

# How the Internet is Reshaping Markets, Society and Economics

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## **Abstract**

The objective of this paper is to present a unifying framework for studying the impact of new collaborative technologies (or consumer technologies) on markets, society and economic science. It aims to influence researchers in social sciences, entrepreneurs and policy-makers to accelerate the adoption of the learning, tools and opportunities which the new collaborative technologies bring into their fields.

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“First they ignore you, then they laugh at you, then they fight you, then you win.” – M. K. Ghandi.

“By giving people the power to share, we are starting to see people make their voices heard on a different scale from what has historically been possible.” – M. Zuckerberg.

## 1 The Market is Watching

The recurrent idea motivating this work is that the digitalization of the world, i.e., the continuous customization of the channels of information and the new ways of interaction between users and providers of services - all three enabled by *new collaborative technologies* - are leading to a new wave of the industrial revolution that will have a tectonic impact on five main pillars of the economy and society: firms and their industrial organization, entrepreneurship, markets (including labor), economic growth and social structures. Due to the nature of the underlying technology, the current revolution - unlike previous revolutions - offers a unique opportunity to develop the mechanisms and institutions for a non-disruptive, sustainable distribution of welfare.

First, the new collaborative technologies provide the means to fulfill most prerequisites underlying the market clearing hypothesis and the assumptions for efficient markets, perfect competition, and information, as advocated by the “neoclassical” economics schools of thought that emerged after the first industrial revolution. They offer the technological mechanisms that can realize the vision of neoclassical markets, and through their functioning, contribute to welfare creation through more efficient allocation of resources and interrelated gains. Second, these new technologies offer tremendous opportunities for reducing a vast variety of *inefficiencies*; from unsuccessful product launch to empty cargo movement or bargaining breakdowns, leading to lost mutually beneficial opportunities, due to high costs of implementing market tests, developing a platform for return loads, or automated bargaining mechanisms. Last but not least, they reduce barriers to knowledge-sharing and collaboration. The speed of transmitting information seems constrained only by the speed of light; reduced processing costs of customizing and analyzing information continuously open new opportunities for value creation. As these lines were written, leading US academic institutions (MIT, Harvard, the University of California Berkeley and Stanford) were launching edX<sup>1</sup>, offering online education for “anyone, anywhere, anytime,” reducing the barriers to high-quality education, talent selection, and accelerating the frictionless diffusion of human capital. This knowledge revolution marks an era in which content is easily accessible almost *everywhere*, and value is created mainly by the ways this context is compiled to kindle new ideas, combined into new concepts, and ultimately commercialized in markets.

Following every major scientific/technological revolution, a new economic theory, interrelated policies,

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<sup>1</sup><http://www.edX.org>

institutions evolve, social structures and organizations emerge, taking over the power from the old ones. New collaborative technologies accelerate the development of compatible, efficient institutions and organizations through: a) the reduction of inefficiencies; b) the promotion of a network theory of value; and c) efficient technological mechanisms that continuously simplify, standardize transactions and exchanges.

In the following sections, the impact of new technologies is projected on firms and industrial organization, entrepreneurship, markets, economic growth, and social structures. This process of change is analyzed from the perspective of the ongoing evolution in the pillars of welfare and value creation, and in the reduction of inefficiencies, costs and barriers to information and knowledge sharing. The paper concludes with the challenges this evolution implies for decision and policy makers.

## **2 The Five Pillars of the Economy Under Transformation**

### **2.1 Industrial Organization and Corporate Management**

The new technologies will impact firms and their interreactions by:

- Redefining the relationships among firms, their suppliers, customers, and shareholders;
- Redefining the role of information technology operations as custody of information management and maintenance of the compliance of business processes with the values and strategy of organizations, through consistent sets of information and new channels of dynamic exchange - both internally and externally;
- Virtualizing markets and making transactions more efficient, simple, and transparent;
- Offering the resources for eliminating inefficiencies throughout the value chain and making the customer experience fully customized and personal.

Furthermore, new collaborative technologies offer the instruments for: a) removing waste at the firm and market levels; b) reshaping economic and corporate management. Rethinking the recent economic failure, what failed, and how to repair it, Stiglitz (2011) argued that it was not economic science that did a bad job but economic management. The impact of new technologies on economies will be transmitted through firms that actively search for tools and methods to re-engineer their business processes, their shareholder - management relationships, and ultimately their culture.

At the organizational level, the reduction of the internal costs for accessing and processing information will empower collaborative clusters to develop innovative ideas, that through the creation of value, will challenge the traditional “command and control” status-quo, in which access to information implies increased political and lobbying power. A common feature shared by the new industrial conglomerates emerging in the Internet era is the principle of access to information throughout their organizations and the utilization of collaborative tools for processing non-value-added tasks. The level of adoption of collaborative technologies that guarantee transparency, simplification, and standardization will become qualitative measures of operational and managerial efficiency. Customer experience will be further transformed, shareholders and stakeholders will challenge organizations more actively, openly, collectively, leveraging the power of new technologies, ultimately demanding more responsibility and accountability from representatives and officials. The new technologies will challenge the current establishment of management hierarchy, the “management by information control” model *per se*, and the ecosystem of its serving agents.

The new collaborative technologies will empower stakeholders to press for transparency regarding how corporations manage their relationships and more visibility in managerial practices and corporate performance, through collective information and dynamic interactions. The doctrine of the efficiency of markets - cultivated meticulously by the leading academic community in finance- discouraged the use of the full capacity of information technology to shed light and question the perverse incentive structures that became particularly prevalent in the banking sector or to facilitate more efficient representation schemes of shareholders that would ultimately result in meritocracy and transparency regarding the allocation of risks and gains. In line with the corporate organization and management vision shaped during the industrial revolution, the materialization of corporate strategy is considered to be a “top-down” process, with strategy crafted by executives, implemented by managers, and executed by the organization, in which corporate performance is perceived as the result of the aforementioned interactions with the external environment. In the neoclassical framework of efficient markets, firm interactions are determined by their ability to combine optimally production inputs into products (captured by their competitive productive technologies) and governing market structures, without reflecting the organizations as creators of value through interactions with their network of customers, shareholders, stakeholders, and competitors. The way this network exchanges information and experiences, shapes expectations on performance, and responds to the services, products, and to the information provided by the organization has strong feedback effects on the evolution of the network and its value. The new technologies, their network-based perspectives increasingly influence the emergence of network-based approaches to management, organizational performance and value. They challenge the way organizations interact and manage relationships and exchanges; promote collaborative schemes that foster transparency and openness, influence how value is created in today’s hypernetworked markets, accentuating a need for new performance indicators required to measure progress in a world of interconnected networks.

Corporations are indeed exploring and experimenting in the use of social networks and collaborative technologies for improving business operations, but how much are they really learning from the Internet in adapting their information management processes? “Top-down” controlled information, management through information asymmetries and information control through lobbying will be challenged by dynamic customer experiences channeled through social networks, minority shareholders, who will exchange and collaborate more and more, and corporate “wikileaks,” which will confront wrongdoing and mismanagement. Through the adoption of new technologies and the interrelated dynamic exchange with customers, stakeholders, shareholders, and communities, corporate organizations will redefine their communication models, moving from static “press release-type” approaches to collaborative, interactive, more open schemes.

Beyond their natural sphere of influence on the mechanics of information management, processing, and communication, the new collaborative technologies will accelerate and facilitate the emergence of new processes, tools, and bodies that will challenge corporate management by demanding further “democratization” of information and adoption of the profound opportunities for enhancing efficiency and productivity. Internally, the new technologies offer the tools for building a culture of collaboration, reducing inefficiencies through standardization and synergy, customizing information and user experiences, accelerating the process of product development. The level of information sharing within teams, across and beyond organizational boundaries, in a transparent way will become a measure of maturity, openness of the culture, and ability of the organization to adapt to the speed of change of the new era. Externally, corporations that keep seeking for the “competitive advantage” and “opportunities” will have to start learning from the new technologies how to leverage their extended networks, go beyond their internal resources, and determine how good people who work for others (or good technologies that belong to others) (Chesbrough, 2006) can still generate value for their operations. Last, new technologies can elevate the role of organizations by making their involvement more visible and effective in addressing global needs by influencing the development of responsible, accountable, purpose-driven corporate cultures.

In this context, chief information officers or chief technology officers will “stop thinking [of] themselves as neutral ... and understand they are custodians of the quality and usage of knowledge and information in their organization” (Marchand 2012). Learning the lessons from Enron, Bear Stearns, and the meltdown of 2008, a new leading role emerges naturally for CIOs, in which they are directly accountable to the shareholders, employers, and stakeholders for the management and quality of information, with shareholders being upgraded to their principal customers. Information technology was viewed as a means used by corporations to demonstrate the level of sophistication of their organization and processes; information management will hereafter also reflect culture and maturity. New collaborative technologies are challenging and catalyzing both, bringing enormous potential for organizations to structure an information technology strategy that contributes to the development of a collaborative mindset, empowers their network, develops unique experiences across each channel, upholds the standards of information use, diagnoses gaps between

business processes and ethics, builds an information-driven management culture.

New collaborative technologies will facilitate collaboration and non-hierarchical organizational structures beyond the “command and control” approach that dominated management in the last century. Virtual teams, autonomy, collaboration, and transparency will emerge as the new pillars of modern management driving organizations out of the hierarchical “top-down” structures, in which power is determined by membership status and access to information. The current building blocks of organizational structures, linear layers and matrices (a paradigm inherited from the conglomerates that emerged after World War II that was heavily influenced by the organization of the Army), will be replaced by organizational networks and clusters. Resource allocation will be determined collaboratively and based on potential, more in line with “... [hackers’] belief that the best idea and implementation should always win not the person who is best at lobbying for an idea or the person who manages the most people ... ” (Zuckerberg, 2012). Furthermore, the dominant tool that emerged in line with the hierarchical era (Powerpoint hierarchical slides) will be replaced by more collaborative tools. Powerpoint presentations, the *standard* for internal communication in the 20th century, “usually weaken verbal and spatial reasoning, and almost always corrupt statistical analysis” (Tufte, 2006), leave space for people with the best presentation skills to win and shifting attention to political elements, rather customer or shareholder value. The migration from complex ERP systems and a Powerpoint culture to relational databases, the cloud and reduced barriers to data (both accessing and processing) will give power to talent to limit the space left for corrupt statistical analysis and dominance through skills irrelevant to the customer or the shareholder. Performance measurement will become more transparent, and the achievement of above-average returns will be the outcome of innovation and exceptional results, rather than market structure and structural deficiencies. The new collaborative technologies will facilitate the acceleration of the creation of efficient and liquid markets for goods and services, drastically reduce the impact of information asymmetries on economic systems and market organization, and challenge the industrial status-quo, shifting organizations from a geopolitical mindset to the customer. Increasingly connected, knowledgeable customers and suppliers will further challenge the firms’ ability to profit from their knowledge tanks, putting an end to knowledge monopolies (Chesbrough, 2006, p. 45) and giving a new role to research “from knowledge generation to knowledge *connection*”.

Overall, the new collaborative technologies will facilitate the evolution from “top-down,” hierarchical corporate management to new collaborative organizational structures that will be able to respond with speed, ability, and adaptability to the pace of change that they bring. Increasingly connected, aware shareholders will further challenge management’s ability to profit from informational asymmetries.

## 2.2 Entrepreneurship

The new collaborative technologies: a) reduce the entry cost and barriers for potential entrepreneurs; b) accelerate the diffusion of knowledge; and c) provide the channels for fast-tracking the path from concept inception to the customer, expediting the generation of critical feedback for product development and collaborative customer experiences. According to MIT Technology Review<sup>2</sup>, the total cost of a new Internet start-up has been reduced from US\$20 million in 1995 to US\$150000. Increased levels of standardization of the interrelated software limit technical barriers to entry, complexity, and the need for sophisticated resources, ensuring the compatibility of new products across different media channels. Although the new collaborative technologies offer unique opportunities for incubating new products and services - in many cases addressing very specific needs or target groups (job sites can range from specializing in truck driver jobs or executive openings above US\$60000) - an emerging facet for the targeted user is coping with the required speed of information customization and for entrepreneurs to sustain the “back-office” operating costs, until a scalable critical mass is created. Furthermore, access to content has never been less costly; content is everywhere, making the process of information management - rather than access to it - a challenge. With minimum attention to content, entrepreneurs can bring their prototypes to the market, crash-test them fast, adapt their strategies and exercise their options regarding their next steps.

Operationally, the new era of collaborative technologies has profound implications for the standardization of processes and methods leading to the emergence of “new industry-wide constants.” User experience is the center of gravity: users are more informed, have no patience, demand a clear and concise value proposition, and most importantly have several options and opportunities for making choices. Democracy seems also to work well: buy-ins from a critical mass of users provide the scalability required for further development in a potentially sustainable way and also “consensus driven” feedback for product development.

But most importantly the new collaborative technologies lead toward an “informationalization” of global markets through an increasing demand for information-driven decisions. Content is available throughout Internet and social media sites, with specialized concepts emerging across the entire range of customer spending, from picking a restaurant to finding a plumber or a family to take care of your pets while on vacation. Although most of these businesses are run relying heavily on manual operations and phone calls behind the “Web window show”, their main challenge remains not in automatization or technology development but in approaching the potentially interested user, who in most cases understands his or her need once he or she has become aware of the product offer.

New collaborative products and services are breaking ground, raising the bar for more technological advancements to reduce the substantial fraction of - to a large extent, still manual - operating costs involved

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<sup>2</sup><http://www.technologyreview.com/notebook/421405/online-evolution/>

and to become sustainable. Matching the emerging dominant quest for a fulfilling, clearly defined, and efficient customer experience with intelligent shop floor operations is a critical success factor for achieving survivorship and scale. In this direction, advances in reducing the inefficiencies in local commerce (from finding a restaurant, a hair salon or an empty return load truck to get the best possible freight, as well as other marketplaces that are still non existent or operate in highly inefficient ways) are expected to trigger further evolutions in consumer technology and its adoption by business processes and industries, leading to greater standardization and efficiency in exchanges and transactions. Users or consumers have historically started their intention to transact with a *search*, which has fueled the exponential growth of search services, the rise of new stars, now marking and setting the standards for the development of new technologies. The quest for an optimized *price quote* experience will be the next milestone; it will transform user experiences, customer spending, the development of new services, back-office operations, and technology itself.

The new technologies are reshaping entrepreneurship, by reducing barriers and opportunity costs. In parallel, they are forming a hyperconnected market of users, customers, shareholders *constantly* watching, reducing for the latter direct and opportunity costs for taking a position, reviewing, and making informed decisions, with a decisive impact on the way entrepreneurs implement their ideas in dynamic and continuously evolving markets. Furthermore, a personal view can be diffused at minimum cost, creating collective knowledge and propagating influence through the multiplier effect of social networks. As discussed in the previous section, the new technologies are and will reshape corporate management, potentially providing the tools for building collaborative organizations that will replace the hierarchic corporate structures that emerged in line with the efficient market theories but that are still in place despite of their troubles. The concept of market watching will influence entrepreneurs toward the build-up of a culture in which the entire organization takes accountability for its internal and external customers/users, putting the user in the center of its business, where the belief that the world is watching through a collective, collaborative and to some extent democratic process of “informationalization” is embedded into the DNA of entrepreneurs, organizations, and management.

## 2.3 Markets, Firms, and Customers

The neoclassical economics has been built on the doctrines of markets that *clear* (supply meets demand) and markets that are *efficient* (prices reflect all available information). In reality, both assumptions almost never hold in either financial or physical marketplaces. Reducing the costs of information and search clearly contributes to the reduction of inefficiencies, but this is only one (albeit the most well identified and studied) impact of the new technologies on the economics of market organization.

The new technologies have in many industries challenged the perception that a transaction or purchase must involve an interpersonal experience, reshaping fundamentally the consumer-firm experience and the

ways this interaction is realized. In line with his seminal and visionary letter to shareholders in 1997, where customer obsession and word of mouth were defined as the pillars for customer acquisition, Jeff Bezos defined the best customer experience service, when customers do not have to contact the seller or provider of the service (Bezos (2011)). Democracy on the Internet works well, customers display solidarity in their behaviors, sharing feedback that can help fellow customers make informed and right decisions when purchasing “on-line.” Companies are following, placing the customer in the center of their universe, consolidating all their efforts in creating exceptional customer experiences, starting with the user, and offering services even for free in exchange of user content and positive word of mouth.

Increased returns to reciprocity are making customers willing to share their experiences through social networks, with reciprocal information sharing through collaborative technologies emerging as a new dominant path to value creation. Making informed and customized decisions on product choice, customers collectively influence the evolution of new products in available offers. Firms that succeed in establishing a personalized customer-centric experience trade-off marketing costs for improved and optimized levels of services or product offers: a positive customer experience propagates quickly through the new technologies and in many cases with greater impact than costly marketing campaigns. *Consumerism*, expressed through the collective behavior consumers display by their propensity to share their experiences through the new technologies, opens a new era for business development, firms and markets, putting the customer experience in the drivers’ seat. Although mass customization represents a new paradigm, getting the operations on the front and back-ends to synchronize, bond with millions of users is a major technical, organizational, and operational challenge (Seifert and Liu, 2012) that continuously triggers advancements in computer science, analytics, interoperability of tools, systems and processes.

Business processes and other transactions are still lagging behind this transformation; in the case of the customer, the interested party and decision maker is the same physical person, whereas for firms, the decision making agents’ perceptions, understanding or personal interests do not necessarily coincide with those of the firm. As such, the penetration of new technologies in the re-engineering of business processes is slower when compared with e-commerce and online retail. **But the enterpriser is coming**, with a central theme to this new wave of innovation being the application of core product tenets and lessons from the usage of the new collaborative technologies in the consumer space to business processes, functions, and operations (Economist, 2011). The new technologies are fundamentally impacting the customer (whether external or internal)- firm relationship by reducing inefficiencies and costs of information. Relationships, transactions or connections of mutual benefit can now be established in many cases in which this was impossible or involved huge costs. Ultimately, the level of adoption will depend on the extent to which the vested interests of decision making agents are stronger than the interests of consumers and shareholders.

The two forces of reducing inefficiencies and reshaping the customer experience are the main drivers of innovation in the customer-firm relationship, accelerating the road to market, making product cycles

faster, intensifying competition for innovation through the evolution of large and powerful networks of connected customers. Through the latter, the new technologies reshape markets by reducing the cost to create customized marketplaces, eliminating inefficiencies in standardized marketplaces (retail and e-commerce), generating mass-scaled economies, and providing continuously improved tools for customers to make highly informed decisions. This process shifts competition from resources to the product, changes structurally the way customers interact with each other and with firms; continuously re-engineers the scope, functioning and range of marketplaces, simultaneously reforms the organizations, processes, and technologies that power them.

## 2.4 Economic Growth

Following Solows' (1956) seminal work, it is well understood that economies (and firms) will progress to stagnation unless there is economic growth created through innovation. In the long run, welfare can be increased by structural innovation-driven gains in productivity; this strand of literature in neoclassical economics and growth theory has fueled the "think-out-of-box" movement that has emerged strongly following the recent catastrophic financial crisis. At the aggregate level and in a closed system, gains from productivity improvement are transformed into welfare; effective transmission to society depends on the efficiency of markets and institutions, as well as the industrial organization of economies. Major scientific breakthroughs, such as the steam engine or electricity, revolutionized production methods, caused a positive shock that accelerated the diffusion of productivity gains to the real economy, and lead to the emergence of new industrial champions, methods of economic conduct, market mechanisms, and institutions.

The new collaborative technologies have the caliber of the previous industrial revolutions and the capacity to drive progress beyond productivity improvement, offsetting any short-term impacts on the labor markets. Two main forces will determine the end balance: productivity gains on the one hand and the effect on labor markets on the other. To what extent productivity gains and gains from the reduction of inefficiencies diffused to customers, shareholders, and citizens will outpace the tectonic impact on labor forces depends critically on the ability of policy makers to facilitate the evolution of institutions that will accommodate a positive end-balance for welfare and income distribution.

The impact of the new technologies on the labor markets was studied by Brynjolfsson and McAfee (2011): while being the force behind the major structural changes in labor markets, they also offer the means for accelerating the transformation of labor required for equilibrium. The speed of change required to cope with evolution in labor markets can be addressed through a fundamental reform of education in interdisciplinary, cross-functional directions and via interactive, dynamic methods for developing the new skills of e-labor.

## 2.5 Social Structures

New collaborative technologies will impact not only corporations or economics, but also will ultimately trigger changes in polity and in the way government is exercised. The principle of *markets' watching* will extend to every structure that involves governing or managerial decisions. For a government, the stakeholder is the citizen, with the dual identity of shareholder (tax payer) and customer (voter), whereas for corporations the term “stakeholder” includes customers, shareholders, communities, suppliers, employees and job seekers.

The new technologies are bringing tectonic reforms to customer experience through the channels discussed previously; they trigger - through similar patterns - the ultimate transformation of every user-provider relationship and press for more citizen-driven politics, with citizenship being a more collaborative, active experience and management a more shareholder-centric process. Through this change, value proliferation through information asymmetries, knowledge silos or lobbying give-up their place, unleashing value potential through welfare creation under a configured set of the new emerging institutions required in order to accommodate the pace of change.

Information is a key determinant in most of the aforementioned relationships and the evolution in collaborative technologies reduces drastically the cost of collecting and customizing information of interest regarding polity-related decisions, as well as participation opportunity costs. Influence through clusters and networks will gradually re-engineer the collective decision-making process and provide more efficient means for democratic participation, efficient aggregation of beliefs, and ultimately reduction of gaps between politics and policies. Social networks have been recently viewed as drivers of democracy: they became the tool for sparking the uprisings in the Middle East at the beginning of 2011, after a man selling fruits and vegetables set himself on fire in a market in Tunisia. His personal revolt ignited protests in Tunisia, which spread to Egypt, Libya, Syria, and Yemen. The role of social networks in the Arab Spring and in other political uprisings (Spain and the Occupy Movement) has been crucial, by reducing the costs of the political act drastically, facilitating collectiveness and sparking mass participation. The events of the Arab spring are a major phenomenon in the emergence of technical solutions that will: a) contain the unlimited space that politicians have today in interpreting electoral results and transforming them into concrete policies; b) reduce the opportunity cost of participating in the polity; and c) accelerate the emergence of network-based collaborative responses to political rule.

The Arab Spring did not begin with guns, violence, or protests but with the creation of a single Facebook page, which quickly gained the attention of thousands, and soon millions, of Egyptians, spreading into a global phenomenon. Anyone with access to the Internet could become a member of this emerging network, aiming towards greater alignment of governmental policies with the collective will, as expressed through the network. By reducing the barriers and interrelated costs of communicating, organizing, and synchronizing

the masses involved, the new technologies provided the means for empowerment at a competitive cost, allowing protesters to share information and align actions in real time.

In line with the cultural transformation of organizations introduced in the previous section, a key moment of the Arab spring was the reaction of the Internet industrialists when the regime eliminated all access to the new technologies: Google and Twitter teamed up, providing “by-pass” systems that would allow the network to continue evolving, even without Internet access. Internet access was utilized as a standardized channel for getting information instantly transmitted to a connected group of people but could be substituted by any screen, provided the same information would be distributed across the network in real-time. Paraphrasing one of the 10 principles of Google, not only does “democracy [work] on the Internet”, but also the new technologies raise the demand for more democratic processes by: a) reducing the costs of customized information and participation; b) ensuring that all members of the network share the same set of information; and c) by allowing for intellectual transactions to be made without physical requirements. In a similar way commercial transactions were challenged; in particular the Internet, has been the one channel of the new technologies, turning over the perception that intellectual transactions can happen on large scales under a leader-follower relationship. New technologies will ultimately compete with the current governmental systems based on group-control or recently *discipline* (austerity economics are just one more name for discipline-based group-control policies, this time by controlling the money supply rather than physical resources, as in the past). Control of groups in the early stages of human history was achieved through control of natural resources and facilitated by physical authority, whereas in the later stages, control is achieved by managing fears and hopes and is facilitated through the control of information. As the new technologies reduce drastically the impact of group control policies through information, the existing *status quo* is inventing (mainly monetary) discipline policies to secure the continuation of the existing socio-economic status quo; within the market is watching paradigm, these policies will ultimately clash with the network individualism that is currently emerging through the new technologies.

In his ingenious letter to shareholders, the founder of Facebook explicitly stated his vision about the role of new technologies, starting with an unconventional though seminal phrase for an IPO letter that “Facebook was not originally created to be a company. It was built to accomplish a social mission to make the world more open and connected.” The letter continues, outlining how the organization is inspired by serving this mission and by giving *more people a voice*; it provides technologies that revolutionize they way people share, it changes the substance of society and ultimately offers the technical means that will transform institutions and industries. By reducing the cost of exposure to diversity, the new technologies will contribute to the creation of a new culture based on the pillars of information sharing and opinion diversity.

The letter progresses with the vision of connecting businesses to the economy and the empowerment of citizens by reducing drastically the costs of influencing the decisions of representatives, making officials

more accountable, and getting citizens more involved. It highlights the mission of the new technologies to reduce the costs of sharing, challenging, expressing collective beliefs, opinions, and consequentially the costs of collective actions. Through this process elected representatives will be called upon more responsibility, the power of a “selected few” to control intermediaries will be limited, diminishing ultimately returns to lobbying, while gains from actively exercising citizenship will increase. Although it does not directly involve a fundamental theme of our previous analysis - namely how the new technologies will influence the shareholder - management relationship - the letter includes an inspiring passage on *how organizations should be structured* to capitalize the power and learning from the technologies. The letter calls for a redefined mission of organizations, viewing corporate structures and strong financial performance as the means for aligning individuals in an organized way, for achieving a mission and “solving important problems ...” and foresees that corporate missions will have increasing influence on branding, as “more people [will] want to use services from companies that believe in something beyond simply maximizing profits ...” It goes one step further, deriving the corporate culture necessary for the incubation of concepts that are based on these new technologies, a culture that incorporates the principles of the new industry in which “the best idea and implementation should always win - not the person who is best at lobbying for an idea or the person who manages the most people. ...” and a culture that embraces openness and meritocracy, as the cost of developing and learning is contained through accelerated user-testing.

The speed with which information is customized and channeled has generated tectonic shifts; multi-billion-dollar companies have emerged through the creation of networks and the elimination of inefficiencies or barriers. What’s next? The way businesses are run, interact with their stakeholders and shareholders, the way citizenship is expressed in modern democracies, even the political system; all will be reshaped. The new technologies are providing the customization and detail of information for which neo-classical economists have always aspired for. Organizations that have understood the structural change induced by the behavior of their customers and the ways they interact have discovered a Midas touch: eliminating inefficiencies for the customer, coupled with a customer driven process, is a guaranteed recipe for success that does not depend very much on strategy, abuse of predominant position, or price fixing. Ultimately, the new technologies will fundamentally impact every customer, policymaker-voter, and management-shareholder relationship. Eliminating inefficiencies, reducing the barriers to information and knowledge will imply a fulfillment of the fundamental underlying assumptions of neoclassical economists and a unique historical opportunity for the human race to realize the full potential of free, efficient markets for welfare, freedom and democracy.

### 3 Conclusion

*“The polity specifies and enforces the property rights of the economic marketplace, and the characteristics of the political market that are essential key to understanding the imperfection of the market”, North, D. (1990)*

According to North (1990) “What would make the political market contribute to the efficient economic exchange ?...”

- “The affected parties must have the information and correct model to know that the bill affects them and to know the amount of gains or losses that they would incur
- The results can be communicated to their agent (legislator) who will faithfully vote accordingly
- Votes will be weighted by the aggregate net gains or losses so that the new result can be ascertained and the losers appropriately compensated
- This exchange can be accomplished at a low enough cost of transacting to make it worthwhile”

As analyzed in the previous sections the new collaborative technologies provide an evolving platform for groups of individuals bound by some common objectives to share information, organize, synchronize and simultaneously the tools for facilitating their pursuit; in essence they provide all the missing means for fulfilling the pre-conditions posed by North regarding political institutions that foster economic development.

Institutional innovations have lowered the cost of transacting and permitted the capturing of gains from free markets as predicted by the neo-classical theory. Together with the available technological sets and market structure they determine the efficiency of economic activity. Historically, new institutional frameworks evolve, once certain forms of economic and social equilibrium have been reached. In the case of collaborative technologies the new tools can have an unprecedented influence on a) bringing the groups with common interest together; b) sharing the information of interest; and c) reshaping the structure of institutions through *collective action* and *standardization*. (“Mirror Worlds” example)

As the decisions made by political leaders critically affect the functioning of the economies, collaborative technologies can provide the information and framework for informed / interested parties to act and influence; they can unleash the collaborative and collective forces required for restructuring political institutions and bring the expression of political rights closer to the principles of democracy.

Whether these ideas are a visionary hope or may provide building blocks for welfare and for evolution of innovation driven political thinking will depend on whether they are stronger than the interests they will affect. The exponential growth of the internet, the adoption of new products have demonstrated up

to now that democracy in the new collaborative technologies works. What remains to be answered is to which extent the collaborative technologies, the reaction chains they trigger are strong enough to provide the materials, becoming the catalyst for a new wave of economic policy of welfare and for a new different, reborn political thinking, *“where people will make their voices heard on a different scale.”*

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