PERSPECTIVES TO RELINK THE "DIGITAL" WITH SOCIAL JUSTICE

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INTRODUCTION

For thirty years, the digital revolution has been breaking down the walls that have somehow kept contemporary economy in balance with rights and social justice. From inequalities, predation and new forms of dependency on network intelligence to the contradictions between automation, employment and sustainability, through social and geographical polarizations, there are many disruptive effects that heavily shake the edifice of capitalism and its legacy rules.

The spreading of the harmful effects of the digital is a fact. They are the subject of controversies the details of which we will not discuss. Still, their adverse consequences are strong enough to reinforce the climate of skepticism about current modernization. As several studies show[1], public opinion has reservations about the promises announced in relation to information technologies and, *a fortiori,* about the very idea of dominating the "digital destiny" considering contemporary problems.

However, despite some initial reactions to curb the most harmful digital behaviors, there is no indication that this interference will be mitigated without rewriting the established rules. On the contrary, the train of innovation has been running for five decades (miniaturization, connected objects, govtech, metaverse, etc.), and the absence of a real compass to guide the new productive capitalism heralds a stormy future. The harsher world we are heading into will make this orientation even more dangerous.

To this end, it is healthy to go up the wave of phenomena generated by the digital and approach its sources of evolution. Figures such as Von Neumann, Licklider, Tanenbaum, or Taylor, Keynes, Chamberlin, Smith and many others, have shown the fertility of such hindsight when building certain computing and economics models. The history of

1 See in particular the study *Trust in the Digital Era* by the Pew Research Center - https://www.slideshare.net/PewResearchCenter/trust-in-the-digital-era or *Les moins de 40 ans ont peur des algorithmes* - https://lexpansion.lexpress.fr/high-tech/sondage-les-moins-de-40-ans-ont-peur-des-algorithmes_1974894.html.

techniques also sheds a far-reaching light on this type of approach. For Stearns, Gille, Caron or Allen, the intrinsic functioning of a technical system modifies the architecture of thought, of production, of relations with nature and, gradually, of the social order, *being the challenge of societies to elucidate them to adapt and respond to them.*

Let's be clear: this is not to imply that techniques define the meaning of history and that it is inevitable to be subject to a new type of technodeterminism. Our intention is to point out that the current technical system powerfully rearranges the material and sociocultural conditions in which we live, leading to an adjustment of *human intentions and strategic frameworks.*

In that regard, our motivation lies in understanding our societies in the process of cyber-industrial transition in close connection with the very heart of the information revolution, that is, the universal programmable automaton, and the interactions that it has with all social strata. Although this connection seems obvious, it is still difficult to find theoretical corpus that try to assemble all the floors of this new building with a certain coherence. Here and there, analysts are rightly interested in data governance and algorithms, fundamental techniques, artificial intelligence, surveillance, two-sided markets, platforms, monopolies, disinformation, cybersecurity, ethics or the sociology of uses, etc.

But the computerized society is not just a bunch of compartmentalized phenomena or disciplinary perspectives. This representation is no longer that of the reality of computerization that has irrigated all (or almost all) the social structure through profound qualitative and organizational changes, even more so in industrial countries. Minds are clearly reluctant to elucidate these fundamental movements that forge new socioeconomic foundations.

Therefore, we feel it is crucial that this problem be addressed trying not to lose sight of current power relations. Here we explore how the nature of digital-based transformations can contribute to a perspective, if not emancipatory, at least favorable to a horizon of social justice. This will be addressed by borrowing notions developed by John Rawls, Amartya Sen, and Nancy Fraser.

UNDERSTANDING THE NEW SOCIOTECHNICAL SYSTEM IS STRATEGIC

Let us first discuss the problem of the *mental challenge*, which is a cardinal issue in the digital. *The mind-automaton couple* is at the center of this challenge. Computing equips, assists, and amplifies the human mind through the power of electronic information processing, software, and the ubiquitous network. More precisely, the individual or collective being has this technical power to automate repetitive intellectual or physical tasks, to shape matter, to design, to communicate, to act, in other words, to solve the challenges posed to human intention. Human processes and activities are thus preceded, accompanied or followed by information operations that prepare, assist or control them.

This *synergy between mind and automaton* is action oriented. It is mobilized mostly to act on the world, not to think about it speculatively or contemplatively. The relationship between thought and action is gradually changing and this transformation brings as many threats as new possibilities.

This relationship is difficult to grasp because of its novelty, but also because cognitive and psycho-sociological references inherited from previous frameworks are projected into it.

For example, the digital is often reduced to a technical object. Multiple observers, including high-level ones, merge the causes and effects of computerization or underestimate the interdependence of the layers of the socio-technical edifice that range from the physical domain (electronics) to the geopolitical dimension (global regulation and power relations between nations). This is added to the fragmentation of knowledge (informatics, sociology, economics, design sciences, cognitive sciences, etc.) whose borders have been reformulated by the rise of the information sphere.

Again, we reiterate that what is at stake is not a simple rearrangement of knowledge. The very mechanisms of thought are put to the test by the symbiosis between the mind and the programmable automaton and its insertion in the organization. The organization that computerizes, whether it is a company, a network or an institution, should model its processes through a rationality capable of representing them. It is required to explain its management rules and its frame of reference, elucidate problems, practice abstraction, articulate logic between them and develop its language, rigorously rooted in reality. The modes of knowledge involved in these approaches are more pragmatic, realistic, and constructivist than mechanistic or dogmatic, and *knowledge is asserted as a process rather than a result.*

On the philosophical level, computerization somehow revives the cognitive approaches deployed to explore the world of nature, through empiricism or positivism. These approaches occur within the mental universe, that is, in thought moved by the purpose of acting (with the aim of designing, manufacturing, communicating, directing, assisting, etc.). Computerization encourages us to grasp realities that have not yet been formalized, to reason in a preconceptual way, to judge the relevance of concepts, briefly, *to think lucidly about the world in order to act on it.* Strategically, it implies representing the emerging cyberindustrial world and adopting a roadmap to become a leading actor.

Economy, area of preference for this implementation, and to a lesser extent the other social strata, tend to be faced by new questions. How do we learn to live with the automaton and define the roles between it and the individual or collective being? How do we arbitrate the new dialectic between the means deployed by computerization and the ends that it reveals? What general orientation do we have to frame the transformations underway?

In fact, thought in the face of computerization is like a Pandora's box. In many respects, thought and culture are strongly separated from technique. Institutional rigidities lead to neglecting the quality of information systems, which form the new nervous system of the productive and institutional universe. Ideological preconceptions are very often added to the new physical and logical reality that digitalization supports. The new economic landscape and its relationship with the social sphere are gradually losing direction and intelligibility. The disruptive effects that we have mentioned at the social level are linked to what we have the right to call an *underdevelopment of thought* about computerization. The dispersion of the narratives that surround the digital, which go in a continuum from techno-obscurantism to fascination, is a symptom of this.

This diagnosis could be nuanced by the fact that leaders and entrepreneurs in certain countries have grasped the nature of the new network economy (the United States, China, Israel, Japan, India, China, Korea, and Singapore). But this is true only for some of them; the “digital divide” is equally present in the environment of decision-makers when one moves away from a first circle of pioneers and scholars.

In this context, *reinvesting in the understanding of computerization* becomes a condition for the effectiveness and control of the sociotechnical system.

REDISTRIBUTION OF INTELLIGENCE, DECISION AND RELATIONSHIP

Some refer to the stormy departure from the industrial society that dominated the nineteenth and twentieth centuries. Although emerging countries have attained an overall reduction in poverty, the polarization of wealth has increased since the 1970s, while inequalities threaten to break the social bond in several societies. Economic growth is stagnant, except in the most conquering countries. The proliferation of networks, platforms and robots has changed old hierarchies, employment and the enterprise, also shifting the border between industry and services.

Although in continuity with the old industrial world, the foundations of the new productive universe have been redrafted since the 1970s. This inflection coincides with the spreading of neoliberalism and the start of the information revolution, both of which were fueled by the socio-economic vacillations that prevailed at the time, as Niall Ferguson recalls. Since then, the "symbiosis" between the mind and the automaton has inspired a whole series of transformations in the industrial environment.

In fact, the mind-automaton pair has introduced a new *"mental resource"* into economic resources. This resource is the intelligence produced by the interaction between the human being in activity and the automation of certain repetitive physical or intellectual tasks by the computer, be it design, processing, memorizing, editing, archiving, etc. The mind provides human intelligence, made of discernment, sense, creativity, empathy and the ability to take initiatives that the computer is not capable of. The latter performs a repetitive action, defined in turn by a human intelligence that has been previously transmitted and programmed in the organization's computer and information system.

Meanwhile, the activity of work agents has shifted towards tasks that require intelligence and discernment, including the relational intelligence that is increasingly developed with actors outside the world of the organization (with suppliers, partners, users, customers, etc.). Employment has thus qualitatively evolved towards an activity rich in design and engineering. It has also become more specialized, and the organization is responsible for ensuring better cooperation between agents with more varied specializations. The continuing increase in the space for services in international flows is an example of this.

Now, this gain in intelligence based on computing resources–which we could resemble to *cognitive power*–is generating a substantive movement in the production universe. On the one hand, the mind-automaton symbiosis reduces the purely repetitive tasks that are more inclined to a logic of rigorous control. It also changes the content of the division of labor by redressing the balance between less-skilled labor and higher-skilled design activity. On the other hand, the exercise of intelligence (and its synergy within the organization) requires conditions conducive to creativity, trial and error and autonomy. It needs an environment based less on the "mechanical" obedience of the agents and the Fordist compartmentalization of competences than on a climate of greater freedom and initiative. The organization is gradually set to assign to its labor force a *legitimacy* (of discernment and decision) in accordance with its responsibilities.

These mutations are palpable in reality, both positive when they give rise to virtuous results, and negative when they are hindered or limited. Thus, since the 1980s, the valorization of intangible capital and intelligence has channeled employment towards services and the better educated middle classes. This is shown by the Lakner-Milanovic

curve with the most massive share of this class in global wealth. The new management, many times presented as an avatar of the neoliberal trend, was one of the ways to promote motivation and communication between the components of the productive enterprise.

In industry, the economist Pierre Veltz observes that the source of *effectiveness* is increasingly *"relational"*, as competencies become more synergistic and information systems interconnect partnerships and technical systems. On the other hand, this relational competitiveness cannot be replaced by the automaton. Industrial operations thus see their productivity *depend on the quality of the system and the cohesion of the whole, rather than on work efficiency.* These phenomena tend to displace the vertical geometry of companies towards more reticular patterns.

On the side of the negative trends, the dynamic is just as visible. The power of computers has stimulated new forms of exploitation and dependency. This is the case of gig workers (job insecurity, mini-jobs, "uberization" of work), algorithm-based finance and, more broadly, the practices that fuel a parallel economy. Excessively hierarchical conditions, contrary to the creative exercise of the workers' mental resources, also lead to the degradation of the labor market and subjective suffering.

In addition, the change in the division of labor has disclosed a top-down exclusion of the less educated professional segments, which in turn fuels social polarization. Schumpeter, Keynes and Kuznets had pointed out this phenomenon present in the stages of economic development. The distributive balance that was previously better assured between wealth, volume produced and labor, is now condensed around the stages of design and engineering.

At this point, let us consider the following perspectives regarding the horizon of social justice that we have set. The emergence of an exploited *mental resource* in the computerized economy is at the origin of an *organic redistribution of intelligence and decision.* In developed countries, it has been misunderstood as the heralded decline of industry when it marked the advent of an industrial renaissance (hyperindustrialization). For workers, this represents a greater incentive to understand the production environment, as well as to manage relationships. This redistribution involves a new type of balanced exchange (in the sense of Walras and Smith) and, consequently, a certain relationship of respect and equality not only within the trade market, but also within organizations.

Seen this way, the computerized economy makes a positive contribution in terms of *freedom and relationships.* It also goes in the potential direction of better *cognitive distribution,* an important issue for Amartya Sen and Nancy Fraser. But this redistribution and the relationship with equity are established in a *dual* way. On the one hand, equity is potentially enhanced by better consideration of workers. On the other hand, it is harmed by the concentration of capital and skills in the middle and upper classes, which is reflected in the social and geographical sphere from the local to the global scale.

MONOPOLISTIC COMPETITION, INNOVATION AND QUALITY

Innovation, a stereotype of the digital, has continued at a constant pace for sixty years in the fundamental layers of computing (semiconductors, microprocessors, computers, networks, etc.). Under the effect of an emerging *design economy* discussed before, it also structures a broader dynamic of *qualitative innovation of goods and services* and of convergence. The center of gravity of this dynamic is the *regime of monopolistic*

competition, emblematic of the computerized economy, whose yields and antagonistic effects are probably the most controversial.

At the base of this economic matrix, we have seen that computerization refocuses the production universe around the *design and engineering* stages. By doing so, the initial investment costs are condensed around these stages. Fixed costs for research, development and the provision of a set of goods and services and their organization become important, even predominant, in contrast to marginal costs that decrease in proportion to the profits resulting from automation. This initial cost can be considerable, as is the case in the semiconductor industry.

The activity of design refers to intelligence work. It has become more important than the flow of "living work" necessary for production, again in variable proportions depending on the nature of the sector of the activity in question. In the past, this relationship was reversed, with design work being insignificant compared to what was done by labor. The computerized economy has thus acquired a *high-intensity capitalist* profile. This profile, whose history shows that it is conducive to *economic violence,* generates new risks, particularly those of the *predation of capital* and the use of coercive means to reduce the uncertainty linked to entering a highly competitive market. Hence the strategies of amortization of fixed costs and strong market conquest that we observe in the economic universe.

These characteristics are an iron law in the field of software and integrated circuits where most of the activity takes place in the initial design. Returns to scale are increasingly higher. This is illustrated by the level of market capitalization of digital unicorns and the predation they incur. But the same thing happens with network, telecommunications, transport or energy infrastructures, whose capacity depends on the initial dimensioning. This premise also applies to services to the extent that the establishment of a network of skills is accompanied by prior investment.

Little by little, we see schematically that *another shift is taking place in the models of the mechanized economy.* The main regime of the market is no longer that of perfect competition, but of *imperfect and monopolistic competition* (or even natural monopoly). The dominant market regime becomes one where a group of companies compete to win a monopoly. The fight for the monopoly generates a flow of innovations and a differentiation of the goods introduced in the market. Thus, each product results from *qualitative differentiation,* adapted to a segment of needs.

On the consumer (or user) side, the response to such an offer follows a demand with variety. In fact, everyone is encouraged to choose a variant that they will consume (or use) according to the purchase price, but also to its perceived quality. This *perceived quality* results from a subjective preference that gradually changes the way value is traditionally set. This then acquires a more subjective, qualitative and imprecise character, the one it had before the unification of the market, and which modifies *the utility function.*

The stage of conquering a monopoly and placing a product on the market follows a logic of a high initial price that later decreases with the consideration received and the competition of other varieties claiming their share of the monopoly.

This comprehensive dynamic is accompanied by an *increase in quality* and a reduction in manufacturing cost, causing value to migrate more towards quality than towards quantity. In fact, quality productivity has become a determining factor in economic strategies, through the traceability of product reliability, the diversification of variants or the

temporary response capacity to demands. Observation of the world economy in the medium term confirms this positive progression in the quality and prices of industrial goods.

Here again, we are faced with destructuring tendencies whose impact is ambivalent in terms of social justice. On the one hand, computerization establishes the *development of monopolies* and an unstable and conflictive economic environment, even more so when the regulatory frameworks are lax or anachronistic. Unemployment, inequalities and the enrichment of a superclass are the many facets of this reality. On the other hand, the regime of monopolistic competition establishes a dynamic favorable to innovation and the *increase in quality and competition.*

This gain in skills is a (potentially) *equalizing force*, with a tendency to reduce the social and cognitive gap between the trained workforce and the management staff of organizations. In addition, the agents' training and experience mean that they hold an ever-increasing part of the social capital and the skills of the organizations. It should be noted that these developments promote the search for new organizational arrangements regarding the geometry of companies and institutions (in terms of ownership, shared responsibilities, distribution of value, etc.).

It should be noted that the computerized economy is far from building a system capable of spontaneously advancing in a virtuous and coherent direction. On the one hand, the behavior of economic actors is contrary to the physical nature of new economic regimes, which brings us back to the field of *political economy and effectiveness.* On the other hand, there are multiple distinctive signs of ineffectiveness. Among them, unemployment sterilizes a large part of the labor force, as the new economy *demands quality and services.* The "services" industry continues to focus its production on the development of goods and often encourages an outsourcing that is far from equitable. With this outlook, production has been relocated to low-wage countries. Finally, while the economy pivots more based on the competitiveness obtained by innovation and the conquest of a temporary monopoly, many companies persist in mass production and price competition.

In a broader way, the *neoliberal doctrine* has taken a path contrary to the role that the State should have occupied in these new economic regimes. The productive system has been mistreated by a financial sector submerged in deregulation and shareholder value. Institutions in favor of the idea of effectiveness ensured by perfect competition are opposed to the new standards required by *monopolistic competition.* In the case of the European Union, this vision has notably broken the cohesion of infrastructures in telecommunications, the railway network and electricity.

All these behaviors make up the fabric of what could be described as a *more or less widespread renunciation before the computerized economy.* This is explained by the precariousness of the guidance frameworks and the conditions of effectiveness, regulation and thought surrounding the digital economy today.

INFRASTRUCTURE, GLOBAL REBALANCING AND SUSTAINABILITY

The rise of monopolistic competition on a global scale has forged the image of forced commodification based on private resources, the sanctification of knowledge, the reduction of wages or fiscal dumping. These phenomena exist without a doubt and provide the weapons of an economic war that has never stopped occupying the international space and

whose modalities have evolved. The intertwining of this economic warfare with the power of information underscores the importance of immaterial issues. However, the *economy of design and competition* that we have described is closely linked to *shared social resources.*

These shared resources are material, intellectual and cultural. These are *infrastructures* for education and training, transport and logistics, energy and communications. The *capitalist intensity* that underpins the computerized economy also refers to a financial infrastructure that must first respond to the distribution of the investment risk among multiple partners. Silicon Valley is an example of this with the raising of private capital from previous economic successes and a network of skills spread across the globe. In Europe, this financial recycling is less accessible; businessmen must rely more on public investment.

While the old infrastructures (roads, telegraph or telephones) connected companies and their specific tools from the outside, their modern versions set up an environment that *links all production or exchange operations.* In fact, the Internet is an ubiquitous network that develops this structuring through information systems. These systems ensure the consistency of the *assembly of goods and services* in a network of partners.

The State is undoubtedly a privileged actor in the creation and maintenance of this expanding environment. There is no modern economy without a *strategist State* and without access to science, knowledge, expensive infrastructures and the confluence attained by technical or professional communities. This pooling of infrastructure requires duration, memory, relationships, shared experiences and trust that, ultimately, refer to the growing role of territorial networks.

The notion of a *strategist State* is hardly conceivable without associating the idea of containing *the predation that acts organically in computerization.* Automated banking has fostered financial markets which take advantage of price volatility and drain wealth from the productive system. Criminal economy uses electronic opacity to launder assets, destabilize certain institutions and companies or bail out exorbitant assets.

Faced with these predatory behaviors, public power is required to ensure *horizontal coherence* in territories destabilized by the centrifugal forces of the contemporary economy. In fact, globalization and connectivity have eroded the horizontal coherence that previously governed the balance between metropolis and peripheries. The local territory is exposed to the global market (particularly skilled labor), while the power of the network transfers value and skills to high-productivity poles under the guise of free trade. Societies that fail to anticipate these disaggregation dynamics are destined to increase their socioeconomic weakness.

In terms of social justice, it should be noted that the strategic vacuum created by a digitization that evolves in ineffective conditions is a *call to public power and citizens.* The need for infrastructure coincides with the return of a State capable of putting limits on dislocation and ensuring greater cohesion and equity. Citizenship is projected more strongly at the global level, having multiplied the contributory capacity of individuals thanks to the development of networks in a context of relative remoteness from large hierarchical bodies, with all the ambiguity that this mutation may entail.

There is room for maneuver to reinforce territorial coherence: economic intelligence, initial and professional training, competitiveness hub and public-private synergies, social economy, support for innovation and regulation of temporary monopolies, mobility and common infrastructures, and reform of the *modus operandi* of the State. It should be noted

that this is more about *active involvement in mutations* than a purely restorative approach, although solidarity policies remain central.

For citizens and social movements, the reflex of interpreting this world in germ from the interpretation models of "mechanized" history is tangible. The answers to the contradictions of the hour are sought in rejecting the technological power, stigmatizing the new productive capitalism or in a victimizing withdrawal fixed on acquired rights and old institutional solidarities. By the way, these interpretation models are still partially valid, and contradictions are palpable. On the political level, the extremes keep on developing their business there. However, citizens and civil society are subject *to the same challenges of understanding* that remain insoluble in preconceptions and easy Manichaeism.

Two *rebalancings* must be mentioned to complete this general perspective of social justice: *global redistribution* and *sustainability.* On the one hand, the emergence of computerized economy has contributed to the progression of a global middle class and, on the other, to the affirmation of this dual and conflicting landscape. In the decade after the 2008 financial crisis, the share of old industrial countries fell below two-thirds of world production. Industrial production growth has been around 6 % per year in emerging countries (2 % or less in developed countries). This marks the end of a divergence between the South and the North, or rather between the West and the East of Eurasia.

However, this rebalancing is far from being homogeneous. Several emerging countries are affected by deindustrialization, while the former rich countries continue to represent an essential part of the production of industrial goods due to their leading-edge technology. The trend towards the polarization of the manufacturing industry in a restricted group of countries, particularly under the effect of new economic regimes, is a harbinger of serious imbalances.

Finally, *sustainability* raises the thorny question of the *ecological footprint* of this new technical system. How do you take stock when computerization is so widespread and is accompanied by qualitative changes in all areas? The first two industrial revolutions generated a takeoff of the consumption of matter and energy to the extent that they were entirely based on the triangle of matter, wave and energy.

Information technology adds information to this triangle. But it has endogenous properties of footprint reduction (thanks to Moore's law) and the "renewable" nature of the mental resource. The deployment of mental resources causes an effect contrary to the principle of entropy and thermodynamics, appreciated in the mechanized economy. They reintroduce a negentropic dimension into the economic matrix, that is, a factor of organization and reduction of disorder, which encourages ecological worldviews to update their conception of the social and natural environment.

According to Moore's Law, the efficiency gain of microprocessors amounts to a factor of about a million over a forty-year cycle, not counting the improvement in storage density and connectivity. Contrary to popular belief, the exponential increase in data traffic is not proportionally correlated with energy consumption[2].

In addition, the improvement of knowledge, that is, the renewed and accumulated mental resource, is a decisive factor in optimizing the use of scarce resources (in particular, through the progress of algorithms). Embedded computing on a growing number of

2 This study by the International Energy Agency shows, for example, that from 2010 to 2019 network traffic increased twelve-fold, while electricity consumption remained stable. https://www.iea.org/reports/data-centres-and-data-transmission-networks

equipment is another path to optimization. All of these factors ultimately contribute to *reducing the amount of material used per product unit* and increasing the quality of the mentioned economy.

However, this should be offset by the *rebound effect* and *mass consumption*, as well as *planned obsolescence*. Although information technology is an industry favorable to the reduction of the global footprint of the system of goods and services, current development continues to stimulate a fantastic mobilization of resources in raw materials and industrial processes. As such, emerging societies are not far from eclipsing the capture levels of industrialized countries.

Once again, we return to the field of *political economy.* Computerization can only make a full contribution to a sustainable world if it implements *its own sobriety and is part of a broader reorientation of production models.*

PERSPECTIVES

The journey we have undertaken schematically raises many more questions than those suggested by the misleading term “digital”. Under the effect of computerization and in a few decades, the fundamental gears of economic reasoning have been transformed: the production function, the distribution of initial resources, the nature of products, the functioning of the market, utility and pricing.

The regime of *monopolistic competition* has been deployed in the global market. In proportion to the degree of computerization of each human activity, it introduces an ultra-capitalist economy of maximum risk, structured by innovation, in which the modalities of *economic warfare* are expanded. These modalities foreground the dialectic between exchange and predation, between the rule of law and feudalism.

An *economic matrix of design and competition* emerged from these mutations. Work has changed. The border between industry and services has disappeared. The world tends to be organized in poles and networks, while value chains branch out into complex partnerships or outsourcing. The productive geography of the territories is remodeled as the development of the metropolitan downtown contrasts with the inertia of the peripheries.

Although a handful of business and public actors have been able to invest wisely in computerization, the majority are still on the slope of *ineffectiveness and predatory instrumentalization.* These two variants, whose causes are simultaneously physical, cultural, cognitive, political and economic, contribute to fueling the ambivalences that are observed regarding the impact on social justice.

The new economic matrix conveys structural dynamics capable of spontaneously favoring freedom, equity, the construction of relationships, the redistribution of meanings and knowledge, citizenship and sustainability. However, the *lack of guidance and philosophical appropriation* of what is at stake leads it to move in contradictory directions and with no other pilot than that of voluntarism or power relations. The entrance of the concert of nations in a multipolar world is a great contribution to this.

Given this lack of guidance, we believe that it is necessary to deepen a *strategic construction* effort. Actors and societies need to imagine how the computerized economy can come out of its transitional crisis and develop its effectiveness in view of the intimate

reality of the technical system and the universe it generates. In other words, it is about generating a representation capable of guiding decisions, containing predatory behavior and *federating wills around a common horizon.* For the authors of this text, this perspective crystallized in the notion of *iconomy*. Many other initiatives can be undertaken in relation to the geocultural foundations, the struggles and the values of each society.