



Extortionomics and Ideas to Leverage the Digital Revolution

By Luis de la Calle

February 2019

Extortionomics and Ideas to Leverage the Digital Revolution

Luis de la Calle

Introduction

Mexico has been labeled and praised as one of the countries that “has done well” because it implemented several reforms—some of which were both profound and transforming—in topics such as macroeconomic stability, antitrust, and energy, among others. In certain cases, the country implemented only gradual reforms and stakeholders opposed to the changes have not been affected. In spite of this, the effort did not translate into faster growth rates. The great unfinished business that would help Mexico grow sustainably and aspire to full development, is clearly the need to establish a true rule of law based on the respect for property, not only in terms of private property rights, but also concerning the ownership of the fruit of one’s own work, intellectual creations, and public and communal property.

Violations to these rights come mainly from the extended economy of extortion¹ that has become a sort of prohibitive tax, particularly for small- and medium-sized enterprises. Extortion is often not included in the explanation of why the country is at a relative economic standstill, in spite of it being an extremely common occurrence—it is hard to find someone who has not directly or indirectly been a victim of extortion. The *franeleros* who take over the streets as if they owned the rights for people to park their cars extort others, as do non-representational Union leaders who call for a strike with their own economic gain as the only purpose, or public officials who grant permits, authorities in charge of public bidding processes², police forces, and others in charge of civil protection. And not only does organized crime commit acts of extortion through violence, kidnappings or threats, it also does so by collecting quotas (protection money) and rights to conduct business, known as *derechos de piso*.

The costs of extortion are high not only because of the impact resulting from not having made an investment, but because of the negative dynamic effects they generate. When investments are affected by extortion, it makes it impossible to achieve technological progress and transference, creativity or regional development, and to create formal jobs or offer social security—among other benefits. In addition, economies of scale³ or focus are not achieved. Furthermore, the absence of these benefits forces the government to increase social spending in safety and infrastructure, which it would otherwise not have to do. The growing extortion industry constitutes a vicious circle that

¹ The economics of extortion refer to the cost of extortion in terms of the stagnation it produces.

² The lack of transparency in government bidding processes has facilitated the government's extortion towards private initiative. Especially in construction biddings, when the government generates agreements before or after the opening of the same, obtaining bribes or benefits for its own.

³ An economy of scale refers to the long-term benefits of reducing the median cost of a product as the production scale increases. For example, a company can benefit from investing in more equipment in order to increase production and obtain greater benefits. However, the cost of extortion reduces that company’s capacity to invest in such equipment.

hinders growth. However, the costs it generates have not been studied nor are they fully understood, and no creative solutions have been suggested to face it.

Mexico, as the rest of the world, is subject to changes resulting from the fourth industrial revolution, which is now digital. These technological advances open the way to new market participants, facilitate the inclusion of great corporations and, potentially, they can also markedly increase the participation of small- and medium-sized companies.

Over the past few decades, globalization constituted a great revolution that became the driver behind world integration through trade and enabled the inclusion of sectors and regions that were previously absent from the modern economy. In spite of opinions to the contrary, globalization is still a positive force behind change. The process is currently being improved with new digital technologies that are no longer promoted exclusively by the most developed nations, but also by emerging economies such as China and India. The inclusion of new players, in addition to the economies of scale and focus that come with it, enabled a technological leap forward consisting of the transition from analog to digital. Today, ones and zeros are the drivers behind change, a role that just a short time ago was played by containers. As Marc Levinson⁴ explains, containers changed the mechanics of trade, logistics, and speed.

The world is now submerged in a new era of digitization, automation, big data, and a strong expansion of communications technologies that shorten distances at rates that far exceed those of the transportation revolution. Digitization has given way to the elimination of borders and distances much more efficiently and with a greater impact than multi-modal advances.

Given the digital invasion in every sphere of life, economies are entering into a new stage of globalization at Moore's Law⁵ speeds. These are all disruptive changes: some jobs or sectors will be replaced and many of the challenges will require government regulations and a particular preparedness. However, this new stage also offers an abundant range of opportunities to foster productivity and innovation, increase the exchange of goods, services, and ideas, allow inclusive participation and, furthermore, act as an instrument to begin to eradicate the extended practice of extortion that hinders growth.

In this document, we will first define what constitutes extortion and what its presence in society means in terms of the cost to economic development and in relation to the ecosystem of impunity it contributes to. Afterwards, we will describe several proposals for facing the challenge presented by the fact that, in order to grow, we must be able to reduce the size of the economy of extortion. We will also discuss the role of the digital revolution on the road to establishing the rule of law.

⁴ Levinson, Marc, "The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger", Princeton University Press 2006

⁵ Named after the co-founder of Intel, Gordon Moore, who defended the importance of technology. Moore's law states that the number of transitions per surface unit in integrated circuits doubles every two years.

Extortion

Mexicans are constantly making concessions to arrogant and corrupt people, as well as criminals, because, when they don't have the resources needed to report them, the costs—namely lawyers, regulatory paperwork, risks, and lost time—can be much higher than the implications of the initial threat. What should we do? Make an illegitimate payment in order to be able to park on a public street or risk having the car vandalized? Pay for trash collection or let it pile up on the street? Pay off a public official to handle all paperwork quickly or wait for weeks or even months? Pay criminal groups for the right to do business or become a victim of their threats and acts of violence?

Etymologically, extortion comes from the Latin word *extorsio*, *extorsionis*, which means to separate or expel by force. Similarly, the Spanish word for blackmail, 'chantaje', comes from the French term, *chantage*, which refers to making threats in order to force someone to act in a certain way. The etymology comes from *chanter*, meaning to sing: to force someone to "sing" in order to extract information through threats and to obtain a wrongful benefit from these actions.

Article 390, Chapter III Bis, of the Mexican Federal Penal Code defines the crime of Extortion as follows: "the person who, with no right to do so, forces another being to give, do, not do, or tolerate something, obtaining a benefit for himself or for others or causing a patrimonial damage on someone". In addition, Chapter I, Article 282 penalizes threats. The chapter sanctions "anyone who in any way threatens to hurt a person, their assets, honor, or their rights, or to hurt the person, honor, assets, or rights of someone else to whom they are in some way related, and anyone who through threats of any kind tries to stop another person from executing anything they have a right to do".

In all these cases, the will of the person directly affected is eliminated, depriving the victim of their legal rights, including the right to their own property, their physical integrity, or even their freedom. Extortion has become the economic support for some criminal structures and it is often also the support for government agents (police forces, prosecutors, inspectors, etc.) who get ahead by extorting citizens and the private sector.

In Mexico, extortion is among the crimes with the highest impact and the darkest numbers; it has the lowest reporting rates. According to the 2017 National Victimization Survey (*Encuesta Nacional de Victimización*, ENVIPE), 98.3% of extortion cases are not reported, meaning only 1.7% of the cases are investigated. Accordingly, extortion is at the center of impunity and the lag in development because it hampers the economy's and society's ability to function well, given its close relationship with corruption.

The Cost of Extortion

Although at first it would appear as if the cost of giving in to extortion is lower than the cost of refusing to be a part of it—slow paperwork, trash piling up or violent threats—by giving in to it,

extortion hinders development and job creation, affects a fair distribution of income, and limits competition.

Crime has a direct and indirect effect on development. Directly, it increases risks (potential damages or loss of assets) and the expense inherent to ensuring safety (preventive systems, more personnel, owning distribution fleets), as well as investors' perception that the environment in which they are planning to invest is unsafe, putting their future profitability at risk. This means that criminal activity is a source of taxation or discouragement for every agent in an economy, not only because it increases costs and reduces value-added, but because it increases the perception of risk as well as the expected return required in order to make the decision to invest⁶. This cancels out the viability of many projects that could otherwise have been carried out, if extortion were absent.

On the other hand, crime has an indirect effect on complementary factors: human and social capital and institutional weakness⁷. In the first place, economic and infrastructure losses imply a high cost of opportunity in terms of productive investments and innovations.

The government has been unable to decrease impunity and, in turn, reduce investment risks, meaning that expected returns required for investments could be lower. The potential impact of extortion on expected returns is twice as negative: expected returns are affected by both the decrease in profit due to higher production expenses and by the increase in the risk related to investments, thus reducing the appeal of investing. Secondly, impunity makes it more expensive to create formal jobs because it could be more profitable, or at least less burdensome, for small- and medium-sized entrepreneurs to remain in the informal sector. Informality has evolved as the most ingenious way in which to deal with extortion within the Mexican economy, but at a high cost. Not only because informal jobs do not grow or improve their productivity as they should, but because of the distorting effect of informality on the labor market: in the face of a desirable increase in the supply of highly trained workers, the demand for them decreases because informality is so extended. For a great number of small companies, it is currently better to be part of the informal sector—where there is a kind of one-stop counter in terms of extortion—than striving to become part of the formal sector, where the chances of falling victim to extortion are much greater. According to Santiago Levy, based on information from the INEGI Economic Census, 90% of all companies are informal and they absorb a considerable amount of capital and labor.

For all of these reasons, if we had an efficient policy in place to radically reduce the practice of extortion, our economy would experiment an explosion in the number of openings and in the growth of formal small- and medium-sized companies. This would increase labor and entrepreneurial productivity, both of which are indispensable to achieve high and sustainable growth rates. Establishing these new companies is also the only way in which to create more productive employment opportunities for workers who are currently performing low value-added

⁶ The investment logic is that risk rewards investment with a higher return. However, the risk of extortion does not translate into a yield, but in a cost and, therefore, the ideal aim would be that the cost be as low possible.

⁷ USAID, *Study on Crime and Investment in Latin America and the Caribbean*, September 2014. Downloaded from: <http://pdf.usaid.gov/pdf_docs/PA00K4WM.pdf> (Consulted on February 12, 2018).

activities or who are dependent on government jobs or programs. This is particularly relevant in the dawn of the digital economy, which could displace so many jobs. In sum, if extortion and the resulting impunity are not addressed, Mexico will be vulnerable to the effects of the digital revolution instead of benefiting from it by finding innovative ways in which to reduce extortion opportunities.

Under the current conditions, the larger the company, the less vulnerable it is to extortion and the higher its chances to survive, regardless of its costs. This creates an incentive for larger companies to acquire successful small- or medium-sized enterprises in order for their successful products to become part of an infrastructure that is less susceptible to extortion. This phenomenon reduces economic competition in the market. The solution, however, is not to sanction investments and vertical integrations, but rather to reduce the possibility of extortion to which small- and medium-sized entrepreneurs are exposed.

The damage made by extortion is not proportional. Micro-, small- and medium-sized companies are prone to continue to operate in the informal sector, where extortion is a one-stop counter, given that in the formal sector extortion is more prevalent and their chances of being fined increase⁸. The reason for this is that criminal groups are not the only ones extorting; the municipalities that charge for land use, land ownership, or for construction permits are also extorting others, as are civil protection agents and labor, sanitary, or environmental authorities. In this context, SMEs opt for not reaching their full potential given that they become more vulnerable to extortion when they achieve a certain level of success. Small companies avoid innovation for fear of being subject to systematic extortions, not only like the ones mentioned above, but also from other sources including transportation companies, municipal, state, and federal police forces, as well as markets and street vendors. Workers in the agricultural sector are, furthermore, more exposed than others to extortion intermediaries and are victims of systematic and constant extortion, particularly in distribution and marketing.

In the third place, extortion reduces the size of the market and damages a country's ability to trade, attract investment, and innovate: extortion affects competitiveness. It is important to point out that competitiveness has three important elements: it is prospective (it makes no sense to appeal to yesterday's competitiveness); it reflects a nation's ability to attract investment—the key is to become dynamically more attractive; and it centers on an attractive combination of expected return and risk. The greater the investment risk, the greater the demand for a higher expected return, which makes many investments that are subject to extortion unviable, which undoubtedly increases risk but not necessarily the feasible expected return.

This crime doesn't hurt business owners exclusively; it also affects consumers. By reducing competition, prices increase, and the quality of products decreases. The Mexican Citizen

⁸ Levy, Santiago, *Esfuerzos Mal Recompensados*, Banco Interamericano de Desarrollo, 2018, p. 43. Downloaded from: <<https://publications.iadb.org/bitstream/handle/11319/8971/Esfuerzos-mal-recompensados-La-elusiva-busqueda-de-la-prosperidad-en-Mexico.pdf>>(Consulted on August 27, 2018).

Observatory (*Observatorio Nacional Ciudadano*, ONC) carried out a study⁹ in 2013 that discusses the consequences of extortion in three scenarios: economic, political, and psychosocial. Extortion in the psychosocial framework generates fear, nervousness, and anxiety, all of which decrease the productive capacity of workers and, consequently, the quality of their work.

Formal companies—regardless of their size—have to make their products more expensive for the end consumer given the long chain of extortion they face: inspectors, regulations, and distribution networks, for example, where criminal organizations charge a quota to merchandise distributors. Extortion also affects the development of these companies by impacting not only the purchasing power of consumers but also by decreasing a company’s production and distribution capabilities and increasing production costs.

Finally, extortion damages whole communities by affecting the trust between the government and society, a relationship that serves as the foundation of a country’s growth. Debilitating government institutions generates a chronic impunity that hinders the way in which the judicial system develops and functions, giving way to an environment that promotes crimes of extortion.

Extortion, thus, hurts the relationship of trust that feeds productivity, it affects consumption levels, curbs the development of human capital and the flow of equity, hinders political participation and savings, and slows down a company’s development and innovation.

Likewise, however, institutions are guilty of not creating the “conditions required to have reasonably efficient markets, or to offer services of reasonable quality, and, consequently, they incite behaviors that are privately profitable, but socially inefficient”¹⁰.

Impunity: An Environment that Promotes Extortion

The main cause of extortion in Mexico lays in the fact that the Mexican territory is fertile ground for committing crimes, not only because of the lack of education, opportunities, and inequalities in income, but, above all, because of the extremely high levels of impunity. It is not surprising that Mexico is ranked 92nd out of a list of 113 countries with the highest impunity, according to the World Justice Project 2017¹¹, which estimates the rule of law based on the experiences and perception of the public in general and of experts on this issue in every country in the world. Crime exists because it can, because the system tolerates it, and because it is founded on a profound institutional weakness.

⁹ Observatorio Nacional Ciudadano, *Análisis de la Extorsión en México 1997-2013: Retos y Oportunidades*. Downloaded from: <<http://onc.org.mx/2014/02/27/analisis-de-la-extorsion-en-mexico-1997-2013-retos-y-oportunidades/>> (Consulted on August 27, 2018).

¹⁰ Levy, Santiago, Op. Cit, p. 9.

¹¹ World Justice Project, *Rule of Law Index 2017-2018*. Downloaded from: <https://worldjusticeproject.org/sites/default/files/documents/WJP_ROLI_2017-18_Online-Edition.pdf> (Consulted on August 27, 2018).

Corruption, impunity, and extortion are, in part, a consequence of the fact that they are a standardized practice and an everyday occurrence. Political and social acceptance of these practices debilitates and nullifies the rule of law and makes it impossible to achieve. The first step toward understanding the extortion phenomenon consists of knowing that its prevalence in Mexican society is a result of it being socially acceptable. While the practice is accepted as part of how economic agents behave, it is not the result—as some state—of a cultural need. In Mexico, corruption, impunity, and extortion are an everyday occurrence. Sometimes without even knowing it, as Mexicans we actively participate in its systematization. As part of their daily lives, Mexican people pay someone off in order to expedite paperwork, to avoid a fine or a regulation, simply because it is easier to do so and because it appears as if everything can be bought by anyone with sufficient means.

In a society that uses the argument that illegality is cultural, fighting against it becomes even harder. Accepting that Mexican people are corrupt because of “cultural” reasons becomes the perfect excuse to justify corruption and impunity: it means consenting to a simplistic explanation for the problems we face and tolerating mediocrity to the point of assuming that Mexico will always be lagging because that is the nature of its citizens. Nothing could be further from the truth.

Corruption and impunity have to do with power systems, not with culture. Extortion is systematized and carried out by different groups, whether they are public servants, organized crime organizations, or members of civil society, all of whom have some sort of monopolistic power. They are practices that we learn to benefit from and that could even be justified as a means of survival, all within an environment of illegality where extortion and corruption are possible because there are no sanctions and because monopolistic powers exist. The historic background for this is a concessions-based regime in which the State graciously used to grant certain rights, instead of recognizing them. Prior to the constitutional reform of 2011 that modified Article One to include human rights as recognized by international treaties, Mexico was ruled by a concessions-based regime which granted, instead of recognizing, certain rights. In Mexico, this regime—both in terms of rights as in competition and antitrust—was closely related to the political regime based on concessions that was in force during the majority of the 20th century. In the same way that public utilities were conceived, certain rights were granted by the government as a kind of “favor”. This practice was inherited from the arrogance of the PRI-ruled administrations.

However, extortion in Mexico is directly related to several crimes, including kidnapping, which, although different than extortion, is by its own nature a threat and an example of why the cost of the threat—extortion—could be justified given that it puts the physical wellbeing of a person in danger.

The increase in violence over the past few years is the result of several factors. In the first place, organized crime has taken advantage of a weak rule of law and the lack of moral authority. In the second place, impunity favors a criminal ecosystem that benefits from extortion. The lack of trustworthy authorities and well-trained police forces makes it easier to commit a crime with no consequence.

According to the Institute for Economy and Peace (*Instituto para la Economía y la Paz*, IEP), “the cost of lost opportunities is high: a 10% reduction in violence would free up resources that would almost be equal to the total cost of the public health system [...]. A 1% reduction in the economic impact of violence would be equal to the federal government’s total investment in activities related to science, technology, and innovation”¹².

Impunity in Mexico breaks all kinds of records; at least in terms of perception. According to the IEP, in close to 91% of the crimes committed in Mexico a guilty party is never found. The country is ranked fourth on the 2017 Global Impunity Index¹³.

Impunity begins with silence, or the lack of reporting, but it continues on with the police forces, which don’t issue a vast amount of arrest warrants, and with the long line of factors in the Mexican judicial process: officials at all stages of the process who accept (or demand) bribes or give in to political influence.

A lack of trust in the institutions results in a generalized social unease since the government is unable to provide the conditions needed to establish a business or to live safely and peacefully. The consequences include less job opportunities and greater inequality, because corruption significantly hinders the resources that could be allocated to protecting health, education, and other aspects that are critical to the wellbeing of the most vulnerable groups.

Path Towards Growth

Mexico does grow, but at rates that are below expectations and, above all, below the country's potential. This is due to the fact that it doesn’t have the infrastructure needed to increase exchanges. Economic growth takes place in an ecosystem that limits it because exchange is the result of trust and the rule of law: the higher the possibilities for making exchanges without unnecessary intermediaries, the greater the growth. “The key resides in radically improving the profile of systemic risks, which include the absence of protection over property rights, as well as public insecurity, corruption, and the prevalence of extortion which mostly hurts micro-, small- and medium-sized companies”¹⁴. The perversion of extortion across the country, at all levels, makes development impossible.

In Mexico, the blame for the reduction in the quality and quantity of investment is also shared by the lack of competition in the markets. Economic competition promotes productivity, increases the size of the market, and protects consumers by making producers compete in terms of quality, innovation, prices, and efficiency. Economic competition, however, only prospers in an

¹² Mexico Peace Index 2018, Institute for Economics and Peace, pp.4

¹³ Juan Antonio LeClercq y Gerardo Rodríguez (coord.). (2018). *Índice Global de Impunidad México (IGI-MEX 2018)*: Centro de Estudios sobre Impunidad Justicia (CESIJ). Universidad de las Américas Puebla (UDLAP). Downloaded from: <http://www.udlap.mx/igimex/assets/files/2018/igimex2018_ESP.pdf>. (Consulted on August 27, 2018).

¹⁴ De la Calle Pardo, Luis, *Cómo Crecer in ¿Y Ahora Qué?: México ante el 2018*, Nexos, 2017, p. 215.

environment that facilitates the development of companies wherever they are able to compete with each other, creating jobs and incentives for innovation. Extortion, on the other hand, generates an environment that limits the ability to innovate, damages investments and productivity, and reduces the size of the market.

Only by increasing exchange levels can productivity and innovation grow. The creation of wealth and the increase in productivity are only possible when there is an exchange of ideas and when a series of characteristics that attract investment are present. Economic competition is an essential component of the infrastructure required for making exchanges and for attracting investment. Seen in this light, it becomes a common good¹⁵.

The benefits of economic competition include innovation and technological progress, job creation, and the capacity to offer products with greater value-added, more trade openness and more dynamic markets, all resulting from the impact that goods and services have on the supply and demand, as well as the efficient allocation of resources.

Ideas also have a direct impact on the economy and social equilibrium. As explained by economist Deirdre McCloskey in her book *Bourgeois Equality*¹⁶, the exchange of ideas is a key component of economic development and it can't grow in an environment that is not closely related to democracy and liberty. Ideas have a direct impact on the economy and on social equilibrium. In order for ideas to flourish, they must be exchanged freely, which is why it is so important for respect for others to prevail and for extortion to become the exception instead of the rule.

In his new book published by the Inter-American Development Bank, *Esfuerzos Mal Recompensados* (Badly Rewarded Efforts), Santiago Levy argues that the key factor that determines a lack of growth is a bad allocation of economic resources—both capital and work¹⁷. Badly allocated resources can result in an inefficient selection in the opening of new production companies in a market where the environment¹⁸ “allows highly productive companies to disappear and makes it difficult for the companies that do survive to grow, thus limiting the number of highly productive jobs”¹⁹. As such, many productive companies disappear while other, less productive ones, remain, although it would be better if they were to disappear. The bad allocation of resources also has an impact on the inefficient distribution of people in different occupations, since many micro-entrepreneurs with low production levels continue to operate in spite of the fact that it would be more efficient for many of them to become employees of other companies.

¹⁵ De la Calle Pardo, Luis, *Reflexiones en torno a la nueva Ley Federal de Competencia Económica*, Centro de Estudios del Derecho de la Competencia y de la Regulación, 2014, p. 3.

¹⁶ McCloskey, Deirdre, “Bourgeois Equality”, University of Chicago Press, 2016.

¹⁷ Levy, Santiago, *Op.Cit.*, p. 7.

¹⁸ Levy believes the environment is explained by the formula E (L, T, M), where T stands for tax collection, L is the labor employer-worker relationship, and M refers to market conditions. *Ibidem*.

¹⁹ *Ibid.* pp.37

Levy, however, suggests that factors that lower productivity are derived from fiscal, social security, and labor protection policies, as well as from judicial institutions that do not function well. Although the latter is undoubtedly true, he does not explicitly consider extortion as the forgotten factor in the environment, which has a strong influence on the bad allocation of resources and on the discrimination of companies that enter the market. That is, extortion is the systemic characteristic of the market in which SMEs strive to grow but are not able to. By not including extortion as a determining factor in the environment, Levy puts emphasis on the role played by excessive resources being allocated to micro- and small-sized companies in the absence of growth. The extortion hypothesis tends to explain their lack of success as a result of the heavy burden resulting from the multiple sources of extortion. Furthermore, extended extortion tends to favor growth for very large companies that have been able to invest and build a legal, transportation, distribution, and reputation infrastructure that makes them relatively immune to extortion.

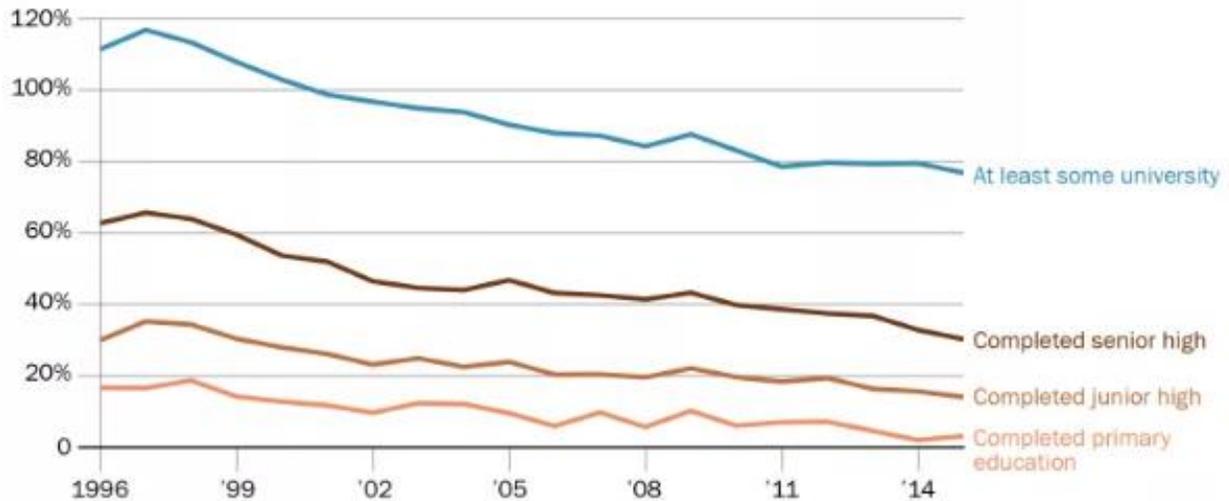
In order for this growth in productivity and exchange to occur, an environment that facilitates it needs to be created. The government is largely responsible for establishing the necessary conditions and for ensuring the rule of law and safety. Extortion does exactly the opposite: it affects the ability to exchange ideas because they are not protected, it limits productivity, and it blocks economic diversification.

Mexico currently has the opportunity to become a developed country, but it won't accomplish this unless it first eliminates extortion by eradicating impunity and avoiding the formation of extortion monopolies. Development is a very expensive social process that requires that every agent that participates in a given economy to make some sacrifices. This is never automatic or free, but rather it is the product of an investment done by the government and society with the expectation of it rendering fruit in the future. However, society must have some trust in its success in order to make this investment and it has to postpone present consumption so that it can invest those resources and increase consumption in the future. This is only possible if considerable improvement is foreseen.

In order to grow, it is not only necessary to increase the resources but also to allocate them more efficiently. As stated before, every investment is assessed in relation to a combination of expected return and investment risk; the higher the risk, the higher the expected return. However, the implicit risk of extortion does not translate into a higher return, but rather into an unnecessary hike in production costs that ultimately is paid for by the client without the producer getting a greater benefit. Accordingly, the key is to work on building a society where the rule of law prevails, where norms are respected, where risks that make production more expensive can decrease, and where it is possible to achieve a competitive expected return.

It is also true that investments need to be made, particularly in education. Development specialists believe that education constitutes the foundation of any prosperous society. However, investments in education only pay off when there is a demand for qualified labor at the end of the road. The following figure shows the financial yield of education in Mexico from 1996 to 2015, measured as

the difference between the weighted salaries of employees who completed elementary school, middle and high school, and those with a university degree.



Source: López, Calva, and Levy, Santiago

Although the supply of highly educated human capital in Mexico has increased, the demand has decreased, in relative terms. In the study done by Santiago Levy and Luis Felipe López Calva²⁰, they conclude that the problem lays in the relatively low demand for qualified people and not so much in the lack of education; this means that often times it may not be profitable to invest in education. This conclusion has a clear implication: the demand for labor is directly related to the speed at which technology develops and to the increase in the number of competitive companies. If the number of companies increases, it will stimulate the demand for more highly educated workers. To the contrary, if market conditions expel SMEs and there is no accelerated increase in their numbers, the demand for qualified human capital will be lower and salaries will decrease. This is how the impunity that allows extortion to exist becomes an obstacle for the growth of companies and, consequently, for job creation. The secondary effect of this lack of economic activity is that the formation of human capital that would be key to leverage the digital revolution and economic development is not rewarded, but rather it is inhibited.

In summary, Levy argues that although trade openness, a stable macroeconomic environment, and improvements in the education sector are necessary conditions, they are not enough for a country's productivity to grow. This is what is happening in Mexico. If capital is not allocated to productive projects, the labor market can't prosper. This means that it is not possible to create an efficient

²⁰ López, Calva and Levy, Santiago, *Will education increase growth in Mexico?* Brookings Institutions. Downloaded from: <<https://www.brookings.edu/research/will-more-education-increase-growth-in-mexico/>> (Consulted on August 27, 2018).

environment for allocating the supply of labor nor a healthy dynamic where companies can enter, exit or grow in order to absorb the availability of such workers.

The authors use the production of tortillas as an example. Large producers need engineers, accountants, and personnel with higher levels of education, while smaller producers only need workers with a basic education. The same thing happens with transportation companies: there are hundreds of independent truck drivers, but if there was a platform or companies that could offer attractive conditions, these would have a greater need for more employees with a higher level of education. “Inefficient allocation is costly for workers, given that the implicit lack of productivity reduces salaries for all workers [...] reducing inefficient allocation increases the difference between the weighted salaries of different education groups, consequently increasing the return on education”²¹.

Efforts made in education policies must be maintained in addition to giving special attention to the labor market and its ability to include new workers who are more highly educated. It is important to leverage the new opportunities offered by new technologies and platforms in order for the allocation of resources and the production and distribution of merchandise to be more efficient, and for government requirements to facilitate formality. In other words, the government needs to leverage these new opportunities and build a bridge between informality and formality.

Digital Revolution

What we refer to as the fourth industrial revolution, third wave or digital revolution is currently in fashion given the changes it brings about and the force with which it is moving current global trends. This new facet of globalization is creating social, economic, political, and, of course, technological changes. The latter are closely related to structural and institutional changes, as well as to the globalization of products, the labor market, and the education system, among many others. Technologies become socially and economically transformational when the change they bring about is significant enough to make the social, institutional, and economic infrastructure evolve. But change takes time.

The two prior revolutions transformed economic, social, and political organizational structures. The first one, which took place from the 17th to the 19th centuries, was characterized by the steam engine that replaced manual labor with machines, thus multiplying industrial power. The second revolution is known for the global adoption of electricity and by the changes that it promoted: greater advances in health, communication, and transportation that emerged in the globalization process throughout the 20th century. Each revolution changed the way in which societies had to work, relate to each other, and produce; they both transformed the economic order and labor markets.

²¹ *Ibidem*.

Although we might think that the world is in a bad situation, the truth is that many countries today—if not all—owe their development to this technological progress. The new digital revolution seems to provoke a global fear concerning the uncertainty of changes in the labor, social, economic, and political dynamic since—as history has insisted on teaching us—in all probability social adjustments will not be produced at the same pace as the technological evolution. However, it is easy to lose sight of the fact that prior revolutions caused a similar anxiety that we seem to have forgotten. Remembering Charles Dickens' *Oliver Twist* or Émile Zola's *Geminal* will help us to better understand current concerns regarding change.

The most important changes of the current revolution are the emergence and rapid progress of artificial intelligence, the expansion of broadband and the increase in access to information, the digitization of the economy, new forms of production and distribution, e-commerce, and the international flow of data.

Artificial intelligence will enable a greater automation of services and manufacturing that undoubtedly can put at risk opportunities for workers who are not highly qualified. However, it will also bring about numerous benefits, including the ability to get training and use new technologies, in addition to new jobs in industries that have yet to be developed. Not every worker has to be a programmer, but they do need to be open to adapting to new and increasingly more useful equipment. In the agricultural sector, for example, technology offers considerable benefits in productivity because of the improved accuracy of weather forecasting, as well as the use of platforms that bring farmers closer to consumers and their preferences.

One of the main concerns is the possible increase in inequality as a result of job displacement that these changes can bring with them. Although new technology improves productivity, it also increases the number and quality of products in the market and, accordingly, it has the capacity to create new jobs. Compensating for the reduction or disappearance of activities and trades will not be easy—as it requires an agile transition to integrate the automation that has substituted manual labor over the past few decades—but it is not impossible.

On the other hand, the fourth industrial revolution can also improve living conditions for low-income households which can now use more productive technologies at more affordable prices, and gain access to better education opportunities offered by the internet and to job and entrepreneurship opportunities that they cannot even fathom today. However, in order for this revolution to render fruit, it is important to double the efforts to eradicate extortion, which is an undeniable obstacle in the process of forming new companies and growing existing ones.

This revolution brings new platforms and systems that can alter international trade dynamics and financial inclusion with new decentralized cryptocurrencies such as Bitcoin²². These new developments have the potential to decrease transaction costs for segments of the population that

²² The Blockchain system works with linked blocks of information. This innovation was first described by the cryptocurrency Bitcoin, but it can be employed for a myriad of uses. The system aims to eliminate intermediaries in all kinds of transactions and also works as a reliable and incorruptible data base.

are most vulnerable and to encourage their participation in the modern economy, with the corresponding increase in productivity. The key lays in ensuring that this concurs with the transformation of economic flows and the decrease in transaction costs in production and distribution.

Digitization as a social process, according to Katz “...refers to the transformation of the techno-economic environment and socio-institutional operations through communications and digital applications”²³. In just a couple of decades, access to the broadband network or networks, the use of computers and wireless devices, as well as indirect services derived from using them, has evolved radically. Digital applications such as social networks, information platforms like Google, e-distribution and e-commerce, and even investment platforms, are a few examples of this. According to Cisco Systems, broadband use grew by 90 times from 2005 to 2016. This growth is modifying global services and international trade. According to Accenture, e-commerce will have more than two million consumers and will generate more than one trillion dollars annually.

Broadband use has permeated almost every household, with multiple effects on the economy. In the case of Mexico, as of the last quarter of 2017, penetration of mobile broadband was already at 65% and fixed broadband was at 50%, according to the Mexican Federal Telecommunications Institute (*Instituto Federal de Telecomunicaciones*, IFT)²⁴. Although progress is considerable, there is still much to be done. The main role of users is to obtain information, communication, and access to social networks and entertainment²⁵, but efforts need to be made to promote the use of technology and production and distribution platforms by all companies, particularly small ones.

The Challenges for Mexico

Innumerable obstacles in Mexico inhibit its ability to distribute technology to everyone, polarizing access and producing a profound digital divide. Large companies are much more likely to use technology and, consequently, boost their productivity and growth.

However, in emerging countries, the impact of technological progress on the informal sector can be considerable and it can work as a bridge to transition to formality and as a catalyst for achieving greater productivity with the same effort. In Mexico, 56.6% of the economically active population works in the informal sector, according to the results of the National Occupation and Employment

²³ R.L. Katz *et al.*, *Measuring digitization: A growth and welfare multiplier*, Technovation, Elsevier. Downloaded from: <http://www.teleadvs.com/wp-content/uploads/Technovation_RK_PK.pdf> (Consulted on August 27, 2018).

²⁴ IFT Press Release, March 4, 2018 <http://www.ift.org.mx/sites/default/files/comunicacion-y-medios/comunicados-ift/comunicadobitfinal3marzo090318.pdf>

²⁵ Instituto Nacional de Geografía y Estadística (INEGI), *Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares* (ENDUTIH) 2017. Downloaded from: <<http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/dutih/2017/>> (Consulted on August 27, 2018)

Survey (*Encuesta Nacional de Ocupación y Empleo*, ENOE) carried out by INEGI during the first quarter of 2018²⁶.

Changes in the labor market vary for every country and its corresponding market conditions, use of technology, and institutions and regulations. Accordingly, it is extremely important for Mexico's digital progress to be accompanied by public policies and a coherent regulatory framework, not only to stop the divide—between people and countries— from becoming deeper and for the labor market to be even more fragmented, but also to ensure that digitization becomes a platform from which to enter modern economy. It is precisely here that the digital economy can play a key role in reducing extortion and fostering the participation of SMEs and informal workers in value-added activities.

Does the flexibility and infrastructure needed to protect citizens against the overwhelming burden of illegality exist in Mexico? Is there any context that could allow society and the economy to adapt to the new changes? In order to be able to achieve real progress, the answer would have to be yes.

Technological progress could foster certain occupations, make others disappear, and, above all, change the way in which jobs are performed. However, while the effects of displacement are immediate, new jobs are created slowly, depending on the ability to respond, mobility, and flexibility they offer²⁷. This constitutes a challenge not only for workers, but also for governments that need to make an investment in a context that promotes change.

Public policies will play a key role in offering opportunities that are relevant to all. “Technologies are tools that don't have their own agenda, but their influence on society is never neutral. They blindly swipe away the means of survival for some and make others richer. Policies need to establish rules and institutions that can take advantage of technology in order to adapt to society's values and vision”²⁸.

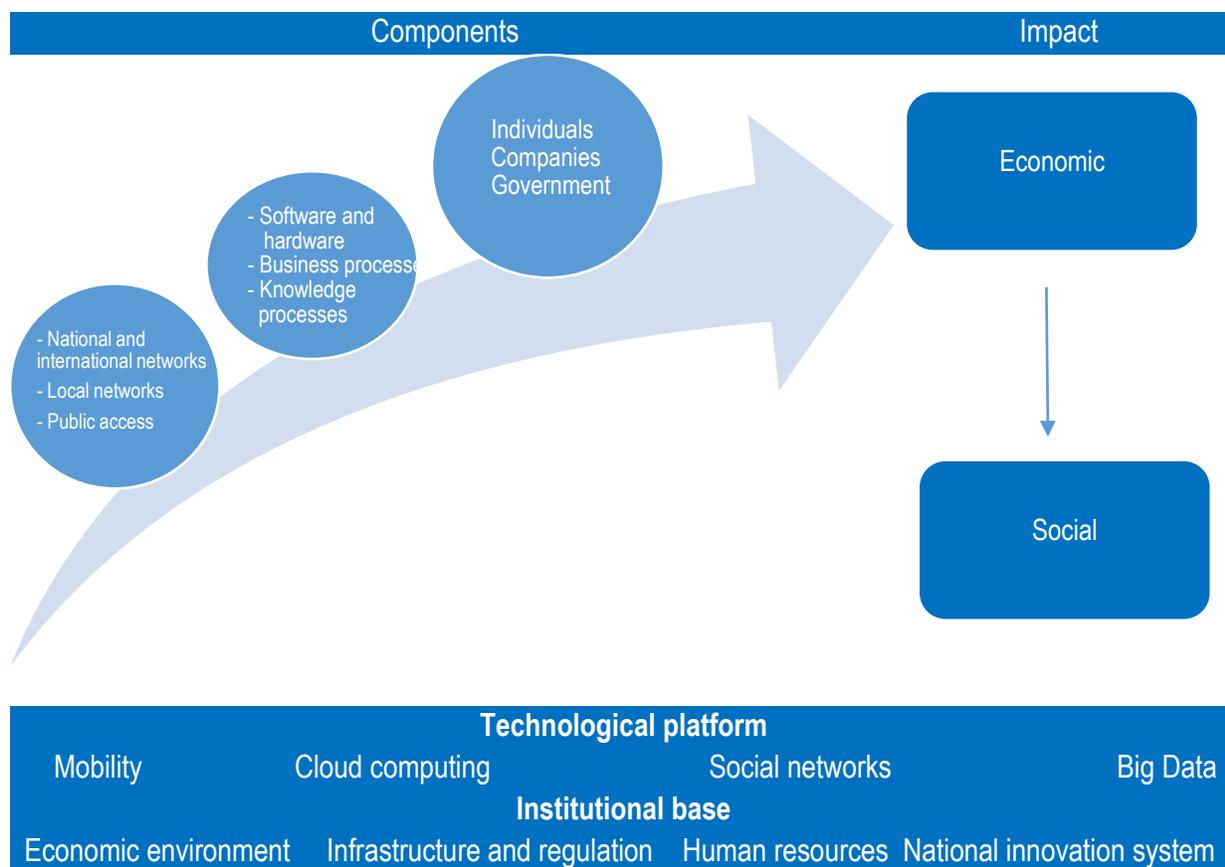
There is a new industrial organization where new links in the digital economy (digital services and applications) have changed the relationship between economic agents and consumers. The following model shows how in order for the digital economy ecosystem to mature, there is a social and economic cost: “The government must articulate economic and social sectors in order to

²⁶ Instituto Nacional de Geografía y Estadística (INEGI), Press Release 141/18. March 27, 2018 Downloaded from: <http://www.inegi.org.mx/saladeprensa/boletines/2018/iooe/iooe2018_03.pdf> (Consulted August 27, 2018).

²⁷ United Nations Organization (UN), *The impact of the technological revolution on labour markets and income distribution*, July 2017. Downloaded from: <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf> (Consulted on August 27, 2018).

²⁸ *The Economist*, (2014, October 3), *The Third Great Wave*, World Economy Special Report, p. 14. Downloaded from: <<https://www.economist.com/special-report/2014/10/03/the-third-great-wave>> (Consulted on August 27, 2018).

materialize the effect of the spillover and the generation of complements in the whole of the economy”²⁹. In other words, new regulations need to exist in order to incorporate digital services.



Source: ECLAC

With the progress of robotization and automation, it is possible that large corporations will no longer make their investment decisions in terms of the cost of labor, but, more so, on the quality of infrastructure, distance to consumers, and costs of transportation, to decide on the location of a facility. Consequently, the legal and regulatory ecosystem has become increasingly more important, which means that the fight against extortion is a critical pending issue.

As we have said already, extortion limits growth for small- and medium-sized enterprises in several ways, but it is also a considerable obstacle in terms of bureaucratic paperwork and for the goods and services’ distribution systems that are plagued by extortion. According to the Survey on Mexican Regulatory Quality and Governmental Impact on Companies (*Encuesta Nacional de Calidad Regulatoria e Impacto Gubernamental en Empresas*), more than 20% of the people

²⁹ Economic Commission for Latin America and the Caribbean (ECLAC), *Economía Digital para el Cambio Estructural y la Igualdad*, 2013. Downloaded from: https://repositorio.cepal.org/bitstream/handle/11362/35408/1/S2013186_es.pdf (Consulted on August 27, 2018).

surveyed pointed out that legal requirements present an obstacle. On average, there are 19.5 requirements that need to be met per economic unit, and 82.2% believe that acts of corruption and extortion by public officials are frequent³⁰.

Many businessmen have reported that criminal gangs require daily payments from them, of varying amounts, just for being allowed to distribute their products in certain markets. This system not only implies a prohibitive additional taxation from quota payments and lost merchandise, but it also forces companies to invest in technologies needed to monitor the location of their drivers in order to be able to protect their lives and/or to avoid wrongful collusions.

But large companies are less likely to be subject to extortion by public officials or criminal groups. However, this doesn't mean that they don't incur in costs derived from the need to be vertically integrated, many times in order to avoid extortion or to protect their assets and employees. Accordingly, even large corporations can encounter better competitiveness conditions in countries with advanced economies (the U.S., Canada, European countries, and others) where they can employ external distribution services with no vertical integration. In Mexico, to the contrary, they end up investing in their own distribution systems. Micro-, small- and medium-sized enterprises that cannot afford such an expense frequently opt to not grow their business (since they can't gain access to an immune distribution network) in order not to be subjected to extortion that makes growth not profitable.

What to do?

There are two ways in which the digital revolution can contribute to solving the extended problem of extortion: first, through the creation of digital platforms that not only encourage small producers or vendors to participate in e-commerce, but also to limit the chances of extortion by reducing the number of intermediaries. And, in second place, through systems such as Blockchain³¹ that decentralize and make all bureaucratic requirements more transparent—making it more difficult for inspectors and officials to demand money for granting a permit—and promote trade.

However, a greater success and promise will only come from conceiving the transition from informality to formality as a business: formalization needs to be at the same time a project with a positive cost-benefit analysis and it needs to employ digital economy tools to build a profitable bridge that allows individuals and SMEs to transition to formality where extortion is more prevalent³². In order to achieve this, it is imperative to ensure the rule of law, improve

³⁰ Instituto Nacional de Geografía y Estadística (INEGI), *Encuesta Nacional de Calidad Regulatoria e Impacto Gubernamental en Empresas* (ENCRIGE) 2016. Downloaded from: <http://www.beta.inegi.org.mx/proyectos/encestablecimientos/especiales/encrige/2016/> (Consulted on August 27, 2018).

³¹ Forbes, Blockchain - What Is It and What Is It For?, March 28, 2018

<https://www.forbes.com/sites/forbestechcouncil/2018/03/28/blockchain-what-is-it-and-what-is-it-for/#2de560c1a16b>

³² Levy, Santiago, *Buenas Intenciones, Malos Resultados: política social, informalidad y crecimiento económico en México*, Océano, 2010.

infrastructure, and avoid over-regulation and corruption in all legal requirements. The digital economy can become a very valuable tool in this process.

From a private standpoint, we must question why Mexico hasn't developed a platform similar to Alibaba to fight intermediaries and extortion. Employing such a digital platform, diminishes the chances for criminal groups and public and private extortioners to interfere in the distribution chain. Alibaba is an e-commerce platform that includes sales websites, but it is also distribution system and an electronic currency³³. Such a platform not only decreases the chances of extortion, but it also offers micro-, small- and medium-sized companies the ability to market their products in a wide range of markets with no unnecessary intermediation. Beating extorting robbers thanks to a platform based on the ideas of Alibaba would without a doubt constitute a great irony. The case of Etsy, a digital platform where artisans can sell their products directly, for example, proves that employing a digital economy can have a positive impact on all sectors.

Ideally, e-commerce puts all market participants on equal footing. Small- and medium-sized companies, as well as original manufacturers, can grow exponentially with no need to take on the costs and risks of distribution, the inefficiencies in the supply chain, excessive legal requirements, or the taxation brought about by extortion. These technologies offer the added advantage of decreasing the use of cash to pay for commercial transactions. This implies the double benefit of promoting formalization and paying taxes, while at the same time decreasing the chances of being robbed. It also makes accounting simpler.

Both the government and society as a whole should promote the use of the Blockchain system. It promises to produce a fundamental change in the way in which the economy and businesses behave, as well as the way in which the government and commerce work. In fact, many believe it will become the basic structure of the internet of the future. Bitcoin became famous for being incorruptible, since it does not require a trusted third-party to validate transactions. By using Bitcoin or any other cryptocurrency, accounting can be public and controlled collectively by the internet. The collected information is incorruptible and if someone were to try to violate or corrupt a block of information, all participants would immediately know it because information would have to be changed in each and every one of the thousands of servers where it is housed, which is impossible.

Likewise, Blockchain systems can inject certitude and stability into public policies. According to the World Bank³⁴, uncertainty in international economic policies has decreased the growth rates of international trade and slowed down the expansion of value chains worldwide. Many companies don't have systems that are efficient enough to track their products across the value chain and don't

³³ Wall Street Journal (2018, February 1st), *How Alibaba Built Its Way to Record Sales*. Downloaded from: <<https://www.wsj.com/articles/how-alibaba-built-its-way-to-record-sales-1517494566>> (Consulted on August 27, 2018).

³⁴ The World Bank (2017, February 21), *Policy Uncertainty Weighs on the World*. Downloaded from: <<http://www.worldbank.org/en/news/press-release/2017/02/21/policy-uncertainty-weighs-on-world-trade>> (Consulted on August 27, 2018).

know what happens in the final links of the supply chain. If companies, regardless of the nature of their business, were to use Blockchain as their central technology, they would be able to face up to current uncertainties in international trade. Alisa DiCaprio, Research Director at R3, the banking consortium composed of more than 80 financial institutions, suggests three ways in which this could happen³⁵.

In the first place, it grants SMEs new sources of financing. Where banks currently require complicated processes to obtain financing using information that they cannot always verify, Blockchain offers small- and medium-sized companies the possibility to register their financial records in blocks of information that can't be altered, which allows them to facilitate or accelerate financing for suppliers across the whole supply chain. Furthermore, many financial institutions, such as HSBC, have reported that they have built Blockchain-based applications to improve the transaction process for granting a line of credit.

In the second place, Blockchain makes it possible to facilitate and determine the focus of tariffs since this system can reliably monitor product origins. "With a higher transparency introduced by companies that monitor and exchange using Blockchain, the focus on tariffs could be more precise"³⁶. And, finally, Blockchain can produce new sources of data, which is among the main facilitators of trade, such as the state or location of the load, for example. Blockchain can increase transparency, speed, and safety in trade by connecting all the points of the trade process, by liberating data. With Blockchain, the trade process can be optimized, including manufacturing processes, customs, and quality controls.

So Blockchain is a source of certitude and veracity. With it, the rule of law is easier and extortion decreases. Blocks of information can represent any object of value: money, property rights, shares, kilowatts of energy, barrels of oil, electoral votes, and thousands of other options. It all depends on how users wish to employ them.

"A cloud-based system ensures that registries cannot be duplicated, manipulated, or falsified, and greater visibility of the parts of the supply chain can promote an unprecedented level of trust. This means that governments are better able to protect their citizens, while trade partners can be assured that certain commercial documents are real. Consumers are able to verify the quality and origin of products, and banks can reduce processing times"³⁷. This means that bureaucracy can be eliminated in the future, since rules are programmed into an intelligent system with no intermediaries.

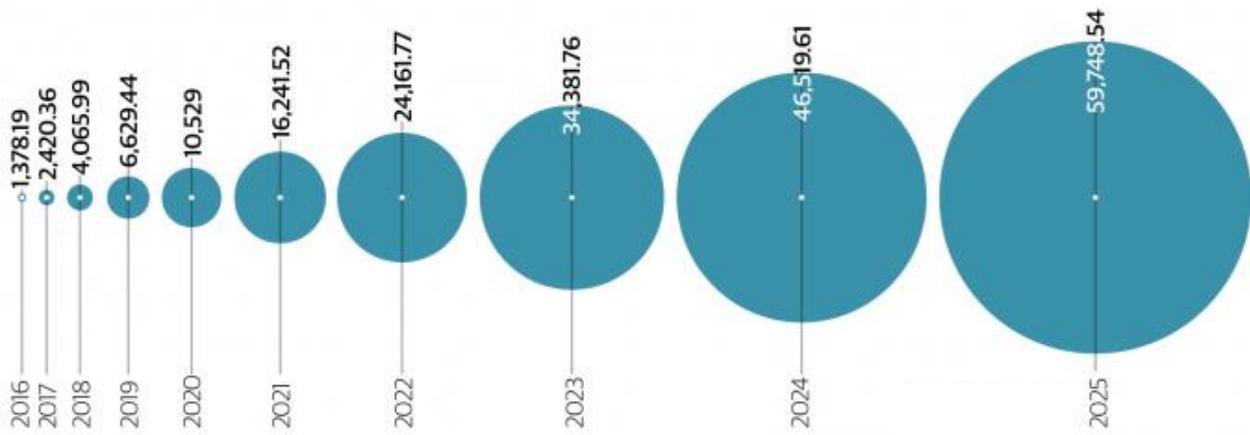
³⁵ Alisa DiCaprio (2018, July 25), *Can Blockchain Fix Trade's Transparency Problem?* Brink News. Downloaded from: <http://www.brinknews.com/?p=14816?utm_source=BRINK+Subscribers&utm_campaign=f27c44fffa-EMAIL_CAMPAIGN_2018_07_24_08_40&utm_medium=email&utm_term=0_c3639d7c98-f27c44fffa-110320765> (Consulted on August 27, 2018).

³⁶ *Ibidem*.

³⁷ Lehmacher, Wolfgang and McWaters, Jesse (2017, April 13), *How Blockchain can Restore Trust in Trade*, Brink News. Downloaded from: http://www.brinknews.com/how-blockchain-can-restore-trust-in-trade/?utm_source=BRINK+Subscribers&utm_campaign=f27c44fffa-EMAIL_CAMPAIGN_2018_07_24_08_40&utm_medium=email&utm_term=0_c3639d7c98-f27c44fffa-110320765 (Consulted on August 27, 2018).

Administrative processes become more transparent and efficient, avoiding extortion in the process to comply with legal requirements and facilitating the formalization of SMEs.

The role of the government in taking this quantum leap forward implies investing in three areas: artificial intelligence, broadband infrastructure, and digital education. It also requires that changes be made in political duties, which implies being open to full transparency. Governments need to consider supporting investments in artificial intelligence (AI) in order to become part of global competition. This is true even for emerging economies, particularly China. The following graph shows worldwide AI investments estimated to 2025, proving that it is imperative for Mexico not to lag behind.



Source: Statista

Needless to say, investments are also needed in digital education, which is currently an indispensable fuel for emerging economies. A country's digital capabilities will define the course it will take. This means that education programs at all levels need to be updated in order for them to include new capabilities, such as programming, that the next generations are going to need.

Conclusion

Extortion is the main obstacle to the country's development because it hinders competitiveness; the extended practice of extortion has an extremely high social and economic cost. However, by prioritizing the establishment of the rule of law, Mexico can surpass this obstacle, allowing micro, small- and medium-sized companies to grow and drive economic growth, to generate certitude and promote lower expected returns for companies looking to invest in the country.

Mexico needs to be able to leverage the digital revolution in order to modify an ecosystem that has enabled the growth of the extortion economy, and it needs to increase not only the amount but the efficacy of its resource allocation. The current world revolution is just like Levinson's container: although it might seem insignificant today, it will transform trade dynamics and economic trends worldwide. Furthermore, it can become a catalyst for democratizing the rule of law and access to

product and services distribution networks where extortion—which limits growth, expansion and the success of small- and medium-sized companies—is not the norm.

Bibliography

Books

De la Calle Pardo, Luis, *Cómo Crecer en ¿Y Ahora Qué?: México ante el 2018*, Nexos, 2017

De la Calle Pardo, Luis, *Reflexiones en torno a la nueva Ley Federal de Competencia Económica*, Centro de Estudios del Derecho de la Competencia y de la Regulación, 2014.

Levinson, Marc, “The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger”, Princeton University Press 2006

Levy, Santiago, *Buenas Intenciones, Malos Resultados: política social, informalidad y crecimiento económico en México*, Océano, 2010.

Levy, Santiago, *Esfuerzos Mal Recompensados*, Banco Interamericano de Desarrollo, 2018.

Reports

Comisión Económica para América Latina y el Caribe (CEPAL), *Economía Digital para el Cambio Estructural y la Igualdad*, 2013. Available: <https://repositorio.cepal.org/bitstream/handle/11362/35408/1/S2013186_es.pdf> (Retrieved on August 27, 2018).

López, Calva y Levy, Santiago, *Will education increase growth in Mexico?* Brookings Institutions, (marzo-2018). Available: <<https://www.brookings.edu/research/will-more-education-increase-growth-in-mexico/>> (Retrieved on August 27, 2018).

Observatorio Nacional Ciudadano, *Análisis de la Extorsión en México 1997-2013: Retos y Oportunidades*. Available: <<http://onc.org.mx/2014/02/27/analisis-de-la-extorsion-en-mexico-1997-2013-retos-y-oportunidades/>> (Retrieved on August 27, 2018).

United Nations, *The impact of the technological revolution on labour markets and income distribution*, Julio 2017. <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf> (Retrieved on August 27, 2018).

R.L. Katz *et al.*, *Measuring digitization: A growth and welfare multiplier*, Technovation, Elsevier. Available: <http://www.teleadvs.com/wp-content/uploads/Technovation_RK_PK.pdf> (Retrieved on August 27, 2018).

USAID, *Study on Crime and Investment in Latin America and the Caribbean*, September 2014. Available: <http://pdf.usaid.gov/pdf_docs/PA00K4WM.pdf> (Retrieved on August 27, 2018).

Indexes and surveys

Instituto para la Economía y la Paz, *Índice de Paz México 2018*, p. 4. <<http://indicedepazmexico.org/wp-content/uploads/2018/04/Indice-de-Paz-Mexico-2018.pdf>> (Retrieved on August 27, 2018).

Instituto Nacional de Geografía y Estadística (INEGI), Encuesta Nacional de Calidad Regulatoria e Impacto Gubernamental en empresas (ENCRIGE) 2016. Available: <<http://www.beta.inegi.org.mx/proyectos/encestablecimientos/especiales/encrige/2016/>> (Retrieved on August 27, 2018).

Instituto Nacional de Geografía y Estadística (INEGI), Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares (ENDUTIH) 2017. Available: <<http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/dutih/2017/>> (Retrieved on August 27, 2018).

Juan Antonio LeClercq y Gerardo Rodríguez (coord.). (2018). Índice Global de Impunidad México (IGI-MEX 2018): Centro de Estudios sobre Impunidad y Justicia (CESIJ). Universidad de las Américas Puebla (UDLAP).

Available: <http://www.udlap.mx/igimex/assets/files/2018/igimex2018_ESP.pdf> (Retrieved on August 27, 2018).

World Justice Project, *Index 2017-2018*. Available: <https://worldjusticeproject.org/sites/default/files/documents/WJP_ROLI_2017-18_Online-Edition.pdf> (Retrieved on August 27, 2018).

Press releases

Instituto Federal de Telecomunicaciones, Press release, March 4, 2018. Available: <<http://www.ift.org.mx/sites/default/files/comunicacion-y-medios/comunicados-ift/comunicadobitfinal3marzo090318.pdf>> (Retrieved on August 27, 2018).

Instituto Nacional de Geografía y Estadística (INEGI), Comunicado de Prensa 141/18. March 27, 2018. Available: <http://www.inegi.org.mx/saladeprensa/boletines/2018/iooe/iooe2018_03.pdf> (Retrieved on August 27, 2018).

Newspaper articles

Alisa DiCaprio (July 25, 2018), *Can Blockchain Fix Trade's Transparency Problem?*, Brink News. Available: <http://www.brinknews.com/?p=14816?utm_source=BRINK+Subscribers&utm_campaign=f27c44fffa-EMAIL_CAMPAIGN_2018_07_24_08_40&utm_medium=email&utm_term=0_c3639d7c98-f27c44fffa-110320765> (Retrieved on August 27, 2018).

Lehmacher, Wolfgang y McWaters, Jesse (April 13, 2018), *How Blockchain can Restore Trust in Trade*, Brink News. Available: <http://www.brinknews.com/how-blockchain-can-restore-trust-in-trade/?utm_source=BRINK+Subscribers&utm_campaign=f27c44fffa-EMAIL_CAMPAIGN_2018_07_24_08_40&utm_medium=email&utm_term=0_c3639d7c98-f27c44fffa-110320765> (Retrieved on August 27, 2018).

The Economist, (October 3, 2014), *The Third Great Wave*, World Economy Special Report, p. 14. Available: <<https://www.economist.com/special-report/2014/10/03/the-third-great-wave>> (Retrieved on August 27, 2018).

Wall Street Journal (February 1, 2018), *How Alibaba Built Its Way to Record Sales*. Available: <<https://www.wsj.com/articles/how-alibaba-built-its-way-to-record-sales-1517494566>> (Retrieved on August 27, 2018).

The World Bank (February 21, 2017), *Policy Uncertainty Weights on the World*. Available: <<http://www.worldbank.org/en/news/press-release/2017/02/21/policy-uncertainty-weighs-on-world-trade>> (Retrieved on August 27, 2018).