Management
in the digital era

Report on the survey results

CEC
EUROPEAN MANAGERS

May 2018

Content

ABOUT

Summary

The fourth edition of the European Managers' Panel depicted the state of development of digital technologies from a managerial perspective. Conducted among 1400 panelists accross the continent, the findings show that most technologies have left their niche existence. When it comes to the way they are put in practice, progress has to be made in the way leadership is applied for their implementation. Only then can productivity gains and better working conditions, among others, be achieved. The digital working conditions investigated point at room for improvement, especially when it comes to flexible working arrangements and accompanying employees in the digital transformation process. Finally, privacy enjoyed a particularly high attention, whereas other ethical concerns were mentioned less often. The survey highlights the need to establish real lifelong learning opportunities, to foster work-life balance and to invest in a leadership fit for the future - a call to managers and policy-makers.

KEY FINDINGS

The scope of digital changes

many changes

Implementation rate of digital technologies

between 20 - 70%

20-30%
3D printing, IoT, robotics, AI

≈ 52%
Big data

≈ 70%
Social media, cloud, online collaboration tools

Connected leadership* used to implement digital tools
Index based on: consultation/joint development with workers, customers, innovators (i.e. think tanks); design approach; VET; social dialogue

3,3 /10

Quality of digital working conditions
Index based on: overload with information, stress, work-life balance, digital skills training, being up to date, flexible working

5,3 /10

Ethical concerns
Percentage of respondents having a particular ethical concern with regards to digital technologies in general

between 8 - 50%

≈ 8%
predictability

≈ 15%
human dignity

≈ 24%
labour rights

≈ 49%
privacy

*see CEC's report on the "leadership of the future" (2017)

Introduction

In the framework of the European Managers Panel, CEC European Managers has conducted its fourth survey on 'Management in the Digital Era'. In many regards, executives, managers and professionals are at the forefront of the ongoing digital revolution. Besides taking decisions on the 'if' and 'how' of implementing digital technologies in their company (be it in the public or private sector), they are also shaping the way how employees are equipped with the necessary skills and how they make use of the technologies.

As an integral part of our increasingly complex and multi-faceted economy and world of work, it is of crucial importance that managers are also well-informed and conscious about the implications these new tools can bring. Seizing the opportunities responsibly without neglecting a sound analysis of potential risks is part of CEC's understanding when it comes to taking decisions for the future.

To better comprehend the digital reality managers are currently facing in the world of work and beyond, CEC conducted its survey among the more than 1400 registered panellists across Europe. The questionnaire investigates three types of challenges that affect managers and their organisations in various ways: economic, employment-related and ethical challenges. The aim of the survey is to better understand the scope of changes for managers' work regarding digital technologies and in what ways respondents accompany these developments.

First of all, the survey takes a closer look on how digital technologies relate with economic factors. This includes the question on the state of development of these technologies in various economic sectors and for different company sizes. Furthermore, the topic of competitiveness and productivity is raised to clarify if the hopes for productivity gains have been met in the view of the participants.

The second domain of interest concerns the way jobs, tasks and working conditions have evolved. To better understand how the respective technologies have been implemented, a particular attention has been devoted to which kind of leadership is applied for accompanying these changes. As highlighted in last year's report on the "leadership of the future", CEC has found that a "connected leadership" approach leads to higher organisational performance. A purely material analysis of how technologies are implemented would be far too simplistic. Therefore, workflows, social dialogue, employee skills and conceptions of technologies are equally to be considered.

And third, the survey investigates which ethical challenges managers see for the unfolding of digital technologies. The types of ethical issues raised will be considered for the development of CEC's ethical code of conduct for the digital era.

Within a context of scarce comparative (European) data on managerial opinions and experiences and on managers' digital role in particular, the survey offers a relevant contribution to the policy debate on digital transformations. Too often, black-and-white thinking overshadows the real margins of actions for workers, managers and policy-makers alike. The present survey sheds light on some of the most important actors, who are responsible for making the digital revolution a tool for a more sustainable and inclusive future.

Demographics

The survey has been conducted between 09.4 08.5 among more than 1400 registered managers of the European Managers Panel. In total, 342 persons have participated.

About two thirds of the participants were registered panellists of the European Managers Panel. The other third participated directly to the survey without being registered. While around 90% of respondents filled in the questionnaire in English, 10% opted for the French version of the survey.

This year, participants came mostly from countries with large member organisations, as shown in figure 1 below. Even though not representative, the survey indicates what managers of CEC member organisations think about the current developments raised in the survey. As a European Social Partner, it is important to have direct individual feedbacks into the policy debate.

Country of residence

- Italy
- Germany
- Greece
- France
- Denmark
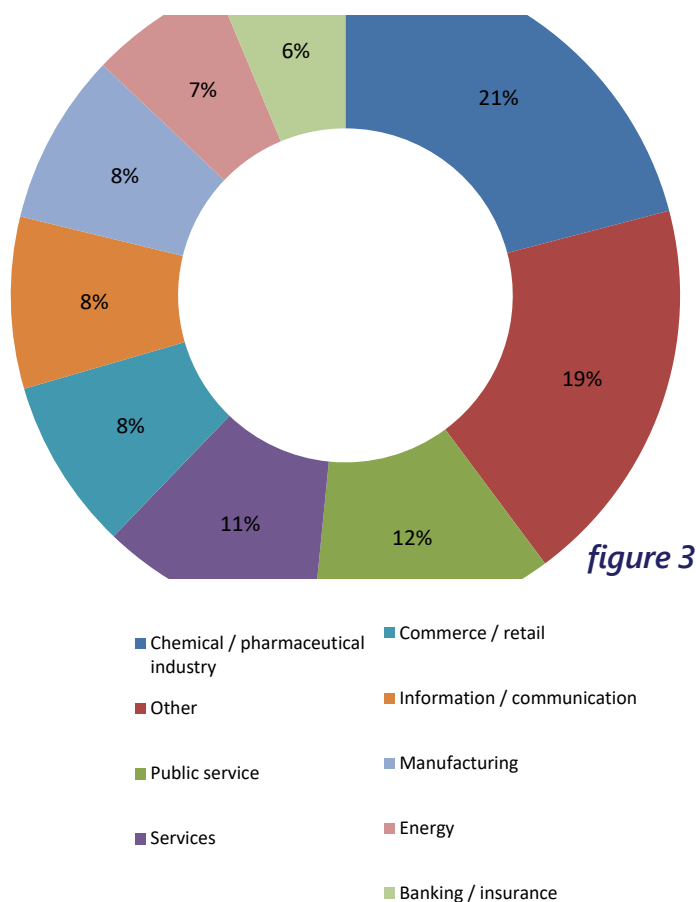- Sweden
- Norway
- Others
- Belgium

figure 1
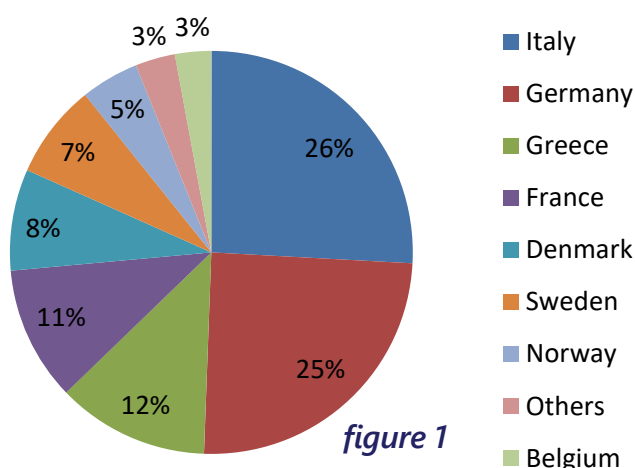
As far as company size is concerned, 58% respondents worked in large companies with more than 500 employees. This is a larger share than the general average in the economy. The fact that social dialogue is often more developed in larger companies contributes to this finding.

Company size

figure 2
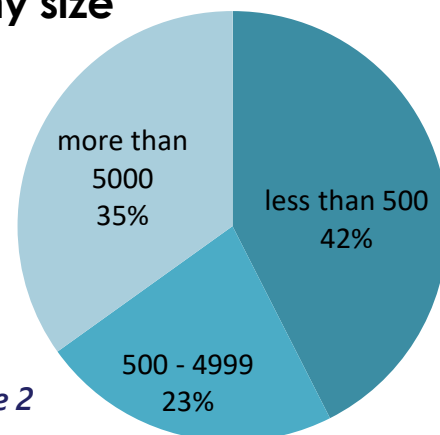
When it comes to the sectoral representation, a large and relatively distributed variety can be observed. The chemical, public service and tertiary sector counted among the best covered ones.

Sectors

figure 3

- Chemical / pharmaceutical industry
- Commerce / retail
- Other
- Information / communication
- Public service
- Manufacturing
- Services
- Energy
- Banking / insurance

Demographics

Taking a look at the gender balance, women were only represented with 25%, reflecting the gender balance in managerial occupations (cf. glass ceiling). According to Eurostat (2017), 34% of managers are female. This finding showcases how important further action to foster gender equality, one of CEC European Managers' top priorities, continues to be.

As far as the structure of positions is concerned, senior, executive and middle managers were presented in equal shares of around 28% each, while professionals made up around 10%. With around 60% in upper positions, it is likely that these respondents enjoy a higher degree of autonomy and decision-making power when it comes to accompanying the digital transformation in their organisation.
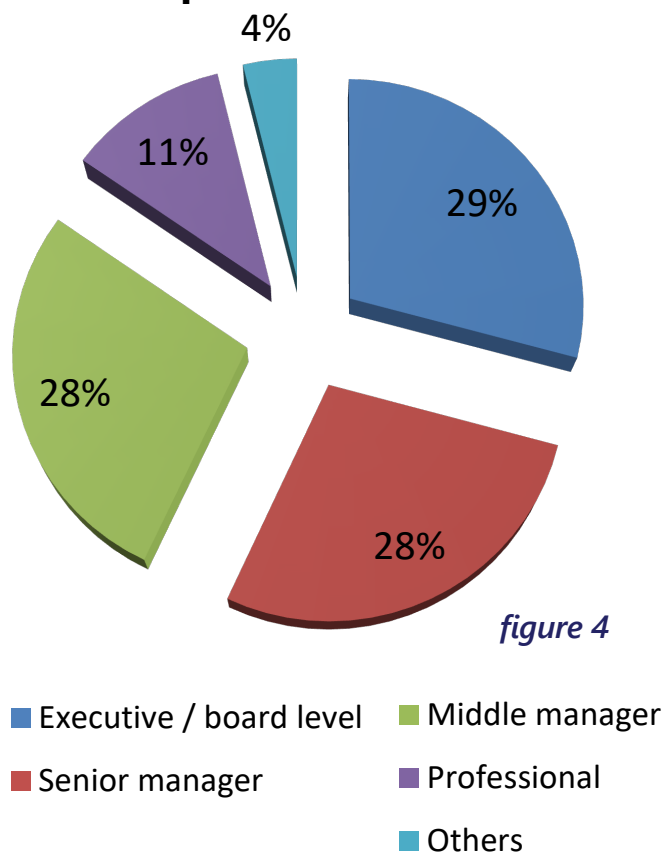
The comparatively higher hierarchical levels found in this survey seems also to be reflected in the age distribution. Only few respondent managers were younger than 40 years of age and most in their fifties.
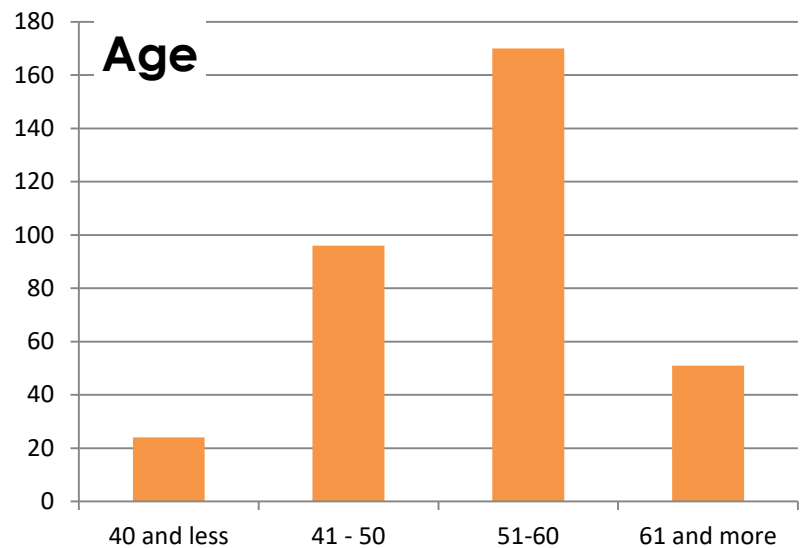

figure 5

If it is usually assumed that higher positions increase with the age, the statistical analysis has only found a small correlation between the level of position and the age of the respondents.

This result could hint at a changing culture, where age and position are less tied than before. Overall, the demographic results correspond to the previous data of the European Managers' Panel editions.

Furthermore, the results can be seen as a legitimate expression of managers covered, at least in parts, by CEC European Managers. As the first and only tool comparing managers' opinions and experience at European scale over time, the Panel has further potential for development.

Level of position

figure 4

- ■ Executive / board level
- ■ Senior manager
- ■ Middle manager
- ■ Professional
- ■ Others

Results

1. The state of development: where do we stand?

Before analysing the employment-related changes and ethical considerations, the current state of development of the digital technologies in the companies will be investigated to assess where managers stand today in the digital world.

1.1. The scope of changes

How far have digital technologies penetrated businesses and managers' jobs? And how do these changes compare with trends in the economic sector?

First of all, CEC has asked how often the management of digital technologies is part of professional tasks. An overwhelming majority manages digital technologies at least sometimes. Working with digital tools seems to have become ubiquitous in the professional lives of managers.

And second, CEC took stock of the perceived scope of digital changes both in the company and in the economic sector of the managers. Maybe unsurprisingly, the participants have made no big difference between the sectoral and company-level evolutions.

Managing digital technologies

How often managing digital technologies is part of professional tasks

- Never
- Sometimes
- Often

6%
45%
49%

figure 6

As far as the enquired scope is concerned, the last ten years have effectively brought considerable transformations for businesses and sectors alike. The propagation of smartphones, automated manufacturing and digital management systems may explain this result. If systemic change has been observed by less than a quarter of the respondents, it is nevertheless remarkable for a decade only. This speed of change poses significant challenges to managers who need to take decisions on technological development, on employee skills and on strategic development in broader terms.

The scope of digital changes

Changes related to digital technologies in companies and economic sectors
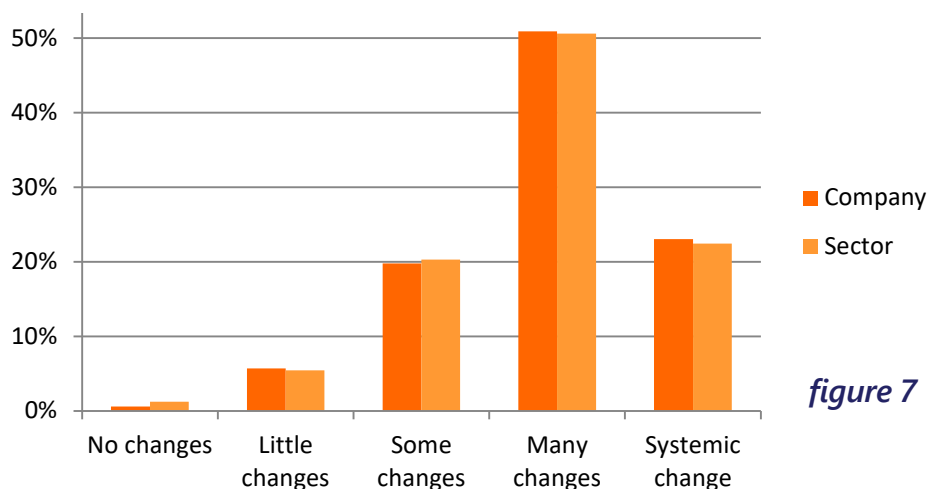
- Company
- Sector

figure 7

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Results

1. The state of development: where do we stand?

1.2. The technological state of development

After having seized the general scope of change perceived, a closer look will be taken at the various digital technologies. Even though they should not be seen separately from connected work processes, an assessment of the technologies in use and considered for usage can help debunk over- and underestimations. If not representative for the whole economy, the managerial focus on these technologies may nevertheless help to better seize the material working environment of the managers CEC represents. This assessment may help to better contextualise business decisions for the future.

The results show large differences among the various digital technologies investigated. Rather accessible and more popular ones like social media, online collaboration tools and cloud-based services are very widespread. All the other technologies are implemented by 20 - 30% of the companies and about the same amount shows interest in their future development. 3D printing stands out as an exception, most likely linked to decreasing prices.

The results show that technologies such as robotics, IoT or augmented/virtual reality cannot be seen as niche technologies anymore.
Furthermore, the majority of respondents worked in companies using big data. As a facilitating technology for multiple purposes and applications, it is probably one of the most important parameters changing the way business is done. Big data, and more precisely the algorithms using big data, may significantly change decision-making and management activities. From analytics to evaluation and prediction: if used skillfully, big data has the potential to modify the tasks formerly performed by humans.

Management and leadership in times of big data require knowledge, know-how and the capacity to make sense of the data's in- and output.

Dispersion of digital technologies

Percentage of companies considering to implement or having implemented (starting to implement) digital technologies
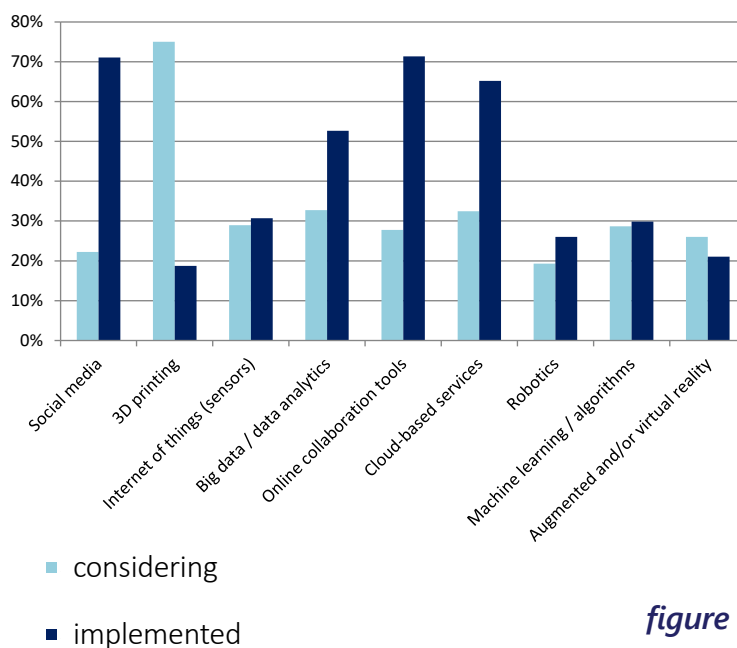

- considering
- implemented

figure 8

At last, the regression analysis has shown that the size of the company correlates with the number of technologies implemented, however below the level considered relevant (R square: 0,19<0,3).

Results

2. Conceptual assessment of technologies and leadership

After having depicted the state of development of the technologies - the perceived scope of change and the propagation of digital technologies - a conceptual assessment will shed light on the way new technologies are introduced, also considering the underlying leadership and management approach. The relation between technology, leadership and organisational practices needs to be raised together, because neither blind techno-optimism nor idealistic leadership visions are likely to produce increases in productivity or improvements of other measures of performance (including social ones).

2.2. Conceptual assessment of digital technologies

The question if productivity gains through digital technologies can help create new employment, counter-balancing job losses through automation, has gained widespread public attention. The question is, however, also linked to the business model of the company and the motivations for introducing new technologies. Often, motivations other than productivity gains are left aside. The survey therefore critically assessed the motivations for introducing the technologies (mentioned in figure 8) and compares them with the achieved results. This conceptual technological assessment aims to clarify, if and where the hopes of digital technologies have been fulfilled.

The motives for introducing digital technologies are relatively manifold for most participants. For all reasons mentioned, the achieved results differ moderately from the intended consequences. As assumed, productivity gains were mentioned most often and have not always been achieved. Other factors were similarly important for deciding to introduce new technologies.

As mentioned, the fact of introducing a digital technology alone is not very indicativeto the quality of implementation. The way the technology is used by staff and customers, how work processes are organised and how it is embedded into the corporate or organisational strategy are equally important. Furthermore, these business considerations may be the priority for many, but are not the only reason and have consequences on other parameter of performance such as the well-being of employees or the social and environmental impact (read more in our dossier on the leadership of the future).

Motives for implementing digital technologies

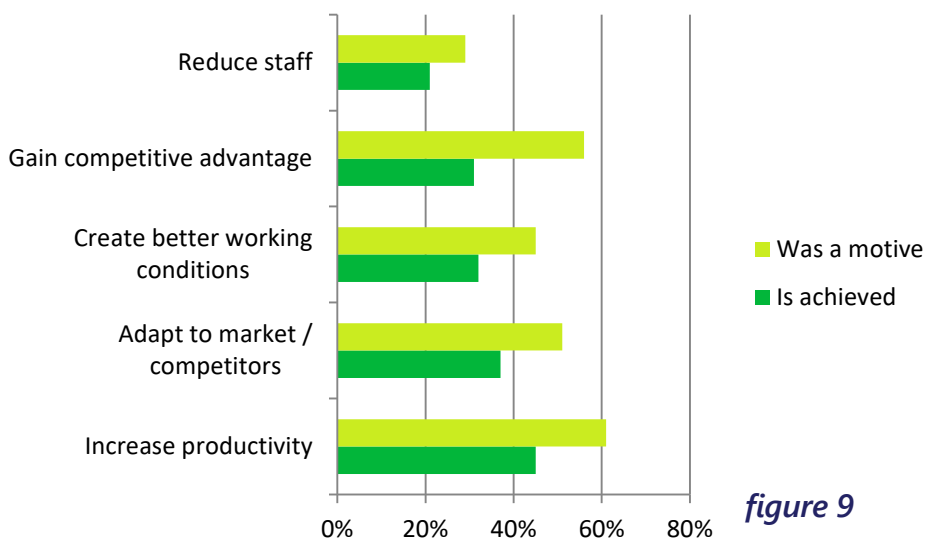Comparison between motivation and achieved results of introducing digital technologies in organisations

figure 9

Interestingly, the reduction of staff was mentioned least. This could point to a declining need for restructuring through productivity gains.

Results

2.2. Leadership and management assessment

To better understand which type of leadership accompanies the technological transformation, the survey investigated how widespread "connected leadership" tools are (as defined in the "leadership of the future" report). In the view of CEC European Managers, a stakeholder approach is better suited to attain objectives in various domains (i.e. economy, society, ecology). Incorporating innovative practices, social dialogue, collaboration and providing training count among the quality criteria for this kind of leadership.

With the question on how the company or organisation has introduced the digital technology, a comparison of reality with the idealtype of this leadership approach is undertaken.

As can be seen in figure 10, only some conditions are met for the leadership model mentioned earlier. Except for the traditional 'adaption of digital technologies to existing company structure', all other items have been used to build an index for connected leadership. Overall, respondents fulfill in average (mean) 2,1 of the 6 conditions (median of 2).
These outcomes clearly show how important it is to further promote a 'connected leadership' approach. Lifelong learning, social dialogue and innovation are key to making the digital revolution work.

The conceptual assessment of the motives, and the analysis of the leadership approach followed to implement digital technologies has demonstrated two points.

Implementation of technologies

Type of action taken at company/organisation-level to implement digital technologies

figure 10

First, the main driver to implement digital technologies seems to be productivity gains. However, also other motives like competitiveness and improving working conditions were mentioned by an important number of participants. The discrepancy between ambitions and fulfilment leave space for improvement.

This is where the second insight of the assessment comes into play. A connected leadership approach had been demonstrated to have a measurable and positive impact on various dimensions of performance, including economic performance of the company (see the CEC leadership report 2017). The regression analysis shows a positive correlation between connected leadership and the implementation of digital technologies, however below the value considered relevant (R square: 0,15<0,3).

To conclude, the "leadership of the future" approach is only partially present in practice today. Encouraging innovation, strengthening social dialogue at all levels and making sure that staff continue to learn at all stages will however be crucial to assure a sustainable and inclusive technological development.

Results

3. Impact assessment

To measure the most likely ambiguous consequences of the implemented technologies, executives', managers' and professionals' working conditions will be outlined. At last, the ethical considerations raised by the respondents will be presented to encourage further reflections on these fundamental questions.

3.1. Working conditions

The respondents have been asked to assess the development of their working conditions in the last ten years (last ten years) and to describe their work-life challenges of today.

Progresses were made in adopting digital tools (see also part 1) and most participants have received digital training in the last ten years.

However, many also mention some challenges when it comes to their working conditions. At least weekly, more than 40% feel overloaded with information, while almost 30% feel stressed and not up to date with the digital world. This non-negligible part of the managerial workforce calls for better organisational practices, work-life balance and training to be able to face the challenges the digital revolution brings.

Working conditions in the digital age

Challenges and opportunities linked to working in a digital environment
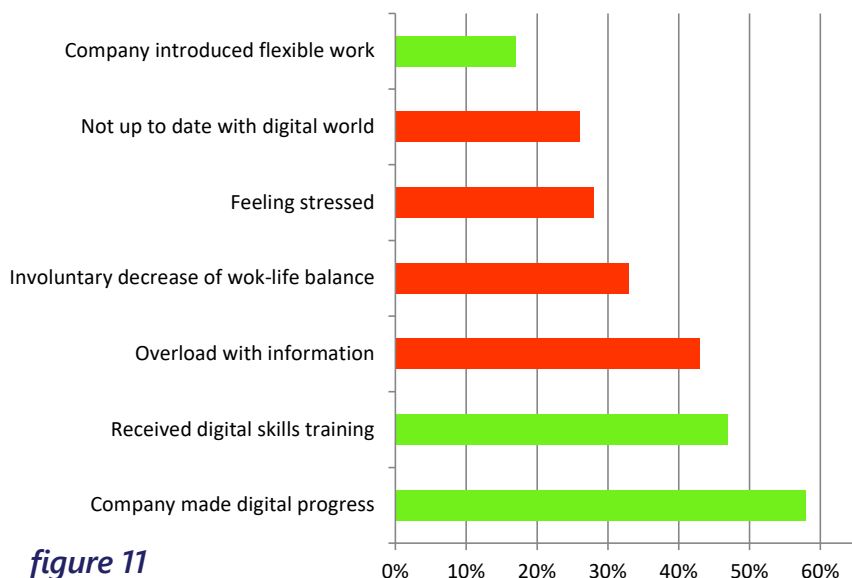

figure 11

Based on the responses to the question of figure 11, an index has been built to measure the quality of digital working conditions. On a scale from 0 to 6, the respondents score 3,2 in average (mean). Even though managers are by definition exposed to a higher work-load, more could be done to improve this figure. Above all, flexible working models could be encouraged, besides other public policy measures in the domain of education and work-life balance.

Results

3. Impact assessment

3.2. Ethical considerations

Finally, associated ethical questions were raised. A lot has been discussed about the topic of data protection, privacy and transparency. The investigation of other ethical issues, relevant when speaking about digital technologies in general and artificial intelligence in particular, aimed at clarifying which ethical questions were considered most by the participants to the survey.

Perhaps unsurprisingly, privacy was mentioned by almost half of the survey participants. The introduction of the General Data Protection Regulation (GDPR) and the large-scale data breach scandals are likely to have influenced the awareness on the issue of data protection. The other ethical issues were less often mentioned.

Speculating about the causes of these findings, either the issues were not on the horizon of awareness and knowledge or, alternatively, not considered an ethical problem.

CEC European Managers will continue to investigate the question of digital ethics in the future.
Raising awareness on the risks and ethical implications is fundamental in times where orientation is scarce and where changes occur rapidly.

Ethical concerns

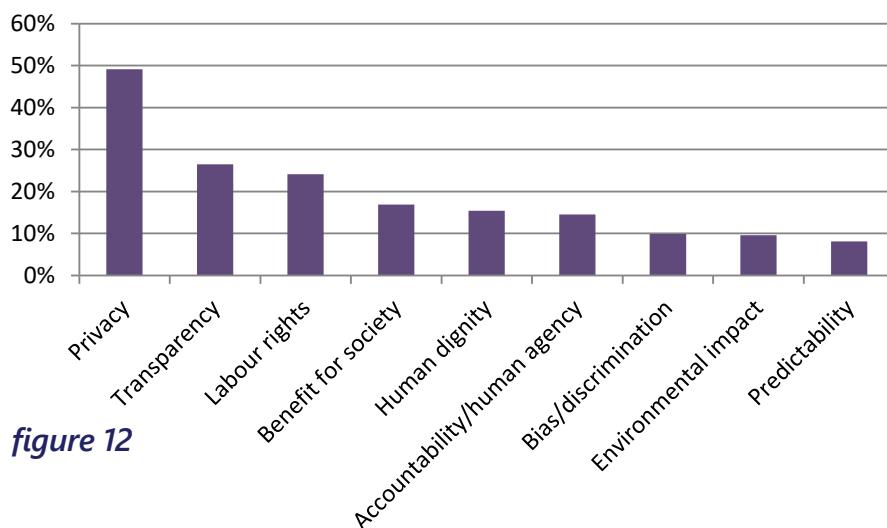Concerns regarding digital technologies in various ethical domains

figure 12

Conclusions

The findings of the survey highlight the urgent need to invest in digital skills, lifelong learning in general and to take action to improve working conditions. The growing importance of digital technologies in private and working lives make a sound reflection on the utility and potential of individual technologies necessary. The fundamental ethical questions need to be further discussed in order to make the most out of the digital revolution.

CEC European Managers is convinced that responsible leadership is needed to give orientation and to formulate a common vision about the way ahead. Without the necessary skills and an adequate leadership approach however, we risk to leave people behind and to steer into undesired directions.

Annex: questionnaire

* 1. Gender

[⬍]

* 2. Age

[⬍]

* 3. Sector of activity

[⬍]

* 4. Size of company / organisation

[⬍]

* 5. Level of position

[⬍]

* 6. Country of residence

[⬍]

7. Are you a member of one or more of the following CEC member organisations (national or sectorial)?

☐ No	☐ Ledarna	☐ ECMF
☐ AMM	☐ Lederne	☐ eTIC
☐ CCP	☐ LH - Ledernes Hovedorganisation	☐ FECC
☐ CFE-CGC	☐ MAS	☐ FECCIA
☐ CIDA	☐ MPA	☐ FECEC
☐ CNC-NCK	☐ SNQTB	☐ FECER
☐ CUQ	☐ SKO	☐ FEDEM
☐ EASE	☐ ULA	☐ FICT
☐ EEDE/HMA	☐ AECA	

8. The management of digital technologies is ... part of my professional tasks.

never	sometimes	often
○	○	○

9. Overall, how would you describe the scope of changes in your company/organisation and sector with regards to digital technologies in the last ten years?

	No changes	Little changes	Some changes	Many changes	Systemic change
Changes in my company/organisation	○	○	○	○	○
Changes in my sector	○	○	○	○	○

10. How do you think will the position you currently hold change in the coming ten years? (multiple choice)

☐ Will disappear	☐ My tasks will be automated
☐ Will be outsourced	☐ New, similar positions will be created
☐ My tasks will change	

11. Did your company/organisation consider or (start to) implement some of the following digital technologies?

	Social media	3D printing	Internet of things (sensors)	Big data / data analytics	Online collaboration tools (e.g. meetings, planning...)	Cloud-based services	Robotics	Machine learning / algorithms	Augmented and/or virtual reality
Considering	☐	☐	☐	☐	☐	☐	☐	☐	☐
Implementing / starting to implement	☐	☐	☐	☐	☐	☐	☐	☐	☐

Part 2

12. For which motives did your company/organisation implement these technologies (if any)? According to your knowledge, have the expected results been achieved? (multiple choice)

	Gain competitive advantage	Create better working conditions	Adapt to market / competitors	Reduce staff	Increase productivity
Was a motive	☐	☐	☐	☐	☐
Is achieved	☐	☐	☐	☐	☐

Other motive (please specify which motive and if it has been achieved)

☐

13. How has your company/organisation introduced these digital technologies (if any)? (multiple choice)

☐ Assessment, evaluation and (re)designing of the organisation

☐ Implementation of strategic plan from management

☐ Consultation with workers representatives

☐ Consultation with stakeholders like universities or think tanks

☐ Providing training

☐ Joint development and/or implementation of management, workers and customers (if applicable)

☐ Adaptation of digital technologies to existing company structure

Others (please specify)

☐

14. With which of the following statements do you agree with? (multiple choice)

☐ I often feel stressed (at least weekly)

☐ My company made progress in using digital opportunities over the last 10 years

☐ I am unsure and/or concerned over the ethical implications of digital technologies

☐ My company/organisation is uncertain over the legal implications of digital technologies

☐ My company adapted flexible working arrangements over the last 10 years

☐ I often feel overloaded with information (at least weekly)

☐ I have participated in (a) digital skills training(s) over the last 10 years

☐ My work-life balance has involuntarily decreased over the last 10 years

☐ I have the feeling not to be up to date with the new digital technologies

Others (please specify)

☐

15. If you were unsure or concerned over the ethical implications of digital technologies, have you had ethical concerns regarding digital technologies in following domains? (multiple choice)

☐ Accountability/human agency

☐ Environmental impact

☐ Predictability

☐ Labour rights

☐ Benefit for society

☐ Transparency

☐ Privacy

☐ Bias/discrimination

☐ Human dignity

Others (please specify)

☐

Contact us

www.cec-managers.org

Office
info@cec-managers.org
+32 24 20 10 51

CEC European Managers
Rue de la Loi 81a
B - 1040 Brussels

Head of Office
Matteo Matarazzo
+32 2 420 10 51
matarazzo@cec-managers.org

Policy and Communication Officer
Jean-Philippe Steeger
+32 2 420 08 23
steeger@cec-managers.org

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