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Digital Transformation

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“Every business is a software business”

as Watts S. Humphrey, the father of quality in software and CMMI, said two decades ago.

The CEO of Microsoft, Satya Nadella, repeats the message:
“all companies are software companies”.

*“Every company is a software company.
You have to start thinking and operating like a digital company. It's no longer just about procuring one solution and deploying one. It's not about one simple software solution. It's really you yourself thinking of your own future as a digital company.”*

We call this change of vision, this metamorphosis of the companies and all its implications, Digital Transformation.

Software is the ultimate source of capacity, competitiveness, innovation, quality and agility of companies. And it is the continually updated repository of our knowledge.

If your organization provides services, the software probably coordinates the entire workflow, supports customer service, builds loyalty, manages the treasury, or aggregates indicators for management decisions. If your business is industrial, the software probably controls the acquisition, production, stock management, marketing, sale, or distribution. When more than 95% of your organization’s operations can be supported by software, it is undeniable that your business is a software business.

Your organization is a software business, even if your activities are not yet managed by software. It is enough that they can be. Because your competitors, particularly the most innovative and disruptive, are taking steps to digitalize all the activities that cab be digitized. Or they are born digital, with all their activities already executed or supported by software. In any case, the possible inattention of your organization pays dearly.

Activities carried out and supported by software include activities that, until now, were reserved for knowledge workers. Like software programming, which is automated at Quidgest.

As it is ultimately the software that determines the quality, speed and scale of your activity, it is the competitiveness of your company that is in question.

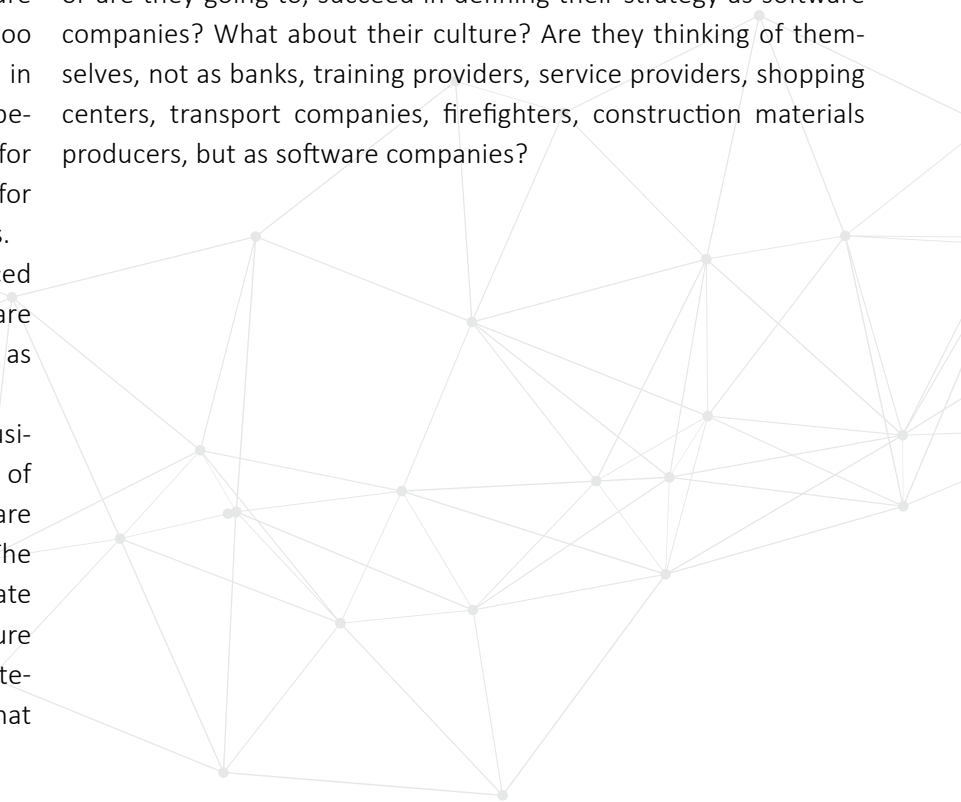
Over the years, the relationship between software and the management of organizations has not been peaceful. “I see software everywhere except productivity statistics,” said Nobel laureate Robert Solow in 1987 in what became known as the Productivity Paradox.

For years, information technologies have taken advantage of the business, more than they have served the business. With the technological diffusion, with the emergence of technologically better prepared decision makers and with constant innovation to remove technologists from their pedestal, this situation has been reversed. However, the cases where the software and the infrastructure supporting it (hardware, networks and communications) take up too much of the organizations’ budgets, giving little to the business in return, are still common today. That is, it does not provide competitive advantages, productivity increases or better experiences for the organization’s customers. There is a very significant potential for change, while reversing these cases and divesting these suppliers.

The trend of software serving the business has also been enhanced by the contribution of more conscious and committed software producers who have developed and followed approaches such as Agile, DevOps or Model Driven Development.

But digital transformation goes further than just serving the business. Digital transformation is putting the software at the center of the business, in the center of the organization’s activity. Software and business are no longer distinguishable from each other. The vision of one is the vision of the other. It is impossible to separate what is software and what is business. Any management measure applies through software. Any learning is done collectively by integration into the software. There are no areas of the business that are not covered by the software, nor software features that are not required by the business. The pace of software and business change is identical, and very high.

Applying the concept to our reality, what is the future of companies, in which we work or with whom we work, as software companies? What is the future of organizations such as CGD, CEMAH, EDP, Sonae, ADENE, CP, SIBS, INA, CCDR, Galp, Competition Authority, Universidade Nova de Lisboa, Águas de Portugal, Secil, Autoeuropa, Brisa, Civil Protection or Quidgest as software companies? Are they, or are they going to, succeed in defining their strategy as software companies? What about their culture? Are they thinking of themselves, not as banks, training providers, service providers, shopping centers, transport companies, firefighters, construction materials producers, but as software companies?



Digital Transformation of States and Companies

The strategic challenge of companies and states is to rethink their activity in the digital era. It's not about buying a technology. It is about putting technology at the heart of the activity they develop.
Digital transformation is a strategic competitive advantage. But it is also unavoidable. If the economy is digital, all businesses are bound to be digital. It is not about updating technology, but about updating the vision of the business. A bank (like n26) is not a business that uses technology, but a technology that comes in the form of a bank and is inseparable from a bank. With, for example, the Portuguese startup Farfetch, it becomes impossible to distinguish software and business. With digital transformation, the software of an organization becomes its essence, its business.
All changes are difficult. But this transformation is particularly difficult to accept. Most leaders and employees of a company or public institution do not see their organization as essentially software.
If this is the case, if it is also difficult for you to design your business as a software business and think about scenarios. Imagine that your business is a digital business. What changes? Or imagine a scenario in which a new competitor, fully digital, threatens your business. What weapons would be used by this competitor? How would these allow you to gain advantages over your company?
Like metamorphosis, digital transformation is a process, a sequence. It is not done from one day to the next. It requires strategy and a strategy map (possibly a Quidgest BSC).
There are new opportunities in the digital economy. But they are more open, accessible to more players and on an international scale. Without the weight of legacy, a new entrant often has an advantage and can pose a serious threat to already established companies. The scale of digital and the absence of barriers to expansion make it impossible to be safe anywhere. Bookstores around the world felt this with Amazon.
Pre-digital companies are not doomed. A bank like CGD will not necessarily fail to enter fully digital fintech companies. But there is a threat, which has to be taken very seriously.

Digital is both a disruption and the new standard. This may be more evident in some sectors than in others, but no industry is immune. Citing the author of "Digital Vortex", Daniel Pink: "Name an industry, and odds are it's being disrupted by competitors deploying digital technology."

And if today's companies do not endow themselves with technological vigilance and the ability to closely follow what digitally-owned companies can do, they are doomed. Activities properly supported by software multiply the productivity or effectiveness of digitally-owned companies dramatically, by the thousands or millions.

However, this is far from easy to achieve, due to aversion to change, difficulties in bringing together technological skills with increasingly scarce and expensive software skills, and for lack of strategic perception.

Often, following is not enough. The former benefits from an advantageous position because it is the first, which is difficult (but not impossible) to overcome.

The key is to learn how to merge business with information technology in a way that is truly transformative.

The software will not remain unscathed to this change. The software has to change radically. It is not the old software (the typical financial management package, in particular) that will support digital transformation. But flexible and powerful software production technologies that automate the application of human knowledge, such as Quidgest's Genio, which have the capacity to promote and dynamize digital transformation.

Digital transformation requires innovation, it is the current way of designating innovation and applying all the benefits (and risks) of innovation and creativity. Digital transformation is the innovation supported by the technological revolution of our time.

What is not digital transformation is also easy to understand. Removing information systems from organizations and expecting them, absurdly, to work better. Exclude organizations from thinking about their digital future. Denial of the possibility of digital transformation is an (effective) way of destroying an organization.

Digital transformation consists of rethinking what is the leadership of your industry, for your company and for yourself.

In strategic terms, software has gone from being neutral to being the main weapon of leadership attack strategies, and has been used in every industry by well-known companies, like Amazon (books and all) Google (advertising), Uber (transport), Booking.com (hotel reservations).

Software, used as a strategic offensive weapon, enables you to identify and deliver new revenue streams, transform customer experience, dramatically reduce costs and response times, increase efficiency and production capacity.

If it is not used by your company it will certainly be used against your company. If it is not used by our country, it will be used by other countries for their benefit and to the detriment of our development.

Business management and country government do not produce immediate, positive or negative results. However, delaying digital transformation for a sufficient length of time will certainly result in a continuous deterioration in the attractiveness of companies or countries and in the desertion of customers, investors or citizens.

The human element and education in Digital Transformation

Societies are stratifying into two groups: digital skeptics and digital transformers. The latter include, even if they are not fully aware of it, the digital natives. It is not just a generational issue. At Quidgest we have often supported, over the past 29 years, projects promoted by digital transformers not fully understood by the digital skeptics surrounding them.

The new millennial generation is entering the job market and their thinking is already global. Without great fears, the most competent learn and succeed in any country or culture.

In corporations and governments, a new generation of decision makers, managers and entrepreneurs, already born in the digital world, is causing a wave of change at an amazing rate. This generation knows, better than any previous generation of decision makers, the power and shortcomings of information technology. It takes advantage of the benefits and circumvents the limitations of technology to put into practice new forms of service delivery, wealth creation and well-being.

It does not blindly follow the technological leaders of the previous generation (it even completely ignores them). It challenges deep beliefs, and creates new business models, sometimes complementary to those that already exist, sometimes completely disruptive. The internet and the breakthrough in computing power and digital storage, available from smart mobile devices, coupled with widespread use as well as new developments in science and engineering are the main basis of this new economic revolution.

Instead, business or government leaders who say, without any embarrassment, they don't know anything about information technology, will disappear, become irrelevant. As will their organizations, if the breakdown of ties is not quick enough.

On the jobs side, the threat "What if people run out of things to do" is not a topic that scares us. Digital transformation will create new types of employment. Even the global trend of "automation of knowledge work", of which Quidgest's Genio is a good example, allows us to create a new profession of Knowledge Engineer capable of creating the demanding solutions required by Digital Transformation.

The human element requires change management. Transformation is more than change, but Digital Transformation can use and inherit all the knowledge gained from change management. Concepts such as Hype Cycle and the management of the expectations of the interlocutors. The distinction between Early Adopters and Laggards. The need to give organizations some time to adapt to the new age and new rules of the game. A map of strategy execution. Your organization's successful digital transformation will require the application of all these and other change management tools.

Digital Transformation on a global scale

Digital is global. It has no borders, although states begin to realize, and societies begin to accept, that being on the Internet will not continue to exempt digital businesses from paying taxes.

Two key concerns arise when we think of digital transformation on a global scale.

On the one hand, how will the digital transformation of societies, governments and companies contribute to the global sustainable development objectives (ODS) reflected in the United Nations Agenda 2030?

On the other hand, what new international economic order will emerge from this revolution? In fact, industrial or technological revolutions are not neutral. All have created leaders on a global scale. But they have also led to the exclusion of countries and regions. In particular, what position will this transformation bring to Europe, Portugal and each of the countries in which Quidgest operates? What companies can we support to be leaders on a global scale?

The vicious cycle nature of our growth also continues to worry. After a period of recession, the current growth has already triggered imports (notably software). The economic awareness of IT decision makers has not made much progress.

During the first half of 2017, growth in the positive balance of services, which includes revenues from tourism (and expenses with the acquisition of software abroad), was already insufficient to compensate for the deficit increase of the Balance of Payments. Our financial position vis-à-vis the exterior has worsened. From this point of view, which is essential for our future, it was a lost semester.

This is a strong enough argument to consider that the digital transformation of the Portuguese economy is necessary. The competitiveness of our producers of goods and services (and also of our tourism) depends on our software. The questions we now face are:

Can digital transformation be an engine of expansion of national technology companies?
Can tourism be a facilitator of technological exchange?
How to promote the Portuguese language as a vehicle for economic development? How can we immediately help developing countries and put national technology to support the achievement of the United Nations' 17 sustainable development goals by 2030?

Be the business:
Computer Science and technology in Digital Transformation

In his book, “Be the Business: CIOs in the New Era of IT,” Martha Heller quotes Mark Settle, CIO of Okta: “Large enterprise CIOs used to function as traffic cops regulating the selection, implementation and use of information technology. To be successful in today’s world, they need to serve as a concierge of IT capabilities, providing the advice and suggestions their companies need to leverage new and emerging technologies. ”

With software, it is not enough to serve the business. It is necessary to be (the soul of) the business.

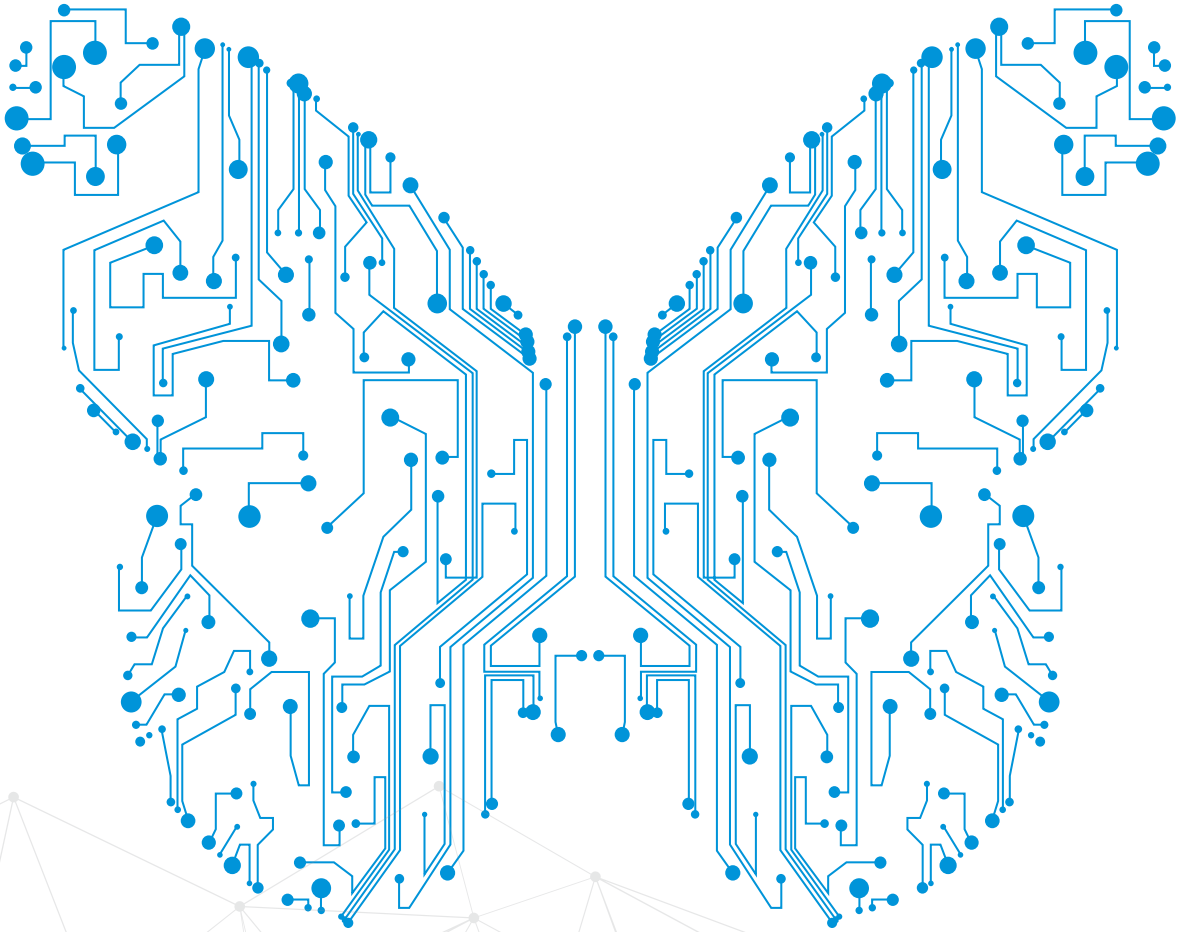
In the last decade, three trends have marked the role of computer scientists in organizations. First, there was a movement from the “back office” to the “front office”. That is, from business applications to customer-facing initiatives. Second, there was a movement from “software as a support” to “software as a strategic resource”. What it meant to directly relate revenues to software costs, rationalize expenses and stop thinking about software as a cost, but rather potential source of revenue. Third, a move from “technology” to “management”, with a focus on performance, quality, information security, adoption of better methodologies (Lean, Agile or DevOps), extension to other areas of management (digital marketing), automation, industry 4.0 and time to market.

As a result, we moved from a closed, self-focused technological area to the elimination of barriers (which existed in both directions) between information technology and all other areas of the organization. In digital organizations, the general movement in society is reflected: digital technology has been democratized. Today, it is more easily accessible and belongs (a little more) to everyone.

Major security challenges also apply to organizations and people in general in this Digital Transformation course. The path of digitization has already overcome major obstacles in the last decades, although some are still not completely resolved as digital preservation. The transformation is raising other issues for discussion and regulation such as privacy and cybersecurity.

Only the most flexible and easy-to-use technologies will meet the requirements of constant change. Many organizations are hostage to rigid, obsolete, and poorly interoperable software solutions that are totally incompatible with the new pace of mobility and change.

This pace, implicit in Digital Transformation, is a huge challenge. The balance of agility, reliability and security, applying the principles of continuous integration and DevOps, enables top performing digital companies (such as Google, Booking.com, Amazon, Uber, Facebook, Netflix) to install dozens of new software solutions daily. Just like Quidgest customers.



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