, the new organisation of business should "start and end with people" and "embrace serendipity", which suggests that the new CIO, as a central figure in the re-humanization of a company, will embrace and guide the process toward a DH approach.

To avoid confusion, we would like to draw a distinction between the notions of digital humanism and digital humanities. Scholars in the field of digital humanities integrate digital technology into the humanities disciplines by employing digital tools to produce, store and access knowledge, for example: (1) to conserve texts in digital copies, so that one can recover them even when manuscripts or books are absent or corrupted; (2) to consult texts from different places and by different devices without needing to possess a paper copy; (3) to search within texts for specific elements for research and/or didactic purposes. In this chapter, we would like to propose what we believe is a much more revolutionary way to conceive the relationship between ICT and humanities by proposing a new definition of the CIO's role at the centre of a new humanism.

2 Digital Humanism Between Scholarship and Industry

Before examining the CIO's transformation into a modern humanist, we need to clarify the meaning of expressions such as "humanist" and "humanism". In a broad and more general sense, "humanism" is an approach to the world that emphasizes the importance of a human as an object of theoretical and practical inquiry. In a specific sense, "humanism" refers to a long-lasting and heterogeneous early-modern cultural revolution that began with the 14th century humanist Francesco Petrarca and peaked in the Renaissance period with Italy as the first and most important centre of diffusion in Europe. "Studia humanitatis" is the central concept for understanding the cultural revolution that took place in early-modern Europe. With that expression, pre-modern scholars meant to put mankind, in all its aspects, at the centre of their work, from theory to practice, from philosophy and history to politics and ethics, from poetry and rhetoric to science and technology. This interest was expressed in different ways with a common starting point: the rebirth of the study of ancient classical works in all fields as the basis for reinterpreting and changing the contemporary world; in other words, the rigorous study of the past put at the service of the present.

We believe that the revolution of the CIO role we are proposing in this chapter shares some similarities with both meanings of "humanist"/"humanism" mentioned above. Indeed, as a new humanist, the CIO exhibits a concern for the people and human resources involved in the processes under his/her control and appreciates the necessary tight connection between the study of cultural heritage and the present world for promoting a revolutionary approach to work and business.

3 The Scientific Organisation and Its Historical Evolution

Historically, early industrial organisations were predominantly concerned with optimizing work processes to minimize inefficiencies, eliminate wasted effort and, consequently, to increase the profits. Little attention has been paid to the role that human resources might have in these processes.

Business organisations of the twentieth century evolved according to a different, scientific kind of logic. Already from the end of the nineteenth century, the theories of Frederick Winslow Taylor, followed by the practical applications by Henry Ford, introduced the concept of scientific management, which in those days was still mainly aimed at maximizing productivity. In this period, the power of the United States of America started to burgeon, and the basis for their surpassing the European countries in this respect was laid. Briefly but emphatically, the weak points of this evolution were manifested dramatically in Wall Street's 1929 crisis, and its catastrophic consequences in the subsequent years. Nevertheless, the growth in social well-being was enormous and, thanks to these successes, the dissemination

of a scientific mindset through corporate organisations started to shape our world and spread from West to East.

In the early '60s, the first computers (IBM, UNIVAC, and others) started to play a revolutionary role in corporate organisation. These early years of cybernetics, intelligent machines, expert systems, along with a cultural and philosophical vision of corporate reality led to a preference for purely logical and rational thought that did not take into consideration the more humanistic characteristics involved in the organisation.

A possible early critique of this business re-ordering could be found in the "first generation" of scholars from the School of Frankfurt for Social Studies, in particular Horkheimer and Adorno, authors of the popular Dialektik der Aufklärung [Dialectic of Enlightenment], published in 1947. Since the '30s, Horkheimer, the founder of the so called "critical theory" and father of the School, had been promoting an analysis of the contradictory nature of the Enlightenment project and its ideal of an absolute sovereignty of reason. According to his theory, during the eighteenth century, and in particular with the philosopher Immanuel Kant, reason became a new religion that brought the Western world towards the tyranny of scientific thought and technology. The tragic consequences and the human costs brought by the modern tendency to worship the god Reason, such as the massacres of the French revolution and the World Wars, were in front of everyone's eyes.

Fordism, the post-WWII industrial paradigm initiated by the American industrialist Henry Ford, is characterized by the mass production of standardized goods produced on a moving assembly line. This system introduced both mass production and mass consumption. Of the company organisations that applied Fordism for to production, the most popular is, perhaps, McDonald's. Praised by some and condemned by others, Fordism may be considered a main target of the School of Frankfurt's attack.

For as long as organisations continue to follow a Fordism approach towards organising and rationalizing the role of IT within an organisation, the critique of such a mechanistic approach will still apply as it did in the early '60s. We believe, however, that today's digital world provides massive opportunities for "humanization" of IT and that the CIO can be regarded as a new humanist of the 21st century.

Both medium and large size businesses have made repeated attempts to stage a qualitative leap by introducing new concepts linked to humanism and the central role of human resources. It is not uncommon to hear human resources being referred to as "true corporate stakeholders" of a company, partly in an attempt to keep up the productivity and increase the motivation of the company's employees. It should be said, however, that such endeavours, as praise-worthy as they are, have remained episodic and have never really become firmly established within the company culture.

4 The Concept of Simplification in Organisations and Its Critical Points

The scientific organisation that was born at the end of the 19th century is based on certain conceptualizations that are generally used for the planning and creation of corporate organisations. They are based on a simplified representation of a company as a complex system and regard the employees as parts of a machine that perform specific tasks and jointly contribute to the functioning of a complex whole. As such, these conceptualizations seem to suggest that human beings, in all their complexity, are not at the centre of the company. While in some cases this perception is correct, in other instances, people are, in fact, the "protagonists" in a company. In such cases, using a machine mechanism analogy to represent a company may be misleading and too simplistic, which brings us to a reflection on the way we represent the corporate organisation that affects our understanding of what the company actually is or should be.

A company's organisational structure is usually pictured as a hierarchy with different levels from top manager down to staff and employees. These hierarchical structures may get rather complex; even small companies may encompass 7 or 8 internal hierarchical levels. At the same time, we tend to represent corporate processes as running like clockwork. These processes include the interaction between different roles and functions, the flow and integration of activities, the interactions between various personae (according to the configuration of their corporate roles), and the way in which people in a specific role start an activity that must subsequently be completed by another corporate role. Indeed, the metaphor of a machine, or a chain of production—in the Fordist fashion—represents the functioning of an organisation composed of actual people.

If the wheels are functioning properly, our clock works precisely and perfectly. Still, we should ask ourselves if people are really comparable to the cogs of a clock, or parts in a machine. If we assume that the best representation of a company and its people is in fact a machine, even a very complex one, we risk missing all the humanistic aspects of the company and excluding the most important protagonists in the organisation: the actual people and human resources.

First, a linguistic issue needs to be addressed before any further analysis of the new type of organisation we want to support. We should pay more attention to the figures of speech we use to communicate the image of the company within its boundaries and to the external environment. The rhetorical aspects of communication affect the way in which we represent a company and its organisation. The "clockwork" we mentioned above is a clear example of the relevance of rhetoric in this regard. Let us assume that a revolutionary approach to business requires a revolution in communication. If that is the case, we should avoid describing the new ideal business organisation in outdated language (i.e., the language we have used until recently). In other words, the change we are proposing is accomplished, in part, by modifications on a rhetorical level. If the way in which we represent the world matters and affects how we perceive it, then we need a new business

language for a new dimension of business. Historically speaking, the metaphor of the clockwork—to remain consistent with the figure of speech often used in several academic and industrial fields—was used in the Western world by modern rationalists to describe a universe built by God as a perfect mechanism. Against this representation stands another one proposed by Renaissance philosophers and humanists and, after the age of Enlightenment, in the Romanticism of the eighteenth and nineteenth century. Their non-mechanistic representation proposes using an organism, and its living dynamics, as the most appropriate metaphor to describe the world. Within the history of Western civilisation, these two opposing models have been the most important representations of the universe and its "parts" (or "organs," it depends on which model we want to use).

We would not be able to understand the nature and history of the mechanistic and non-mechanistic model without employing such metaphors. As the German philosopher Friedrich Nietzsche argued, all language stems from a process of metaphorization of reality, from perception to intellectual conception and linguistic codification. Put simply, the way we speak affects our knowledge, understanding and judgement, and how we share them in a specific environment.

If figures of speech matter so much in our human experience in general, then they will matter equally for business organisations. To that end, we should recognize the power and importance of language and start using contemporary rhetoric when trying to convey our business vision of the future—a human-centric business with the CIO as a coordinator at different levels.

A mechanistic representation of corporate reality also affects our approach to education and training. They way business disciplines are being taught—in the classroom and online—emphasizes the importance of studying a well-defined set of procedures and rules and learning how to apply them. Furthermore, the system of control and evaluation follows a similar rigid approach: failure to adhere to the rules is sanctioned and most failures are viewed as consequences of not following the prescribed procedures. Success is thus measured in terms of how strictly one can follow the rules. When we change perspectives, however, we realize that it is extremely difficult to follow an onerous and complicated body of rules.

Along with this body of procedures, other scientific tools are also used in organisations, such as safety plans, organisational models, and a control matrix. In Italy, the legislative decree DLS 231/01 represents the main standard for safeguarding the civil and criminal liabilities of companies, and it helps to demonstrate compliance with certain requirements. The international standard ISO 9001, to broach another subject, represents the "best practices" for working at a quality level, as it defines rules for managing the functioning and production of final products, endowing them with the best possible characteristics as far as quality is concerned.

Applying these internal standards is extremely complicated. We often hear from staff that quality is a necessary aspect, something that must be accepted, but at great cost. Either the current regulations or the market requires quality standards, and so quality is perceived more as a burden than as a solution to problems.

One might argue that the guiding principle behind introducing these rules and requirements is the human need to simplify the real-world complexity. Simplifying

the complex reality affects our understanding of its important aspects, especially when we deal with "systems" in which the human resources play a major role, like in a company of any type.

Following only the rational approach, we risk underestimating the role of a human factor that cannot be modelled by a mathematical algorithm. Simplifying helps with understanding some aspects of the organisation, but we should always keep in mind that this is always a partial representation that cannot be confused with the comprehensive reality of an organisation.

As we mention at the beginning of the chapter, the School of Frankfurt pointed out the moral and social costs of modernity and the modern approach to living. The authors of the School focused on the macro events, such as the Worlds Wars, but not on human costs in the work environment. The very beginning of Dialectic of Enlightenment (1947) pictures the relationship between the Enlightenment and its tragic consequences in a few efficacious sentences:

"Enlightenment, understood in the widest sense as the advance of thought, has always aimed at liberating human beings from fear and installing them as masters. Yet the wholly enlightened earth is radiant with triumphant calamity" (p. 1).

In other words, according to the authors of the Dialectic, although the Enlightenment was conceived as a new humanism to give human beings the power to freely determine their present and future, the actual results were a de-humanisation of the world. The destructive power of science and technology was, according to the text, the most relevant aspect of modern thought and approach to reality. We may apply this critique to the development of business organisation so far, highlighting its lack of humanism due to an excessive use of the mechanistic model. Nevertheless, we believe that, nowadays, we have the power to invert the tendency of modern organisations, based on a mechanical approach to reality, and put IT, which is at the peak of the technological evolution, at the service of a new humanism.

5 The Impact of New Technology

Over the last few years, we have witnessed the global phenomenon of a technological revolution, which is creating a real upheaval in the traditional ways of doing business. In this regard, one must reconsider the existing organisational structures of companies that, until now, have been based on the scientific and oversimplified approach we described briefly in the previous paragraphs.

We defined this phenomenon "technological revolution" because it has rapidly made new and powerful technological tools available for organisations. The exponential increase in the availability speed and consequent supply of these technologies has forced companies to question the consolidated paradigms, and to push for an organisational redesign. It has already been a while that, at an international level, some important concepts have been introduced, such as digital disruption, digital business transformation, industry 4.0, the status quo challenge,

and many others. These concepts touch upon the function of the organisation that was intimately tied to digital technology and that had been traditionally appointed the role of harbinger of propositions for a continuous stream of new digital tools: this function was, and still is, ICT (or, to give it its updated name, IT).

The arrival of the new technologies and their implementation in business demand an organisational and cultural redesign of the company, particularly of its IT. Before we describe this change, we'll try to summarize some of the principal technologies available on the market now, that are evolving with the extraordinary speed mentioned above.

5.1 Big Data and Analytics

Big data, as reported by Wikipedia, is the term used to describe a collection of data that is so vast in volume, speed, and variety that you need specific analytical technology to store, process and analyse the data and then extract valuable insights. These technologies are available today and are increasingly being developed with impressive speed. These new technologies are more effective than previous tools for analysing the large amount of data that has become available. In the paragraphs below, we will make particular reference to corporate organisational technologies.

The tools for discovering, interpreting and communicating an analogous and meaningful model of a given system are subsumed under the term analytics. While the analytical approach gives us tools that were unthinkable before, true innovation only happens in the event of a veritable cultural change in human habits and behaviours. The lack of such a change explains the real obstacle to the large-scale application of these technologies today.

In the United States, the use of Big Data was launched some years ago, through various applications, in different corporate and political processes; while in Italy, for example, it faces a lack of cultural acceptance.

The greatest problem is that big data analytics are being treated as the exclusive territory of Information Technicians, largely disconnected from other business functions. The results obtained through the rigorous analysis of big data are often discarded and substituted with conclusions that are based on intuition, heuristics and common sense—modalities that top management has been using for decades in their daily working practice. These old and traditional decision-making modalities are so deeply rooted in the company that they might stand in the way of a potentially cutting-edge innovation within a Company.

5.2 Knowledge Management

Knowledge and its management within companies have been among the primary concerns of traditional and scientific organisations for years. What does knowledge

mean for traditional companies? It means creating order in the flood of documents, experiments, developed technologies, patents, competencies, and so forth, which a company elaborates for its daily business. But knowledge in a more humanistic sense goes beyond organising the library and optimizing the document flow. According to the humanistic learning perspective, people's access to knowledge is not exclusively focused on pure ordering and categorizing but also on the meaning of words and texts. This means entering in the field of semantic search engines that overcome the limits of statistical search engines (with Google on pole), as powerful as the latter may be. The underlying logic behind a semantic search engine and the competences required to build such an engine would differ substantially from those required for designing a statistical search engine, and are much closer, yet again, to humanistic approach.

5.3 Collaboration

Social, or collaborative, tools contribute substantially to building and developing the culture of collaboration within companies. Collaboration has been traditionally underestimated and often ignored in corporate projects of a scientific nature. Only a few companies, particularly those competing in the high-velocity markets that require high levels of innovation and creativity, have put these tools to use within their businesses.

In this context, we must distinguish collaborative tools for internal use from those whose purpose we would define as external, such as customer management (CRM or similar). Social tools help companies to manage the "real" organisations whose scientific architecture relies mainly on organisational charts, processes, and roles. These social tools represent the "hidden" fabric of corporate functioning, and surely its most humanistic component. They involve interpersonal relations among people, personnel's perceptions of colleagues, and the application of competencies that do not feature on organisational charts and job descriptions, as they are external to the official roles but still an asset of the company.

Take an expert, for example, who is transferred to a different role for organisational reasons; he can share, through these social tools, his experience and know-how with people who will benefit from his former role, even if they don't attain the level of competency and knowledge of the expert.

Collaborative tools allow one to face and understand, in teams, critical working areas. Many companies today use the "ethical code" to sum up corporate values and tools of collaboration. This code helps to measure the application of a merely theoretical ethical code, to an actual corporate system and the real, humanistic world of the company.

The corporate climate, the pro-active and innovative potential of staff, the capacity to delegate and control by management, and other aspects within a company can be monitored with these social or collaborative tools. This monitoring

ideally enables us to analyse these aspects, understand them, and then proceed with activities that aim to improve performance.

5.4 Digital Work Place

The concept of Digital Work Place—a workplace that uses digital tools—has always been underestimated or oversimplified in the tradition of scientific organisations. This oversimplification is the result of the low level of importance attributed to the logic of information and knowledge, especially compared to the logic of finding practical solutions to problems and the need for decisional synthesis at the top levels of the hierarchy. Minimalizing its importance has been done to the detriment of a system that enables the autonomous creation of operative solutions in daily work, which can be done more effectively by people who possess an intimate knowledge of operative details. Consequently, decision-making has always been delegated to people who were well-aware of the operational details and can therefore analyse the operational processes, critically assess them and propose suggestions for their improvement.

5.5 Hybrid Risk Management

The methodology of Risk Assessment comes from the common framework founded on "best practices" (ISO 270001 in the field of computer security, for example, ISO 9001 in the field of the quality of productive processes, etc.) that have historically been advantageous to scientific organisation. The methodology deals with issues that today are becoming increasingly critical in the functioning of companies; having an effective way to deal with these issues is an asset of an increasingly digitalized corporate architecture, which necessarily requires things to be carefully tested for their configuration.

Management according to the "best practices" method allows you to control the system that is the object of the analysis. These tools, however, generally tend to overlook the immaterial phenomena on which the real operative functioning is based, and therefore the impact of human resources in handling the organisational processes.

The hybrid approach, applied already in Operational and Commodity Risk Management, is not currently widely used, except in the evolutionary phase of some research projects. Therefore, industrial practice is still quite limited.

The hybrid approach combines qualitative and quantitative themes for risk management, composing an integrated vision that comes closer to running an organisation and takes considerations related to human resources into account.

5.6 Consumerization

The phenomenon of consumerization has completely overturned the technological planning of information systems. In the early '90s, only a handful of companies had a computer available to manage their activities. Those that were better organised had an IBM or UNIVAC Mainframe, while mid-sized companies had more affordable and modest solutions. With the arrival of the PC, corporate information technology evolved towards client/server networks and the creation of personal computers for carrying out one's own calculations and responsibilities.

A basic issue that remained, though, was where to separate the activities carried out at the Company from those undertaken in the context of one's private life. The fundamental, non-humanistic, theme consisted of the assumption that there was a profound difference between the corporate and the private personae, and the idea that the two had distinct behaviours and tools permeated traditional logic.

Today, new technologies have provoked an outburst of consumerization. Smartphones—once an exclusive asset of activities carried out in private life—have been brought inside corporate life, by social network tools, tablets, free Internet access, and similar things. All these tools were previously considered part and parcel of one's private life. One can imagine the profound disappointment and worries of people who are more closely linked to the traditional cultural canons. In a way that was unconditioned by design, digital technology has broken down the barrier between corporate and private, pushing forward the concepts of BYOD (Bring Your Own Device) or the reconsideration of themes such as Privacy, a humanistic theme that often is merely "tolerated" by the corporate "scientific" models.

Today, the reinforcement of information-based culture within companies is also connected to the proliferation of information technology that, before, was limited to the private environment; this reinforcement carries with it important benefits for companies in the fields of the security, privacy, and use of passwords.

5.7 Digitization and Simplification of Corporate Processes

The Digitization and Automation of corporate processes have two goals in a modern Enterprise:

- Digitalizing information previously stored on analog mediums (e.g., hard copy) or, in the best of cases, in excel sheets, word files, or PowerPoint presentations.
- Pushing the system towards the automation of processes, thusly minimizing manual input and routine work.

The second point is connected to the concepts of work in the context of processes, and to the theme of collaboration described previously.

Once manual and operational workload (for example back office activities) is reduced, time and resources are freed up for performing other, more value-adding activities. Such activities may include advancing one's knowledge within one's area of expertise, learning new skills and competences, or searching for alternative solutions and opportunities for improvement of the existing processes.

Digitization projects have a fundamental prerequisite, however: the ease of implementation. Ultimately, the success of such projects is contingent on corporate processes being simplified and on the company becoming agile and "brisk". In short, it is essential to break down the walls of bureaucracy, one of the most resistant barriers in business, as it is born out of the fear of managing a complex system.

For clarity of argument, we must avoid confusing the concept of simplification, a fundamental asset of the scientific organisational approach described above, with the concept of agility and structural simplification of the organisation, a fundamental asset of humanistic organisations.

Today, many experts of organisations view bureaucracy as an obstacle to improving corporate performance. Still, many companies struggle to overcome this construct and continue to maintain a highly bureaucratized architecture: a less humanistic situation is hard to imagine. Even today, in 2016, many businesses suffer from this problem.

6 Restructuring IT's Function and Its Role in the Humanistic Redesign of Companies

The function of IT in a Company has a particular characteristic that distinguishes it from others: it typically supports processes. Because IT projects are rarely confined to a single corporate function, the job of IT is viewed in a wider context. The most modern IT organisations have abandoned the traditional role of administrator of applications, and have substituted it with the administrator of business processes. This distinguishing characteristic allows IT to remain above the level of single viewpoints when working in a company that has decided at its highest levels to truly change its operative modes and transform through the pursuit of actual and profound performance improvement. This is even more true if the company, in conformity with the development of its market of reference, decides to adjust its business model in order to obtain, within a limited time frame, actual results through its new operational modality.

According to the pattern of processes, to coordinate operations with business, IT requires a work model transformation from one of a technical support to one that is more business-oriented. The function of IT must evolve from its departmental design into a team of multi-skilled professionals that are both specialized in technology and competent in business. In order to make this happen, IT professionals must work to enhance their competencies. Doing so, however, will prove difficult,

given that the IT team will have to continuously build new skills to remain updated on new technologies that are emerging on the market.

These new technologies must be used, in projects that reflect a new humanistic dimension in company operations, and that express, through their realization, a few fundamental rules that are listed below:

- Introduction of a vision that integrates the concept of user experience.
- Redesign of traditional interfaces for applications towards users.
- Adoption of operational models that involve users.
- Monitoring of user satisfaction and carrying out proper actions for improvement accordingly.

The IT organisation and management of new projects must be redefined according to these criteria. As always, in order to obtain concrete results within a reasonable time frame, we must look for a valid compromise between past and present to facilitate a transformation towards the future. In fact, we would like to present the IT transformation project in a way the American consultancy firm Gartner has called "Bimodal".

To proceed in this direction, companies not only need a new a type of CIO but also an up-to-date skill set for the IT personnel. The IT staff needs to develop know-how in entirely new areas: psychology, conflict management, change management, empathy, leadership, and the ability to sell oneself and one's solutions (i.e., the marketing of self). Furthermore, today's IT staff is expected to master the ability to manage client relationships both internally and externally.

We have discussed the transformation of IT architecture. We would now like to take a holistic perspective on the organisational framework. In doing so, we aim to answer the following question: when a company evolves from the old, scientific paradigm into a new, humanistic paradigm, should this transformation happen in a "destructive" mode vis-a-vis the past, or should it be conceived in a "lighter" and less radical way?

7 The Organisational Transformation of the Company

The company, or rather: the organisation of the Company "can" and "must" become humanistic. This imperative call is inextricably tied to the technological revolution that is underway. Whereas, in the past, the scientific approach could be justified by the necessity to simplify the complexity of corporate life, today we can no longer accept this argument. Also today, companies that implement transformational projects of such epic proportions need to understand what the main economical drivers of the activity are. On the one hand, the approach of a traditional "business case" is no longer so easily applied. On the other hand, traditional legacy architecture that was created and nourished over decades of a company's existence,

cannot be radically substituted with a new one, but needs to be first paired with an alternative innovative approach that eventually will replace the old approach.

Indeed, even if IT, perhaps on the initiative of a visionary manager, tries to evolve in humanistic terms by itself, while the entire system continues to operate in a traditional mode, the project is destined to fail. An operation for the organisational and cultural redesign must be carried out throughout the entire organisation and with the support of top corporate leadership.

Also in this regard, collaboration plays an essential role in this transformation process. In our experience, not only have collaborative projects been appreciated by those involved, but they have also resulted in the development and practical implementation of a number of interesting operational improvements. By its own nature, collaborative activities promote initiative that fosters even more collaboration, which is a powerful booster for innovation in a company.

As mentioned before, the application of social media technology allows for the redesign of a traditional scientific organisation, on the basis of real data, in a humanistic way; this means that the projects would be highly connected to people's behaviour. In order to manage these IT projects, one must seek the added value in new competencies.

If we think back to the theme of consumerization, the idea is to spur the evolution of interfaces used in a work context towards a modality that is similar to home computers, that is, more "human" interfaces, that take into account the human factor in their design.

In short, the humanistic component of the "unexpected," of the "hidden," of the "irrational" needs to play a greater role in the reorganisation of the company.

But how is the head of the company and the leader of the transformation, the CIO, supposed to manage this change, supposing that he absolutely co-opts and supports it? This is the complex issue we are going to discuss in the next section.

8 The Evolution of the Characteristics of the CIO

From the perspective of the IT organisation transformation in a company, CIOs need to change by developing new competences and a more business-oriented attitude. This idea is not entirely new. Ever since the early '90s, at nearly all seminars related to information systems, it was reiterated that the CIO needs to change. More than 25 years have passed, but little has actually changed. Now the transformation is becoming a necessity because the consequence of not changing is quite clear: either the disappearance of the role of the CIO or its enclosure in a typically technological capacity, the role he held in the past. The arrival of new technologies and of the phenomenon of consumerization have created a situation in which corporate information skills have proliferated all sectors and have well overstepped the boundaries of the functions of IT, and particularly of the CIO.

If the CIO maintains his purely technological role, it would be better to re-dimension it to a simple CTO (Chief Technology Officer). It is easy nowadays to

find CTO-services and the running of hardware infrastructure and applications on the market place. Many, even large, companies offer these services. Cost-reduction has become, more than before, one of the most widely observed modalities by scientific organisations to deal with the financial crisis.

Delegating the management and execution of technological activities to external companies is one of the main risks for a company today, especially when it comes to its core business. Losing control and governance of the information systems means losing control of the development of business itself, risking deadlock. Corporate business is increasingly becoming digital. For this reason, by pushing critical IT functions into outsourcing or, alternatively, under the hierarchical guidance of a function in a scientific-type organisation, one can obtain disappointing results and eventually hurt the corporate business.

In order to effectively govern the evolution that we suggest pursuing, the technical competencies of the CIO should be complemented by business knowledge and so-called "comprehensive interaction". That is, the CIO should learn how to listen to the requirements of users, and understand their needs and wishes that often are unconscious and therefore non-rational; he/she must increasingly become a psychologist. He/she must lead the company's push towards change, coherently and methodically, and have an evolutionary vision, inspiring respect and esteem in his interlocutors.

Furthermore, The CIO must learn to face complex changes with the appropriate serenity and the right methods. Therefore, he/she must be persuasive (like the ancient sophists) in applying rhetorical skills to convince business users, gathering their consensus to accomplish a common evolution for their own benefit. But to do so, the CIO must be ready to face new insight, accept the culture of analysis and understand other people's language and perspectives: open-minded, indeed, and open to accepting the challenge of a changeable, complex, and pluralistic human environment.

One of the most important themes that involve the CIO today is the so-called Demand Management, i.e., the management of the demands of internal users. The internal users traditionally submit their requests for solutions to him with an attitude that leaves little space for real change. They simply desire to have some new technologies, perhaps because they are modern, or in fashion. In the past, when IT was weak, this has contributed to the creation of so-called application "legacies," or the modification of systems like SAP, according to the model "customizing," which consists of bending applications that were built in a standard mode towards the working modalities present in an organisation. The information system gets applied, but matters were not truly changed.

The challenge for the new CIO is to gain a perspective of "governance" over the development of information systems, but not as he did in the past. To do so, he must channel the demands of business towards a logic of change that is to include the process itself, and not merely its tools. The overall objective being, obviously, the improvement of corporate performance.

The evolution of the CIO represents one of the more advanced expressions of the humanistic development of a company, and the focus will be on a persona that

today is at the heart, or cornerstone, of the attainment of corporate development in that sense. It could happen that through the evolution of organisations, the systems of the future would assume different configurations. Until now, however, with scientific culture pervading principal organisations, the CIO seems to be the best qualified when it comes to sectors like Research and Development, or Human Resources and Organisation. More than others, the CIO possesses the right tools today. Still, he must absolutely change his own approach to his work and competencies.

The humanistic aspects of the CIO profession, and the activity of his/her company, are also related to the VUCA (Volatility, Uncertainty, Complexity, Ambiguity) perspective. VUCA is taken from the military linguistic code and applied for the benefit of the business. In the history of Western civilisation, mankind has experienced opposing philosophical approaches for interpreting situations and solving problems: the systematic/metaphysical approach versus the flexible/anti-metaphysical approach. The classic example of the first approach is Platonism and Aristotelianism, while relativistic and sceptic traditions are examples of the opposite approach. The advantage of adopting the flexible/anti-metaphysical approach is that one can avoid rigidity and fear of changing, which are obstacles in the evolution of any aspect of business and company, including the figure of the CIO. If the company embraces the flexible approach, which encompasses the awareness that any aspect of life—including business—is constantly changing and no form is universal and eternally stable, then the same company and its staff will be ready to face any unpredictable challenge and embrace serendipity.

Furthermore, in a certain sense we might say that the flexible approach includes the systematic one, while the opposite is not true. Indeed, the company adopting a flexible mode can decide to use a specific system for a certain period of time for the benefit of the company, with the awareness that the system can be changed or switched off any time, if needed. Switching from the "metaphysical" to "anti-metaphysical" approach is, above all, a mindset matter, a Weltanshanung ("vision of the world", to use a popular term from German philosophy), which involves redirecting any aspect of the company, including the role of the CIO. Once the company decides to embrace the VUCA approach, and the flexible knowledge and strategies it brings to the life of the company, the CIO might emerge as the key role to enhance and implement the new philosophy.

We believe that human sciences, or humanities, and a humanistic discussion practice within the company can help to increase the degree of awareness about the two available options "metaphysical" versus "anti-metaphysical", which is essential for deliberating the appropriateness of both.

We would like to stress the fact that the flexible mode does not necessarily imply dismissing any ethical approach to the exigencies of employees and clients. On the contrary, to balance the changeable strategy and the revolutionary/disruptive effects of it, the company needs to have a very strong and stable ethical agenda, which includes taking care of the mental and emotional wellness of the staff, a strong sense of responsibility towards the clients/final-external users of its service/product, a consistent communication, and a less-ceremony/more-participation mode within the

company. Furthermore, the stress on ethical concerns should also be suggested for strategic reasons, since human resources play an instrumental role in the business. Moreover, these ethical concerns perfectly fit with the humanistic ideal we are proposing for the new CIO professional profile.

9 The Comprehensive Interaction of Cultures

As discussed in the previous paragraphs, we can distinguish between two types of organisational cultures: the scientific (or traditional) culture and the humanistic culture. The former adheres to a depiction of the organisational reality of a company composed of organisational charts, processes, tasks, responsibilities and roles, while the latter, on the other hand, tries to depict the organisation as a complex reality, consisting of interconnected flows of communication, collaboration tools, human resources that interact, the corporate climate, the psychology of relations, personal skills, and pervasive knowledge.

We represented the traditional culture as a "simplification approach" used by organisations to deal with the complexity of real-life corporate structures.

The traditional approach has been applied in corporate organisations for several decades and, despite recent technological developments, still prevails. Traditional IT tools were born in that environment. In information systems, this culture developed into corporate practice, introducing the concept of the "culture of the mainframe," with all the consequences that can be ascribed to it.

The humanistic culture was introduced later on, and has manifested itself in companies, including Italian ones, at different moments in time: we all remember the Olivetti experience, which introduced the humanistic notion of honouring the rights of workers to have the opportunity to dedicate time to their families even during working hours, and to have a work station conforming to standards of order, cleanliness and aesthetics. Other companies went ahead with projects like the Lean Organisation, aiming to reduce the number of hierarchical levels, delegate more and augment pro-activity, creativity, and innovation among personnel, thereby transforming staff into internal entrepreneurs. But rarely, or perhaps never, have these initiatives become an integral part of corporate culture, nor have they succeeded in effectively transforming it. One of the causes for this might be that we have always relied on the few initiatives at the higher hierarchical levels, without succeeding to implement a genuine change in culture.

These rare initiatives failed at the moment they had to be integrated into the cultural background of the company—an operation that must not be carried out in a simplified, and therefore scientific, mode, but with the tools of the complex management of change. Even if the best intentions were there, most projects did not create any value within an organisation, and some have even drained resources from training and testing—accomplishment-focused activities—without consequent practical results in terms of operational change.

The cause of the failures is connected to a specific methodological error: both cultures, the traditional and the new one, should not be considered at odds with each other, like in a manichaeistic approach, and they should not be implemented separately; they should rather be considered two faces of the same medal: they must be handled conceptually with the method of "comprehensive interaction," never by "substitution".

For the reasons described above, implementing a new system of collaboration must be carried out along with a redesign and simplification of the theoretical processes. The logic of comprehensive interaction must permeate these innovative projects and drive the change towards the new situation in-the-making.

As we already said, it might be necessary to employ rhetorical strategies in communicating with users so that people are collectively driven towards innovation without experiencing a conflict between traditional and new approaches. In other words, one must convince the users that the direction towards innovation is what they truly want. This technique was used not only by the most popular ancient sophists, such as Gorgias of Leontini and Protagoras of Abdera, but also by their major adversary, the Greek philosopher Socrates, who, with his pupil Plato, used a "noble" sophistic rhetoric to serve the good aims of the new Platonic philosophy against the traditional culture.

Also, the projects we define as humanistic must be carried out according to traditional modalities, though not exclusively so. The "Bimodal" approach proposed by Gartner is an expression of this concept and is increasingly becoming common practice. This means comprehensive interaction between project methods, the scientific approach (Waterfall) and the humanistic approach (Agile).

10 The Evolution of Competencies and of the Cultural Level of Staff: The Federal Organisation

The application of new technologies brings about, as noted, an upheaval in IT practices within companies, and the goal of these transformational projects is two-fold: (1) to redesign the cultural mindset at the Company, with the aim of increasing productivity and organisational efficiency; (2) to redesign the working modalities of people, reducing manual and repetitive tasks, leaving more time for analytical activities regarding operational processes, operational decisions, the empowerment of collaborative tasks, and the reinforcement of a collaborative environment.

This evolution of the scientific organisation into a humanistic organisation must take place, as we discussed above, through an integrated, rather than alternative process. The humanistic approach within an organisation should complement, rather than substitute, the traditional one. Competencies, too, must be integrated. For example, the competencies of synthesis of coordination, managing relations,

and organisation of work must be integrated with the competencies of analysis, team work, empathy, conflict management, participatory leadership, motivation.

This cannot be accomplished exclusively by traditional training methods, or coaching activities. New training initiatives need to be developed and tailored to the personal strengths and aspirations of the people involved. Training programs for implementing this change must also be developed, especially for those who manage the resources in question (typically HR management), and perhaps they also need to be incrementally spread among the heads of the organisational architecture.

By freeing up resources and prioritizing new skills and competencies, the actual application of new tools will be possible in a comprehensive way, as will the execution of challenging projects with challenging targets.

This itinerary is extremely complicated and requires complex reasoning, analytical skills and knowledge of socio-behavioural dynamics. One could describe this trajectory of change by using a metaphor of a trail through obscure woods. We walk slowly, unaware of what is surrounding us, in pursuit of an outcome that only a few know to be there, and even they have no idea of its practical applicability. After our slow hike, we begin to see a dim light, and finally, as the darkness is thinning, our view of the final objectives gains shape and clarity. It is like reaching a clearing (i.e., our project and its goals) illuminated by the sun, that suddenly becomes clear to all who walk with us, and not merely the leaders.

But our trail doesn't finish here, as we must walk on another darkened trail towards another sunlit clearing, and so on. Indeed, the world outside continues to change, the technological opportunities revolve around us at the highest speed, the market offers new products and demands new solutions. And once more we take off in a cycle of continuous research. The search acquires a pattern, though, and a clear value becomes manifest: the culture and knowledge of the people involved. Knowledge and human collaboration as means to increase the quality of our community, even the business one, are humanistic values to pursue in the future.

Raising the level of knowledge means that an organisation can push on towards further delegating and autonomy. Maybe the functions that are more strictly operational must remain subject to major procedural rigidity, and to major directional leadership, but this is all part of the integrated model for the development of this process. We could add that, probably, this rigidity will be necessary only during the initial part of the journey, because subsequently all segments of the organisation will evolve and adapt to the new corporate mood. Through this process, the company will be thought of more and more as an organism instead of a machine.

The CIO will play the role of guide through this change: he/she will be a genuine Change Manager, or Innovation Manager. He/she will have the usual, traditional technological competencies as well as his/her new competencies, while the traditional distinction between Technology and Business, will be rejected in favour of a more unified vision. The future CIO will be much more integrated in the business and thusly be moreable to change it. He/she has to understand how to track an itinerary through dark woods to reach the clearing of knowledge, not only for him/herself, but also for all others. In our vision the CIO will be more a leader than

an Officer; humanistic organisations will no longer need Officers, but rather guides towards the future evolutions.

11 Conclusions

This chapter has aimed to promote a humanistic type of evolution for organisations and for the corporate personae that would have to direct a transformation. We have attempted to understand what impact such a re-ordering may have within a company and whether it might somehow have an influence on productivity and profitability. Furthermore, we have addressed the necessity of a cultural change for achieving a new approach to working. Moreover, we have addressed what has been happening around us in terms of technological evolution and new opportunities offered by IT.

A constant concern in our discourse has been the relationship between the traditional scientific approach and the new humanistic approach to business and corporate organisation. We highlighted the complex dialectic between those two modalities and the necessity to adopt a "Bimodal" approach to avoid the negative effects of a disruptive evolution that occurs too quickly.

We also addressed the necessity of a new rhetoric and style of representation of the company system, no longer described as a machine but rather as an organism in which changeable situations, flexibility, emotional factors, and wellbeing of the "organs" must be taken into account. A total representation, indeed, in which people and the humanistic aspects of the business are at the centre.

The new role and features of the CIO, as we presented, reflect this big change. At the same time, we stressed that the company in which the CIO works has to understand and support his new role and the transformation he promotes. We also argued that the big changes the CIO promotes might scare the employees and the users inside and outside the company; therefore, it is particularly important to facilitate the company's internal communication to show the advantages that the new system can bring to all the subjects involved.

Because with great power comes great responsibility, the CIO has to fully understand the importance of his/her new role in the company. Accordingly, he/she will be more oriented towards leading the whole company with a new vision and mission, beyond providing the typical IT services. The core of the humanistic revolution through IT requires a CIO focused on human beings, as they are at the centre of the information network, devices, and practices he/she organises and leads.

This is an exciting moment and a great opportunity for the re-ordering of company organisation.

While we cannot fully predict what these changes will bring, we can decide now to take a chance, embrace the evolution with the means offered by IT, and accept the challenge of a new humanistic business.

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