Keynote: Technologies' Future Role in Management Education and Which Organizations Will Be Leading It

Dominique Turcq
Founder of the Boostzone Institute
France

Today I will speak about management education and new technologies. Please note that this is a "work in progress" presentation.

Management education must evolve because the world is evolving, impacted by a multitude of factors, and in particular by new potentially disruptive technologies. This was said at large at the beginning of this conference, I will not insist on it again. The very business model of management education is challenged.

I will first address the technologies I am talking about and then their impact on the business ecosystem of management education. Which challenges do technologies bring for management education?

A lot of new technologies are changing our society, and by reaction, management education but what is actually most important is the fact that these technologies do combine with each other to provoke major changes in the information, communication and education ecosystems. I propose to look today at three technological combinations:

- The new digital complex: Let's call it "Digital Redux",
- The new Human Enhancement Technologies (HET) complex,
- The new Ecological complex.

FIRST COMBINATION
The digital REDUX complex: Digital, AI and all information managing system

Thanks to the development of these technologies, we will see more and more of:

- Tools for generating data about people, events, and everything that can be digitalized.
- Tools for analyzing all these data.
- Tools for monitoring, delivering, storing, controlling what people do, how they react, how they learn, how they memorize, how they will have understood, or not, the courses.
- Tools for delivering, accessing, and translating information, making a reality the global universal encyclopedia of knowledge.
- Tools for education material production, in particular video production or games.
- Tools for distributing knowledge, from remote teaching to any content delivery.

- Tools for being assisted in small tasks (like recognizing faces with Augmented Reality glasses…) or complex tasks (like using AI chatbots for replacing the teachers for some activities).

What will Digital Redux mean for management education?

A lot! Both on content, and on delivery methods.

Let's see some examples:

- First, obviously, as the COVID crisis has proven, major changes are happening in delivery methods, from remote learning to hybrid, etc. A lot has been said about it. The issues of how to handle and combine remote presence vs physical presence vs hybrid, etc. will occupy us for quite a long time. This is true both for educators and for individual learners and workers. New skills are required. We need to acquire them and to teach them.
- Also (and the COVID has also shown its importance), distance and non-synchronous education material, like MOOCs, will further develop. We need to develop those new forms of education material; we are just at the beginning. Many players will enter the market, the barriers are quite low, and will further enhance a new global market for content.
- Communication technologies, however, have much more impact than just on education content and delivery methods. The number of communicating stakeholders and the power of their communication skills create a new competitive environment for the cognitive market. In short:
  - The experts are challenged all over by non-experts pretending they are experts, and since those self-declared experts are vocal and very active, they grab an increasing part of the cognitive market.
  - Social networks have a stronger and stronger political and sociological influence. Not only do they rate everything, but they present contents without any scientific validation.
  - Social networks also fuel a new and profoundly revolutionary movement, the "woke", by which past ideas or actions are condemned in today's environment up to the point of forcing people to resign, companies to change products, names, etc. and risking being boycotted.
  - Also, and on a positive side however, social networks convey interesting information on what the new market expectations are, and what the new stakeholders expect.
- The new digital complex will obviously also help us to better measure performance, attendance, capabilities, progresses, individual precise personal and social profiles, etc. It will help us to design more personalized programs.
- It will allow to access many more resources and to combine them from all parts of the world. With a large choice of languages thanks to now quite good technologies like Google Translate, a treasure chest has opened, not just a Pandora's box.
- The new digital complex will also have a dramatic impact on costs: costs of material, costs of professors, costs of infrastructures, and this will generally be a downward impact.
- Finally, in this list of examples, cyber security and personal data security will become a threat for all and a major additional topic in all disciplines. It might in some cases become a political issue, in other a sociological one. It is not only an abstract issue. Let me give an example of teaching via Zoom I had at Sciences Po. One of my foreign students never spoke in class because she was concerned her government could get the recording (via other students of her nationality in the class) and that someday it could backfire on her. Remote classes and conversations are not private, they are only partially secure.

SECOND COMBINATION
The Human Enhancement Technology (HET) complex: AI, Biology and Neurosciences

After all, we are all here in the business of HET, Human Enhancement Technologies. We do not provide prosthesis for the seeing or hearing or walking, we do not provide pills or drugs for enhancing memory or sport performance, but we help people improve their skills, their vision capabilities, their operational capabilities, their problem-solving skills, their technical skills, don't we? So, we are engines of human enhancement.

The combination of AI, Biology and Neurosciences will help us to dramatically improve our contribution to human enhancement!

In short:

- Biology will help to differentiate individuals according to their capabilities, in particular as far as memory, stress, concentration, need for sleep, etc. are concerned.
- Neurosciences will help to differentiate individuals according to many other factors (soon measurable), like sensitivity to stress, collective working capabilities, sensitivity to nudge, depth of critical mind, nature of sensitivity to decision biases, ability in some sciences like language or mathematics, etc.
- AI will have access to many new data generated by biology data and neurosciences data. They will improve the analysis and predictive capacity of AI from the ocean of data already available.

What will HET mean for management education (examples):

- Improving the selection of participants, of development tracks, even of team composition, including with DNA analysis. Let's be careful here, it will also mean that the word "selection" will have to change its meaning, from the "finding clones" of today to finding "the best contributor" tomorrow.
- Personalizing much more of the programs, content and ways of delivery via ever-improving profiling of people.
- Largely changing evaluation systems taking into consideration many more factors than today.
- Developing sophisticated systems for avoiding biases in decision-making systems, like group think and other biases now well understood by neurosciences.
- Using influencing tools and nudges to enhance learning capabilities.
- Measuring emotional implications of participants, in real time.
- Using chemicals to enhance some capabilities like awareness, memory, resistance to stress, etc.
- Educating the participants to these new tools and in particular nudge (a form of manipulation), in marketing and in human sciences including HR.
- Adding a lot of ethical issues in the curriculums.

THIRD COMBINATION
The New Global world environment technologies

Most business models are going to be challenged by the Anthropocene crisis which includes climate change, biodiversity management, pollution issues (such as with plastics) and new social expectations.

Let's be clear, the paradigm has changed. We have moved from "what can we do to limit our impact on the planet" to "how to live with the unavoidable change we have initiated on our planet and our species". In a way it is accepting that it is too late for many actions, but in another way, it is much more inciting to action than just prevention was. It can present opportunities for many industries. Therefore, it will trigger innovation and strategic disruptions.

Many new technologies are emerging for producing or saving energy and natural resources, capturing CO_2, even manipulating climate, managing impact on biodiversity, etc.

Also new pandemics may appear, leading to new social relationships, international relationships, new research, new ways of working, etc. Let's be clear, this COVID pandemic was a weak signal, it was sort of kind. Just think of what will happen if the next one is as contagious and lethal as Ebola was or as the plague was in the past. 30% of Venice population was killed by the plague, twice.

What will it mean for management education (examples):

First, we all need to be precursors and strategists for understanding how it will impact corporations, the skills they need, the people they need, the strategies they need. We will have to translate these issues into management education concepts and products. It is not easy and it will force all of us to become better strategists and futurologists.

Second, it will affect some fundamentals of management and in particular of governance. What should be the relation of management to their boards in a world where the issue number one is environment and not anymore Total Return to Shareholder? What is the new role and, more importantly, what should be the new weight of stakeholders in decision-making? And, most of all, what should be the weight of shareholders' interests in a world dominated by environmental issues?

This third complex of technologies, linked with the new social context (on which I am not going to talk today) raises many management issues but also many ethical issues. Management education will have to take care of more and more ethical dimensions. We don't have to educate on how to increase the top or bottom lines but to educate on managing the business impact on the ecology. We have to redefine and to teach a few fundamental concepts like performance, purpose, mission, excellence.

These three technological complexes evolutions - the digital redux, the new HET and the new global environment - are posing challenges. Let's now see if some players within our industry will be more affected than others.

Who will be the most impacted within the education business ecosystem?

We can look at management disciplines on one hand and at the players within the management education ecosystem on the other hand.

Disciplines first

All management education disciplines are concerned. From HR to strategy, marketing, accounting, finance, communication, organization, economics, governance, etc.

A few examples:

- How to teach strategy in a world where disruptions - technological, social, and ecological - are becoming the norm; where frameworks, like the Porter's one, have become quasi-irrelevant?
- How to teach HR when most of the classic variables are challenged by technologies and social forces (recruitment, development, enhancement, separation, team building, place of work, employer's brand, etc)?
- How to teach marketing when product design, advertising, communication, influencing, pricing, segmenting, biological impact of components (epigenetics), ecological impact of business model, etc, will use new tools and where these tools evolve nearly by the day?
- How to teach economy when old indicators are clearly obsolete (like the GDP or the simple measures of profits), and where it has become so important to understand and evaluate the costs and benefits of externalities, the benefits and risks of new technologies?
- How to teach governance when stakeholders take such an importance, can change with circumstances, can affect the board composition, the corporate image, etc, and some of them are becoming much more powerful communicators than corporations?

All disciplines are going to be impacted.

Then management education ecosystem players

All players in the management education ecosystem are concerned. Let's see some of the revolutions ahead and the ones already developing.

Let's look at:

- Content deliverers,
- Content providers,
- Consultants,
- Tool providers,
- Students graduating in management,
- Students complementing their studies with management education,
- Executives,
- Board members,
- Infrastructure providers.

First the content deliverers

Professors and teachers face first of all a major challenge of being themselves competent on the impact of new technologies on their fields. Research is often slower than practical market evolution. Fashion is fun, but it is not science. Professors and researchers may sometimes look outdated vs the market, while they actually are just trying to be scientific.

More annoying, teachers are now a minority competing in the cognitive market. They are dominated in quantity by a host of players including:

- Self-designated experts,
- Bloggers,
- Influencers.

They will have to live with this competition in the cognitive market. They are all on a global market where MOOCs (good and bad) and remote access systems allows anyone to create material anywhere and allows anyone to learn anywhere, even to get graduations or credits or stacks of credits online, potentially bringing the cost (and income) of teachers to a lower global standard.

A strange phenomenon will have to be observed: how will the long tail of management education offering behave? With a large elongation of the tail and the de facto overall increase of the market supply? Or, as with what happened in music or in books, with a premium for the most popular and a sort of 'winner takes all' profile. My hypothesis goes to the second evolution. The "best" will grab the lion's share (and I don't define what best mean here today).

The professional content providers; education programs designers; program engineers and program managers; MOOC designers

They face the same issues as professors although they are at the heart of new organizations, they have new degrees of freedom in their choices of curriculum, teachers, ways of teaching, etc. For them the issue is more how to be fast enough for grabbing the implications of technologies and using them to the best for creating innovating material, innovating delivery methods, and getting visibility in the long tail.

Consultants

Consultants also face the same issues, but they have improved their strategic market position since they can pretend to be closer to the field, to have a practical experience of the impact of the new technologies. However, since their primary business model is consulting, they can be seen also as partners rather than competitors for professors and content providers.

Tools providers

They are agents of disruption IF they provide new and really useful and easy to use tools. They are a bonanza for startup investors in education. They cover a wide variety of domains from delivery tools, remote learning tools, serious games, evaluation, certification tools, students' data analysis tools, etc. They use mostly digital and AI tools, but they improve fast in using neurosciences tools and soon biological tools. They might be strong agents of disruption.

Students

Students in management can be divided into two categories, the pure management education students, and the students looking for a complementary education to their earlier engineering or other sciences education.

Students in management sciences will have very high expectations toward their education providers since they know how the new world is complex, how competitive it is and how good they need to be if they want to be successful. In particular if they have "only" a management education background.

Their coordination skills, their multidisciplinary capabilities as their foresight skills will be needed, they will want to be well trained on all these, with the best tools, the best content, and the best educators. This may, in the long tail, give a premium to the institutions with the most original, cross-disciplinary and reputed programs.

Students complementing their earlier education with management education are actually a different breed. They have understood that their field, whatever it is - engineering, sociology, even history or philosophy - is very useful but needs to work with other fields. They will expect interdisciplinary methodologies, advanced thinking on technology impact, etc. BUT they will also bring a formidable content to classes where they will bring their expertise. Therefore, they will be more and more courted by programs. There might be the need for a new marketing to attract them.

Executives and purchasers of continuing education, i.e. companies

Most executives have in general only a very scattered knowledge of the latest technological revolutions but they realize the complexity of the world and they want actionable ideas and concepts for their immediate use. This is an enormous challenge since it will mean being able to help them to really apply the implications of new technologies to their current business. It is for instance easier to describe the generic impact of AI than to help an executive to find out how AI can help him change his business, how he can become an expert, how he can become a translator of AI capabilities into his current activities. The same applies to neurosciences and to biology.

But they also want short sessions, quick learning, under the best possible hybrid or remote or presential education techniques. This is a high bar challenge since all these new issues demand an interdisciplinary approach and an in-depth learning, which is time consuming. We will have to solve this time paradox collectively.

Board members as participants in management education

I think, and my current work with board members led me to realize how important it is, that board members need a new series of management education inputs.

Board members will be more exposed, more at risk tomorrow, but today they are often quite ignorant about the impact of new technologies on their companies. They have been briefed on digital although often they have accepted without too much discussion what the management presented to them. They now need to make sure that their own board decision-making process does not leave too much domain too vague AND they need to make sure that the executive team decision processes are aligned, less subject to biases, transparent to the board. There is an emerging need for some sort of audit committee of decision-making within the company to make sure what is presented to the board has been well structured internally.

Board members will also be confronted with new issues affecting corporations at the highest level, such as:

- How to consider the stakeholders? Which ones? How to involve them, if at all? The answers are far from obvious and vary by type of industry. But all need stakeholder mapping and stakeholder relationships skills.
- How to monitor actions from the management that might be seen as immoral, unethical, even fraudulent by stakeholders or by justice? Think of the examples of several pharma products like opioids, or think of the Diesel gate, or think of some lobbying efforts that risk discrediting a corporate reputation in the public and therefore harm the company's performance. Boards needs to be better educated on how to understand and act on these issues.

Board members could be a major field for management education. But most of the board members are not managers, they are rather supervisors of management teams. Some have actually very limited experience in real world management. Most have very limited capacity in understanding technologies and even sociology.

In some countries (the US and the UK in particular) some indicators are now put in place to rate the capabilities of board members to understand the new and complex issues like AI, cyber security, etc (tomorrow it will be neurosciences and biology). These ratings will develop. Board members will need to adapt. This will require new teaching techniques, new concepts, new programs.

Last player in the management education ecosystem, the infrastructure providers

At a time when remote learning and remote working becomes more common, but also when the analysis of individual data and behavioral data become more important, the infrastructure providers, real estate providers in particular, face an interesting series of challenges. A few examples:

- How to change the physical infrastructure to adapt to the hybrid-learning world, what kind of new equipment, what kind of experts, what kind of logistics will be required?
- How to invent new forms of sociability in order to reinvent the value of social contact, of the emotional value of physical presence and emotions?
- How to use emotional data to improve the learning process, the teamwork, etc? Steelcase, an office furniture company, for instance, has now tools in its labs tracking the emotions in a meeting, tracking the foreign language level of participants, tracking the dynamics of the meeting and are able to give feedback to the organizers or to participants on these variables.

Conclusion

How to get prepared?

We have to understand that technologies are a special breed to handle. It often starts as an opportunity, then becomes a problem, then becomes an opportunity again.

Let's look at the example of the automobile: it was first a way of getting around, then it was a problem with accidents –allegedly caused by bad drivers, and then, after 1964, thanks to Nader and others, it was a problem with the technology itself and not just the drivers, leading to dramatic safety features improvements. Today, it is both a pollution and CO_2 problem and a great opportunity with the new electric mobility tools.

The same is currently happening with the Internet 2.0, the games, the influencers, etc. You all know that the same is happening with AI. It is a formidable opportunity, it will have perverse usages, and then it will become a great and moderated opportunity again.

The same is happening with social networks. They are a formidable tool, they have serious perverse effects like the distribution of fake news, students bullying, etc. They will evolve and their positive side will be better and better used.

The overall implication is that more regulation will come, and more opportunities will arise.

The implications for us however are not the same in the various phases of a technology life cycle. We must be careful not to present any technology as a perfect panacea (it is not), nor as a real problem (it is not), but as a fabulous tool to leverage other capabilities. And our role as management educators is to understand all technological implications. We need to be excellently educated on all tools.

We also absolutely need to be good at foreseeing what will happen. Most of our participants are late in understanding, many don't care whenever something is not yet fully happening, many are procrastinating, but we must warn them to help them get ready. In my view, this is part of an educator's responsibility.

In order to understand and to teach on such a large scope of technologies, we need to:

- Develop more cross-functional/cross-education systems, in particular:
  - We need to train engineers on philosophy and on technologies other than the ones they are familiar with (but let's not underestimate the difficulty of interdisciplinary teaching).
  - We need to train business-educated people on philosophy and on technological evolution.
  - We need to develop these new interdisciplinary skills in ourselves.
- We also need a lot of humility, namely:
  - To avoid our own decisions and judgment biases. Neurosciences teach us how vulnerable we are.
  - To avoid pretending we know a subject when we actually only know it superficially, and in technology we are all superficial... We need to be trained constantly.
- We will need to improve our skills, particularly in:
  - Having the best possible critical thinking.
  - Understanding and teaching ethics.
  - We finally need to work more with futurologists and forecasting experts. They become essential in the management education fields.

Let's see management education overall as a HET, like glasses, prosthesis, hearing aids, aesthetic surgery, memory, other performance boosters, etc.

What will help to enhance further humans? And managers in particular? To make them more effective, efficient, skilled, and at the same time more honest and more "intelligent" in the meaning of understanding the world around them?

In the 1940s, the Harvard Business School invented the case study method for teaching.

What we see today is a flurry of new inventions. Let's see all these issues as a formidable opportunity to boost management education to new heights. Let's innovate and invent the management education of tomorrow.