

# CIO's: Drivers or Followers of Digital Transformation?

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**Abstract** It is increasingly clear that Digital Transformation acts as an enabler of structural innovation of company processes and products, services and go-to-market models and that it does so through the appropriate use of new digital technologies. In this sense it appears as a contextual transformation of a company's business strategies and technology infrastructure. CIOs are correspondingly required to transform their own role by offering themselves as leaders of Digital Transformation. However, if Digital Transformation is a great systemic project, consisting of a long process guided by a master plan, what factors should direct it if it is to succeed? And what tasks should the CIO perform to bring this process to a successful conclusion? In this context, CIOs find themselves at a crossroads requiring them to redefine their role in the immediate and medium term perspective. The results of a survey conducted in the first half of 2016 on a panel of Italian CIOs (CIO Survey 2016) provide us with an answer to these questions. Specifically, the Survey reveals 10 lessons learned that in the experience of the CIOs interviewed are key requirements for the successful completion of a Digital Transformation project.

## 1 The Reality of Digital Transformation in Companies and the Role of the CIO

Digital Transformation is currently the prime strategic goal of European companies. It is also backed by their respective governments, which through major public programmes, such as Industry 4.0 and Horizon 2020, seek to stimulate and govern the digitisation of their countries.

However, it is clear that at present there are no established and unambiguous models and roadmaps at enterprise or national level to which we can refer to achieve this ambitious goal.

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The consequence of this is that even with a widespread belief that Digital Transformation is a real tool for the structural innovation of companies and the modernisation of a country's economic system, companies and public administrations follow an individual path, trying to draw the greatest possible benefits from it.

This transitional scenario poses many questions that do not always meet definite answers, starting from an understanding of what the current and future role of the CIO might be and also, more radically, whether the CIO will play a role on the path towards Digital Enterprise.

## 2 The Results of a Survey

In answering these questions, we could find it useful, for example, to consider the results of an Italian survey that has been conducted for about 10 years (CIO Survey) by NetConsulting Cube (2016). This survey aims to monitor the projects, perceptions and opinions of a panel of 100 CIOs operating in major Italian companies but not in Public Administration.

The distribution of the CIOs chosen on the panel represents their companies' respective industries in accordance with their relative importance within the Italian economic system (Fig. 1).

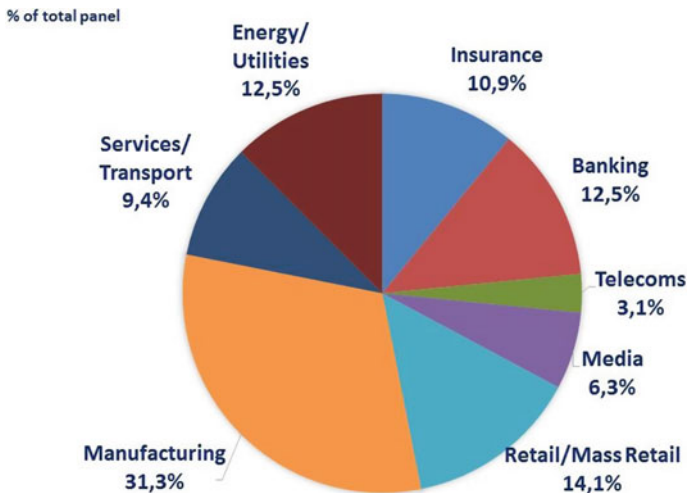


Fig. 1 Composition of the panel. Source CIO Survey 2016

The Survey focused on the following aspects:

- How CIOs and their organisations are coping with Digital Disruption—what impact it is having on ICT resources/skills, infrastructure, applications, and governance
- Digital workshops utilising new technologies—IoT, Cloud Computing, Big Data, Mobile, Social Media—through which they are implementing Digital Transformation
- The Impact of Digital Transformation on the ways in which ICT interacts with other company functions, on the governance of innovation in the company
- The dynamics of ICT expenditure and investments
- The changes in sourcing policies and the methods of interaction with external partners.

Using the results of the last edition of this survey (CIO Survey 2016) we can translate the views of the CIOs into at least 10 lessons learned from their everyday experience.

### 3 Lesson 1

#### 3.1 *CIO Vision: Digital Transformation Is not just Technological Innovation*

A large proportion of the companies interviewed have activated digital workshops and are accelerating their investments in projects in areas such as mobile (88%), cloud computing (76%), big data (70%), IoT (42%). However, while until two years ago CIOs believed that the optimal model of Digital Transformation was the synergistic integration of these project areas in order to innovate a company's technology infrastructure, today their perspective has changed and is increasingly based on a business and strategy driver vision Uhl (2014).

The new vision sees Digital Transformation as a systemic innovation based on three pillars (Fig. 2):

- (a) Customer Experience, that is the creation of an interactive relationship with the digital customer where the factor of attraction and retention is experiential and emotional in nature in support of the service quality of the products offered. Technology infrastructure based on digital paradigms must be able to provide customers with omnichannel, physical and virtual access to the services
- (b) The reorganisation of internal processes in order to create a form of cooperation, interaction and exchange of data and information between different company functions (Smart Working) also extending these new interactive and transactional methods to external partners

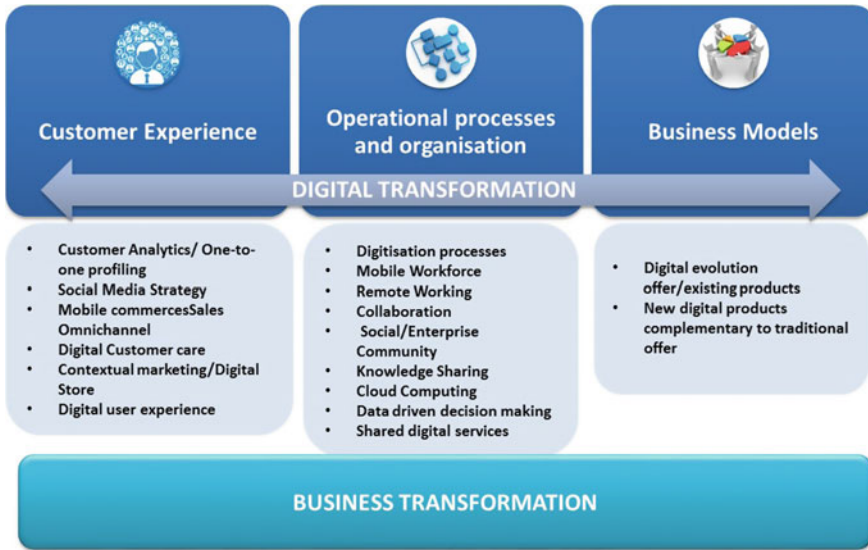


Fig. 2 Digital transformation is business transformation. *Source* NetConsulting cube

- (c) The introduction onto the market of new and previously non-existent products and services conceived through the incorporation of digital technologies or the innovation of existing ones using this same method.

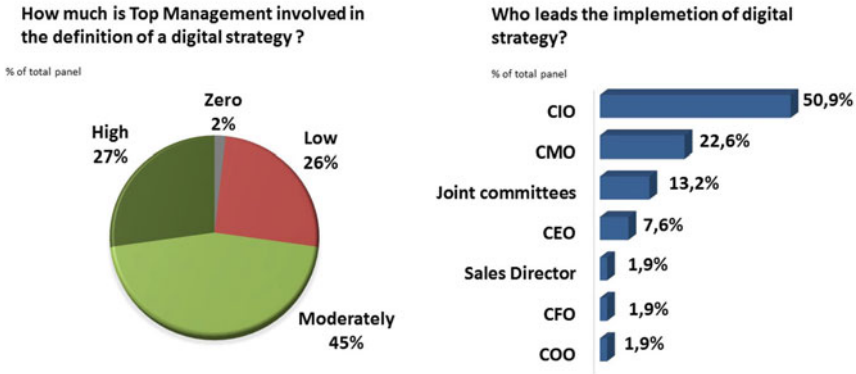
In the light of these assumptions it is clear that CIOs understand Digital Transformation not as mere technological innovation but as a structural transformation of the entire company in its organisational models, internal processes and market positioning.

## 4 Lesson 2

### 4.1 *Digital Transformation Should Be Developed on the Basis of a Strategic Plan that Involves the Entire Company, from the CEO Down*

The CIOs surveyed are convinced that Digital Transformation will have a major impact on the company at all levels, and that we need to accelerate its implementation because business is already being affected by the external environment (51%), and will be even more so in 2018 (25%) and 2020 (25%).

*...a quarter of Top Managers have truly understood that we need to change in a digital logic. ICT and Marketing lead this change process.*



**Fig. 3** Is top management committed to digital transformation? *Source* CIO Survey 2016

The strategic value that CIOs attribute to Digital Transformation, understood as Enterprise Transformation, and the urgency in its implementation, necessarily require the involvement of the CEO and top management.

However, the Survey revealed that only in 27% of cases is top management significantly involved in the implementation of Digital Transformation. It has little involvement in 26% of cases and is moderately involved in the other 45% (Fig. 3).

Underlying these answers, we can see that on the one hand top management sees Digital Transformation in predominantly technological terms and has little understanding of the business benefits it can bring, while on the other hand they fear that it will demand a very high volume of investment, the return on which will only be achievable in the medium to long term.

This is a cultural gap that CIOs, who lead Digital Strategy in 50.9% of cases, must help Top Management to bridge.

At present, the CIO, being the only figure in the company who fully understands business processes and technological infrastructure, may assume leadership of its digital transformation in the above-mentioned sense, also involving Top Management in this. But to lead Digital Transformation the CIO must constantly monitor the evolution of technologies and learn to sense the right time to incorporate them into plans for the innovation of the company's processes and evolutionary strategies.

To do this, the CIO needs to acquire transferable skills and soft skills, to spread digital culture in the company and build consensus and cross fertilisation relative to the Digital Transformation plan.

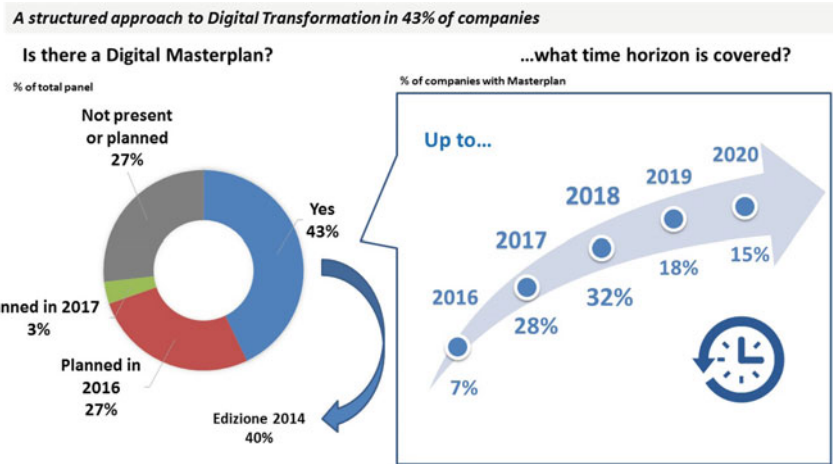


Fig. 4 Has a master plan for digital transformation been prepared? Source CIO Survey 2016

## 5 Lesson 3

### 5.1 *The Path of Digital Transformation Should Be Guided and Directed by a Master Plan*

The strategic nature and speed of implementation of Digital Transformation require the preparation of a master plan based on an “Enterprise Driven” systemic approach which, taking a strategic view of the company’s innovative path in the medium term, clearly indicates the achievable benefits, the impacts on processes and the organisation, the investments to be made and the related economic returns, defining a roadmap of objectives to be met over time.

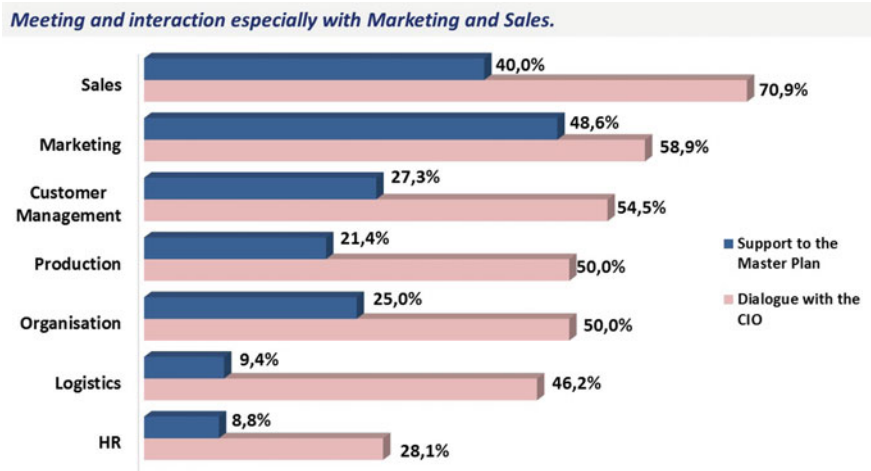
Forty-three percent of companies consciously developing Digital Transformation and participating in the survey, already have a master plan, while a further 27% intend to adopt one by 2016, and another 15% by 2020 (Fig. 4).

Only 27% of companies responding do not have a master plan.

## 6 Lesson 4

### 6.1 *Digital Transformation Requires the Contribution of All Business Functions and the Lowering of Barriers Between CIOs and Business Managers*

From an enterprise-wide perspective Digital Transformation must be achieved through the contribution of all main business functions in a climate of cooperation and mutual trust.



**Fig. 5** Who does the CIO speak with most and who has contributed to defining the digital transformation master plan? *Source* CIO Survey 2016

To date, Marketing & Sales has developed more Digital Transformation projects than any other company function, guided in this by the need to interact with digital customers on the basis of the paradigm of customer experience.

This has occurred through often poorly coordinated initiatives between the CIO and Head of Marketing, not always in a climate of cooperation with the CIO.

This situation is rapidly changing and the CIO Survey 2016 showed that all major company functions, not only Marketing and Sales, provide support to the master plan and dialogue constantly with the CIO (Fig. 5).

The accelerated and pervasive way in which ICT is penetrating all major company areas on the one hand helps to involve the managers concerned in ICT investment decisions by giving them budget and spending autonomy, and on the other hand, precisely because of this, tends in some cases to result in a misalignment in the choice of solutions and suppliers with respect to the development plans defined by the CIO and company information system compliance and security policies. It is clear that this process of delegation of expenditure and technology choices to business functions requires harmonisation with the CIO's plans and a new governance model that refers to the implementation of the Digital master plan and the involvement of top management.

The construction of an ecosystem of internal cooperation between functions is essential for the development of digital transformation projects where technology and business are intersected natively.

This approach is also important for the construction of a climate of internal knowledge as regards the implementation of the solution and in its subsequent adoption.

## 7 Lesson 5

### 7.1 Digital Transformation Requires a Revision of the IT Division's Organisational Model and the Corporate Positioning of the CIO

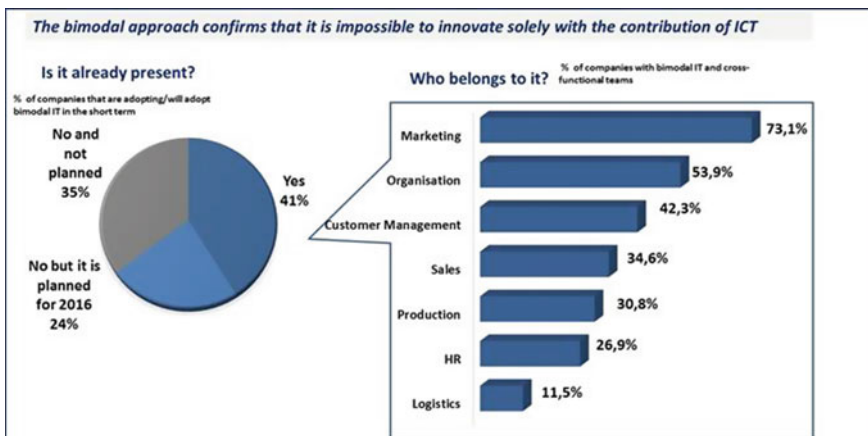
While on the one hand Digital Transformation has been promoting the development of a technology infrastructure for interaction with the customer and the digital partner, on the other it requires a thorough modernisation of legacy systems and applications.

The bimodal approach accurately responds to these needs, considering aims of efficiency, security and reliability on the part of the traditional core of the company's information system and aims of agility and speed necessary not just for operations but also for real-time interaction with the digital customer.

Forty-one percent of the companies surveyed already need to manage bimodal IT and are planning a further adoption over the course of 2016 (Fig. 6).

The bimodal approach also requires a strong synergy between IT and business and the consequent reorganisation of the traditional organisational model based on a clear distinction of roles between demand and the CIO.

Thus, it is not IT that listens, gathers requirements and proposes design developments for approval, but it is the joint IT and Business team which, with its vision of the business strategies/objectives and the different forms of evolution driven by technology, analyses the context, makes appropriate assessments and takes the relevant decisions. Cross-functional teams are especially common in Finance and in the Telecoms-Media sector.



**Fig. 6** Is there a cross-functional team to manage this evolution from a bimodal perspective?  
 Source CIO Survey 2016



It is obvious that this way of operating mirrors the speed and agility that are typically at the base of a bimodal IT model.

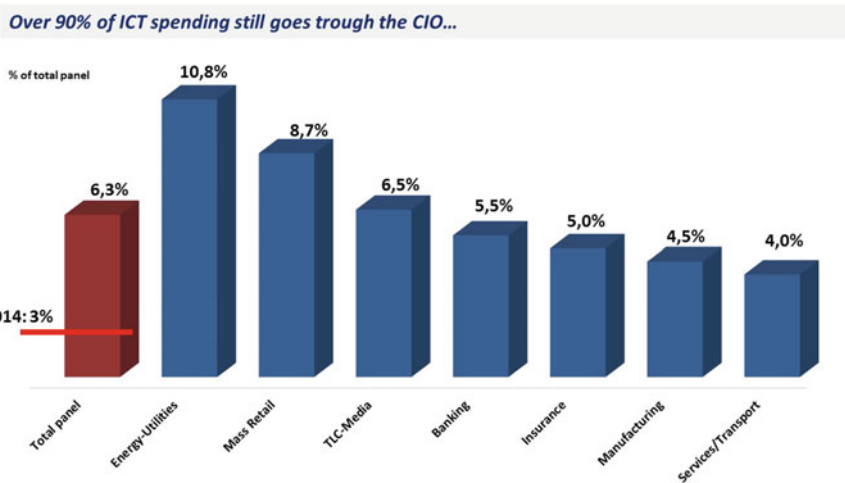
The 41% of companies that are already taking a bimodal approach have formed cross-functional teams, with a particular presence of Marketing and Organisation managers, whose task is to carry out the native design of Digital Transformation projects.

## 8 Lesson 6

### 8.1 *The IT Budget Must Become Dedicated to Digital Transformation Shared Between the CIO and Business Managers*

In most of the companies surveyed the path towards Digital Transformation is in a phase of transition where while on the one hand, as previously stated, cross-functional teams have been created, on the other the IT budget is not shared equally but, on the contrary, many company functions have their own IT budgets, often allocated to digital projects and suppliers whose conception and whose choice is not shared with the CIO.

The CIO Survey 2016 shows that the IT budget is still mainly in the hands of the CIO, but that the share allocated to business functions increased by 100% between 2014 and 2015, with significant differences between the various economic sectors (Fig. 7).



**Fig. 7** What proportion of total expenditure is handled outside the ICT department? *Source* CIO Survey 2016

This is further evidence of the pervasiveness of ICT and the consequent redistribution of the budget available to business managers, with the previously described possible dysfunctional elements in their relationships with CIOs.

As previously mentioned, we need to create a consensual decision-making process as part of a new governance model for the innovation of processes, products and approaches to the market supported by digital technology.

Looking forward, in line with the establishment of cross-functional teams, and with the introduction of governance models for Digital Transformation, we need to define a budget shared between IT and business functions.

## 9 Lesson 7

### 9.1 *Given Their Strategic Importance for Companies, Digital Transformation Projects Need to Be Evaluated in Terms of the Business Benefits Delivered, and not just the Technological Ones*

The assumption that Digital Transformation projects bring structural changes to strategies and corporate performance has two types of consequences:

- That the return on investments benchmarks relate not only to IT but also to the gains made at a corporate level
- That, consequently, a cross-functional team in which the company’s top managers are represented carries out the evaluation.

Companies are not too far away from this model in that although the Survey shows that in 48% of cases the CFO is the evaluator, and this is obvious because the first

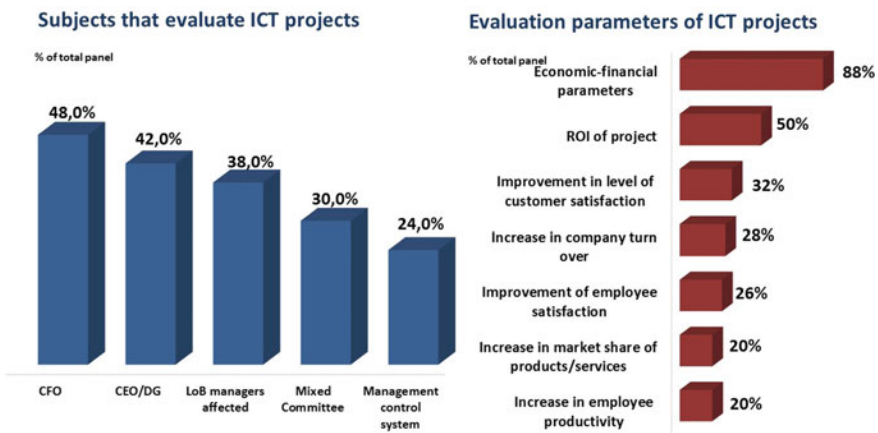


Fig. 8 Subjects that evaluate ICT projects and evaluation criteria. Source CIO Survey 2016

benchmark is compliance with the budget, it should be noted that the CEO or General Manager comes second (42%), followed by the Lines of Business (LOB) managers (38%), and that the most important benchmarks include “improving Customer Satisfaction” (32%), “increasing the company’s turnover” (28%) and “improving internal Customer Satisfaction” (26%) (Fig. 8).

In general we can see that digital transformation, by enabling the company to design and sell new products and services on the market, as well as supporting the innovation of internal processes, reconfigures IT from a cost centre to a profit centre, structurally modifying its ROI indicators.

## 10 Lesson 8

### ***10.1 Seeking Out Figures with New Skills and the Re-Skilling of Existing Ones Are the Most Important Enablers of Digital Transformation***

It is commonly believed that the success of a Digital Transformation project depends largely on the availability of figures with new skills in the company who, on the one hand, have in-depth knowledge of the digital world and on the other, have the vision and ability to incorporate and make optimal use of technologies in specific company processes.

The ideal profile that emerges is of someone who combines technological skills and business expertise, which is very difficult to find on the labour market.

Consequently, separate skills are sought, the most in demand of which are Data Scientist, the IoT Specialist, Enterprise Architect but also the Business Analyst and Digital Media Specialist, to name a few.

Faced with the need for figures with new skills, who are hard to find and therefore particularly expensive and not easily accessible to small and medium-sized businesses, we need, especially in large organisations and public administration, to embark upon re-skilling projects for skills on their way to obsolescence or to reduce the number of surplus workers. The latter is more difficult in countries where the labour market is less flexible and this is an obstacle to Digital Transformation.

CIOs respond to these constraints either by training figures with new skills or by using the skills of the ICT Vendors, acquiring for themselves generic skills of a non-technological nature.

Moreover, the people-centric approach that is frequently adopted in Digital Transformation plans demands that the CIO possess an unprecedented ability to manage human resources in order to create sharing and agreement about the objectives and innovative projects.

## 11 Lesson 9

### 11.1 Digital Transformation Requires Support from External Partners from an Ecosystem and Open Innovation Perspective

Digital Transformation is a complex project that, involving both technological and business innovation, requires extensive and sufficient knowledge on both fronts.

At present, few companies have all the resources necessary for the independent management of such a complex process and so they increasingly rely on the support of external parties and position themselves within innovation ecosystems (universities, research centres, start-ups and innovative companies) within which they exchange ideas and start new projects.

The Survey showed that over a period of five years the profile of external actors perceived as capable of supporting important Digital Transformation projects changed significantly (Fig. 9).

While in 2010 the main contacts were ICT Global Vendors (75.2%) and Specialist Vendors (53.6%), in 2015 Specialist Vendors ranked first (73.6%), followed by Digital Agencies (55.3%), while ICT Global Vendors had dropped by around 25% points to third place in terms of mentions by respondents and ICT Consultancy Firms were also down about 10 points (from 39.4 to 29.2%).

Innovative Start-ups were the biggest most significant growth area according to the CIOs surveyed, gaining about 22% points from 15.7% of mentions in 2010 to 47.1% in 2015, moving into fourth place, ahead of ICT Strategic Consultancy Firms.

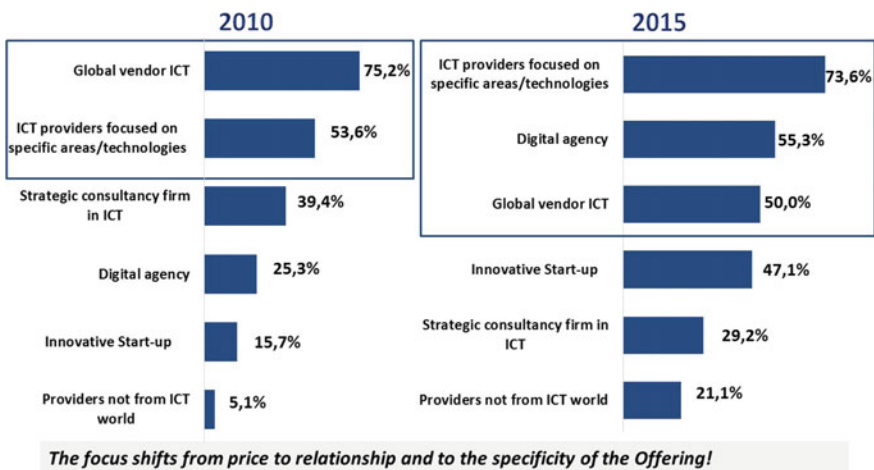


Fig. 9 Type of suppliers that support the company in innovation. Source CIO Survey 2010 and 2016

## 12 Lesson 10

### 12.1 *The CIO and not the CDO (Chief Digital Officer) Should Assume the Leadership of Digital Innovation, Taking on a More Strategic Role*

Italian companies participating in the CIO Survey panel stressed that obstacles to the Digital Transformation process are not economic in nature, due to limited budgets, but are mainly cultural, or rather a lack of understanding of the potential benefits.

This means that priority is given mainly to traditional maintenance projects and the evolution of existing digital tools (Fig. 10).

A reductive understanding of Digital Transformation in essentially marketing and sales terms is leading many companies to create the figure of Chief Digital Officer (CDO), separate from that of the CIO, often reporting to the General Manager or Chief Executive Officer Eller (2016).

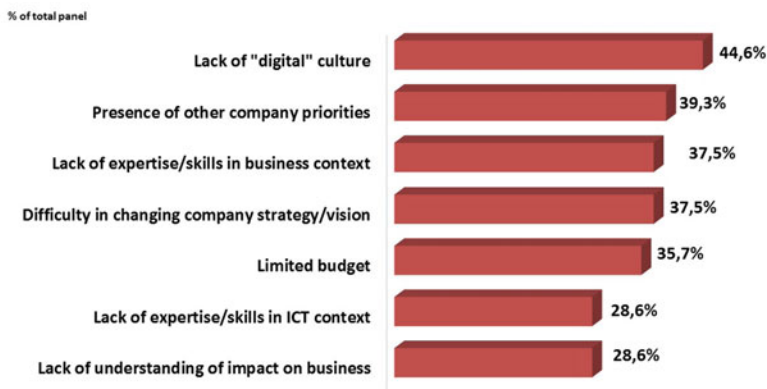
This seems to be a partial answer to the technological and business complexity of Digital Transformation for several reasons (Fig. 11).

First of all, CIO and CDOs can possibly end up with overlapping roles and innovative parallel and potentially conflicting paths that make the Digital Transformation process slower, partially ineffective and difficult.

On the contrary, in this scenario, CIOs can and should take a leadership role in the digital innovation of the company in which they operate:

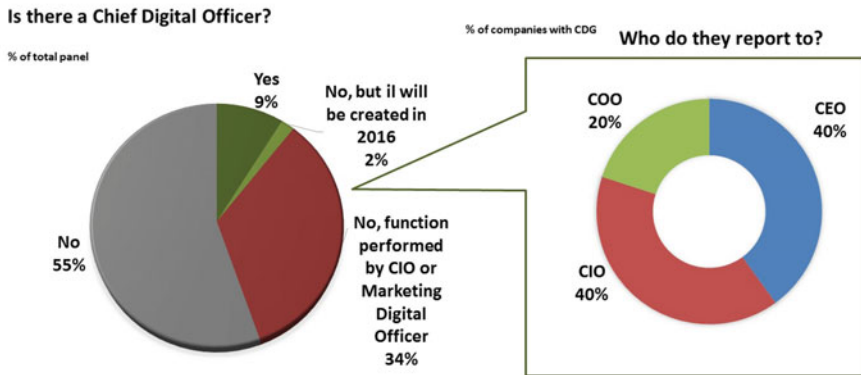
- Creating internal culture, above all at managerial and executive level
- Developing knowledge and skills about the business aspects of the company

*Limitation of culture, vision and lack of skills the worst enemies of Digital Transformation and CIO.*



**Fig. 10** What limitations does the CIO need to overcome to direct digital transformation? *Source* CIO Survey 2016

*The Chief Digital Officer: not widespread and where existent still in search of their true identity.*



**Fig. 11** Is there a chief digital officer? Who does this figure report to? *Source* CIO Survey 2016

- Establishing and generating cross-functional teams
- Initiating a permanent observatory on technological developments and success stories
- Initiating relationships with innovative parties and setting up their own network or ecosystem of innovators, beginning with the start-ups
- Participating in Strategic Committees.

By building on these lessons learned the CIO community could make a significant contribution not only to the Digital Transformation of their own companies but also to that of the entire national economy.

## 13 Conclusions

The CIO Survey 2016 shows that Italian companies of all sizes are now moving from a general interest in digital technologies and their potential impact on the business to the launch of projects—projects that are not always clearly aimed at structural innovations and not always framed in a master plan.

The Digital Journey remains a process that is not yet clearly structured, whose expected results cannot be precisely mapped in advance, which leads companies to adopt a prudent and experimental attitude towards major investments in “disruptive” Digital Transformation projects.

In this transitional scenario, the role of the CIO can be positioned between two opposite extremes within the company, that of manager or weak innovator of existing technology infrastructure or that of the Digital Transformation leader whose task is to innovate the business through the intelligent use of new technologies.

However, this latter aim can be achieved under two conditions: that the CIO has the courage to question the constraints of budget and prospective vision that typically limit their willingness to innovate, and that top management and CEOs understand that digital transformation is the only way for companies to regain competitiveness and sustainable growth.

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