"Everywhere the digital world will introduce major step-changes, which we need to anticipate and control. The digital company business model is very different to the classic business model, in its foundations and its relationship with the market."\(^1\)

Ever since the nineties, the emergence of digital technology within our society and the massive upsurge of information technologies in companies has sped up the exchanges, production and distribution processes. They question the historical value creation chain: consumer behavior modification, companies’ competition intensification, and new markets opening.

These mutations create opportunities advocating of new business models adapted to the digital technology world, in which we observe two ruptures:

- **Disintermediation**, eased by the Internet and defined as the reduction or the suppression of intermediates in the distribution circuit.

This phenomenon appears in an online space where the information flow intensity is higher and where it is easier to buy goods and services that used to belong to separate distribution channels.

- **Network mediation**, when several stakeholders form an alliance in order to co-create or co-produce services or goods. This cooperation is eased, once again, by information technologies (standardization, real-time interfaces, competence sharing, costs reduction...).

To cope with these ruptures, companies must rethink the entire client relationship and more largely their ecosystem. Beyond dematerialization, it is necessary that they redo their business models. In the first place, they have to seize the opportunity that the Internet - especially the mobile web - offers and get clients involved in their value chain, in order to stick to their needs. At the heart of the marketing mix, more than the product, the price, the place or the promotion, the "person" is from now on the center of attention.

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\(^1\) Ménard, Bruno, (2010), *ibid.*, p. 56.
The brand new fact here is the appearance of consumer-centered ecosystems, through the creation of client databases that are even improved with big data - data collected in all access channels (call centers, social networks, Internet of Things, etc.) - open data - socio-economic and environmental data - and continuous traceability of the Internet user, on the Web and in real life (geo-localization).

For several years, Nike has put on the market trainers using digital technology. These shoes are equipped with sensors that are able to record and analyze the runner’s performance. The runner can upload on his or her computer the stored data, share the performance analysis with friends and other competitors… Thanks to digital technology integration in the product itself, the shoe is transformed into an information sensor, enabling a new service to be co-produced.

**Value propositions transformed by digital technology**

Numerous examples of good practices illustrate, in different fields, the necessity to deeply rethink marketing strategies and organizations, in the light of digital technology. A recent BCG study, dedicated to marketing opportunities in the digital technology era, shows that companies producing consumer goods, had - in the past - very little interaction with their clients. They now have new means to test their new products available such as distributing coupons, sharing information on products and the consumers’ opinions or encouraging influential clients to become brand ambassadors.

The study quotes Diageo for instance - a leading company in the alcoholic drinks sector. It has successfully become a leader especially by launching an IPhone application called "thebar.com". It helps consumers to find out the closest bars and shops, suggests them a large amount of drinks recipes and gives them access to Facebook and other social networks so that they can exchange and give their opinions.

For airlines and other services companies, digital platforms have led to customer relations department evolutions by replying to their complaints or to their need for assistance, by informing them in live of schedule modifications, departure gate modifications, etc.

In another sector, banks can provide 24/7 financial services to better answer their clients’ needs. The convenience services such as online payments make it more difficult for a customer to shift to another bank. Digital technology obviously accentuates client loyalty.

Retail industry, as for it, is exposed to the printed advertisement efficiency erosion. It is subject to the challenge of integrating new channels that allow consumers to buy directly in shops, online or via a mobile device. In South Korea, Tesco Home has set up virtual grocery machines in subway stations providing hurried travelers with a solution to do the shopping while waiting for the subway. Clients can scan bar codes of items that will be delivered at home with their smartphones. Online sales have then risen by 130% making this platform the country first online selling website.

Thus, companies adapt faster to the permanent evolution of consumer expectations and tastes. With the Internet, consumers have imposed their supremacies by comparing goods, services and prices to one another. They are even in direct contact with companies’ production chains, as the logical sequence of their goods personalization implies it. It has provoked two main evolutions for companies: customized goods mass production and real-time awareness of the latest expectations expressed by clients.

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Recent studies, led by the University of Southern California as part of the CIGREF Foundation, ISD program, were able to identify three main tendencies to conceive digital companies’ business models:

- The primacy of customer experience and the need of personalization.
- The distributed co-creation of value: more and more, consumers - as suppliers do - commit to the goods and services elaboration they consume (shared value creation).
- The continuous sense-and-respond experimentation: the sensors-provided data multiplication is to provoke complex analysis capacities development, enabling to interpret masses of data in a clever and focused way.

**The primacy of customer experience**

Digital economy imposes a new paradigm to marketing that not long ago was concerned about making prospects into clients. Let us be reminded that the "prospector" is historically the one who sounds things out to strike the goldmine. Pre-digital marketing considers clients as goldmines, sources of enrichment and the latter knows it very well. Digital companies consider clients as people they are speaking to and above all with whom they have to be sensitive and have to build a unique service experience. Consumers discover a new relationship with the merchant world.

The convergence of hyper competition - main feature of the current economic context -, societal evolutions and speed demands - induced by digital resources - makes companies competitive advantages fleeting. The product on its own is longer differentiating: competitive advantage now occurs through related services. Thus, digital transition breaks with companies’ traditional vision and opens a co-creation space where clients are, among others, in different ways, thanks to personalization in particular.

This is the case for example in the pharmaceutical industry which - to answer to people suffering from chronic diseases - now takes interest in digital services for patient support during their pathology treatment, beyond pharmaceutical products production. In this context of development of multiple communication and trade channels, of products and linked services personalization, the customers’ platform becomes a key space to promote customer experience.

To benefit from their clients presence on digital spaces, companies not only have to integrate them within the co-creation of value space but also to create an ecosystem around their brand, their products and their services to allow their differentiation.

However, it will be necessary to pay attention and check if this challenge is sustainable and/or relevant for all companies.

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2 The Essentials
The project named "The impact of Web 2.0 on organizations" from the ISD program shows that a company can rely on a certain number of levers to develop its access capacities to the Web 2.0 communities:

- Information systems and associated actors: development of customer communication platforms, using available moderation and control tools, and actors who combine technical skills with a talent for moderating.
- Coordination between design and horizon-scanning activities.
- Coordination between the organization’s different actors: who analyzes information feedback from Web 2.0.
- Monetization of the potential for new services emerging from community exchanges.

In this kind of digital project, companies also have to be aware not to fall in traps. Actually, communitarian expression spaces are hardly controllable, and surveillance attempts by organizations - if they intend to impose their truth in this free speech space - can be counterproductive. Thus, the opportunities offered by digital technology show a new risk: a risk of image, one of e-reputation. Among the points to pay attention to:

- The representativity and reliability of web communities only convey the opinions of those consumers who write a review.
- The scope of such communities is not controlled, and is open to competitors and new entrants. The list of relevant communities, moreover, can be hard to establish.
- Knowledge of the codes and rules of behavior that apply in web-based social networks is essential for access to these communities. Also, they can adopt behaviors hostile to the company.
- Capturing and exploiting knowledge requires semantic analysis tools, and also a strategy: either the firm doesn’t want to be identified by the community, and must therefore employ stratagems, or, it chooses to be identified explicitly.

Value co-creation

Companies’ borders are now porous and it becomes difficult to determine where the company stops and where the ecosystem starts. In this service dominant logic, value is co-created by consumers, companies’ networks and other parties at the same time.

They do not only exchange goods and services but they implement or put in common a set of capacities, of competences, of knowledge and of data.

The model of consumers-producers - who themselves become prescribers by committing to the production process of goods and services they consume - is about to increase. This value co-creation phenomenon, eased by technologies and the Web 2.0, is stimulated by the development of a shared digital culture whose main principle is confidence.

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5 Tran, Sébastien (under the direction of), (2013), L’impact du Web 2.0 sur les organisations, Springer, Coll. Espaces numériques.
Creating value from data exploitation

The multitude of sensors and entries offers a broad range of available data that is more or less structured. Analysis capacities have improved at the same time and their costs have dropped. The stakes of this emerging tendency rely upon data collection, then on the cross-analysis of information sources (structured, non-structured, internal, external) in order to develop or reinforce a competitive advantage. The goal is also to give a meaning to data (non-structured data collection and exploitation seem to be key stakes for companies). Then, it is necessary to set-up handy tools for lines-of-business, enabling a simplified - and legal - data handling. In this framework, information management is a major stake for a company’s performance.

User-friendliness and interface attractiveness

A value proposition cannot only have a strictly functional aspect. In a more and more mature and sophisticated digital environment, consumers want products endowed with rich, intuitive functionalities and they also look for an attractive and fun product, right up to extreme personalization sometimes.

Digital culture is also an information design culture and a user-friendly interface culture. Design does not only concern 3D objects; it becomes an essential element for the attractiveness of services and functionalities that can be seen on a screen. Interfaces have to be straightforward; the icons obvious and funny. Functionalities have to encourage and value the participant’s implication.

Digital companies have soon identified the seducing power of formalization and successful interfaces. They are now especially interested in behavior transformation capacities through design.

The importance of linked services and of client interface comes up in particular in VISOR, a new framework to define a digital business model.

VISOR: rethink business model in a digital space

This theoretical framework, elaborated by Professors Omar A. El Sawy and Francis Pereira from the University of Southern California⁶, is composed of five elements:

• value proposition consisting in identifying the value delivered to the final client, even if the company is a mere link in a broader chain;
• A value proposition consisting in identifying the value delivered to the final client, even if the company is a mere link in a broader chain;
• A service platform is a "playground" where partners will collaborate; it is where the value will be assembled and where consumers will access a value proposition;
• An organization model enabling to understand in which ways the company depends on others;
• A revenue model that can identify user preferences and prices consumers are ready to pay.

<table>
<thead>
<tr>
<th>VISOR model elements</th>
<th>Priorities</th>
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<tbody>
<tr>
<td>Value proposition</td>
<td>• Offers attractiveness</td>
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<td></td>
<td>• Targeted population and market size</td>
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<td>• Offers synergys</td>
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<td></td>
<td>• Co-creativity with consumers</td>
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<tr>
<td>Interfaces</td>
<td>• Functionalities (user-friendliness)</td>
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<td></td>
<td>• Esthetics (formats and drawing style)</td>
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<td></td>
<td>• Fluidity (ability to personalize)</td>
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<td></td>
<td>• Resilience regarding utilization mistakes</td>
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<tr>
<td>Plateforme de Services</td>
<td>• Architecture (open or closed)</td>
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<tr>
<td></td>
<td>• Agnosticism on various systems</td>
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<tr>
<td></td>
<td>• Acquisition (specific development or existing components integration)</td>
</tr>
<tr>
<td></td>
<td>• Access (free or limited)</td>
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<tr>
<td>Modèle d’Organisation</td>
<td>• Process efficiency</td>
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<td></td>
<td>• Partnerships quality</td>
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<td></td>
<td>• Ability to obtain data in the ecosystem resources</td>
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<td>• Project management quality</td>
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<tr>
<td>Modèle de Revenus</td>
<td>• Pricing system and financing model</td>
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<td></td>
<td>• Income sharing between partners</td>
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<td>• Cost structure</td>
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<td></td>
<td>• Potential selling volume</td>
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</tbody>
</table>

**Digital company business model**: priorities
Source El Sawy, Pereira (2012)

A successful business case in digital world is a case that achieves to bring into line the various VISOR components, in order to provide the best value proposition; that is to say the one which, while reducing necessary costs to provide offered services, increases targeted clients’ will to pay for it.
**From value chain to value network**

Digital companies are also known for being decentralized. This decentralized organization -that can be referred to as a "matrix organization" too - constitutes a fitted answer to companies’ interdisciplinary needs and to globalization. It favors exchanges on one hand (information and knowledge sharing), sometimes at the cost of a consequent coordinating work between operational entities (for instance geographical) and support functions (jobs, R&D etc.).

This kind of organization defines de facto a double authority, reinforcing central power that determines parties’ goals and a synergy between them (some actually cannot achieve their goal without the help of others), and even an interdependence.

This kind of organization and functioning generates collaborative interplays whose aims are to reach at best the company goals. Beyond the matrix-like organization, the goal is to enable the infrastructure entities to each overcome the organizational "border" and get networked to one another.

The network size is a key issue in this transformation. Contrary to the traditional pattern of value production linked to a unique chain (production - treatment - distribution - consumption), the value creation new methods are partly linked to information repeatable nature until infinite. They are also linked to the wide circulation of information, between a multiplicity of parties and in an open ecosystem.

Then, the "value chain" becomes a "value network", as an unequivocal and internal production culture becomes a culture dedicated to diffusion, circulation and improvement. The almost universal presence of digital technology multiplies and accelerates - thanks to the Internet - the capacity to produce and weave links with an infinite number of parties, which favors horizontal collaboration and revolutionizes value creation.

"Digital maturity" and high profitability

Several studies analyze the success standards in our globalized economy. In their results, we can find most of the VISOR model components again, showing how crucial they are in companies’ performance. A benchmarking of digital practices in the world, produced by Capgemini Consulting and the MIT Center for Digital Business, has enabled to identify the essential elements of digital maturity and analyze the links between digital maturity and financial performance. This statistical study pinpoints four major company categories, different in terms of digital intensity and of transformation management intensity: beginner companies named "beginners"; those for which digital technology is a tendency nicknamed "fashionistas"; conservative ones called "conservatives" which obtain less important financial performances than "digirati", companies with high digital maturity.

The digirati common denominator is situated on two digital transformation criteria: digital intensity and digital transformation management. They directly impact companies’ performance and profitability:

- In terms of transformation management, digirati have elaborated a crystal clear vision of digital evolution. They have set up digital governance, stimulated employees and clients’ commitment and improved relations between IT and jobs.

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- In terms of digital intensity, digirati excel in at least one of the fields of expertise (customers experience, social media, mobiles, client analyses, digital process and internal collaboration), combined to create synergies.

Several of digirati excellence criteria fall under the direction and perspective managers give the company (the vision), employee commitment and a strong interaction culture developed within the company and with clients.

Digirati companies are on average 26% more profitable than their competitors. They produce 9% more income and they are 12% higher in market value.

Conventional wisdom would believe these companies are high-tech and pure player jewels. Statistical reality demonstrates digirati deploy in all business sectors: high-tech (38%), banking (35%), insurance (33%), travel industry (31%) and telecommunications (30%). They are also present in other sectors that are less mature on a digital point of view, such as large retailers (26%), consumer goods (24%), collective interest services (20%), manufacturer industry (12%) or pharmacy (7%). Their presence in all sectors tends to slow down the digital maturity improvement of their beginner competitors.

Consumers experience pre-eminence, value coproduction, data exploitation optimization, resources and tools are numerous and today enable to enrich - and even deeply - the value chain in digital world.

Clients, their perceptions and their practices, their expectations regarding flexible and attractive interfaces, their wills not to remain passive consumers, to take part in offer evaluation, are levers to be exploited by companies in order to improve - with stakeholders - their business models’ competitiveness and attractiveness. Some companies have integrated these aspects of digital competitiveness in their business models. Their maturity is not the same as cutting edge technophiles’. It is the result of a coherent articulation of all these dimensions, composing companies’ digital culture. When they are supported by executives, IT and lines-of-business management, in a digital concerted strategy, they lead to performance increases.

New innovation and coordination vectors

Mobility work tools (smartphones, laptops, tablets) are one of the interaction modes of networking companies and their digital cultures. These mobility technologies possess a significant innovative potential for companies.

Thus, smartphones enable professionals to use different means of communication based on data, pictures or videos, all this within a unified platform. This convergence opens several innovation trails in the framework of organizational coordination.

The study produced by Professor Namjae Cho in the context of the ISD program, shows that coordination can be considered as a global concept bringing together integration (take part in a broader set), collaboration (work together) and cooperation (carry out common operations).

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*Cho, Namjae, (2013), *The Use of Smart Mobile Equipment for the Innovation in Organizational Coordination*, Springer Briefs in Digital Spaces. Professor Namjae Cho’s study (University of Hangyang - Korea) deals with mobile work practices, in particular through smartphones-like terminals.*
An efficient coordination favors decision making. It contributes to the company performance, to savings or to flexibility facing market changes. Information sharing through new technologies is at the heart of business activities coordination, especially through mobile offices systems.

This study reveals other benefits. Digital technologies usage - mobility technologies in particular - is considered as one of the companies’ most influential coordination mechanisms. In highly complex and moving environments, an efficient use of analyzing tools is a key success factor for coordination.

Eventually, adopting a new technology is an extremely dynamic process which introduces changes in practices, structure and organization strategy. In the same way, as a technology is adopted by an organization, its conception, its components and its usage are chosen as well and are adapted by the organization.

Mobility represents people, resources, capital and information flows. The Internet and wireless telecommunications large scaling diffusion have completely changed mobility perimeter and meaning.

Mobile office applications are seen as a source of facilitation for the parties of the organization that will enable them to exceed spatial and temporal limits.

"M-commerce": a potential in full growth

According to the BCG⁹, in 2015, there should be more private individuals to access the Internet via a mobile device than via a desktop. In 2010, 43% of sold cellphones were smartphones and this proportion should reach 71% by 2015. At the same time, cloud computing enables to get rid of hard drives. Such evolutions will enable private individuals to leave their computers - laptops or desktops - and make operations online, while moving. In Asia and Africa, hundreds of millions of consumers have moved to mobile devices directly.

The impact on purchasing behavior is spectacular, as consumers can look information up on products, receive personalized offers, compare prices, see advice, pay their purchases... Therefore, Domino’s Pizza in Australia foresees that orders placed from a cellphone will represent more than the quarter of their sales within two years. Google, eBay and Sainsbury senior managers reckon trade via mobile devices will be the next growth opportunity for large retailers.

Brick-and-mortar distributors use cellphones to improve customer service in shops and set up accessible offers during the available time of the client, and where he or she is located.

The BCG study reminds us that several companies in the world - as Ocado in the UK (food distribution) or Budnikowsky in Germany (cosmetic product selling) - have quickly mimicked the Tesco Home-plus model in South Korea.

E-commerce fast growth, especially via mobile devices, deeply changes the purchasing behaviors. To adapt to them, a company has to endeavor to three key ideas:

- Find new ways to interact with clients throughout the purchasing process (make the product known, stimulate interest, optimize purchase experience, reinforce customer loyalty, have the product recommended).

- Seize new market opportunities by defining a policy towards social networks, towards comparing prices websites, etc.

- Make cellphones key elements in a multichannel 3.0 strategy; cellphones being links between online and offline environments - especially when social networks are integrated to the purchasing process. Beyond a mere adaptation of websites to cellphones, it is necessary to develop a specific approach for m-commerce feasible models.

All the opportunities brought by digital technology to m-commerce are extremely stimulating for innovation, value propositions leverage, client awareness and its experience awareness in the relationship.

In such a process, knowledge sharing and collaboration between parties appear to be indispensable elements of digital culture as a source of performance for the company.

The current breaks in the building of new business models, primacy of customers’ experience and value co-creation imply to rethink digital companies governances methods.
CALL TO ACTION N° 1

Creating a digital accelerator,
a Digital Agency structure

Description

• A central team, with a light architecture, integrates employees coming from business and IT departments. With an excellent training level and versatile, they know technologies, digital usage and the company business at once. Curious, they are able to exploit the company’s knowledge resources.

• The team benefits from IT support in order to set up an agile test-and-learn approach and to industrialize the chosen solutions, all at the same time.

• This Digital Agency is likely to underline the senior management’s will to place digital technology as a driver for efficiency, reactivity and market adaptation. These employees are the main agents for diffusing digital culture within the company.

Priorities on communication

• The creation of such a structure has to be encouraged and announced by the CEO who has to detail the stakes and purposes.

• The implication of IT, HR and all other lines-of-business managers is crucial.

• A regular communication (via the company social network in particular) on actions, learned lessons, projects and benefits obtained by this agency has to be organized.

• The board of directors has to be regularly informed of the digital agency’s actions.
"New business models take advantage of digital culture"

- Value proposals transformed by digital technology
- The primacy of customer experience
- Value co-creation
- Creating value from data exploitation
- User-friendliness and interface attractiveness
- VISOR: rethink business model in a digital space
- From value chain to value network
- "Digital maturity" and high profitability
- New innovation and coordination vectors
- "M-commerce": a potential in full growth
Challenging the use of digital technology

Digital culture enables the setting up and the success of new business models.

- To what extent do these new models - that require a paradigm and an adaptation shift - lead to a transformation of company values?

In other words, have you thought of digital culture effects on the institutional governance existing in the company?

- In which conditions do these adaptations and transformations work towards stakeholders (suppliers, historical clients, employees)? How to support them in this change?

- Reducing informational asymmetry between offer and demand implies to put clients at the heart of the system. It means to identify these clients beforehand: how to achieve this without making them captive? How to make sure their privacy is protected?

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