THE ROLE OF IT IN MOVING TOWARDS A SOCIALLY-BENEFICIAL ECONOMY

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Abstract- Many scholars and economists have raised the issue of the degradation of the principles behind the theory of capitalism and their lack of validity in today's world. Among the many principles that do not hold today, the so-called "sanctity of the market" and the "invisible hand" are two of the most clearly wrong today. Behind these principles, there are many assumptions that were quite established and permanent at the time when the book was written but that do not hold anymore. These principles have guided the world economy for a long time and reasonably well. However, the introduction of IT systems, their evolution in processing power, memory and connectivity and the capabilities that these advances bring, have resulted in the capability to practice "unenlightened self-interest" in the large scale. That is, to control the evolution of the markets in the interest of a selected elite, that will have catastrophic consequences (referred as the "tragedy of the commons"). In this paper we present the first IT system capable of reverting the situation, bringing us back in the direction of enlightened self-interest and promoting a more socially-beneficial economic activity.

Index Terms- About four key words or phrases in alphabetical order, separated by commas.

I. INTRODUCTION

Scholars and economists have raised the issue of the degradation of the principles of the theory of capitalism and their lack of validity in today's world [1]. Now this perception is also widespread among citizens. Among the many principles that do not hold anymore, the so-called "sanctity of the market" and the "invisible hand" [2] are two of the most clearly invalid today. These principles were established on the basis of assumptions that were quite accepted and considered permanent at the time when the theory was developed. These principles have guided the world economy for a long time and reasonably well, but have recently started to show signs of their obsolescence. For instance, the relatively small scale of the economies, the inability of actors to pervert the system in their benefit, or the locality of the market were assumed, but are not real anymore. Furthermore, these principles have been extended to develop additional unquestionable principles as the "right" of companies to operate in opaque forms with regards to who their stakeholders are and which relations exist among companies. Furthermore, the introduction of IT systems, their evolution in processing power, memory and connectivity and the capabilities that these advances bring, have resulted in the capability to practice "unenlightened self-interest" in the large scale. That is, to control the evolution of the markets in the interest of a selected elite, which will have catastrophic consequences (referred as the "tragedy of the commons").

In essence, the economic theory of capitalism relies on the "self-regulation" of the economy on the basis that a balance is supposed to exist between different forces (buyers and sellers, workers and companies) that prevents the system to become pervert. Self regulation was also assumed in relation to competition, as the theory is that business that perfection manufacturing processes to increase the quality or reduce the cost of the products, that offer new improved products or services (in the remainder of the paper we will use the term product to refer to both as this has no effect on the discussion), or that offer any other advantage for the consumer would be rewarded by the system with success.

Today it is clear to most experts, and even to many citizens, that this alleged self regulatory mechanism does not work. In the current socio economic situation, the balance between economic agents (which we will refer as "markets") and society in general (which we will refer as "citizens") has deteriorated in favor of the former. The result is that markets have become far more influential than they had traditionally been; to the extent that they not only have a capacity to influence labor conditions but also all aspects of society. Among the instruments that have deteriorated the most are labor standards and the power of trade unions, both reduced or almost eliminated in the name of economic competitiveness. The overvaluation of economic results as the single measure of progress has led to classify countries as if they were companies. In the particular case of Spain, labor conditions have been unilaterally degraded by the pressure of the markets, which our leaders have not known or wanted to counteract. In addition, this overvaluation of the criteria of economic profitability has opened the door to numerous behaviors detrimental to citizens, society and the Earth, in terms mainly economic, but also social, ecological, and ethical among others. The Transparent Info project has been designed to restore this balance, giving citizens access to information and

tools that will allow them to influence the way companies behave.

The basis of this project is the observation that one of the main reasons for the imbalance is that while economic agents have large systems of information and data analysis, citizens do not have the necessary information to react to the imbalances of the system. Currently, when you buy something, you are led by marketing and branding strategies that result in customers not buying the best product or service for them, but the one that was more convincing. In the decision of the specific one to buy, you do not know who will ultimately receive the benefits of that sale, whether the manufacturer exploits the workers, if staff is fired to maximize profits, if the company uses tax havens to avoid paying taxes in your country, if they respect the environmental norms, etc. etc. Imagine now that this information is available to everyone and that, knowing that our well-being depends on it, we begin to use that information to choose how we spend our money instead of just being guided by economic criteria ...

This is just what Transparent Info can do: Provide users with the information they need so they can consume benefiting companies that act well and penalizing those who do not. And there is precisely the closing of the circle of the new mechanism of equilibrium: Businesses depend on workers to buy their products and services to make money. Therefore, if companies / countries are guided only by the criterion of maximizing economic results, lets make sure that those who act badly lose money. If Transparent Info or any similar system succeeds, we honestly believe that:

- Companies that act unethically (in any sense) would lose money while those that act ethically would increase their profits.
- Local businesses will be favored, resulting in social, ecological, etc. benefits.
- Speculation can be limited and punished.
- Countries that use their economic power to subjugate others would be vulnerable to the victims penalizing the companies of the "aggressors."
- Countries would cease to be judged for their ability to produce economic benefits and would be judged for their ability to improve the lives of their citizens ...

II. BACKGROUND

According to John Iker [1] "Conventional wisdom in the U.S. seems to be that only the market is capable of doing things right. Anything that interferes with the market; the government, public attitudes, or cultural values, for example; by definition creates economic inefficiency and is bad for society. Few people are aware of the origin of this belief, and even fewer seem willing to challenge it. In fact, the few who dare to question the market's sanctity are quickly attacked and degraded by people in powerful places with obvious self-interest in perpetuating the belief, including an army of economists." On the other hand Gregory Mankiw, states that governmental intervention can improve on market outcomes under conditions of "market failure," or situations in which the market on its own does not allocate resources efficiently.

In his seminal trilogy [4][5][6] Karl Marx tries (in a way, as we are now) to link the value of a product with something related to the value for society. In his case, the amount of work required for its production. The main idea is to define a value-generating substance, the essential of which is quantitative: the magnitude of its value. And this magnitude is determined by the amount of work, which in turn is measured by the duration or working time, in the usual units of time (day, hour, year, etc.). However, it is not any particular person's work that is measured, but the work "of the same human labor force," the labor required by each product (commodity in his terminology) as part of the "whole of the labor force of society," so that each individual labor force is taken only with the character of a "social work force", operating exclusively with "socially necessary working time" in each case.

These ideas have strong implications and are at the heart of the Transparent Info proposal. The main conclusions are that we must rule out any solution based on regulations or intervention, and that we must keep the current way of evaluating business by their economic success. That is, we must not try to impose alternative ways to measure success. Consequently, our strategy is to design a system is capable of creating a direct relation between the production of benefits for the society and the economic success of businesses.

In this way we transform Marx's idea of linking the value of a product with the amount of work required for its production, which is a specific form of measuring benefit for society, into something more general and we link the value of a product with all the benefits it produces for society. For instance, a product made by a company that distributes the profit more homogeneously between all workers will produce more benefits to society than another that pays low wages to most employees and huge amounts of money to executives. Likewise, a product made by a company that protects the environment will produce more benefits to society than another that contaminates and degrades the environment. This is precisely the core of our vision: That the value of a product must be linked to the benefits it produces for society, and that customers should have access to the relevant information they need to evaluate such benefits according to their own balance among the different pieces of information.

III. TRANSPARENT INFO

A. Socially-beneficial applications

The term "Socially-beneficial applications" was coined by the author to describe systems that protect or benefit the society by avoiding unfair situations, providing new services, tools, and information to give reactive power to the society to counteract a given misuse or abuse situation. Civil society is continually being threatened by external forces that do not hesitate to create problems that affect society to achieve its own benefit. Normally, citizens have insufficient means or have no ways to react to situations of abuse. The main idea of this type of systems is to restore the balance by offering computer applications that allow society to react to counteract the abuse of external forces previously described in section. These systems must evolve continuously responding to the needs of users, offering a high level of security and confidence, and a scalable computing platform that allows secure and quick access, at any time, from anywhere, to information through mobile devices.

B. Transparent Info

Transparent Info is a system that empowers consumers by providing them with the information they need to take informed decisions when buying products or services.

They say that the client is always right. Consequently, we must consider that by buying the cheapest product clients encourage companies to do whatever they can to reduce the cost of the products, which normally implies behaving unethically (abusing suppliers, providers and employees, outsourcing the production to countries where the rights of employees are not enforced, not producing ecologically, speculating, doing tax engineering to pay less taxes, etc., etc.). On the other hand, by choosing products from companies that treat their employees and providers ethically; distribute their benefits fairly; and produce and behave ecologically, consumers will promote ethical and socially-beneficial behavior. In the end, it will be better for consumers to act in this way because although they will pay a bit more for the product, the benefits will return to them in the form of better working conditions, better environment, less speculation and more fair distribution of the benefits of the companies, increasing the wealth of their area and country, etc. etc.

Moreover, Transparent Info will allow consumers to buy as locally as possible (not only, production-wise, but also benefit-wise), thus enriching their own area.

The Transparent Info mobile app makes it possible, by scanning the barcode of a product, or searching for a company or a service, to access important information about it that is normally unavailable for consumers, such as how ethical the company is with the employees, its ecological behavior, the way benefits are distributed and where do the benefits go. In this way people will be able to start a new form of selecting products, not only based on their price.

Transparent Info does not prescribe a particular formula for selecting or ordering products. Instead, it allows users to personalize the criteria that are important for them so that they receive the information about these criteria highlighted when they search for an item. Moreover, if the product, service, or company that users are searching for does not meet their personal criteria, Transparent Info will provide a list of alternatives, also ordered according to their preferences.

Formally, we can define Transparent Info as a Socially-beneficial application designed to counteract the unethical behavior of companies, in order to avoid them to practice "unenlightened self-interest", and oblige them to act in the benefit of society at large.

Achieving such ambitious goals does not require extremely advanced technology. In fact, the technology is already available and well established. A key aspect is to get a system that allows all consumers to access this information when they need it and this can be easily achieved through a web application, connected to a mobile application. Another essential aspect is to achieve a critical mass of information. We are currently working on strategies to achieve this critical mass, but the idea is to allow the "good" companies to join the system easily and free of charge, so that after some time citizens can assume that if a company is not listed, there is something they have to hide.

In part, such information is already available; e.g. through protected designation of origin (PDO), protected geographical indication (PGI), and traditional specialties guaranteed (TSG). Consequently, agreements with the entities that manage them can allow us to use that information. Other information will be obtained directly from the "good" companies because they'll have an interest in the success of Transparent Info, as that will reward their ethical behavior. Once many good companies have provided their information, the rest will have to follow as otherwise people will interpret the fact that they are not listed in the system as having something to hide.

Transparent Info will provide information on different aspects (ethical behavior in business, with workers, locality, benefits to society, ecology, etc.) organized by categories of companies and products and divided into four levels of reliability of information: (I) information provided by users, (ii) information provided and self-certified by the company, (iii) evaluation by the Transparent Info team based on documentation provided by the company, and (iv) evaluation by the Transparent Info team based on audits. In the two later cases, we will also appoint external trusted evaluators to perform the evaluations.

The Transparent Info mobile application will allow users to predefine their own balance among the different criteria in a way that maximizes their own

interests and by simply scanning the bar code of a product with their mobile phones, have access to those evaluations in order to make a conscious informed purchase.

The Transparent Info system is realized as a web-based application that stores information about items (products and companies). Items are associated to categories in order to establish a relevant set of evaluation criteria (which we call aspects) for them. For each item the application stores a set of evaluations values (called ratings) for the different criteria (aspects). Products are linked to barcodes so that the users of the mobile app can simply scan a barcode to access the information about a product. A simplified entity diagram is presented in Figure 1 below.

The diagram shows that the system stores information about items (tiapi_item) that can be companies (tiapi_company) and products and services (tiapi_product). Items are associated to item categories (tiapi_itemcategory) and have ratings (tiapi_rate), which in turn are associated with different evaluation aspects (tiapi_aspects). Aspects are things like "locality", "ethical treatment of employees", "ecological behaviour", etc. Of course, aspects depend on the type of product, service or company. Aspects are organized in aspect categories (tiapi_aspectcategory). The system also stores information about users (tiapi_users) that are identified in the system by means of user identification and authorization data (auth_user).

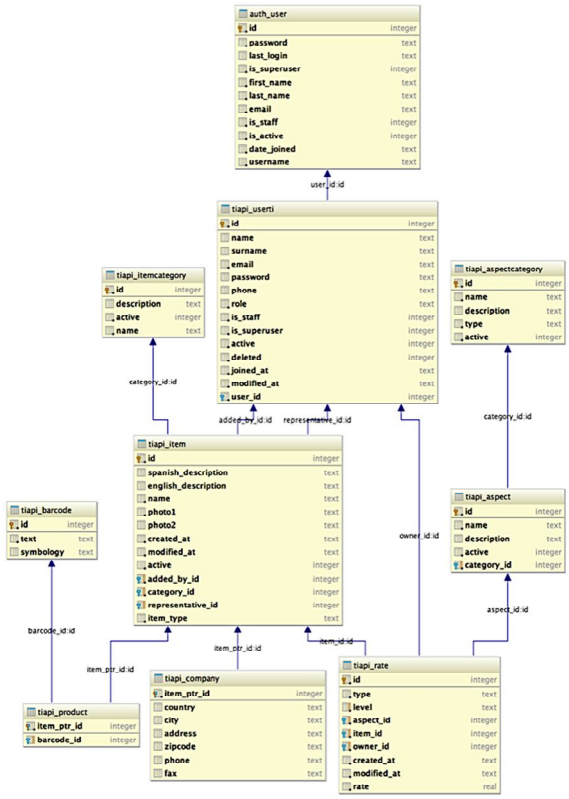

Figure 1. Entity diagram for Transparent Info

This data structure is a simplified version of the actual data model containing the core elements and concepts that we use to implement the Transparent Info system. The system is fed from ratings from four sources corresponding to the aforementioned four levels of reliability of information. In this way, each aspect is valued using 4 rating categories: AMBER (level I), EMERALD (level II), RUBY (level III), and DIAMOND (level IV). For each category, the rating of a product is a number between 0 (worst) and 5 (best). The evaluation in each category is interpreted as follows:

- AMBER. This category reflects the user-provided ratings on each aspect of an item. Users provide their own rating in this category and the total value is calculated using Safe Society Labs proprietary algorithms that take into account not only the number of votes, but also its freshness (how recent they are), and other statistic tools for providing the most accurate interpretation of the individual votes and avoiding abuses. This rating is especially important because it represents the perception of the users.
- EMERALD. This category shows the self-assessment of each aspect by the company responsible of a product or service. Companies are also rated based on how realistic these self-assessments turn out to be, so they are encouraged to provide honest ratings. The second level of rating is called Ruby based on information provided and self-certified by each company. To provide this information, companies must register a representative by providing legal documents that certify his/her ability to legally represent the company in the Transparent Info system. The management of Transparent Info is responsible for validating the documents provided and authorizing the representative.
- RUBY. The rating in this category is established by the management of Transparent Info based on official documentation voluntarily provided by the by the company representative in relation to the company or one of its products or services, as well as other trusted sources.
- DIAMOND. The maximum level of trust in our ratings is represented by the transparency of diamonds and reflects the result of thorough audits defined by the management of Transparent Info and performed by selected and authorized auditors. Only those companies that want to provide customers with the most transparent information about themselves, as well as about their products and services, and have nothing to hide will have this rating.

The system is designed to first attract companies and products that have good ratings (e.g. because they are ecologically produced, ethically managed, etc.) so that users associate the fact that a product is not listed in Transparent Info with the idea that there is a reason for that, and that such reason is related with expecting

a bad rating. If this perception becomes widespread, and if users decide to buy only items listed and having good ratings disregarding the price of the alternatives, we will be able to "oblige" those bad companies to join and to improve their behavior to maximize their social benefits as a prerequisite for the acceptance of their products and services and their success as a company.

CONCLUSION

In this paper we have presented an economic model based on assigning value to products and services depending on how much their production and the operation of the company behind them benefits the society. This model represents an evolution over previous models, made possible by the existence of current IT technologies and their application as mechanisms to prevent practices of "unenlightened self-interest". In a sense, the model takes the best of both worlds, using the principles and ideas of Marxism that relate products with their value from a social perspective (but redefining them to be provide a more accurate accounting of the social benefit), but maintaining the essence of free competition and market self-regulation that is the core value of Capitalism.

We have also introduced the concept of Socially-beneficial applications, to refer to IT systems that are designed to restore balance in situations where there is some threat or attack to society. We have also presented a specific application called Transparent Info designed to promote the ethical and socially beneficial behavior of businesses by linking their profits with such behavior. Transparent Info has been implemented and is being tested with a reduced set of users to evaluate and improve its performance; usability and to refine the criteria and the algorithms used based on the feedback provided by those users.

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