DIGITAL REVOLUTION
NEW CUSTOMER EXPERIENCES, NEW BUSINESS MODELS, NEW TRANSFORMATIONS
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NEW CUSTOMER EXPERIENCES, NEW DIGITAL BEHAVIORS

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SUMMARY

The US has made huge advances in digitalization, leaving Europe and the rest of the world way behind. Missing the boat this time around has already had far-reaching consequences. And the implications will be even more serious if these countries fail to anticipate what’s coming next. Indeed, digitalization is no ordinary transformation: it’s a long and deep game-changing migration for most businesses – much like electricity in its time. Understanding and anticipating these changes is complex, but nonetheless vital.

THE LONG DIGITAL MIGRATION

In less than a decade, digitalization has gone global, intergenerational, mobile, and collaborative. Our lives are becoming continuously connected through objects (or devices) that connect themselves to the internet and are overflowing with an abundance of information. With no slowdown of these trends in sight, the world is expected to undergo even more dramatic change by 2025:

• The growing penetration of smartphones will drive widespread, global usage of the internet and social networks by over 80% of the population.
• With the installation of smart systems in homes and cars, and other devices (such as wristwatches and glasses), connected objects will invade our available time, whether we are travelling, in the street, or sleeping.
• The constant progression of e-commerce will reach an initial phase of maturity (15 to 25 percent penetration rate) in many industries, with newcomers challenging many established legacies and profit models.

ANTICIPATE NEW EXPERIENCES AND DIGITAL BEHAVIORS

All of these changes will enrich the digital scope of customer experience and continue to modify buying and consumption behaviors around six major disruptions:

• New demand created by ultra-personalized offerings and suggestions in real time.
• Unprecedented demand for quality and greater price sensitivity with greater access to information and prescriptive influence.
• Six times more available connected time thanks to augmented reality and connected devices.
• Reinvented purchasing journeys as well as virtual and physical customer experiences that redefine the role of physical stores.
• Increasingly accelerated adoption cycles.
• The revenge of physical industries, which, through connected devices, will have access to a vast range of digital technical and commercial opportunities.

UNDERSTAND THE NEW ECONOMIC MODELS

Digitalization is profoundly changing the rules of competitive dynamics: global platforms give digital players a major cost and competitive edge and enable them to project their model without concern for industry or geographical borders. Although each industry has its specific characteristics, a few key models are emerging.

New “technologically transparent” offerings are focused on latent demand. The winners are no longer the technological pioneers, but those who understand and solve existing or latent customer needs.
problems better than others and who manage to create an emotional bond with them.

Interactional models or the battle for the customer relationship. From purchasing products or services by the unit in a predefined format, we are gradually moving to subscription-based models enabling continuous access to a broad range of scalable content.

Offerings hitherto similar for all customers can be ultra-personalized with invisible pricing differentiated by customer segment. The battle joined by physical industries and their digital intermediaries will be centered on control of the customer relationship. Today, each player holds information that the other does not and will capitalize on this to capture, develop, and retain high-value customers more effectively.

Accelerated growth models. With 2.9 billion internet users, digital models naturally enjoy a powerful advantage of scale, especially since distribution costs largely favor the leaders in each market (three times higher conversion rates). The establishment of global platforms across the entire value chain (sales, customer relations, communication media) will increasingly foster the deployment of new accelerated franchise-type growth models.

Industry 4.0 and digital production. In the next decade, the digitalization of industrial processes and the emergence of “smart factories,” with corresponding productivity gains of around 30 percent, will be made possible by the development of cyber-physical systems (CPS), where automated elements collaborate to command and control physical entities.

DEPLOY NEW TRANSFORMATION MODELS

Digital transformation is not the product of a three-year company vision, but a gradual migration over a decade. The required key drivers to put into place are very different:

- Choose the model (integrated or isolated) to enable digital transformation to manage sometimes very different company cultures and paces.
- Rethink innovation completely by using incubators, recruiting critical new competencies (data analysts, for example), and establishing new development and marketing practices (such as test and learn, and agile development).
- Accelerate the growth of digital culture throughout the organization: digital technology upsets the formal dimensions that are typical of large business organizations (internal processes, HR models, governance, and so on). The organization is the principle obstacle to the dissemination of digital. People must not simply tolerate the new digital world, but truly embrace its various dimensions with suitable drivers (work environment, learning expeditions, managerial exemplarity, etc.).

TURBULENCE CAUSED BY THE MASSIVE SPREAD OF DIGITAL

We are now entering an era of massive digital dissemination. Much like industrial globalization a decade ago (where the first years of euphoria gave way to years of turbulence after 2006), the scale effects will be increasingly great, and traditional business models increasingly challenged. The first impacts are already becoming apparent: accelerated product and service imports through digital channels, tax evasion in a difficult-to-regulate world without physical barriers, sudden shift of some industries adversely affecting traditional players (distribution, travel, lottery, VOD, etc.).

Every company must urgently integrate these new challenges now, position themselves on these new business models and build global champions able to hold their own a completely open and still largely under-regulated global supermarket.

INTRODUCTION

Most countries are lagging way behind the US in the new digital world. The level of digitalization in Europe is, for example, significantly lower than in North America. While Europe was ahead of the curve with the invention of GSM and the deployment of DSL 20 years ago, North America has caught up with Europe. It has been investing much more in its digital infrastructures annually, by a ratio of two to one per capita since 2006. The results speak for themselves: 80 percent of the leading websites originate in the US, while 81 percent of users are located outside the US (see Exhibit 1). Of the 25 largest digital companies in the world, 85 percent of the value is American, 13 percent Asian, and only 2 percent European.

Exhibit 1: Number of single monthly visits

<table>
<thead>
<tr>
<th>Platform</th>
<th>INTERNATIONAL USERS</th>
<th>US USERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>1,200</td>
<td>600</td>
</tr>
<tr>
<td>Microsoft</td>
<td>800</td>
<td>400</td>
</tr>
<tr>
<td>Facebook</td>
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<tr>
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<tr>
<td>Tencent</td>
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<td>100</td>
</tr>
<tr>
<td>Baidu.com</td>
<td>200</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: comScore Global, Kleiner Perkins Caufield & Byers (KPCB)

Missing this first boat is a major concern for these countries, considering the revolutions that are yet to come. It is estimated that some 50 points of GDP are transferred every year from Europe to the US, with some 50,000 jobs that are not created. Various studies indicate that, by 2020, from four to six million jobs in Europe will depend on investments in digital infrastructures and regulation favorable to these investments.

Of course, a few American firms also missed the boat (such as Kodak, Blockbuster, and Blackberry) but new “internet native” models nonetheless continue to be invented in the US. New trends are emerging, which will continue to shuffle the deck on markets in the years to come, such as: the Internet of Things (or IoT, where internet-enabled devices connect with other objects), the virtualization of telecommunications networks, the emergence of global business-to-business (B2B) platforms (following business-to-consumer (B2C) platforms), big data and its various applications, and the collaborative economy.

Digitalization is penetrating all sectors and will represent a major share of tomorrow’s growth and competitiveness.

The volume of data exchanged on the internet has been growing exponentially since 2007. This affects every segment of the market, both B2C and B2B, across all or part of the value chain. For example, the digital economy currently represents $185 BN in France, or 6.8 percent of service sales (excluding financial services). By 2020, it is expected to represent 14 percent of service revenues.

Until now, the big winners in the digital world have been “internet natives”. This may seem troubling, but it is impossible to find a single company that has turned the digital corner without a hitch. With the exception of Netflix, which managed to move from DVD rental to become the streaming champion, for the moment, every internet winner is an internet native. The formula for such successes is more complex than it seems, as it involves the ability to, for example, attract talent, establish an agile organization to accelerate time-to-market, and form partnerships.

Digitalization is no ordinary transformation; it’s a profound migration, which, like electricity in its time, is changing the rules of the game for every sector of activity.

2 General commission for strategy and prospective thinking 2013, Organisation for Economic Co-operation and Development (OECD), 2012.
THE LONG DIGITAL MIGRATION

The digitalization of our society in less than a decade, and in successive phases (see Exhibit 2), has gone global, intergenerational, mobile, collaborative, continuously connected, and connected to objects. Last but not least, society is swamped with an overabundance of information. A few statistics clearly illustrate this (also see Exhibit 3):

- **Global**: 35 percent of the world’s population is using the internet in 2014 with annual growth of 17 percent in China and 32 percent in India. In this new context, Asia will dominate digital commerce with nearly $800 BN in sales forecasted for 2016, or 28 percent of global e-commerce, far ahead of North America (19 percent) and Europe (17 percent). China alone represents a market equivalent to all of Europe.

- **Intergenerational**: All generations are affected. Even if new generations are the forerunners, older generations are falling rapidly into line. In the US, seniors (aged over 55) are largely catching up and are buying only 25 percent less on the internet than their younger counterparts.

- **Mobile**: In 2013, more connections were made from mobile devices than from traditional computers. We are currently seeing the rapid transfer of all digital usages (information, purchasing, and social networks) toward mobile, particularly in Asia. In 2018, this continent will represent 44 percent of mobile traffic, which is a tenfold increase from 2013. And rather than “e-commerce”, we can think of it instead as “m-commerce”.

- **Collaborative**: One of the most notable phenomena in the past five years has

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[Exhibit 2: Phases of the digital revolution](#)

[Exhibit 3: The digitalization of society](#)

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[Source: Cisco VNI Mobile, 2014; eMarketer, May 2014; Cisco VNI, 2014; Planet Retail financial data; Oliver Wyman analysis]
The long digital migration

Digitalization is spreading at an unbelievable speed on a global scale. In just ten years, the world will have changed profoundly, given the incredible evolutions in some countries.

Here are some examples (see Exhibit 4):

- Internet penetration has already hit a plateau in most OECD countries (between 80 and 90 percent), but emerging countries are catching up with annual growth rates of 10 to 30 percent.
- E-commerce is growing very dynamically (17 percent a year on average), and will represent 12 percent of GDP in the UK in 2016 and 23 percent of retail sales.
- In India, more time is already spent on the internet on mobile devices (2.6 hours a day) than in most more mature countries. The share of the time devoted to social networks is also 60 percent higher in India than in Germany or France, with an average of 2.4 hours a day (all devices, including mobile).
- Emerging countries already make purchases on mobile devices more often than in Europe and the US (69 percent of users in China versus 26 percent in France).

Based on the existing dynamics, we can predict a few essential features of the world in 2025, which should be seriously considered today (see Exhibit 5):

- Generalized usage of the internet and social networks on a global level (over 80 percent), accelerated by the domination of smartphones (or their next-generation equivalents).
- The revolution of connected objects, which will be an integral part of our everyday lives (home automation, wristwatches, glasses, cars, and so on) invading all our available time, even while we are traveling, in the street, or sleeping.

Exhibit 4: Digital usage in five countries

INTERNET USAGE

SMARTPHONE USAGE

Source: Global digital statistics report, 2014, wearesocial; Economist Intelligence Unit, BCG report; The Internet Economy in the G-20; Global Digital Statistics report.
The travel and entertainment industry has transformed since 2005, when internet travel sales reached 15 to 20 percent, due to the emergence of online players which captured over 20 percent of the total market value in less than six years, in successive phases.

**Phase 1**
- Rising power of digital brands in 2005 and 2006 (such as Booking.com, Expedia.com, and Promovacances in France), and gradual shift of the balance of power toward these new players.
- Lower sales and pressure on margins, and massive restructuring of traditional travel agencies (40 percent decline in the US in under three years).
- Shift toward new hybrid online-offline business models.

**Phase 2**
- Development of metaplayers (such as Google Hotel Finder and TripAdvisor) starting in 2008.

**Phase 3**
- Explosion of the collaborative economy starting in 2011 (Airbnb and HomeAway, for example). Repositioning of physical players on customer relationship capture models (digital itinerary, CRM, retention).

**Tomorrow**
- Development of Asian distribution platforms and augmented reality, and continued upheaval of the purchasing itinerary.
And especially the decisive advance of e-commerce, which, by reaching a certain level of maturity in many industries, will challenge most historical profit models. The gradual penetration of digitalization in each sector (in all or part of the value chain) can be observed to reshuffle the deck beyond a certain maturity threshold, generally between 15 and 20 percent, when the mass market is reached. Most markets have not yet hit this stage of disruption but many will within the next decade (see Exhibit 8).

Akin to the globalization of industry after 2006 (when the effects of industrial delocalization became visible), the first years of euphoria will give way to years of turbulence in business models. Although we are just entering this period, the first effects are already visible: acceleration of product and service imports through digital channels, fiscal evasion in a hard-to-regulate world without physical barriers, and sudden upheaval in some industries adversely affecting local players (the travel and hotel industry, lottery, retail, and VOD for example).

SUMMARY

Our digitalized society, in less than ten years, has become global, intergenerational, mobile, collaborative, continuously connected, soon to be connected to objects and, finally, overflowing with information.

The upheavals connected with this new dynamic are far from over. In another decade, the world will be even more profoundly transformed.

The constant progress of e-commerce will have reached a first stage of maturity (15 to 25 percent penetration rate).

And, most notably, the decisive advance of E-commerce, by reaching a certain level of maturity in many industries, will challenge most historical profit models. The gradual penetration of digital technology in each sector (in all or part of the value chain) can be observed to reshuffle the deck beyond a certain maturity threshold, generally between 15 and 20 percent, when the mass market is reached. Most markets have not yet hit this stage of disruption, but many will do so within the next decade (see Exhibit 8).
NEW CUSTOMER EXPERIENCES, NEW DIGITAL BEHAVIORS

The internet is completely transforming day-to-day existence, little by little, each day. It offers access to many new products and services at ever-lower prices – even for free – accounting for incredible adoption rates (see Exhibit 9).

With 70 percent of OECD households having ever-faster and cheaper access to the internet, the recent slide toward mobile connectivity makes smooth, continuous access possible.

Inevitably, these new experiences will profoundly change our behavior in terms of how we shop, interact with others on social networks, consume content and culture, or even look for work.

Contrary to popular belief, this phenomenon concerns not only the internet-native generation. These transformations are affecting every age group, but at different adoption rates. Although younger people remain the pioneers, older generations are just six years behind in adopting the new usages.

On the one hand, with 17 percent growth, e-commerce for seniors is becoming an attractive segment; on the other, 71 percent of children under 12 are already using digital tablets, and represent a significant new market (see Exhibits 10 and 11).

Tomorrow, new opportunities will be created as a result of recent technological developments, such as the cloud, big data, social networks, geolocation services, the apps economy, mobile payment systems, canning/bar codes, near field communication (NFC), and 3D printing. All of these trends will enrich the digital scope of the customer experience and continue to modify purchasing behavior around six disruptions.

### FIRST DISRUPTION

New demand created by ultra-personalized products, services, and suggestions proposed in real time throughout the digital and physical journey.

Digital technology enables increasing access to information, extremely precise knowledge of customer behavior, and many more points of contact than in the past. Products, prices, and services can thus be personalized to the extreme.
Suggestions and promotions can be proposed in real time through multiple points of contact via smartphone and tablets, and tomorrow through augmented reality and connected objects. Profiling algorithms that track digital behavior throughout the user’s journey (including pages viewed, shopping history, speed of scrolling) are already extremely powerful, like the recommendation engine (subscription video on demand, or SVOD) used by Netflix, which makes tailored suggestions that lead to 75 percent of videos viewed. Tomorrow, augmented reality and the digital and physical journey will converge, further reinforcing the power and relevance of suggestions that, thanks to big data, offer an infinite range of new services linked to mobility, geolocalization, and interconnection of groups in real time.

SECOND DISRUPTION
Unprecedented demands and greater price sensitivity

In exchange, customers are much more demanding than in the past, as the balance of power between customers and companies has shifted. Today, customers enjoy infinitely more power from information, prescription, nuisance, and negotiation and can communicate this in real time on social networks. The potentially negative impact of every pricing or quality error is much higher than in the past. For example, in the hotel market, you have Booking.com on the one hand, with 540,000 available hotels—corresponding to the equivalent of 110 percent of the US market—providing unprecedented visibility on prices and increasing customer sensitivity in the process. On the other, you have TripAdvisor reinforcing quality expectations with its rating system. Indeed, a 30 percent rating drop represents a 10 percent decline in margins for a hotel package in Europe. These new rules of the game no longer apply simply to large e-commerce sites, but also increasingly to the local market, where 40 percent of mobile searches are local, with social networks taking a major share (15% in 2011, over 55% each year) due to their prescriptive influence and real-time updating.

THIRD DISRUPTION
From continuous connectivity to gaining control over available time

In the US, people spend three hours a day on their tablet or mobile (80 percent of the time on apps). But all this connectivity is still in its infancy. Tomorrow’s consumers will have the capacity to view products using image, voice, and augmented reality. Connected glasses (such as Google glasses) or autonomous or semi-autonomous vehicles will increase available connected time by saving on commuting by car (80 minutes a day on average for inhabitants of the greater Paris region) or in the street. The objective is no longer continuous connectivity, but the ability to capture the highest possible share of each individual’s available time. Urban drivers spend an average of two hours on the internet every day. Between commuting (1.2 hours) or the 5.6 hours of potentially available time spent outside the home (for meals, sports, and hobbies), the time that can be captured outside working hours could be increased sixfold in the years to come (see Exhibit 12).

(Semi) autonomous connected vehicles will engender a major disruption by revolutionizing the time spent commuting and our relationship to the automobile:

• Innovative virtual driver services (enabling driverless vehicles to be moved from one point to another) are revolutionizing the concepts of car sharing and shared mobility, and enabling the creation of new logistical patterns and solutions for people with mobility impairments.
• Freed of the responsibility of driving, passengers and drivers will have more available time for digital services.

What may seem like a science fiction fantasy today is actually happening, with tests underway in 2014 in the UK and Singapore and more initiatives planned for the coming years.

These initiatives will initially be directed toward assisted driving (“eyes-on” assistance in traffic jams, speed control), then toward increasingly autonomous models “eyes-off” with semi-automatic systems in specific environments, such as parking lots, highways and urban congestion. It is predicted that three million semi-autonomous vehicles will be sold in Europe in 2025 (2.7% of global production), principally in the high-end segment.\[7\]
FOURTH DISRUPTION
Reinventing the shopping journey and the customer experience

Many sectors are facing a sudden shift in the purchasing behavior of their customers and are forced to reposition themselves to avoid being marginalized by digital newcomers. We can observe the same phenomenon in each instance: Customers, much better informed than in the past and able to gather much more precise information on products and services, can compare prices and collect opinions. This physical and virtual purchasing journey makes sales strategies more complex and redefines the raison d’être of physical sales outlets. Such outlets are turning into comparison sites, augmented and segmented call centers (to convert more complex sales and boost up-selling and cross-selling), showrooms, and so on. These trends are taking very different forms depending on the industry.

In specialized retail, brands like IKEA encourage customers to do it themselves in some of the sales process steps, such as online kitchen design, creating lists of furniture from the established design catalogue, and assembling orders in the warehouse, to make the physical sales process simpler and more fluid.

Real estate and insurance players are developing multi-access (online and offline) sales models, by setting up insurance brokers with no physical agency or mandated real estate agents to support their online site and replace traditional bricks-and-mortar agencies.

Exhibit 12: Example of the available time of a French student*

Exhibit 13: New car shopping journeys

In the automotive industry, distributors are accentuating their efforts to capture customers more effectively on the internet upstream in the purchasing process (including tracking and targeting of prospects navigating on third-party thematic websites, capitalizing on internet prospects navigating on brand websites and/or network and online sales). All are developing sales processes that integrate and attempt to optimize the combination of physical and virtual dimensions in order to reinforce the added value of physical networks, faced with customers who are now better informed and much more demanding (see Exhibit 13).

FIFTH DISRUPTION
Simplification that accelerates adoption cycles: “all early adopters”

New applications are free and their interfaces are increasingly user-friendly. Means of payment are also greatly simplified by smartphones and NFC technology. A password and a few clicks (or about 10 seconds) are sufficient to buy music on iTunes. The relationship with devices themselves is rapidly becoming simplified by the convergence between computers, smartphones, tablets, and even TV screens.

This simplicity of use, adoption or purchase, and understanding of these features through social networks has considerably accelerated adoption rates. It took 11 years to reach the first million PC customers, compared to nine months for Facebook, and just two months for Instagram (see Exhibit 16).

But though adoption cycles are faster, people may subsequently drop new trends even faster in the future. For example, the social network landscape is changing very fast. Initial players such as Classmates and Friendster have vanished, and Myspace, which pioneered social networks in 2004, has only 33 million users today, compared to 110 million in 2007.

Exhibit 12: Example of the available time of a French student*

Exhibit 13: New car shopping journeys

* Data subset by standard population 20–74 years. Sample population from Germany, Spain, France and UK. Source: Eurostat report “How is the time of women and men distributed in Europe?”; Oliver Wyman analysis

* Oliver Wyman survey

6x more available time thanks to augmented reality and connected devices
Another salient example is the development of drive-thru grocery shopping. This channel, invented in France a decade ago, has become an inescapable part of distributor strategy. What makes it so popular? Drive-thru is a free service provided to customers to save them significant time (40%) on recurrent grocery shopping. The site features and drive-thru apps accelerate the speed of selecting recurrent products based on the consumer’s order history. And drive-thru effectively supports distributor strategies to win market share from competitors who do not offer attractive drive-thru solutions. It also facilitates opportunities to personalize the customer relationship, specifically by establishing targeted promotional offerings.

All of this has a cost. In addition to requiring investments to deliver the service, distributors offering “adjacent” drives, that is, co-located with their stores, suffer from severe cannibalization of sales in these stores, reducing the profitability of the latter. The omnichannel trend creates value for customers but, as the number of drives becomes equivalent to the number of hypermarkets and opportunities to win new market share are shrinking, distributors must continue to search for a profitable long-term multichannel operational model. The challenge tomorrow will be to cope with Amazon Fresh, Google, and other players of different origins.
SIXTH DISRUPTION
The Internet of Things or the revenge of the real economy

Paradoxically, physical industries seem at first glance to be the poor cousins of the digital revolution, given the tangible nature of products sold and often the barrier represented by distribution in the relationship between manufacturers and end customers. This situation is temporary, however. The potential to connect objects to the internet creates a vast palette of technical and commercial opportunities. Equipped with chips or captors, all products now can support data or new services. This revolution, which will become fully apparent in 2025 with 80 billion connected objects (and perhaps 500 billion in 2030), will push industry straight into the digital age, and simultaneously embed digital services into the real world.

Smart products dialoguing with their environment. The Internet of Things enables new applications, such as geolocalization, alerts, behavioral analysis, and usage-based invoicing. Airbus has thus developed e-solutions, a series of services to optimize flight and ground operations (including fleet management, engineering, maintenance preparation, and flight operations). Likewise, Sanofi is developing integrated care solutions connected to smart devices used to track blood sugar levels in diabetic patients and automatically send alerts to doctors. Coca-Cola has also connected its beverage dispensers to optimize logistics and maintenance. And there are immense opportunities for connected cars.

Optimized management of networks and infrastructures. The networking of devices opens up new opportunities for making objects interact and managing networks with intelligent infrastructures. Schneider Electric is repositioning itself, for instance, in the optimization of energy systems by capitalizing on “smart grids”. These combine electrical and digital infrastructures to integrate and interconnect all users (generators, operators, the sales force, and so on) and optimize the balance between supply and demand and consumption in real time.

Augmented reality applications are emerging, supported by massive investments, by Google for one (including human-machine integration, digital assistants, and connected homes and vehicles). Some manufacturers, like BMW, which equips mechanics with augmented reality glasses to help them visualize parts to dismantle, have already found operational uses for these applications.

Tailored services. When it comes to services, connected digital bracelets, scales, and body sensors open the way for much more effective preventative digital medicine. The stakes are huge, since initial experiments in the US demonstrate savings of 15 to 25 percent on hospitalization among some polypathology patient segments. In insurance, connected homes or vehicles will help to adapt coverage and prices to the behavior of policy holders.

SUMMARY
The internet is completely transforming our everyday existence little by little each day. New usages are spreading like wildfire and, although young people remain the pioneers, older generations are just six years behind in adopting these new usages.

Recent technological developments and new usages (cloud computing, big data, social networks, geolocalization, NFC, 3D printing, and so on) will create vast fields of opportunity in the future. All of these trends will enrich the digital scope of customer experience in a remarkable way, and continue to influence purchasing and consumer behavior around six major disruptions.

1 New demand created by ultra-personalized offerings and suggestions proposed in real time 75% Percentage of video selections (SVOD) chosen from recommendations made by the Netflix tool
2 Unprecedented demand for quality and sensitivity to price due to the accessibility of information and prescriptive power 110% Proportional share of the US hotel market represented by the 540,000 hotels listed on Booking.com
3 Six times more available connected time, thanks to augmented reality and connected objects 6x more available connected time, thanks to augmented reality and connected objects
4 Reinvention of the physical and virtual shopping journey and customer experience, which will completely redefine the raison d’être of bricks-and-mortar stores over 8% The share of drive-thru in the supermarket industry in 2015 compared to 1.7% in 2011
5 Continued acceleration of adoption cycles 2 months Period needed for Instagram to reach the first million users
6 Bouncing back of tangible industries, which will gain access to a vast palette of digital technical and commercial opportunities through connected objects 80 billion connected objects by 2025

Source Oliver Wyman research and analysis

Exhibit 16: Period to attain the first million users

<table>
<thead>
<tr>
<th></th>
<th>1 year</th>
<th>2 months</th>
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<th>2 months</th>
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<tr>
<td>Internet (Eighties)</td>
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<td>Facebook (2004)</td>
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<tr>
<td>PC (Seventies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instagram (2010)</td>
<td></td>
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8 ARMAN web, for example, is a solution to track flight operations live and correct bugs remotely.
the connected car
Two sample applications

A scientific approach to spare parts pricing. Spare parts represent 2 to 5 percent of automaker revenues, but 20 percent or more of their margins. Spare parts pricing today is principally managed on a cost-plus basis. Taking advantage of a larger volume of available data could help manufacturers develop a more scientific approach to pricing – comparable to practices used in distribution – by taking account of sales and demand trends, brand image, competitor prices and intensity, and auxiliary services (such as packaging, delivery, and warranty).

Better management of customer value. One out of every two private customers switches brands when buying a new car. Customer value management is still in the early stages, as data is held back at the dealership level and there is a low level of interaction with customers beyond the point of sale. Using customer-generated data would help to reinforce customer value by adapting points of contact to each profile. Simpler and more relevant customer access based on fine-tuned segmentation of the database and precise analysis of the profit zones of each segment would facilitate cross-selling and help to predict customer needs more accurately (for example, the renewal of leasing contracts before they expire).
NEW COMPETITIVE DYNAMICS, NEW BUSINESS MODELS

Quicker, more violent

Digitalization is rewriting the rules of dynamic competition. Quicker and more violent, these changes cut across historical industry barriers and geographical borders. Using global platforms that create a cost and competitive advantage, digital players are able to project their model without concern for borders, provided the demand exists.

In just a year, capitalizing on its existing B2C infrastructure, AmazonSupply has positioned itself in the enormous B2B market for spare parts by putting over one million products online at extremely aggressive prices (see Exhibit 18). While it took Walmart 45 years to deploy its stores across America, Amazon will be able to serve 60 percent of this territory in less than 15 years. And Amazon is not alone. All the major players of the web are growing at an annual rate of 10 to 30 percent a year to generate several billion dollars in revenues (see Exhibit 19).

Though each market has its specific characteristics, it is possible to establish a general inventory of emerging new business models.

FIRST PATTERN

Innovate through latent demand

The big winners will no longer be the technological pioneers, nor the market share leaders, but those who understand and solve the existing or latent hassles of customers better than the rest and forge an emotional bond with these customers.

For consumers, the advantages linked to demand innovations are often spectacular (see Exhibit 20):

- Taxis can be summoned in a few clicks, in just half the time.
- Supermarket drive-thru systems based on predefined lists makes grocery shopping 41 percent faster for a similar price.
- Car-sharing systems are 90 percent cheaper than owning a car.

TECHNOLOGICAL TRANSPARENCY

Although technological trends seem to be at the heart of the digital revolution, they are often nonetheless invisible to consumers. This customer-focused strategy drives intuitive usages favoring self-taught models – like the NEST thermostat – erasing all technical complexity for users (no more ten-page user manuals for a remote control). Players are also appropriating market innovations more easily to meet their objectives. Apple did not invent the different technologies used in the iPod and iPhone, but capitalized on its understanding of customer needs to create a unique offering, then used the best leading-edge technological innovations to turn them into iconic products.

One need only decipher the value created by the product to understand how it works. Offshoring assembly (“made in China”) represents only 1 percent of the value generated over the product lifecycle; production represents 15 percent of the value generated. That leaves 83 percent of the value in the US for design, commissions, and application-linked services (see Exhibit 21).

SECOND PATTERN

From transactional to interactional, the battle for the customer relationship

Digital models have focused historically on highly transactional models (comparison, transaction, payment, distribution). With more time spent online, interactional models have developed (interactional content, social networks, subscription models, for example) and currently represent 31 percent of the value of the top 30 digital companies (see Exhibit 22).
“ALL YOU CAN EAT”
When it comes to video, media, gaming, IT services or music, digital technology must also be considered as a retention driver and a means to increase revenues per customer. From purchasing service units in a predefined format, we are gradually moving toward a very broad and flexible range of content that is accessible by subscription. Offerings that used to be similar for all customers can now be ultra-personalized in different formats with different prices by customer segment, according to their maturity (prospects vs. existing customers, for example). These models tend to foster brand loyalty – Spotify or Deezer for music, and Canalplay Infinity for SVOD being the best-known examples. Yet there are many others, such as the new generations of free games (like King) and SaaS\(^9\) services replacing traditional software applications.

**Exhibit 21: Value generated by the iPhone**

<table>
<thead>
<tr>
<th>Value Created by Products and Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$600</strong></td>
</tr>
<tr>
<td>Commissions</td>
</tr>
<tr>
<td>Apps suppliers</td>
</tr>
<tr>
<td>Apple Design (US)</td>
</tr>
<tr>
<td>Bluetooth (US)</td>
</tr>
<tr>
<td>Assembly (China)</td>
</tr>
<tr>
<td>Processors (Korea)</td>
</tr>
<tr>
<td>Camera, GPS (Germany)</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>TERMINAL (60%)</strong></td>
</tr>
<tr>
<td><strong>SERVICES’ (20%)</strong></td>
</tr>
<tr>
<td><strong>83% of value is generated in the US</strong></td>
</tr>
<tr>
<td>just 13% of added value is linked to production</td>
</tr>
<tr>
<td><strong>20% of value is linked to retention services</strong></td>
</tr>
</tbody>
</table>

\(^*\) Revenues generated over three years (average lifespan of the iPhone 3GS).
Source “Capturing Value in Global Networks,” University of California-Berkeley study; Apple annual reports; Oliver Wyman analyses, 2010

**Exhibit 22: Digital model trends**

<table>
<thead>
<tr>
<th>MARKET VALUE OF THE TOP 30 DIGITAL FIRMS (EXCLUDING APPLE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$BN</td>
</tr>
<tr>
<td>1,600</td>
</tr>
</tbody>
</table>

Source Thomson, Bloomberg, Forbes

**Opaque Ultra-Personalized Offerings**
Taking maximum advantage of better-informed customers and customer behavior, many proposals are moving toward more robust models to adhere more closely to demand at all times and move away from visible price competition. The goal is no longer selling objects or offerings that are strongly dependent upon brands, with public promotions and prices visible to the widest possible audience, but rather selling access to broad, multi-format, multi-channel, and multi-brand offerings, which can be precisely tailored to each customer. The price of this experience can be adjusted invisibly for specific high-value customers and prospects.

The magazine industry is a particularly interesting example in this regard. The migration toward mixed digital models creates unsuspected value to a market with low historical margins. Contrary to popular belief, combining traditional paper with a digital offering actually promotes sales of additional services to customers, which may increase average per-subscriber revenues by 35 percent in some segments. However, it takes new skills to understand price elasticity and predictive analysis of customer behavior throughout their lifecycle and according to their digital maturity over time.

**Era of Dynamic Pricing and Private Pricing**
To manage increasing price sensitivity (price elasticity) resulting from the high level of knowledge of consumers (or customers), companies are developing sophisticated, dynamic pricing methods. Combined with micro-segmentation or profiling, these approaches are becoming one of the major drivers of revenues and margins by enabling companies to make the right trade-offs based on historical, competitive, and behavioral data on a highly granular level in real time.

**The Battle for Control of the Customer Relationship**
The battle to be waged in the coming years by industries and their digital intermediaries will center upon control of the customer relationship. Every player now has information the other does not – manufacturers and service operators potentially have access to very detailed information on customer behavior and experience (which will be accelerated by the Internet of Things) and are capable of developing unique services. Digital players, often positioned upstream in the purchasing journey, understand upstream behaviors and have a much more powerful competitive vision. They will attempt to capture the relationship from the moment consumers start searching. The sheer number of users of Google, Facebook, Amazon, and even Twitter is a factor that enables these players to threaten, for instance, relationships established by bricks-and-mortar retailers with their customers.

\(^9\) SaaS: software as a service. This has risen fivefold in just five years and will represent a €113 BN market in 2015.
Customer relationship management (CRM) performance will thus henceforth become a major driver in securing sales. Indeed, capturing relevant information to recruit, develop, and retain customers depending on their profile, order history, and forecasted future behavior will become critical to maintain and develop direct sales.

THIRD PATTERN
Accelerated growth models

DOMINANT MODELS AND VOLUME STRATEGIES

With 2.9 billion internet users, which will certainly grow to 4.3 billion by 2020, digital models are extremely scalable. The fact that bandwidth costs have dropped by a multiple of 40 and processing costs by a multiple of 60 in recent years makes this even truer. The scalability of internet distribution now favors the leaders in particular – it’s a case of “winner take all”. Conversion rates between leaders and challengers may vary by a factor of two to five (up to 8 percent for large platforms compared to 1.5 percent for challengers), which mechanically reduces distribution costs. Although it is important to consider the massive SEO and SEM investments of these leaders (in 2013, Priceline spent over $1.1 BN on purchasing key words), the distribution costs of leaders are estimated to be much lower than those of challengers, creating a growing competitive advantage over time (see Exhibit 23).

This is indeed the strategy of players like Amazon (and many others), whose price algorithms generally involve applying the lowest market price. Referenced products, whose price ranges are predefined, are automatically readjusted with web scraping, and the system can respond to a competitive price drop in less than an hour.

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**Exhibit 23: Dominant models and volume strategy**

<table>
<thead>
<tr>
<th>Average Conversion Rates by Player Type</th>
<th>Percentage of One-time Visitors Making a Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Top 10 platforms</td>
<td>6</td>
</tr>
<tr>
<td>Top 25</td>
<td>4</td>
</tr>
<tr>
<td>Median regional platforms</td>
<td>2</td>
</tr>
<tr>
<td>Elite</td>
<td>1</td>
</tr>
</tbody>
</table>

**Market Share of Leaders in Their Industry**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video streaming site (Netflix)</td>
<td>75</td>
</tr>
<tr>
<td>Search engine (Google)</td>
<td>50</td>
</tr>
<tr>
<td>Social networks (Facebook)</td>
<td>25</td>
</tr>
<tr>
<td>Music platform (iTunes)</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Wordstream, company information, Oliver Wyman analyses

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10 Oliver Wyman: EDC, Next Issue Media, A New Digital Future for Publishers?

To reinforce their hold on customers and optimize their distribution costs, digital leaders develop marketplaces by industry with the requirement that prices be lower than any other channel.

The structural advantage of the leaders, but also the proliferation of offerings and sites, naturally tends to herd consumers toward a few winners. When all is said and done, only two or three players can survive in each industry with impressive market share. What seemed unthinkable in the old economy is nonetheless happening today in an unregulated digital world.

Major countries haven’t allowed dominant positions since Standard Oil was broken up into 34 separate companies in 1911, because it controlled 91 percent of oil production in the US.

Although they already control over 50 percent of the market in their segments, these leaders continue to capture even more share. What seemed unthinkable in the old economy is nonetheless happening today in an unregulated digital world.

Fourth Pattern: Industry 4.0 and digital production

In the next decade, the development of cyber-physical systems (CPS), in which IT systems collaborate to command and control physical entities, will be used to digitalize industrial processes and create smart factories with 30 percent higher productivity.

Lean factories with zero inventory will be made possible by the complete digitalization of the customer relationship. In some cases, renewal will be proposed automatically to customers and corresponding production orders sent straight to the factory.

Small batches tailored to customer needs will become possible with 3D printing. This process is growing by 23 percent a year, and is expected to represent a €10 BN market (over 30 percent of which will be in Europe) in the world of 2020. 3D printing is more flexible and reduces industrial waste and manufacturing costs, while cutting innovation cycle time for new concepts to 30 to 50 percent compared to the process of commissioning prototypes. General Electric projects that it will realize 50 percent of its global production through 3D printing by 2020.

Platforms across the entire value chain to accelerate development

One of the key factors in digital models thus involves developing, testing, and reinforcing platforms in the home environment or laboratory and deploying them worldwide as fast as possible.

These platforms far surpass the traditional distribution or cost optimization sphere. These platforms can be created for each dimension of the value chain (interational platforms, operations, shared services, development) to capitalize fully on all digital drivers and help physical teams combat newcomers in this ultra-dynamic, borderless context:

- Reinforce the professionalism and expertise/reliability and quality of internal services, such as CRM covering infrastructures, tools and experts in data analysis, and data analysts.
- Accelerate international development by pooling scarce resources – for example, marketing, data analysts, central purchasing pools, centers of technological excellence – to serve markets that lack critical mass or the necessary local skills.
- Integrate competitors laterally to accelerate control of a link in the value chain. Microsoft and Cisco, for example, recently concluded a partnership to align and reinforce the integration of their products and operations on the cloud and data-center markets. Comic book players, for example, invested jointly in “Izneo,” a shared distribution platform.
- The importance of platforms rests first and foremost in their ability to reinforce the transformation of the service offering and the business model, and to accelerate the international growth model.

- Move from B2B models to B2C models, in order to develop a direct relationship with end customers (for example, develop home delivery platforms for products that stores do not carry for the intermediary distribution community).
- Move to franchise/management (“asset-light”) models to limit investment costs and accelerate international development. Operational, commercial, or distribution support platforms make the value created by the franchiser more transparent. Such
Digitalization is rewriting the rules of competitive dynamics. Indeed, the global platforms supporting the cost and competitive advantage of digital players enable the latter to project their model without concern for industry or geographical borders, provided they find sufficient demand. All the major players of the web are growing by 10 to 50 percent a year, with revenues of several billion dollars and often good profitability. Though growing by 10 to 50 percent a year, with revenues of sufficient demand, All the major players of the web are industry or geographical borders, provided they find cost and competitive advantage of digital players enable several billion dollars and often good profitability. Though growing by 10 to 50 percent a year, with revenues of sufficient demand, All the major players of the web are industry or geographical borders, provided they find cost and competitive advantage of digital players enable.

New technologically transparent offerings focused on latent demand. The deck has been reshuffled and the winners of today are no longer the technological pioneers of yesterday. Instead, they are the players who understand and solve the existing or latent hassles of customers better than the rest, and who create an emotional bond with these customers.

Interactional models or the battle for control of the customer relationship. Offerings that used to be similar for all customers can now be ultra-personalized, with invisible pricing differentiated by customer segment according to maturity. The battle waged by physical industries and their intermediaries will be centered in the years to come on control of the customer relationship. Each player now has information that the others do not and will leverage this knowledge to optimize recruitment, development, and retention of high-value customers.

Accelerated growth models. With 2.5 million available internet users, digital models are eminently scalable, especially since distribution costs largely benefit the internet users, digital models are eminently scalable, especially since distribution costs largely benefit. This transformation is far from over. Digital penetration remains low in European companies. In 2010, 35 percent of European firms with more than 10 employees used the internet to make purchases and only 18 percent to sell products and services\footnote{OECD, 2012}.

A new generation of smart robots and digital command tools will render production lines more interactive, autonomous, and versatile. SAP, for example, is developing production lines to manufacture initially identical plastic cases, which can be transformed at will into remote control units or mobile phone cases. Finally, logistics will be entirely integrated and connected to production tools to optimize flow in real time. Products themselves will make systems more efficient by sending alerts and instructions to distribution stations, concerning their location or destination, for instance, or the required packaging or handling operations.

Many obstacles must be overcome before the factory of the future can emerge: technical (CPS systems, standardization, virtualization, high-speed infrastructures, safety), strategic (business model redesign, investments), and especially human (internal skills, supplier reticence). Nonetheless, Germany, for example, is one country that has decided to spearhead this effort. Angela Merkel’s government has launched an ambitious plan in this regard, funded by €200 MM in public and private investment. The first applications are expected for 2015, and full migration by 2025.

This transformation is far from over. Digital penetration remains low in European companies. In 2010, 35 percent of European firms with more than 10 employees used the internet to make purchases and only 18 percent to sell products and services\footnote{OECD, 2012}.

Digital transformation of companies More than a transformation, a profound migration that must be managed over more than a decade

After a decade, it is difficult to identify the real success stories in the digital saga. There are a few examples, but they are actually quite rare: Apple is one, Netflix is another. The reason is simple: digital transformation isn’t a company project that can be conducted in a few years, but a long, gradual migration on the scale of a decade, with very different success formulas.

Given these long-term challenges, and even though some changes seem rapid, it is difficult or even dangerous to rely exclusively on existing best practices and skills in a given industry. Leaders must answer three essential questions to negotiate their digital transformation successfully.

FIRST QUESTION
What digital transformation model should we use to manage very different company cultures and paces?

INTEGRATED MODEL
In industries where digital penetration has reached a first level of maturity (15 to 25 percent internet penetration), most digital operational structures are observed to be integrated into historical operations.

This has happened in the travel, airline, hotel, online gaming, and media industries. Publicis, for example, initiated digital transformation ten years ago and digital services currently represent 40 percent of its business.

ISOLATED MODEL
In less mature markets, attracting and retaining talent is difficult in traditional cultures where interests do not necessarily converge concerning how to build a multichannel strategy or simply manage the pace of very different types of businesses.

Some companies have decided to isolate digital structures from the rest in order to protect their dynamism. Such a solution has many advantages by enabling firms to:

\begin{itemize}
  \item Develop a digital culture able to attract top talent
  \item Manage the digital migration over a decade while preserving historical channels
  \item Invest directly in new geographies with a purely digital model
  \item Adapt to market dynamics more agilely and autonomously without being hindered by historical operational or governance models
  \item Once critical mass has been attained, infuse best practices into historical structures
\end{itemize}

Summary

Digital transformation of companies
market, Chile, where the group was absent. The result was a fully digital bank offering customers new innovative services, such as the possibility of transferring money between Facebook accounts (BBVA Link service). But this division also works to develop applications for the entire group, which it tests in beta form on a certain number of customers whose reactions are recorded.

Supermarkets, for which the consumer and competitive stakes are enormous, are now at the transition point between two models. Some distributors have migrated toward an integrated model, while most of the others have not yet taken this step.

However, the following stage remains complicated for isolated models. The dissemination of digitalization to the entire organization, ultimately necessary in the end, is a major challenge.

SECOND QUESTION
How can we integrate entrepreneurial innovation?

Forty years ago, the champions of innovation were industrial leaders or major public-sector structures such as IBM, Bell, NASA, and DARPA. A considerable number of inventions and patents were generated in their labs, including the advent of the internet, water purification, infant nutrition, and satellite communications. Today, the principal internet magnates\(^{13}\), many of whom did not exist 15 years ago, are valued at nearly $1.1 TN thanks to major innovations. The difference? They all started in a garage or college dorm a few years back.

Innovation has changed considerably. It has become much more entrepreneurial and no longer requires large infrastructures. Most of the million mobile applications available today were created by start-ups less than ten years old.

Starting from this observation, some industry and service players have decided to rethink their models deeply and adopt the entrepreneurial innovation model. Less structured, more random and more iterative, many such initiatives have seen the light of day.

**Incubators and accelerators.** Many structures have been created in a few short years by large industrial and service groups. Their professed objective is to gain a better grasp of market trends and be able to detect future champions rapidly, by absorbing winning business models and internalizing the skills. Merck’s Global Health Innovation Fund, with a budget of $500 MM, has already invested in over 20 start-ups (such as health informatics and personalized medicine). Michelin, with the creation of the Incubator Program Office, as well as BMW, Deutsche Telekom, and Orange have established units to fund digital start-ups.

**Acquire key skills.** In a context dominated by big data, data scientists are in short supply (that is, data experts or statisticians able to manage and analyze colossal volumes of data). The race to recruit the right digital skills is another key factor in corporate digital strategies, particularly since the experts predict that the US will lack 60 percent of required data analysts – or 200,000 jobs – by 2020 and lack over 1.5 million managers and analysts with the required digital skills.

**Innovation at every level to accelerate cycle times.** Some go even further and involve the entire organization and even the community in more or less formal models. At Google, employees are allowed to devote 20 percent of their time to personal projects unconnected to their professional duties. If these projects result in significant innovations, they are largely recognized and rewarded. Innovation contests are also developing within and outside business organizations. Netflix launched a million-dollar contest in 186 countries with 40,000 candidates to improve the efficiency of its recommendation engine by 10 percent.

**Accelerate IT developments (“no more cathedrals”).** IT development strategies have also become much more agile under the influence of web players by involving more of the organization at every stage.

- **“Agile development.”** Cross-company teams using iterative methods to improve specifications and solutions through better collaboration, using application program interfaces (API) to mine for basic features in standard platforms, can reduce the development capacity needed to launch new products by 30 percent (like PayPal). This approach enabled US cable operators, for example, to market three new products a day, rather than one a month.

- **Time-to-market can be accelerated** by creating small product-line teams cutting across the organization and responsible for short-term (often quarterly) business objectives for their assigned product line (like HomeAway).

- **New functions are emerging,** such as the product marketing function, which relies on dedicated resources to align marketing and product objective throughout the development cycle: business specifications, interim reviews, and so on (like Google).

- **Finally, other drivers can accelerate development processes** through franchise models or reinforced partnerships, or even “coopetition” (cooperation + competition) with digital competitors.

Test and learn from development to commercialization. Understanding behaviors and testing concepts form an integral part of some models. Improved conversion rates have driven some players like Booking.com to reserve 10 percent of its volumes for continuous testing (the A/B test process).

THIRD QUESTION
How can we transform large corporations?

The new digital era puts large corporations head to head with unprecedented challengers like Google, Amazon, and fab labs\(^{14}\) while the former have inherited a legacy of structured systems and organization to standardize processes, reduce risk, and manage safety, in a long-term perspective.

Before being technical, the digitalization challenge is thus transformational. To capitalize on the corresponding opportunities, large corporations must hence revisit their strategic vision in light of digital stakes and undertake a profound transformation of the organization. Indeed, digitalization upsets the formal dimensions of large organizations (such as their internal processes, human resource (HR) models, and governance) as well as the more informal aspects (such as the leadership model and culture).

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\(^{13}\) Google, Alibaba, Amazon, Twitter, Netflix, LinkedIn, Facebook, eBay, Pinterest, Yahoo.

\(^{14}\) Shared production workshops or fab labs, provide entrepreneurs, craftsmen, and individuals of all kinds with tools, specifically computer-driven machine-shop, to design and produce objects (prototypes, small batches, or spare parts).
UNPRECEDEDENT OPPORTUNITIES TO SHAKE UP ORGANIZATIONS

Organizational improvement opportunities offered by digitalization are numerous:

- By breaking down internal silos, digitalization promotes closer collaboration between marketing and CRM, between research and development (R&D), marketing and the production division, and so on.
- By facilitating access to training and learning, through e-learning and now the emergence of corporate open online courses (COOC), more individualized and hence richer development paths become possible.
- By fostering the emergence of communities within the company, because globalization and continuous connectivity paradoxically reinforce the need to form tribes, digitalization restores closeness and authenticity with a smaller circle. As an example, BASF’s social network, BASFConnect, has 35,000 registered members (or nearly a third of the company workforce), of which 65 percent are also members of various communities, a good sign that the tool is being used. There are different circles – communities of expertise, communities of interest, communities of engagement – created by the company itself to facilitate dialogue with employees. Several hundred employees keep a blog, and company leaders themselves share their thinking and ask people for advice on these pages.
- Digitalization also helps by developing communities with the outside world (customers, influencers, suppliers, partners, and so on). It opens up opportunities by expanding the scope of experimentation, by rapidly testing beta versions of future offerings with targeted populations, as pure digital players do with their employees.
- It accelerates decision-making processes and reshuffles the deck on roles and responsibilities within the organization, with the establishment of self-organized networks alongside hierarchical structures (see Exhibit 25).

Exhibit 25: Management model trends

<table>
<thead>
<tr>
<th>STRATEGIC ENVIRONMENT</th>
<th>STRATEGIC ENVIRONMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable environment</td>
<td>Unstable</td>
</tr>
<tr>
<td>Cost strategy</td>
<td></td>
</tr>
<tr>
<td>Many hierarchical levels</td>
<td></td>
</tr>
<tr>
<td>Functional silos</td>
<td></td>
</tr>
<tr>
<td>Centralized decisions</td>
<td></td>
</tr>
<tr>
<td>Weak leadership</td>
<td></td>
</tr>
<tr>
<td>Many formalized processes</td>
<td></td>
</tr>
<tr>
<td>Hierarchical decisions</td>
<td></td>
</tr>
<tr>
<td>Mechanistic</td>
<td>“Living organisms” (natural selection)</td>
</tr>
<tr>
<td></td>
<td>“Muti3d organisms” (3D printing)</td>
</tr>
<tr>
<td></td>
<td>“Neural networks” (AI)</td>
</tr>
</tbody>
</table>

BUT UNSURPRISINGLY, THE ORGANIZATION IS ALSO THE PRIMARY OBSTACLE TO THE DISSEMINATION OF DIGITALIZATION

Structural complexity, hierarchies, silos, internal policies, vested benefits, specialized processes, and established operating practices are all enemies of change. Yesterday, power was in the hands of a handful of people who held the information. Tomorrow, and even already today, useful and reliable knowledge is more easily available to all, challenging the status quo. The result is latent resistance, sometimes conflict, or even outright rejection by the old guard toward internet-native newcomers grafted onto the organization.

CULTIVATING A DIGITAL CULTURE WITHIN THE ORGANIZATION

Managers are aware that transforming the corporate culture is critical – 63 percent of managers cite this as the most important challenge of the digital transformation. And people must not merely tolerate the new digital world, but actually embrace its various dimensions.

In terms of cultural change in general, and the development of a digital culture in particular, there is no ready-made, one-size-fits-all formula. Everything depends first on the starting point – taste for innovation, appetite for change, or, conversely, aversion to risk. It is nonetheless important to combine various key drivers:

- **Behavior:** Identify and underline existing behavior that is particularly aligned with a digital culture and promote new desired behaviors (such as entrepreneurial spirit, transversal practices, collaborative work, openness to the outside world).
- **Exemplarity:** Including the company leaders who, sensitized to the stakes of digitalization and the importance of transmitting this message, must set the example, akin to Jean-Pascal Tricoire at Schneider Electric.
- **Openness to** the digital world, by engaging in initiatives such as “learning expeditions,” for example.
- **HR processes and specifically training:** Rather than forbidding or closely monitoring the use of social media, more and more companies, like Dell, train their employees in their use.
- **The work environment itself,** which can be inspired by that of internet-native players: The remarkable originality of the workplaces of leading digital players is not just a matter of resources; it’s also a different way of considering the work environment. By establishing informal collaboration spaces and a “fun” environment, companies make employees want to get more involved.

ABOVE AND BEYOND THE CULTURAL DIMENSION, GRASP AND STRUCTURE THE TRANSFORMATION AS A WHOLE

In a certain number of cases, large corporations will have to align their structures and operating practices and move toward a more horizontal, network organization to permit the development
CONCLUSION

Turbulence caused by the “massification” of digital

WE ARE ENTERING THE ERA OF DIGITAL MASSIFICATION

E-commerce represented a $1.01 TN market in 2013, growing at an average annual rate of 17 percent. Digitalization, which is integrated into most industries, is more difficult to measure. Estimated today at about 5 percent of global GDP, it is expected to represent at least 10 percent by 2025.

Gradually, all domains of economic activity, social and cultural life, and citizenship will be affected by the digital services that we use every day. All countries, social classes, and age groups will access networks in the coming decade and become active, demanding users.

These already visible trends will continue to accelerate under the influence of two concomitant waves.

Deployment of smartphones. These are becoming more widespread and will accelerate internet connectivity and hence e-commerce (mostly m-commerce in the future) with emerging countries making up for their current lag. Over 230 million new internet users are recorded worldwide every year, or the equivalent of the entire US market (see Exhibit 26).

SUMMARY

The digital transformation is not a three-year project, but a long migration on the scale of a decade. Faced with this long-term challenge, the key to success resides in establishing specific key drivers:

• Decide on the digital transformation model (integrated or isolated) to manage sometimes very different company cultures and paces.
• Completely rethink innovation using incubators, recruit new key competencies (data analysts, for example), and establish new development and marketing practices (test and learn, agile development, and so on).
• Accelerate development of the digital culture across the company. Digitalization effectively upsets the formal dimensions (internal processes, HR models, governance, and so on) as well as the informal dimensions (such as the leadership model and culture) of large organizations. There are many opportunities to transform large companies but, unsurprisingly, the organization is also the primary obstacle to the spread of digital technology. The objective is therefore to make sure that people do not just tolerate the new digital world, but actually embrace the various dimensions of this change in their behavior, processes, HR models, and the work environment itself.

Finally, the frequent complexity of the digital transformation agenda means that the vision and agenda for change must be shared by senior leaders and broadly supported by company employees.

HR models will need to change, specifically to attract and retain key talent. By analogy with the “customer journey” in which the various points of contact and the quality of the customer experience are analyzed, it is possible to develop the concept of the “employee journey” to ensure the well-being of employees during their time in the organization. Internet-native companies, which focus on the “user-centric” dimension in their internal processes, can once again serve as inspiration.

Given the stakes, leaders must implement a complex digital transformation agenda to be conducted over a number of years. This must be based on a shared conviction by senior leaders on the diagnostic and the vision, and be supported by broad-based employee engagement.

Exhibit 26: Internet penetration trends G7 and BRIC, 2008 to 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Population Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>50.2</td>
</tr>
<tr>
<td>France</td>
<td>67.0</td>
</tr>
<tr>
<td>US</td>
<td>81.2</td>
</tr>
<tr>
<td>Italy</td>
<td>61.2</td>
</tr>
<tr>
<td>Japan</td>
<td>70.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>67.0</td>
</tr>
<tr>
<td>China</td>
<td>57.5</td>
</tr>
<tr>
<td>India</td>
<td>24.0</td>
</tr>
</tbody>
</table>

* Annual growth
Source: Data.2.org, Oliver Wyman analyses
Maturity of online buyers. The more frequently people buy online, the more they tend to buy across national borders. In this context, imports may easily exceed 50 percent, as observed in Europe in particular (see Exhibit 27).

SERVICE GLOBALIZATION, NEW RULES FOR THE COMPETITIVE PLAYING FIELD

The digital economy will turn the rules of the old competitive game upside down. For example, the service economy – which represented 53 percent of global GDP in 2010 – will be particularly impacted. Long seen as local and difficult to export, many service industries will nonetheless be able to export at least part of their value chain tomorrow. Largely underestimated, because they are more difficult to measure than manufactured goods (60 percent of trade services are not integrated into public statistics\(^\text{17}\)), 28 percent of exports today are services in the US. Over the last decade, average service exports grew from 7 to 20 percent per year (see Exhibit 28).

When considering all types of exports, it is probable that services will represent over half of international trade by 2020. The very notion of national competitive standing will be shaken, for example, as more services are offshore in the years to come.

While up to now, globalization has affected only industry, with the impact that we have seen over the past decade, tomorrow, core consumer and business practices across the entire economy will be shaken by turbulence.

Exhibit 27: Domestic and cross-border online purchases

<table>
<thead>
<tr>
<th>Cross-border online purchases percentage of users</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online purchases percentage of users</td>
<td>0</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
</tbody>
</table>

Source: Eurostat, Community survey on ICT, 2012

\(^{17}\) Oliver Wyman study, “Globalization of Services” 2011: Revenues linked to electronic commerce are particularly difficult to track, notably for purchases made on platforms located in certain tax havens. Others defy any attempt at tracking. This is true for revenues linked to telecommunication operator roaming agreements, for example.

TAX CHALLENGES IN THE DIGITAL WORLD

Digital players can optimize their taxes much more easily than traditional industries. As a consequence, the growth of digitalization is a source of progress, but puts great strain on major industrialized economies.

Although digital companies are not alone in attempting to optimize their taxes, it is much easier for them to transfer their profits to tax-advantageous countries by remunerating intangible assets whose value is multiplied by the scale effect. In contrast to older companies, which must generally be restructured to optimize taxes, the digital economy is organized from the outset to take best advantage of tax system disparities across different countries, specifically through the choice of their head office location. (International law gives companies the right to have their profits taxed in the country where the head office is located, rather than where the business is exercised\(^\text{18}\)).

Most companies and countries thus have just a few years to integrate these new challenges and position themselves on these new business models, which attract more than 50 percent of venture capital investors in the US today\(^\text{19}\). It is high time to build the global champions able to hold their own in an eminently open and still largely under-regulated global supermarket.

Exhibit 28: Service exports by country in the past decade

<table>
<thead>
<tr>
<th>Share of services in operations by country</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
</tr>
<tr>
<td>2008</td>
</tr>
<tr>
<td>2013</td>
</tr>
</tbody>
</table>

Source: International trade statistics, WTO, International trade center and Oliver Wyman analyses

\(^{18}\) Large international digital economy businesses currently operate based on commissions. The revenue generated in France, for example, are invoiced by their structures based outside France. The French subsidiaries pay tax only on a base equal to operating costs plus 5 or 10 percent. This aspect is particularly important when it comes to the commercialization of digital content (such as music, VOD, and e-books). Although France has been able to catch up in terms of VAT on e-books, no similar measures have been taken concerning online music sales or VOD.

\(^{19}\) OECD.
4 KEY QUESTIONS
TO GAIN A BETTER UNDERSTANDING OF THE DIGITAL TRANSFORMATION OF YOUR COMPANY

How do you foresee the digital transformation of your industry?
• What part of the value chain is the digital culture penetrating in your industry? What are the consequences?
• Do you have a clear vision of the next stages of digitalization?
• What threats and opportunities do you see inside or outside the historical perimeters of your industry?

How will the customer relationship and purchasing behavior evolve in the coming decade?
• Based on observations of new technological opportunities (through, for example, connected objects), what might the purchasing journey and the customer relationship look like in five and in ten years?
• Which digital players are likely to penetrate your industry, in one way or another, by capitalizing on these new behaviors?

What new economic models will you use?
• Which start-ups, innovative products, or services could win big by satisfying a latent need of your customers?
• What types of platform (operational, commercial, or relational) must be developed to secure sales and accelerate international development?
• How can you secure your customer relationships throughout their lifecycle? How could you make your value proposition more relationship oriented? What models could be used to tailor your products and services and reinforce customer loyalty?
• How does digital technology fit into your production model? What cost and quality gains could be obtained as a result?

How have you initiated the digital transformation of your company?
• Have you chosen an integrated or isolated model?
• Have you revisited your innovation model (incubation, acquisition, recruitment of new critical skills)?
• How can you accelerate your time-to-market model?
• How are you accelerating the digital culture in your organization (HR models, processes, governance, work environment, training)?
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