

INTRO

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The phrase "*The Future is ours*" –a recurrent slogan in the Anglo-Saxon context– is used to claim that Calvinistic vision about the world: every person is the owner of their own destiny, and God is their companion and mentor (not the judge who guides their plans, as it happens in the Catholic world). Furthermore, it is also the title of a book published in 1996 by the academician –and also my friend– Graham May, then Director of the Master's Degree in Foresight at Leeds University (United Kingdom). Professor May made his own classification of Futures Studies in that book and spoke about three approaches; three ways of 'looking at the future,' namely: Foreseeing; Managing; and Creating. The creative option was relegated (by law) to the other two (based to a greater extent on what is probable and plausible) in the management of organisations at that moment –almost twenty years ago. Those were still times of structural stability when determinism dominated academic research, organisational management and citizens' general thinking, and it was still believed that the future could be predicted through extrapolation, taking as a reference what had happened in the past.

The world has changed considerably since then: the 21st century started with the 9/11 terrorist attacks and has continued with an unprecedented financial crisis – except for the crash of 1929. A series of unexpected events regarding both their occurrence and/or magnitude took place in both cases which situated the system on the brink of collapse (by the way, security and economy feed each other) and highlighted the system's inability to forecast breaks; meanwhile, the Internet, which was then starting to expand beyond its natural context (security and education), has now become a mass phenomenon, as well as a key element in most of the planet's social life. The combination between the World Wide Web and the development of telecommunications has generated a new scenario where the unidirectional access inherent to the first phase has given way to interaction as a rule (between individuals and with the Net itself). Forecasts say that the next step will be based on artificial intelligence, and also that a higher degree of integration between man and machine will be achieved –with all that this might mean; to which must be added that the world has changed on a geostrategic level with the 'appearance' of alternatives to the traditional hegemony; the so-called BRICS (Brazil, Russia, India, China and South Africa) run as such in their capacity as emergent economies. This can introduce remarkable changes in structures as well as in processes.

For all those reasons, the instruments which had so far been used to face uncertainty and look towards the future, mostly supported on determinism and extrapolation (what happened in the past and its inertias) and on plausibility (what is possible and probable according to our extrapolation models) have proved to be insufficient nowadays –and sometimes sterile or even counterproductive– when it comes to developing a strategy. They were simply conceived within a context of structural stability and can no longer be used to guide decision-making processes in a period like the present one, characterised by outright indetermination, total and global interconnectivity and constant change. In fact, the aim now is not to 'predict' what will happen in the future from a probabilistic point of view in order to adapt to it; it does not even suffice to anticipate alternative scenarios based on the plausibility of one event or another. Being proactive is not enough; neither for

organisations nor for individuals. It becomes necessary to introduce creative thinking when it comes to generating images of the future; speculators and terrorists used this in their own interest knowing perfectly well that the system would never use it to foresee their actions due to the prevailing overconfidence, navel-gazing and self-complacency.

At present, creativity has become the central element which must go hand in hand with proactivity: there is a need to generate opportunities, to reinvent ourselves, to think about the future in an innovative way (not as an extension of the past and the present), and to openly integrate multiple visions which can provide a wider range of possibilities. The future must be tackled creatively; it must be invented, deciding where we want to arrive from the present situation, providing the means to achieve it, and guaranteeing sustainability for the process (decades may elapse between an action and the visibility of changes). Therefore, proactivity must be accompanied by creativity when it comes to generating images of the future which can serve as the basis to design and plan a strategy for the community (whether it is a national or a supranational institution, organisation or enterprise).

However, everyone on a boat must agree on the essential: where to set course to. They need to choose a shared image of the future. There must be what **Janet Faulkner** calls communal 'spirit,' based on a shared system of values and the hope of a better future for all the community members, these being both key elements in order to articulate social change processes that can integrate young people and help them to give their best.

As is rightly pointed out by **Jennifer Gidley**, the loss of values and meaning derived from the lack of a future perspective and a sense of community (what Janet called 'spirit') may have hugely destructive effects not only in terms of communal break-up but also directly on individual health. The absence of a horizon and the lack of perspective, together with the non-existence of expectations –precisely what gives sense to life– leads to despair and depression; and a community's welfare is only possible through the welfare of all its members; thus, **Ryota Ono** dares to state that the main reason why Japan (which used to be an emergent power until the 1990s) finds itself in the current situation is the absence of a positive image of the future.

It can be stated as well that, looking at the other side of the coin, a positive image of the future, the existence of expectations and the motivations to achieve them, have a tremendous mobilising effect. The cultural perspective is essential in this respect, since our way to face life and changes is determined by the system of values that we take as a reference. As told by **Rakesh Kapoor**, the cultural dimension (and not only the socio-historical situation –which is important too) becomes essential to understand the optimism with which young people from India face their future.

Youth represents the greatest asset owned by a community as far as future is concerned. This is something which they seem to have widely accepted in India – but also in South Africa, as pointed out by **Maphuti Manny** and **Refilwe Ramatlhodi**; no wonder the South African government is following the footsteps of Finland (another country where this has been clear for a long time) when it comes to articulating the educational system with the national innovation system. **Débora Rodrigues**, **Ana Bossler** and **Priscila Lima Pereira** tell us that this approach –i.e. integrating innovation and education– turns out to be essential to explain Brazil's economic growth; as shown by these authors, university incubators have become a key strategic element as tools for social inclusion, helping to bolster entrepreneurship in the country.

This is an idea that I, **Enric Bas**, insist on reinforcing by claiming the central role which must be played by education in the development of an innovation culture (as an essential element for a community's welfare and consolidation), together with the establishment of Open Innovation Ecosystems which can encourage entrepreneurship from the real integration of the productive fabric, the educational system and the research framework. As **Simone Arnaldi** rightly explains, formal education is –and continues to be today– the dominant form of socialisation in modern societies; the means to transmit the characteristic values of a culture. Hence its essential role –that of education– as a strategic element for the survival of a community; only training its young people properly will the community have a future.

And what does 'training properly' mean? On the whole, it could be said that it basically consists in providing individuals with the skills –professional tools (aptitude) and personal ones (attitude)– required to survive in the socio-historical context that we are immersed in: a global, hyper-technological capitalist economic system in constant transformation. **Miko Laakso** and **María Clavert** explain some of the keys to the success achieved by the Finnish excellence model (where training, research and transfer are integrated) through the specific experience of the *Design Factory: design thinking*, multidisciplinary, creativity, connection with enterprises and the active participation of students.

No perfect formulas exist and there is no such thing as a fixed and normative 'proper training': training has to adapt to the changes occurred in the environment seeking to make sure that graduates, young people, are acquiring exactly the personal and professional skills that they will need tomorrow (not today). And that –as **Anita Rubin** reminds us– implies systematically rethinking the educational model. This prospective vision is well settled within Finland's educational model: in their view, it does not suffice to have reached excellence; now we need to maintain it, to carry on thinking prospectively..., reinventing, looking for alternatives...

Ulrich Reindhart tells us that it is necessary to achieve an active integration of young people in all the processes which have to do with the future of the community (which is also their own future as individuals), and that integration must be reached by means of participation mechanisms which promote young people's involvement in such processes. As **Antonio Alonso Concheiro** rightly points out, students must be listened much more than they so far have been listened to, thus avoiding a colonisation of the future from the present to which we have no right (sic).

The educational environment –and that includes the success of the *Design Factory (Aalto University)*– is the ideal one to 'activate' young people. In this respect, **Mario Guilló** has shown how online tools and platforms can be developed for the purpose of stimulating and channelling –through formal educational institutions– participatory processes that can enable youngsters to identify images of the future, to contrast them, and to develop a collective type of learning.

This integrating and participatory way to deal with learning will be essential to survive in the 'New Economy' described by **Jerome C. Glenn**; a new scenario where the pre-eminence of digital media will be overwhelming, values will gradually be transformed, and a sort of 'collective intelligence' will develop, assisted by the breakthroughs in artificial intelligence, nanotechnology, etc.

On the whole, this work shares the 'communal spirit' claimed by Janet as an essential driving force which makes it possible to look towards the future –with which we started this account. Because this *ad hoc* community –the one signing the special issue about Images of the Future in Youth– is extremely heterogeneous in

terms of age, gender, creed, ethnicity, nationality or disciplinary approach, among others, all its members share the same common spirit: the commitment to young people and their future, which is the future of us all.

This is something which has been very much present in the creed of prospectivists from around the world ever since the origins of Futures Studies (not surprisingly linked to the Club of Rome and the United Nations): we do not work to describe a probable future, but to create a better future.

It is thus a source of pride for us to introduce you to the work of some of those who are currently (and some of those who will be) the world's most important and renowned experts in the research and analysis focused on images of the future among youngsters. Hopefully, it will be of interest to you.

EDUCATE TO INNOVATE: INNOVATION AS CULTURE. YOUTH, PROACTIVITY, CREATIVITY, PARTICIPATION AND SHARED VISION ABOUT THE FUTURE

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ABSTRACT

Spain has a serious cultural deficit which affects our innovative capacity and, therefore, our productive capacity and the competitiveness of our human capital and our enterprises and institutions; and ultimately, our possibilities as a country too. The future of Spanish young people –in the present-day context– must necessarily include a deep structural reform based on the design of an educational system. And this educational system needs to be integrated into a national innovation system which can serve as a framework for decision-making in the short, medium, and long term.

This educational system must become the epicentre for the country's recovery and has to be completely focused on maximising the competitive potential of young people, generating an innovation culture –non-existent to date– which has its roots in the earliest ages and a complete development in higher education. An innovation culture which can instil a new system of values into youngsters underpinned by a work ethics based on effort, co-responsibility, proactivity, collaboration, creativity, empathetic capacity and active participation.

If it really seeks to generate a true innovation culture among young people, Spanish higher education should meet –at least– five conditions which are in turn interconnected: pragmatism (i.e. the curriculum design must be focused on the practical resolution of problems and not on an ideology); contextualisation (it needs to be based on the needs of the socio-economic environment and connected to it actively, and not only symbolically); sustainability (it has to be designed so that it can survive transitory political changes); an overall vision (it must pay attention and remain connected and integrated into international experiences and excellence centres) and a strategic vision (it needs to have clear and specific long-term aims, anchored in a shared vision about the future –on which the community has reached a consensus).

Some experiences can serve as a reference (the Finnish case is mentioned here): building an innovation culture may take one generation (15 years until the effects start to be seen) and must inevitably include achieving not only an integration between the educational system and the innovation system but also a strong support for that integration from civil society. However, that requires the development of mechanisms and participation spaces which make possible a better use of our human capital and the improvement of several skills both individually and on an organisational level, among which could be the 10 skills proposed in the present paper.

KEY WORDS

Innovation culture, Proactivity, Entrepreneurship, Youth, Creativity, Participatory Foresight, Open Innovation Ecosystems

1. SOCIAL ECOSYSTEM AND INNOVATION

To start with, it is worth highlighting that when people speak about 'Ecosystem', they very often fall into the simplification that represents assimilating this concept with that of 'environment.' The idea of Ecosystem as such must be approached from social sciences and goes beyond the concept coined from the field of ecology, which defines it as the natural system formed by all the living organisms and the physical milieu where they interact with one another. Thus, according to the Theory of the Social Ecosystem, an ecosystem would be made up of four elements, namely: environment; population; social organization; and technology (Hawley, 1991; Díez Nicolás, 2004). These four elements are not understood as a set of isolated elements but as components of a system which interact constantly, as a result of which the changes experienced in each one of them may end up affecting the whole group.

Therefore, it can be said taking as a reference the concept of Social Ecosystem that, unlike the rest of living creatures, human beings base their collective survival on the adaptation to the milieu through the generation and transmission of culture –a distinction can be drawn here between elements from non-material culture (systems of values, beliefs, etc.) and elements from material culture (technology, knowledge...) (Díez Nicolás, 2004). All living beings have the survival instinct by nature, but only human beings seem to be able to adapt the environment to our needs through the alteration of the resources available, the invention of new social organisation forms, the transmission of renewed systems of values, and so on and so forth.

Likewise, human beings also have as one of their peculiar characteristics the need to think about the future (Bas, 1999). Although other species show a certain interest in the future too, only man owns the capacity to assimilate and plan a wide range of future events (Makridakis, 1993). Such a necessity inherent to the human being may have a strong cultural root (Herbig & Dunphy, 1998) and its greater or lesser rootedness will largely depend on the system of values adopted by a group (Weber, 1998). It thus becomes absolutely necessary to analyse how the cultural factor (both material and non-material) influences the development of a shared vision about the future.

However, the shared vision about the future as we understand it –collectively generated, consensus-based and implemented– has never played the prominent role that the current context requires, that civil society demands, and that (public and private) organisations seem to need badly in order to survive within an ever-changing reality characterised by: interconnection; the collective generation of knowledge and information; and hyper-communication. It is a reality that demands from every Social Ecosystem (and every community): an optimised utilisation of the human capital that they own; an updated knowledge of the environment (and the opportunities and contingent dangers which may be generated in it); and an accurate understanding of their own weaknesses and potentials that make possible a consistent decision-making based on strategic vision. A reality which requires a change within organisations (from more hierarchical/vertical and élite-controlled to more participatory/horizontal and integrating) so that they can continuously reinvent themselves –by means of innovation– and thus have real options to survive.

It is no easy task to find a single social system in the history of mankind where a specific collective or social group has not been –explicitly or implicitly– subjugated by another. The use of information and knowledge (through religion, ideology, economy or technology) has repeatedly acted as a weapon to implement a situation

characterised by the domination of some over others. And that continues to be the case: one only has to read the national and international press.

The aforementioned use of information concerns both the past (it has always been said that history is written by the victors) and the present (the control exerted by the media and its materialisation in social control through the influence on public opinion) and, of course, the future: the management of individual and collective expectations –whether it is by means of advertising or through the election manifesto, among many other options– is an infallible weapon to lead a community's fate.

With the exception of certain historical episodes and very few specific experiments (perhaps the assembly-like and communal movements supported by the libertarians and their sequels –the hippy movement, May '68, etc.) there are few moments in History when knowledge, creativity and innovation (which is not the exclusive property of technology –as some want to make us believe– but covers every aspect of social life: rethinking the operation of a National Parliament, or of Universities, generating a new action model which is innovation too) have been postulated or claimed as contexts open to the participation of any community member.

The maxim "Innovation for the people, but without the people" –which paraphrases the one coined by the Enlightened Despotism– seems to have prevailed in design and strategic planning (in all fields: from politics to economics, and including security as well) to the present day. It is a maxim which apparently became useless after the advent of a new social reality characterised by a change towards more open and participatory paradigms, which has ultimately assigned a central role to the individual (user, beneficiary, citizen...) as the main character of every Social Ecosystem. Hence the stream of thought linked to Human Centred Design and the other approaches which reclaim a prominence for the individual that the latter has lacked for centuries.

A context like the present-day one, a liquid world characterised by globalisation, interconnectivity and flexibility, is leading to the establishment of a new approach to Innovation that is more horizontal and open; more open and strategic; more integrating and participatory. Therefore, it becomes practically unfeasible to make proposals with possibilities of success in any sphere of social life or any organisation without the active involvement (endorsement or submissiveness do not suffice any more) as well as the sustained involvement (participation at specific moments is no longer enough) of individuals (citizens, consumers, employees...).

It consequently seems that having a vision about the future (imposed/suggested/anticipated by preachers, political leaders, visionaries, executives, technologists or experts) does not suffice for a Social Ecosystem (regardless of whether we are referring to an enterprise or a State) –for the community by which it is formed– to survive in the future; instead, that vision about the future needs to be shared. In other words, it must be generated by the actual community (according to its needs and expectations), approved on the basis of consensus by the individuals belonging to it (as a 'lowest common denominator' in its heterogeneity) and implemented in a coordinated manner by the institutions around which it is structured.

Therefore, the only way for any innovation (the implementation of a creative idea which can help to reach higher levels of economic development and/or social welfare) to result in greater welfare and socio-economic development –nowadays– is to be generated from individual contribution and widespread consensus in a

community, within the framework of the Social Ecosystem where that community lives.

2. FINLAND AS A PARADIGM

The systems of values –as part of the non-material culture which is transmitted within a society– are of paramount importance when it comes to adapting to the Ecosystem and, therefore, the transmission and strengthening of that system must become a priority on an educational level. One cannot fail to mention the Finnish example at this point, insofar as it can be regarded as the paradigm of a developed society which has reached high welfare levels on the basis of a productive model underpinned by knowledge management and wealth redistribution.

Finland is a country which has been assuming a firm and decisive commitment to an economic and social development supported on an exemplary educational system and a correct utilisation of the (material, human...) resources available ever since the late twentieth century. It is a commitment based on a shared vision about the future (originally generated from below, from civil society), designed from: self-knowledge (weaknesses and strengths); the proper understanding of the context, participatory foresight (a consensus-based strategic planning: the Parliament's *Committee for the Future* –where all the political parties in parliament have a representation– is the living proof of this way to understand the construction of the future); and pragmatism when the time comes to make decisions.

The aforesaid commitment has lifted Finland to the first positions in the PISA report rankings, thanks to which it has been the world's leader in educational matters for over a decade and has become a model to follow for many countries around the world. Another of the key factors in the development of the knowledge economy in Finland was its bet on Innovation, something that is clearly revealed by the fact that it belongs to the group of countries that make a greater investment in R&D (3.7% of the GDP in 2008). And this orientation towards innovation processes is not only reflected in macro-economic indicators at a national level; there are cases of recognised prestige in the business field (such as, for instance, NOKIA, the world's second-best enterprise in terms of R&D investment and one of the organisations which have shown more interest in innovation –and not only the technological one– during the last ten years). These examples allow us to infer that the bet on innovation is being made both from the public and from the private sector.

Nevertheless, although the previous data become essential to understand 'the Finnish miracle,' the fact that we are in front of a society –the Finnish one– which shows a clear 'orientation towards the future' becomes equally or even more important (Heinonen and Wilenius, 2008). That 'orientation towards the future' materialises in the existence of a social organisation specific to this country, which could be referred to as the 'Finnish Foresight System' –directly connected to the successful and internationally acknowledged Finnish National Innovation System– where different social actors have a role to play, namely: civil society (represented by the FSFS-*Finnish Society for Futures Studies*); the scientific research framework (represented by the FFRC-*Finland Futures Research Centre*); the political sphere (represented by the aforementioned CF-*Committee for the Future* of Finland's Parliament); and the academic context (represented by the FFA-*Finland Futures Academy*). The integration of all these actors around a well-articulated system guarantees that the long-term strategies will be developed on the basis of a vision about the future which is shared by the Finnish population as a whole. And this shared vision about the future in turn ensures the achievement of social welfare

levels which are not only consistent with the entire society's vision but also sustainable in the medium and long term.

The case of the *Aalto University* probably symbolises –better than any other initiative– that particular way to understand the innovation culture anchored on a vision about the future that they have developed in Finland. Created in 2010 through the formal integration of three very different pre-existing universities (technology, economics and arts), it constitutes a creative and proactive response to a financial problem: a 2004 study carried out by the Ministry of Finance had informed about the need for structural reforms in order to optimise an oversized Higher Education system. By transforming a problem into an opportunity, a proposal is put forward –from the actual university context– to create a new centre of an interdisciplinary nature that could go well beyond the mere formal integration (the organic umbrella) and make an attempt to create a synergic space, an ecosystem focused on the encouragement of innovative thinking and its application to the practical resolution of problems found in the socio-economic environment.

Private financing for the project (donations, projects, etc.) is promoted from the public sphere –with the State providing two additional euros for each euro obtained from the private sector– with a view to ensure the integration of *Aalto University* into its immediate context as well as the reinforcement of its connections with the productive fabric. Furthermore, the design of an Innovation Ecosystem (Design Factory, Start-up Sauna) with an international, flexible, creative and participatory approach which boosts an open, multidisciplinary innovation oriented to the resolution of specific problems posed by enterprises and organisations. An Ecosystem where students (who are supposed to find solutions to the problems identified by enterprises and organisations in their projects) assume a starring role; it equally guarantees the integration of the training process into the research work, as well as a total orientation towards the transfer of knowledge to enterprises and organisations. The outcome?: graduates with an excellence level that increases their competitive capacity within the global labour market; an entrepreneurship level (regarding both the quantity and quality of initiatives) which –after only three years– has made Aalto become a worldwide referent and called the attention of Silicon Valley (18 million euros were invested by Microsoft –in an agreement with Nokia– in the AppCampus during 2012); and, finally, a constant revitalisation and reinvention of the productive fabric, which is completely integrated into the activities and orientation of the university itself.

It can be said at this stage that the levels of development shown by this country at present are the result of a national strategy agreed by consensus and adopted a few decades ago (more precisely, in the early 1990s) with the aim of boosting the economy of a country which used to have economic and social development levels typical of underdeveloped countries during the 1950s. What is more, trying to relate the different elements which form a Social Ecosystem, such a strategy can be said to stem from the willingness of a society (the Finnish population) that, trying to reach an agreed future ideal (social organisation), implements a series of initiatives oriented to make use of the technical, material and human resources (technology) required to be able to reach a high degree of social welfare in a country where –until the 1950s– the crudeness of winters (the physical environment) could ultimately compromise the actual survival of the population (Castells & Himanen, 2002).

Therefore, the Finnish case –if compared to the reality of other countries which have similar figures regarding resources, technological development, etc.– provides a clear example of the fact that the availability of cumulative knowledge or technology does not guarantee that the adaptation to the ecosystem and the changes occurred inside it will take place in suitable conditions. They do not form

part of a direct causal relationship: having the ingredients available, if we are allowed the metaphor, does not ensure the preparation of a dish; the first thing is a necessary condition, but not sufficient, for the second. Therefore, the adaptation process will not be effective unless attention is paid not only to the elements belonging to the material culture (technological development) but also to those included in the non-material culture (shared prospective vision and proactive attitude). Only in that way will it be possible to guarantee success when facing the challenge of designing innovations (products, services, processes) that can prove useful to society; or, differently expressed, that make it possible to manage the changes experienced within an ecosystem by anticipating those changes –which will result in lower opportunity costs for that society.

3. THE ('DOWN') CASE OF SPAIN

The absence of an innovation culture in Spain is not new at all... it is something that has been repeatedly denounced by the scientific and intellectual community throughout recent history, either implicitly (in the idea of an invertebrate society developed by Ortega y Gasset) or explicitly (–and ironically– by Valle Inclán with his "let them invent!"). It is an endemic evil with a structural nature and a cultural root which has always determined our future as a country and which has recently proved to be a heavy burden that prevents us from reaching the desired welfare and development levels.

The study "*La cultura de la innovación de los jóvenes españoles en el marco europeo* [The innovation culture of Spanish young people within the European framework]" (Perez-Diaz & Rodriguez, 2010) bore witness to it, showing that Spaniards –by their cardinal virtues (sic)– are situated in the lower third within a distribution of countries that includes the ensemble of Nordic, Central-European, Anglo-Saxon and Euro-Mediterranean Europe. This study has proved that the cultural inferiority of Spaniards is similar to that of other Mediterranean peoples (also known by the awful acronym PIGS) such as the Portuguese, the Italians and the Greeks. These are all countries which share a simple productive structure, less innovation, difficulties to solve common problems, late literacy, political clientelism, widespread corruption and a weak civil society... all of which has placed them in a delicate situation before the crisis.

I would even venture to add other lacks to those mentioned above, at least in a first impression; among them, the non-existence of an industrial revolution (with the dimension and development of other Northern European countries); the lack of a solid business culture with an international orientation (with very few exceptions); the absence of a labour ethics (here hedonism and paternalism defeat asceticism and the capacity to undertake and assume risks) that could prove suitable to survive within a worldwide capitalist system; the lack of an advanced democratic political culture (we continue to think in terms of left/right, and not in terms of management, in Spain), and a complete and total disregard –both socially and institutionally-- for knowledge and education as essential values to articulate social and economic life. That is why the educational systems of these countries can be described, for lack of a better adjective, as loss-making and ineffective.

The whole of Finland's national innovation system (and, consequently, its innovative power to generate wealth and welfare) revolves around an educational system which, apart from being excellent, is perfectly intertwined with both the productive fabric and the political system (which includes civil society, as mentioned above). Drawing a straightforward and concise parallelism, one could go as far as to say that, in the case of Spain, the educational system is just the opposite; so much so that it has become a real Achilles' heel which largely hinders

our present reaction capacity within the knowledge society and compromises the country's future –'castrating' it at its root.

And what are the flaws in the Spanish educational system? At least the following ones should be mentioned: the absence of a politically agreed strategic vision which should stem from a shared vision about the future (plans change depending on which party is ruling the country and, if some measure is implemented following an imposition of the European Commission, this is done without resources, lacking expert knowledge and on a partial basis, in the best of cases); total lack of coordination between the different educational system levels which results in academic failure and difficulties to make the most of our potential human capital (which exists, indeed!) giving a clear direction to the training process; a complete disconnection –perhaps not formal (there are *OTRIs* [Spanish initials for Research Results Transfer Office(s)]) but definitely *de facto*– between the training level (teaching) and that of innovation (research) and application (transfer) which – added to a painful lack of communication and synergy with the productive fabric– materialises in a serious inability to meet the needs of the socio-economic environment; absence of flexibility in the areas of programme design and human capital management, which reveals a total lack of international perspective and results in a considerable loss of competitiveness –not in all of them, but actually in many areas– for graduates trying to access a globalised labour market.

In short... Spain has suffered from the lack of a general strategic vision, which results from one of our worst blights as a country: the absence of a vision about the future, of a proactive culture, and of innovation. With few exceptions (the Basque Country and Catalonia, perhaps because of their industrial, commercial and international tradition, have actually developed prospective thinking to a greater extent and have implemented initiatives aimed at improving the competitive capacity of individuals and organisations in a global market), Spain is a 'moor' regarding these issues. The prevalence of a reactive culture which lacks any anticipation and is absolutely installed in the *modus vivendi* of citizens, enterprises and institutions has ultimately become a structural problem.

And that is due to the lack of a vision about the future... and of an international perspective: most of our political leaders –who are actually the decision-makers– have very little or no vital and professional experience outside Spain and lack the references –to start with, foreign languages are a recurrent problem– needed to place themselves, to contextualise and adopt informed decisions within a global environment. Furthermore, these two factors –vision about the future and international perspective– are inextricably linked: it becomes essential to travel and explore other forms of management, work, taxation, organisation and learning in order to assess benchmarking activities, for instance (basically, getting to know success cases in order to learn from them –not copy them–); and also to be able to realise the extent to which there is a need –for survival purposes– to develop an innovation culture (and, consequently, a shared vision about the future) in the country. Other countries - Other cultures.

An aspect which clearly shows the absence of an innovation culture derived from combining the lack of a strategic vision and the lack of an international perspective is the design and implementation of spaces and systems meant to promote Innovation within the scope of action and/or the sphere of influence of public (i.e. state-run) universities; whereas foreign Innovation Ecosystems work successfully, Spanish Scientific/Technological Parks are highly unproductive and uncompetitive.

Most of the Scientific/Technological Parks created from public universities are conceived as Incubators; in other words, they host exogenous projects (generated away from the Park) and are compartmentalised spaces with a common coverage

(which share expenses, resources and infrastructures, but not information or work). They are places where Innovation Management is carried out in the best of cases, but where Innovation Culture is not cultivated. Places which are not too different from a Hotel, or a block of apartments where tenants –who live, each one of them in their cubicles, and have hardly any relationship with one another beyond mere convention– share the use of the lift (or the spin-dryer) and the common expenses derived from the shared utilisation of infrastructures.

Instead, Ecosystems linked to universities, as is the case of *Silicon Valley (Stanford University)*, Mondragón (University of Mondragón/University of Deusto/Innobasque) or *Aalto Campus (Aalto University)*, are designed as shared-interest communities: open, sustainable communities focused on individuals and their creative capacity and devoted to the analysis of problems posed by the environment (in the market and/or in public administration). Integrated and well-articulated communities where universities, enterprises and students go hand in hand, and where the latter really act as the main characters of the innovations generated within that Ecosystem (which develop its activity providing support for endogenously generated ideas). As mentioned above, these are shared-interest communities which, far from simply occupying a common compartmentalised space and working isolated from one another, work in the same direction, openly sharing information, spaces, resources and even leisure activities.

At least five conditions –which are in turn interconnected– should be met in order to promote a true innovation culture among young people: pragmatism (i.e. the curriculum design must be focused on the practical resolution of problems and not on an ideology); contextualisation (it needs to be based on the needs of the socio-economic environment and connected to it actively and not only symbolically); sustainability (it has to be designed so that it can survive transitory political changes); an overall vision (it must pay attention and remain connected and integrated into international experiences and excellence centres) and a strategic vision (it needs to have long-term clear and specific aims, anchored in a shared vision about the future –on which the community has reached a consensus).

4. PARTICIPATORY FORESIGHT: THE BASIS FOR AN INNOVATION CULTURE

According to the IFA-*International Foresight Academy* (IFA, 2012), Foresight is one of the participatory formats which contribute to shape the agenda setting as well as the political priorities in different countries, being an essential functional element for the formulation of strategies in modern democracies. Hence the explicit support that it received from the European Commission's 7th R&D&I Framework Programme, as well as a transversal development within the different sub-programmes.

As pointed out by the IFA, the role played by Foresight as a tool for the establishment of political priorities and democratic participation has gradually changed during the last few years, as different changes took place in the democratic systems of numerous countries. In a number of regions, Foresight has emerged as a process which favours participatory democracy, networking and interactive approaches through reflection, consultation and joint open debate. Such approaches have permitted a thorough development of common visions about the future and strategies in the communities where they have been implemented.

A review of the different Forecast Types (see Table 1) easily allows us to conclude that the various social systems which have appeared throughout the history of mankind have been entrusting their future –successively, in the arrow of time– to prophets, ideologists, economists and experts of different kinds. Only since the

advent of democratic capitalism –and after the emergence of Marketing and opinion/vote-intention surveys– have citizens been taken into account when it comes to identifying alternative futures, but only and exclusively on a consultative basis and working with closed choice models.

SUPERNATURAL	HERMENEUTIC	TECHNICAL	EMANCIPATORY	PARTICIPATORY
Primitive Societies Old Regime RELIGION Culture Emotional (RH)	Secular Society Nation-State IDEOLOGY Politics Emotional (RH)	Industrial Society Mass-Capitalism PRODUCT Economy Rational (LH)	Post-ind Society Glocalisation KNOWLEDGE Technology Rational (LH)	Liquid Society Technomics+Networks PEOPLE Social System Emotional+Rational
GOD'S ORDERS	UTOPIAS	TRENDS FORECASTING ADAPTATION	DELPHI METHOD FORESIGHT ANTICIPATION	WI-WE CREATIVE FUTURES INNOVATION

Table 1. Forecast Types (Bas, 2012)

This formula (closed choice models + merely consultative participation) seems to have become exhausted insofar as there is a growing demand among citizens –both in the economic field (where they are consumers or users) and in politics (where they are voters)– to have an active involvement in the elaboration of game rules, as well as in the direct control over public management. Corruption as a widespread phenomenon in both contexts (of which corruption could be said to act as an intersection), along with the lack of transparency in management (also in the use of information –Wikileaks, etc.) have sparked off this phenomenon, and not only in western democracies. And, if that was the flame, the extensive development of social network on a global scale together with hyper-communication and the free access to information favoured by ICTs were definitely the wick.

It is currently very difficult to apply forms of Prediction both in public management and in business without considering the horizontality and immediacy (in terms of public opinion generation) introduced by ICTs and, especially, by social networks. The blind belief in a religion, an ideology, or even in the opinion of technicians and experts (with a supposedly greater access to information and knowledge) is no longer the way in which citizens articulate their expectations. Plurality is increasingly demanded in sources as well as in contrast and public participation. In that sense, Civil Society is starting to claim a starring role in the management of collective life.

All the above is favouring the appearance of new ways to 'study the future' –to predict– which integrate that demand. The traditional quantitative predictive models (perhaps appropriate for historical moments characterised by stability, but –surely– inappropriate for periods of instability and structural change) and the techniques on which they are based (time series and surveys, among others) have

long proved insufficient to face this new context. Also the models based on experts' opinions (simulation, Delphi method, etc...) have turned out to be insufficient to meet the compelling need for empathy required by public institutions and enterprises in order to satisfy the demands of citizens and maintain the stability of the system.

The irruption of a generation (Generation Z: the 'digital natives') of youngsters whose main common denominator is that they were socialised in a digital environment which radically altered the social behaviour patterns (relational, commercial, or related to information access) has become essential –despite the obvious ageing of the population in western democracies (that is, the pre-eminence in quantitative terms of individuals socialised in environments which could be described as 'analogical')– for that change to be required when it comes to managing (collect, analyse or mould) expectations. Tools devised to examine social reality which were generated in a particular socio-historical context cannot be used to try and understand another context where those tools have obviously become obsolete –or, at least, insufficient. It is necessary to invent new tools which can meet the demands described here.

The aforesaid tools need to integrate these demands in good time and in an appropriate manner. And that implies the design and implementation of collective participation processes which must pervade every social institution: from the church to enterprises, and including public administration or political parties as well. Our work at FUTURLAB since the last decade has involved R&D&I projects designed along these lines together with international partners such as Manchester University's MiOIR (which headed the European Commission Project *IKnow*), the B.A.T.'s Foundation of the Future in Hamburg (which led the Project *United Dreams of Europe*), Aalto University (our partners in the Project *Flux-3D*) and the IFA-International Foresight Academy, among others.

5. BY WAY OF CONCLUSION: HOW CAN AN INNOVATION CULTURE BE GENERATED? TEN PROPOSALS

These ten proposals have to do with a way to understand the culture of organisations that we advocate (or share, because it is not an invention of ours); with a system of values and with the manner in which work, life within a community, and the future are approached.

A comparison between these proposals and the current panorama in Spain reveals that our functioning on a country level is exactly the opposite: we Spaniards do not think of innovation as a value (because we have been unable to understand innovation or structurally integrate it –for us, it is nothing but fashion); complex thinking is not encouraged (on the contrary, Spanish people tend to simplification and hyper-specialisation instead of promoting interdisciplinarity); there is no contrast of our visions (among other reasons, because no other visions –mainly international ones– are known to us); future is not seen as a 'buildable' space (our actions are guided by other people's predictions and guidelines); uncertainty is not assumed by us (as good Catholics, we prefer to have faith in improbable truths); we do not have a proactive attitude (our preference goes for waiting "to see what happens"); creativity is punished by us (precisely in relation to the slogan "let them invent" mentioned earlier in this article); we prefer determinism (it is easier –or more convenient– for us and no initiatives whatsoever need to be undertaken); we fail to establish efficient connections across spheres (it is difficult for us to understand that universities cannot live without enterprises and vice versa) and, therefore, we are unable to create spaces for interaction, participation and shared creation. No wonder things go so wrong for us.

5.1. THINKING ABOUT INNOVATION AS A VALUE

A key difference exists between 'Innovation Management' and 'Innovation Culture,' even though both approaches share and assume the evidence that Innovation is an essential element for the success of organisations in the 21st century. The former basically sees Innovation as an exogenous element which society –or an organisation– has to assimilate, despite the fact that it was basically generated outside that society or organisation. Therefore, it is a 'predictive' or "preactive" (action as precaution) way to manage change, supported on the –ultimately deterministic– idea that there is an inescapable need not only to adapt to the changes which are bound to happen in the environment but also to rapidly take advantage of them.

Instead, the latter understands Innovation as something which goes far beyond the assimilation of the novelties produced in the environment, treating it as a basically endogenous element (rather than exogenous), as a 'philosophy' that must pervade the society as a whole. It is, in this case, a 'prospective' or 'proactive' way to manage change (action as innovation) which stems from the conviction that the organisation not only must adapt to the transformations which may eventually take place in its environment but also has to play a starring role in those transformations.

Because it is proactive, and since it takes into consideration the existence of 'futuribles,' or possible 'futures,' as opposed to a single –still probabilistic– inexorable 'future,' the Innovation Culture implies adopting an exploratory methodology (Foresight) which makes it possible to define a shared vision about the future and maximises the expectations of a specific society as far as welfare levels are concerned. Therefore, Participatory Foresight methods can be regarded as the 'hinge' which joins Innovation and Design (the specification of actions aimed at implementing Innovation in products, services and processes). The analytical exercise of identifying and evaluating consensus-based alternatives which precedes the action is extremely necessary, as it permits to articulate that 'internalisation' of the accumulated knowledge associated with Innovation in the design of specific initiatives which are in turn the ones meant to provoke changes in the desired direction.

Foresight would consequently act as the catalyst for innovative action: the instrument which helps society to shape a desirable and plausible image about the future and to orient the design activity towards the identification of products, services or processes suited to that future. From this point of view, Foresight is the tool that will allow us to know and assess society's future expectations, an information which becomes crucial when it comes to designing 'empathetic innovations', that is, adapted to the future –or latent– social demands.

5.2. THINKING ABOUT PROBLEMS (AND SOLUTIONS) IN TERMS OF COMPLEXITY

The whole is more than the sum of its parts and that requires the development of a holistic vision when it comes to tackling any problem or challenge. It is an evident fact that social reality is a multidimensional system, which means that any analysis leading to its interpretation will have to bear in mind that social events –even if they become clearly evident in one of the social reality contexts– result from the convergence of complex as well as multiple phenomena, the origin of which can be exclusively found in one of the dimensions that make up the social system (García Ferrando *et al.*, 1986).

Furthermore, social events are not only the consequence but also, and in turn, the cause of processes which may be triggered, annulled, strengthened or diminished in contexts other than those where those events took place. Therefore, this key mainly concerns the initial R, Research, the seminal process which lays the foundations for Innovation. The strategic management of change cannot be undertaken without having a thorough knowledge of the social environment in which one is operating, and that means building a diagnosis from the joint reading (as opposed to the sum of readings), the 'total reading' of the information obtained regarding the different dimensions which are likely to affect the social environment, either directly or indirectly.

Interdisciplinarity and creativity are needed to approach problems from a holistic perspective and to look for innovative solutions which can turn those problems into opportunities. The former makes it easier to understand the various dimensions of the problem (both the possible origins and the potential consequences, referred to different areas) and creative thinking is required in order to be able to connect seemingly unrelated issues in space and/or time, with an identical aim.

5.3. RELATIVISING OUR PERCEPTIONS, SUBJECTING THEM TO AN ONGOING CONTRAST

Reality depends on the eye (or the method) of the beholder. And, as is well known, the information that is available to us (its quantity and quality) will determine our interpretation of social reality. Nevertheless, it is also true that the method used to collect, order, prioritise, classify, analyse and interpret that information entails (due to the lacks and potentials inherent to any method) an equally important bias in our possible perception of a social event.

Every 'reading' of social reality, whether it is past (history), present (news) or future (forecasts) is predetermined by the method and information used for that purpose. This evidence is very often ignored under the pretext of looking for a supposed objectivity with the aim of placing social sciences on a level with natural sciences in terms of 'rigour,' without taking into account the principle of reflexivity (Lamo de Espinosa, 1990), according to which the observation of a social fact largely differs from that of a natural phenomenon, insofar as the observer forms part of the reality observed, thus making it literally impossible to reach the degree of objectivity which is typical of natural sciences.

Despite not being an advantage, this does not represent a disadvantage either; it is quite simply a type of evidence which needs to be considered in order to relativise and contextualise any analysis and any value judgment derived from it. The fact that any interpretation of social reality is a direct consequence of the method used in its construction leads us to another conclusion: there is no such thing as a universal truth in social events; they are all more or less grounded interpretations. Therefore, relativising any analysis of social reality (Berger & Luckmann, 1968), whether it is our own analysis or someone else's, becomes an essential requirement –together with a holistic attitude– to face the first of the processes on the path to Innovation: Research.

5.4. THINKING ABOUT THE FUTURE AS A BUILDABLE SPACE THAT CAN BE MOULDED AT CONVENIENCE

The future is an open, buildable space; it is not predetermined by immutable divine or scientific laws. No compass consequently exists which indicates the course to be taken: regardless of the information available and the method used to analyse the past and present reality, and to anticipate futuribles, it will never be possible to find a marked path towards the future, since it does not exist as such...it has to be built.

The deterministic compass, which shows us the north, the right path, is no use. It is a fallacy. Therefore, our maximum possible aspiration would be to draw a cognitive map of plausible options for a future –futures– constructed in accordance with the information and methodology at our disposal, and appraise –in terms of probability and desirability– the dangers and opportunities entailed by each of the different destinations –as well as by the different paths which may lead to each one of them.

If the future is predetermined neither by natural nor by supernatural laws, then it must be a construction of human beings; there precisely lies the emancipatory nature of Foresight as a way to forecast the future: in the assumption that the future will inevitably be a consequence of previously undertaken actions. The construction of the future is thus based on human action. A wide variety of actors and factors can combine –with different action capacities, as will be shown below– in the future development of a social event. The realisation that the future is to a greater or lesser extent in our hands becomes essential in the Development process which leads to Innovation: an organisation will only value and promote the transfer (D) of knowledge and technology if it is aware of its usefulness, of the tremendous transforming potential that this transfer confers upon the organisation, making it – to a larger extent– the true owner of its destiny.

5.5. LEARNING TO ASSUME AND INTEGRATE UNCERTAINTY INSTEAD OF ISOLATING IT

Identifying weaknesses and limitations is a strength. After decades trying to isolate and avoid uncertainty (very often reduced to a supposedly identifiable and measurable ‘error’ in closed models), the evidence provided by categorical facts has highlighted the weakness of some predictive models that –guided by a positivist and deterministic reading of social sciences– tried to associate the future of human societies with natural laws; so, it seems that the time has come to start coexisting with uncertainty and to learn how to manage it.

Uncertainty results from the lack of control over social events. However, as fuzzy logic (Kosko, 2000) teaches us, control over social events cannot be interpreted in a dichotomous way: 0/1, *on/off* or black/white. Rather, it might be compared to a grey scale where the ends are hardly identifiable, and even so reachable. Before the evidence that absolute control –which would imply the complete absence of uncertainty– over a social event is impossible and that an influence can be exerted (though in an unchecked way) on the evolution of events even from inaction, the most reasonable option for organisations when it comes to dealing with their strategic management lies in trying to minimise uncertainty through their capacity to influence reality by means of innovative action; in other words: proactively.

Uncertainty should consequently not be taken as something necessarily negative; instead, it can be seen as a factor which facilitates the generation of strategic opportunities. The non-existence of natural laws (and, therefore, the impossibility of identifying those laws and using them) leading to a predetermined future is likely to provoke a certain feeling of helplessness, bewilderment and insecurity, but this can be read positively too: if nothing is predetermined, then everything is possible. The absence of total certainty should not be understood as a black, bottomless hole, but precisely as just the opposite: as the opportunity to trigger a chosen future; as a chance for emancipation.

The way in which uncertainty has traditionally been managed, trying to isolate it and making an effort to control it with methodological subtleties (‘error margin,’ ‘likelihood,’ etc.) is a product of the traditional complex that social sciences have had with respect to natural sciences, due to which decades have been spent trying

to cope with the fruitless challenge of transferring the predictive models of the latter to the former. It has proved to be an inefficient way to deal with the analysis of social reality "towards the future." Thus, the social events which have caused dramatic structural changes of a larger magnitude and with a greater impact on contemporary human societies have been brewed outside the narrow limits of closed predictive models and have come as a result of innovation actions and processes based on the creative and transforming capacity which derives from a positive and proactive reading of Uncertainty: from the Internet to 9/11.

That represents the large potential impact of what is highly improbable according to the 'black swan' thesis (Taleb, 2008). Uncertainty, which cannot be placed within the supposedly controlled niche of the falsely objective probability, as far as social reality is concerned, appears as a space of risk but also as a space of opportunities which are likely to provoke an exponential qualitative jump that could lead us towards a desired scenario. For this reason, the most innovative organisations, such as NOKIA in Finland, advocate ways to manage uncertainty which are far away from deterministic prediction: for instance, the Weak Signals methodology developed by the FFRC-*Finland Futures Research Centre* (Hiltunen, 2007).

5.6. ACTING PROACTIVELY: LEARNING TO IDENTIFY, EVALUATE AND CHOOSE OUR ACTIONS ACCORDING TO OUR GOALS

Good luck is created (Trias de Bes & Rovira, 2005); the randomness of uncontrolled events and/or processes may result in situations that are positive or negative for us, but we are largely responsible for our destiny. After assuming the inexorable fact that it is necessary to coexist with uncertainty, and to try and manage it, as previous explanations have tried to make clear, and the equally evident fact that our future will depend on our capacity to influence the construction of reality depending on the extent to which we can intervene in the development of events that affect us; once all of that has been assumed, as said above, the next step consists in maximising our sphere of control and influence on the actors and factors which are likely to determine or condition the social events that can have an impact on our future.

Thus, our ability to minimise uncertainty will be directly proportional to our capacity to maximise the degree of control over the actors and factors which are most likely to influence our activity and the achievement of our aims. Since absolute control over a situation is hardly reachable, not to say impossible, at least in the context of social sciences –where the possibility to reproduce perfect causal formulas in a zero atmosphere (as if we were working in a laboratory) does not exist–, an effort needs to be made in order to maximise our control capacity, being aware of the fact that this by no means guarantees our potential ability to manage things in a way that suits our objectives.

And being able to maximise our action capacity requires the deepest possible knowledge of our current reality and our potential, both in absolute and in relative terms. In absolute terms, through a self-diagnosis and identification of (manifest) weaknesses and strengths in the organisation; in relative terms, through the contextualisation of such weaknesses and strengths and the subsequent identification of (potential) threats and opportunities which may affect the organisation, so that they can serve as a reference for us to be able to develop an internal 're-engineering' process that permits to restructure weaknesses or emphasise strengths, defuse threats or create opportunities by means of action.

5.7. STIMULATING CREATIVE THINKING IN LEARNING, COMBINING IT WITH SCIENTIFIC KNOWLEDGE

In our view, the correct formula when it comes to facing Innovation is: Systematisation + Creativity. It has been repeatedly highlighted earlier in this paper that the decision to apply the –quantitative– method typical of natural sciences to the letter does not work in social sciences, for the reasons explained above. The integration of qualitative parameters into the interpretation, understanding and prediction of social events can also be systematised, as qualitative sociology and anthropology have shown us, which means that social sciences are in a position to develop their own scientific method adapted to their peculiarities; a more open and heterodox method than that of natural sciences which incorporates uncertainty as a positive, opportunity-generating element, and additionally encourages and integrates creativity instead of punishing it.

Systematisation without creativity is like a soulless perfect machine; creativity without systematisation is an erratic spirit. The former becomes essential to establish diagnoses and forecasts based on well-grounded as well as comparable premises. The latter, apart from complementing both –by enriching them– has proved to be a basic element in therapy design. As explained above, systematisation is a must because the collection and analysis of information serve as the basis for the diagnoses and forecasts which are carried out following a set of specifically-defined and comparable theoretical and methodological assumptions (sources and methods). The error in a prediction developed in the area of social sciences under a positivist quantitative approach does not lie in the utilisation of the scientific method, but in the conviction about its infallibility. In other words, the definition and interpretation of a social event from predictive models represents a useful and necessary contribution to innovative action, insofar as it provides the strategic management process with referents; what represents a crass error is to assume that a model –no matter which one– can be identified as a universal truth, believing that –collective or human– behaviour is governed by immutable natural laws which, therefore, are totally predictable.

Consequently, heterodoxy prevails: there is no such thing as a perfect formula for the management of human organisations; the action protocols designed for specific situations in specific contexts, for which they are effective, may become ineffective –or even counterproductive– with the slightest change of nuance in the context (i.e. by the introduction/exclusion of a variable from the model and/or a variation in the parameters for the values that those variables can take). Moreover, improvisation inevitably leads to chaos, above all because it stops the organisation learning either from its past experience or from the changes operated in the environment on a diachronic level, which completely deprives that organisation of its strategic potential, making it completely unable to articulate a vision about the future supported on that learning process –which is so necessary too.

5.8. TRYING TO BANISH THE EXTRAPOLATION OF OUR THINKING: A TREND CAN BE REVERSED

Determinism is not innovative (it is “more of the same”) as repeatedly stated in this paper. The basic idea underpinning innovation says that things can be changed; that reality is nothing but a construct. A deterministic vision about the future manages change in a static way, ‘objectivising’ the future as a unique space which is a product of the past as well as of the present; a mere extrapolation. The fact that it fixes the analytical limit in the present and ignores the link between present and future (our actions and those of others) means that determinism can only carry out extrapolative predictions: how things are going to be according to how they have been so far. In other words: what the future will be like if nothing changes.

In our opinion, it is not possible to develop innovation on the basis of a deterministic vision about the future. Innovation requires a vision about the future

which envisages it as an open, multiple and buildable space (it has already been explained above); innovation requires a prospective vision. Prospective Vision –as a concept (and in capitals)– somehow integrates the other six preceding keys, since it might be defined as a “holistic and multidisciplinary working method, based on a proactive and emancipatory conception of foresight which attempts to orient strategic design and planning through the detection of futuribles and the determination of action alternatives within uncertainty environments favoured by change and complexity.”

Neither does it seem possible to us to develop successful innovations –from a social point of view– unless it is done from the empathy with the user/beneficiary of the resulting products/services/processes. Thus, the open and participatory exercises focused on the definition and evaluation of alternative future scenarios (Participatory Foresight) become absolutely necessary at this point, since they will help us to determine the future expectations that a specific society or collective has. Such expectations will therefore allow us to assess the success or failure of innovation design –on a social level.

5.9. INTEGRATING EDUCATION INTO THE KNOWLEDGE MANAGEMENT CYCLE OF ORGANISATIONS

The educational system and, especially, the higher cycle (university) cannot remain alienated from the socio-economic reality. We are living in a world system characterised –with few exceptions– by economic capitalism (globalisation, free market, financial economy, etc.) and political democracy (representation, universal vote, etc.). In this context, both countries and enterprises badly need a human capital management based on a training model which –avoiding exclusions and in a sustainable way– can maximise the potential of individuals, facilitate their integration into the emergent labour market dynamics, and improve the competitive capacity of the organisations where those individuals develop their professional activity.

However, the educational system is sometimes designed without taking account of that reality (as may have happened in Spain); on some occasions due to incompetence, lack of perspective and/or the absence of a strategic vision, and other times, because of the imposition of a normative ideological model (or another). Thus, for example, the political debate in Spain has paid more attention to imposing (or vetoing) Religion or Valencian as subjects than to a real reflection – considering the global context and the probable future scenarios– on what our youngsters (and future citizens) were going to need in order to reach an optimum living standard in keeping with the position that our country is supposed to occupy.

One of the keys seems to lie in the integration of the training system (the educational system) and, above all, in higher education, with research (where knowledge and opportunities are generated) and the transfer of knowledge (which will only be effective if it is based on the resolution of problems posed by the socio-economic environment). Didactic processes cannot be exclusively supported on theory; instead, the latter needs to be accompanied by some practical learning that provides the student and future professional with various abilities and skills (problem-solving capacity, analytical capacity, creative capacity, empathetic capacity, teamwork capacity, self-critical capacity, etc.) Such practical learning must be based on the study of cases and relevant up-to-date information produced in the international context (research) and also be oriented to the resolution of specific problems arising from the different sectors which make up the socio-economic fabric (transfer), so that the training process and professional learning can be transversally approached.

In other words, the convergence of the educational system with both the national innovation system and the productive fabric must aim at generating a type of human capital that can remain competitive and integrated into a sort of social brain, of a collective intelligence community; this is something absolutely necessary for us to have any chances of reaching a prosperous future in the technological information and communication society.

5.10. IMPLEMENTING OPEN INNOVATION ECOSYSTEMS (OIEs)

OIEs (as those mentioned above in our reference to the Finnish innovation model) are physical spaces where an effort is made to achieve a sustained convergence between knowledge and initiatives on the basis of: interdisciplinarity; pragmatism (problem solving); creative thinking; and the active, integrated convergence (open participation) of all the actors involved in the socio-economic fabric. *Aalto University* (Helsinki, Finland) would be the paradigm of a European OIE –the same as Silicon Valley (California, US) on the other side of the Atlantic Ocean.

A necessary condition for us to be able to speak about an Innovation Culture is the prior existence of an Ecosystem (physical space + living beings) designed in such a way that it can favour, stimulate and sustain that 'intelligence community,' that 'collective brain' which represents the axis for synergies in the immediate environment as well as in other (national and international) environments – integrating and not only adding. In other words, promoting an Open Innovation System (OIE) instead of a closed –or rigid– one (as it has been happening, for instance, in Spanish Technological Parks: little more than hotels for enterprises sharing common expenses among which there is no information flow and synergies are hardly ever produced). That OIE has to be a multilevel space based on interaction and creativity.

An OIE works as a seedbed of ideas: a breeding ground which permits to develop the two stages that precede the 'planting': the Nursery (that is what Technological Parks are in the best of cases), of course, but also the seeding stage (endogenous generation of business ideas), which is where talent and competitiveness are fed, where opportunities are found, and where students have a lot to say, since they are truly the main characters in this system. Therefore, an OIE like Aalto University places its most important human capital (students) at the disposal of projects promoted and financed by private enterprises which seek a solution to their problems (or the identification of emergent opportunities), thus leading to a synergy which –both in the short and in the medium and long term– benefits everyone: students, enterprises, the academic institution around which that dynamics is structured, and the country itself.

KID 2.0, THE APPLE DOESN'T FALL FAR FROM THE TREE

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Abstract

A new generation of Houston kids born in the pluralistic landscape of the city will not succeed with the tools and services that are currently being provided. The majority of youth's ability to realize opportunities in the cities "future orientated" system is stanchd. Perpetual poverty, limited access, limited experiences in conjunction with a "present orientation" creates a communication break. But there's still hope, right?

Keywords: social change, value, time orientation, Houston

Kid 2.0, The Apple Doesn't Fall Far From The Tree

"Somewhere over the rainbow, way up high there's a land that I've heard of once in a lullaby." - Edgar Yipsel Harburg, Over the Rainbow

We all dream, do we not? As a person, as a family, a neighborhood, a city, state, nation, and as a people in whole – we individually and collectively dream. We carefully mold these mental images into aspirations and strive, pushing through struggle and defeat, yearning to actuate our thoughts into reality. We are the buildup that creates the moment right after now. We individually are Americans and together we create the American spirit. Our spirit is the thread that binds us. Yet – I don't feel bound. Rather, I feel isolated within a fraying collectivity. In wonderment I stand upon a moving sidewalk, heading towards tearing.

This begins my quest to search for the spindles that, at this moment, are twisting and drawing out new threads, which combined together will bind our next American spirit.

Spirit is to a nation what a heart is to a human. We can rationally think of a heart as what pumps blood through our brains and body, allowing us the grace of life. Or we can think of the symbolic meaning the heart harbors. Be it the emotions that well up with every new birth, the sorrow we have for another's suffering, the pride we exude with the accomplishment, or the secret emotional stir that a first kiss holds. These emotions are tied up into bundles that once knotted, describe the not only your heart, feelings, beliefs or behaviors, but a nations as well. We aren't fools though and I know children are born unwanted; that panhandlers are ignore, see people grapple over the failure of others, and have either created or experienced scaring. It's the described truth and reality of life.

I grew up knowing that "America is a system that rewards hard work, intelligence, sacrifice, and that America is a land of opportunity." (Friedman, 2009) I still believe this, it's hard to shake the ideology and honestly I don't want to shake it. Yet, I'm standing here on this moving sidewalk having watched opportunity first offshored then outsourced. Witnessed generations of dual income families, single mothers/fathers and their crop of day-cared offspring. Emotionally celebrated the fall of Berlins Wall yet, I am not shocked by the quick rise of the physical barrier dividing the United States and Mexico or the power of the Golden Dawn. During all this time, I work. When my employer asks for more of my time, I freely give it. I participate and live my life complacently during the unwinding of our American Dream.

Individual human beliefs and behaviors create the foundation, which holds the pillars of a collective ethos. Our collectivity fosters our expectations and drives the direction for the future. While the current American dream is unwinding a new dream is fighting for dominance. Understanding the various behaviors that our society exudes is dependent on listening to the various subcultural narratives that exist today. Momentum is gained through factionist voices actively vying to assimilate the like-minded. Assessing the social orientation of those aimed to inherit our nation in conjunction with understanding our nations current context and disorganizational trends will offers insights into the current and plausible collective American spirit. Defining our future dreams, ambitions, and ideology.

The purpose of this paper is to try to understand what our children's future might entail. To do this we will look at their attitudes and beliefs while constructing the environment and surrounding landscapes that currently exist. The flow of future events is dependent on this intertwined relationship. To do this we will first look at the foundation of our cities and attempt to understand what ideological drives pushed their design forward. Understanding our past is an important aspect while we begin to develop a story of our present. Painting the landscape of our present is daunting and one can quickly boil the ocean. For this purpose, I have chosen to apply Pierre Bourdieu approach to understanding society. From this perspective we will begin a case study of the city of Houston. An investigation within this framework allows us a full understanding of how and why a city grows. More importantly, it allows us to understand how human values motivate consumption within the social habit. Maya Angelou wisely said, "Everything in the universe has rhythm. Everything dances." Let us start by feeling the rhythm and then learn to dance.

Ideological Drivers

"But the most common and durable source of factions has been the various and unequal distribution of property. Those who hold and those who are without property have ever formed distinct interests in society."
James Madison,
Federalist Papers No. 10

Our values, for the majority of the time, dictate our behavior and approach to designing the world around us. When cities and governments are created, the sole focus is to mitigate conflict and provide a secure environment for the citizens. It is our values that create the idea of security and through this perspective, we design our future.

Throughout the centuries, human morality has been carved out from a series of generationally inherited and modified ideological stances of justice and of order. The theory of "justice" has been claiming a virtuous standard of right that is supported by the morality outlined in a religious codex. Judaic, Christian, Muslim, Hindu, and or other religions have, from their own perspective of justice, outlined the right and wrongs of civilized behavior. The proponents of "justice" have legally institutionalized economic systems and culturally motivated citizenry production by happiness. On the other hand, "order" is an ideation of solutions aimed towards the resolution of conflicts. Power over resource has served as a motivator in the human compulsion loop from the beginning of time. "Order" claims that through power society is able to create its own production of right and wrongs, yet maintain the ability to incorporate adaptive knowledge. This enables society the flexibility needed to endure the struggle of confronting abstract concepts, which ultimately leads to further human rights. The philosophic, religious, political and now social debate of who is right or who produces the more stabilized governance has continued throughout the centuries. Today, in the states, the debate is heard not only in the statutory, judiciary, and political law, but also within broadcast media, educational institutions, and social medias. Each is individually flexing their perspective while pushing for the dominance of their cultural narrative.

Methodology

Pierre Bourdieu, a 20th century French sociologist, anthropologist and philosopher developed an approach to understanding social phenomena called the "theory of practice". He designed a formulaic approach that devises a symbiotic relationship between subjective and objective schools of thought. His concept is an active system of social interactions, which is often described as a game or competition that is being played, practiced, in order to obtain domination of a particular position under conflict. In most general terms, Bourdieu (1983) describes the first part of his formula as the (*habitus*)(*capital*). They are two inseparable conditions, that combine amplify a mood of the specific social space from which it spawned from.

The concept *habitus* is a subjective construct formed by socialization of its social space. The *habitus* is the personality that comes from ones upbringing and experiences. (Grenfell, 2008, p. 51) At times, *habitus* is ingrained deep within itself *doxa*. The *doxa* is the formation of shared beliefs within the *habitus*. It shrouds a muted layer that binds to the *habitus*. A deep rooted sense of religion is often an idea used to represent *doxa*. This idea though, is not limited to religion (Grenfell, 2008, p.120) and it can be seen in the behavior resulting from the hierarchy in traditional Asian families or Military families. I would also venture to suggest that it can be represented in families that are experiencing chronic abuse. The *doxa* acts as a stabilizer; it holds the behavior found in the *habitus* in tight repetition. It's not talked about, it just is.

Habitus, though, cannot stand-alone. It is and continues to be the result of its interaction with *capital*. The existence of *capital* is two fold, it is first understood from macro level and then micro level. According to Bourdieu (1983), the levels are represented by the various degrees of existing their capital.

- Cultural capital - your degrees or certifications that allows you entry or bump your status, it is a result the education provided by society.

- Economic capital - the traditional concept monetary power and acquirement of goods or resources.
- Social capital - your network reach an your influential ability.
- Symbolic capital - very similar to economic capital, but is the monetary power is derived from ones social capital.

These types of *capital* are under influence of 3 "states" of conditions,

- Embodied State
- Objectified State
- Institutionalized State

Bourdieu (1983) explains the states that the embodied state is the active game of the disposition that is currently at play. The dispositions are the exuding from the multiplicity of (*habitus*)(*capital*) expressions on the field. (Grenfell, 2008, p. 69) The dominated expression is the Cultural Capital.

Our next state of condition follows similar logic of the embodied state. The Objectified State is the dominated expression of the overall existing and produces the Cultural Capital. Like a mother, the Cultural Capital influences its new generation while the new generation experiences the various expressions on the fields within the area. The existing disposition of the cultural capital determines the "objective values" of the goods being produced and consumed within the fields. The "objective values", which are subjectively harbored by the Cultural Capital, are transposed on the various goods found within the culture. Everywhere we look we find a "good", I am a good, my computer, the Disney movie playing for my two kids, the "like" I just received on my Facebook post, and my recommendation I gave to my neighbor on which plumber to call. The goods I described all have a "subjective value" and "objective value" which are predetermined by the existing Cultural Capital.

Lastly the Institutionalized State is the production of "subjective values", which are established by the Cultural Capital, and transformed into "objective values". Bourdieu states that this takes the "form of academic qualifications." Though, it is important to remember that these newly created "objective values" are now subject to the whims of an active field.

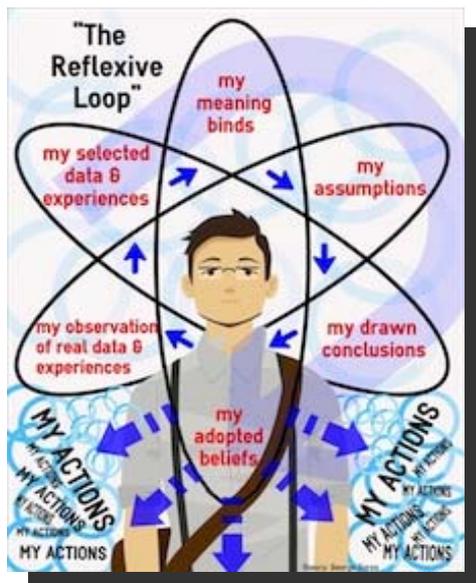


Figure 1 Reflexive Loop

Again, Bourdieu's "theory of practice" is active and one that flows via a series of continuous interaction and changing fields. He has termed this exchange as the "structured and structuring structure". George Soros "reflexive loop" (Figure 1) easiest illustrates this constant interchange of ones self being influenced while influencing ones surroundings which is influenced and influencing an overall disposition (Grenfell, 2008, p. 200), which describes a given space. Bourdieu explains the "structured and structuring structure" as "principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them." (Grenfell, 2008, p. 51)

Houston, a case study

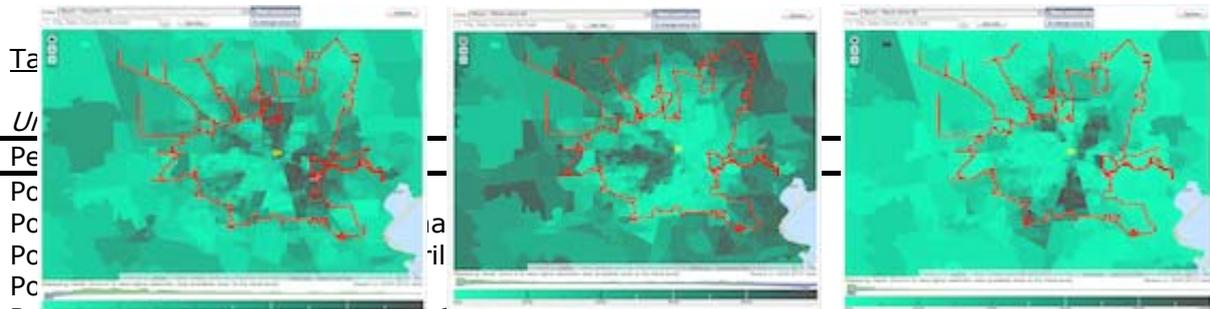
"Life is like an ever-shifting kaleidoscope – a slight change, and all patterns alter." Sharon Salzberg

For the purpose of this paper we will focus on the city of Houston. There are notable gaps in this research effort, specifically regarding “beliefs” held from a household to neighborhood level. Regardless, my aim is to create three cross sections of investigations that layer upon one another to offer an overall reflection of the vantages and opportunities found from the perspective of local neighborhoods to the entire city. The goal is to seek out the feeling of a predominant rhythm that encompasses the full landscape.

Houston is the 4th largest city in the United States with an approximate population of 2,100,000. The City of Houston (2012) “has among the youngest populations in the nation.” Visually we are able to gain an understanding of average family sizes within the Houston city limits. The lightest areas (Figure 2), West Houston, represent an average family size ranging from two to three. The surrounding North, East, and South Houston areas slightly increase to four to five persons per average family. This is a diverse city, which is represented by a Hispanic or Latino, African American, and Caucasian alone, not Hispanic or Latino population. (see Table 1, demographic percentages) Like many cities across the United States, areas of Houston are dominated by ethnicity. The following images of Houston represent the geographic distribution of the three major populations found. The heavily shaded areas indicate the overall dominance of each ethnicity in a specified space. (Figure 3 – 5).



Figure 2 Average family size



Persons under 5 years, percent, 2010	23.9%
Persons under 18 years, percent, 2010	39.0%
Persons 65 years and over, percent, 2010	49.8%
Female persons, percent, 2010	50.5%
White alone, percent, 2010 (a)	23.7%
Black or African American alone, percent, 2010 (a)	0.7%
American Indian and Alaska Native alone, percent, 2010 (a)	6.0%
Asian alone, percent, 2010 (a)	0.1%
Native Hawaiian and Other Pacific Islander alone, percent, 2010 (a)	3.3%
Two or More Races, percent, 2010	43.8%
Hispanic or Latino, percent, 2010 (b)	25.6%
White alone, not Hispanic or Latino, percent, 2010	

Note: Adapted from United States Census Bureau. (2013). *State & County QuickFacts*. Retrieved from <http://quickfacts.census.gov/qfd/states/48/4835000.html>.

Habitus

Ones *Habitus* is their own personal upbringing and experiences. My aim was to attempt to understand a few foundational images and ideas that create and bind a society. Trust, beliefs, identity, and availability of resources are our most basic means of survival. All elements wrapped together create meanings, assumptions, and demand conclusions while navigating life.

Children growing up in Houston are developing distinct personalities with the aid of the given surroundings. Their values are formulated in an upbringing of shared beliefs, ultimately socializing them to their geographic space. I cannot begin to understand or even formulate a perspective of growing up within a different environment other than the one I personally grew up in. To say that I would be able to give an objective view is riddled with problematic realities. My perspective looking in will always be rooted from a different vantage. So, In order to conjure a feeling of expression that each habitus exudes, we will begin by finding where the children are and listen to their voice.

Trust: In 2012 Houston’s children made up 16.7% of Houston’s population. Over the past ten years the child populations of Latino’s have grown from 44.6% to 51.3%, while Caucasian and African American children populations decreased from 32.9% to 23.9% and 19.8% to 19.3%. (Sanborn et. al, 2012) (see Table 2) This is a pretty dramatic shift in population and is speculated to rapidly continue. This shift has flocked consumer goods firms and political scientists to the city to study, hoping to hedge in early and gain the trust of the largest growing population in the United States. This though, will be a bit more of a challenge than expected. A recent Pew Research (2012) survey has suggest that 86% of the Latino population does not believe people can be trusted, while 12% trust. Trust issues are also prevalent among Caucasian and African American youths. The 2010 monitoring the future responses indicated that 51% of Caucasian and 58% African American high school youths feel that you “can’t be too careful” when relying on the trust of others, while 21% and 14% trust. (Bachman et. al, 2010).

Table 2

Children in Harris County by Age and Ethnicity, 2010

Age in Years	% White	% Black	% Latino	% Other
< 1 yr	26.80%	18.40%	50.00%	4.80%
1 yr	27.00%	18.30%	49.70%	5.00%
2 yrs	27.20%	18.20%	49.40%	5.10%
3 yrs	27.40%	18.10%	49.20%	5.30%
4 yrs	27.60%	18.00%	49.00%	5.40%
5 yrs	27.80%	17.90%	48.80%	5.50%
6 yrs	28.00%	17.80%	48.60%	5.50%
7 yrs	28.30%	17.80%	48.40%	5.50%
8 yrs	28.60%	17.70%	48.10%	5.50%
9 yrs	28.90%	17.70%	47.80%	5.50%
10 yrs	29.90%	17.90%	47.20%	4.90%
11 yrs	30.40%	18.90%	45.90%	4.80%
12 yrs	30.40%	19.20%	45.50%	4.90%
13 yrs	31.00%	19.30%	44.60%	5.00%
14 yrs	31.60%	19.60%	43.80%	5.00%
15 yrs	31.50%	20.00%	43.70%	4.70%

16 yrs	31.80%	20.80%	42.60%	4.80%
17 yrs	32.30%	21.10%	42.00%	4.60%

Note: Source Sanborn, R., Lew, D., Kimball, M.S., Hierholzer, A., & Neary, C. (2012). *Growing up in Houston 2012 - 2014: Assessing the Quality of Life of Our Children.* Houston: CHILDREN AT RISK.

Beliefs: Trust is an interesting emotion; it is rooted in Erik Erickson and Lawrence Kohlberg’s theories of moral development and more recently found tucked in Psychology’s “Big Factor Model” of agreeableness. When our culture narrative states that we are the land of opportunity and that hard work is the path towards success, how many of our parents trust this and what of their children? 56% of African American and 65% of Latino parents in lower class populations believe that their children will be better off than themselves, while only 31% of Caucasian parents feel this way. The optimism and pessimism is echoed in the children’s assessment of their future. Latino’s surveyed harbor an overwhelming 75% trust in the American ethos that their hard work will place them in a better future position (Taylor, et al., 2012) While 47% of African American and 37% of Caucasian youths believe they are able to master their own future success. (Bachman et. al, 2010)

Identity: Interestingly, while these populations strive towards the goal of success they do not identify themselves as an American. In 2012 51% of Latino’s described themselves not as a person from their family’s country of origin and 69% aligned with their ancestral cultural. While in 2011 a survey of a sample of high school seniors found that 47% mostly agreed that “it would be better if we all felt more like citizens of the world rather than of any particular country”. Each identity has various reasons that come into play as to why this phenomena has surfaced, regardless it’s important to understand that identifying as what it is to be an American is now embarking plurality.

Availability of Resource: The optimism held by Latino and African American’s is impressive considering the large rates of poverty experienced by both populations. In 2012 the federal guidelines stated that a family of four, 2 parents and 2 children, is considered poor if their income falls below \$23,050 annually. In 2011 38% of Houston families fell below this minimum, with 17% in extreme poverty earning \$11,405 annually. Figure 6, Children below poverty, is most populated in the Hispanic and African American alone regions of the city.

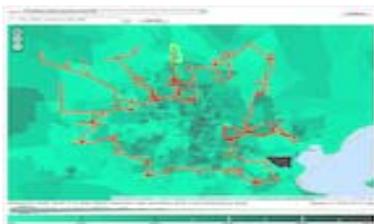


Figure 6 Children

Below poverty level

Even though the volunteer campaigns like the Houston Food Bank feeds over 68,000 children each week, research shows that a staggering 25.5% of Houston’s children still live in food insecure homes. This lack of purchasing power has a direct influence on the businesses found in geographic locations of below poverty neighborhoods. Figure 7, Food Deserts, mirrors the geographic regions of the poor. Many low-income neighborhoods have low access or ability to purchase foods from fully stocked grocery stores. Instead, these neighborhoods are filled with fast foods and dessert dominated food stores. Although this topic continues to be debated, statistically there is mounting evidence that this attributes to obesity and further long-term health issues.

The American Obesity Society states that 36% of Houston’s children are overweight; within this 19% are considered obese. It is often said that we are what we eat and although this is true, it’s valuable to understand how, who we are dictates what we eat.

West Houston, in contrast, harbors a wide range of diverse grocery stores, numerous restaurants and retail shopping.

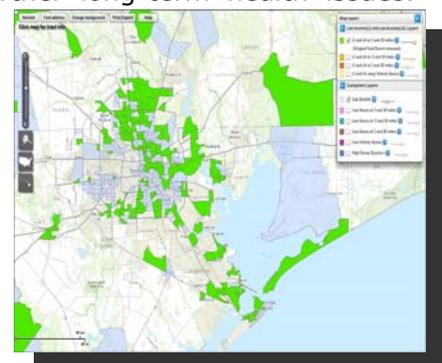


Figure 7 Food Deserts

This region also embodies the cities culture. Hosting twenty types of museums (see table 3), half of the cities public parks land mass, and various sports arenas. The geographic space is plush with opportunity and experiences.

Table 3

Houston Texas Fiscal Year 2012 Budget: Demographic/Economic Summary of the City

Houston Museum	Zip Code
Czech Center Museum Houston	77004
Houston Center for Contemporary Craft	77004
Houston Museum of Natural Science	77030
The John C. Freeman Weather Museum	77004
The Jung Center of Houston	77006
The Menil Collection	77006
Rice University Art Gallery	77005
Byzantine Fresco Chapel Museum	77006
Contemporary Arts Chapel Museum	77006
Holocaust Museum Houston	77004
Houston Center for Photography	77006
Houston Zoo, Inc.	77030
The Health Museum	77004
Lawndale Art Center	77002
Museum of Fine Arts, Houston	77005
The Rothko Chapel	77002
Project Row Houses	77004
Asia Society Texas Center	77002
Buffalo Soldiers National Museum	77004
Children’s Museum of Houston	77004

Note: Adapted from Houston Texas Fiscal Year 2012 Budget. (2013). *Demographic/Economic Summary of the City.* Retrieved from http://www.houstontx.gov/budget/12budadopt/I_EO.pdf.

Capital

Economic: In 2012 Forbes rated Houston as “America’s Coolest Cities”. The city has “enjoyed 2.6% job growth last year and nearly 50,000 American’s flocked there in response – particularly young professionals. In fact, the median age of a Houston resident is a youthful 33.” (Brennan, 2012) Houston’s local economy is rooted in the energy sector, but since the 1990’s has significantly diversified. The City of Houston (2012) now touts the busiest ship channel in the nation, largest public airport in North America, the renowned Texas Medical Center, and the 7th largest public school system.

Visually (Figure 8 – 13), one is able to capture a sense of the economic capital harbored by the various populations throughout Houston. This offers us an understanding of the distribution of blue-collar jobs versus white-collar jobs within the ethnically dominated regions of the city. The residential location of citizens working in Management, professional and related occupations can be found primary in West Houston (Figure 8). Educational workers (Figure 9) reside throughout Houston. While the majority of those living in blue-collar jobs reside in North, East, and South Houston. The “per capita income of \$15,343 for Latinos, compared to \$19,066 for African Americans and \$45,783 for Anglos.” (Sanborn et. al, 2012)

The children growing up in these occupationally dominant regions are beginning to observe

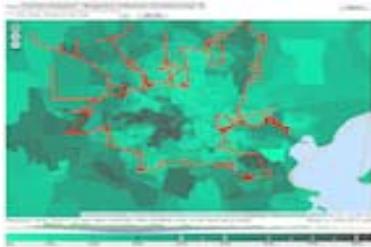


Figure 8

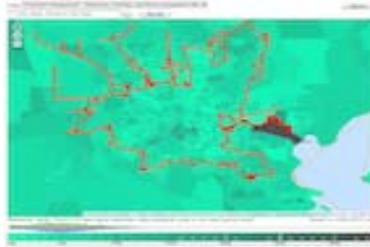


Figure 9

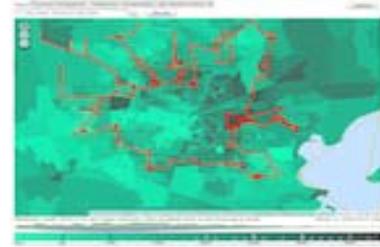


Figure 10 Production,
Construction, extraction,

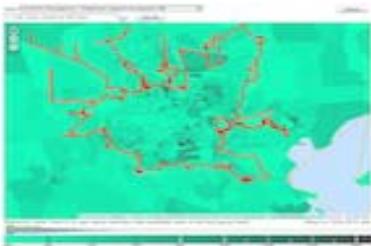


Figure 11 Healthcare

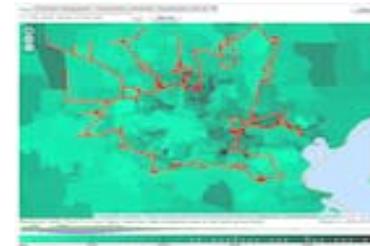


Figure 12

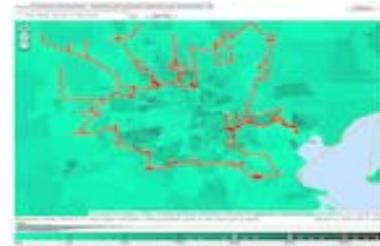


Figure 13 Building

Construction, extraction,
maintenance, and repair

their embodied state, or the active field within geographic space. Their reflexive loop begins observing and experiencing how their family and those within their networked community earn a living and obtain material goods. Children are beginning to formulate the rules of the game and are establishing a perspective to which life is supposed to be played by and within.

Our traditional economy sets the rules of one game, but another game is being played by a different set of rules. While Houston has had a surge in what is considered positive growth, the city is also experiencing a surge in its black market. Houston is ideally located and offers local gangs the opportunity to work successfully with transnational criminal partners. In 2011 Houston experience a 29% growth in gang membership. There are over 20,000 documented gang members, 90% of which identify as Latino or African American. (Walker, 2012) A threat assessment analysis has indicated that recruitments are younger, increasingly more violent and a predominantly recruited from schools and playgrounds.

Culture: The Institutionalized State of Cultural Capital is education. Houston has been focusing on connecting with their students and proving success through high school graduation rates. Houston Independent School District (2011) reported a 78.5% graduation

rate, a 14% increase over their 2007 numbers. Although these are impressive numbers they may not be accurate and are being challenged by the nonprofit, Children at Risk.

Texas requires each student leaving high school to be coded for the specific reason why. The integrity of these codes and validity of students the student's responses have the potential to skew statistics towards a more positive light. For instance, a student may leave school without being considered a "drop" if they state that they are leaving the country. Regardless of the statistical debate, there has been a really impressive attempt to reach, challenge, and motivate some of the cities youth.

Houston Independent School District offers a competitive opportunities for its students to attend schools focused on meeting the challenge required of gifted students, diversifying curricula by offering magnet schools focused on various interest, and in the creation of The Apollo 20 program. This ambitious program aims not only to turn around academic performance but to also foster a positive cultural community that partner's students with tutors, counselors, life coaches, and a school staff. All or whom are helping and caring about their success of each student. The district is also attempting on bridging the technological gap by providing over 130,000 students laptops. (Mellon, 2013) Superintendent Terry Grier believes that technology is now and our greater future depends on our student's ability to access and embrace this as a foundational skillset.

As ambitious as these programs are, many Houston students remain below average and others completely fall through the cracks. Children at Risk (Sanborn, R, et. al., 2012) projects that 54% of Houston's graduating students are college ready, with Latino and African American students scoring 100+ points below the SAT national average. Although Latino's have made consistent improvement over the years, the population still maintains the highest rate of high school dropout due to pregnancy, having to work to support their family, uneducated family members and other social influences.

Cultural Reflection

Currently there is an appropriate focus on ensuring our cities educational institutions are up to the challenge of creating tomorrow's workforces. Some call it, "The Great Crew Change", while others have termed it "The Staffing Stream". I think these are very reactive phrases. The approaches echo an anxious tone and the feeling of threat that has recently been pervasive in our society. The economic angst about our future coupled with the existing dichotomous political mode, blatant economic disparity, and looming fear that hovers over a staggering demographic shift doesn't make the task of seeking shared values an easy one. I can't help but to think of Steve Jobs, the most important imprint he left on society was that success is impingent on the ability to learn from failures. To me, we are in the midst of an epic failure. Houston is not yet an economic failure, or a political failure, but has failed life, liberty and the pursuit of happiness.

The historical ideological drivers that laid the foundation of our cities are no longer sufficient and are on the brink of failure. As we continue to scurry and fight for the remaining crumbs of our past ideological concepts of justice, we fail to recognize the demise. Justice is not solely found in virtue, nor is it solely found in order. They are in a mutualistic relationship. When virtue is parasitic it kills orders ability to be flexible when humankind embarks knowledge. When order is parasitic it kills virtue it staunches humankinds desire to be better. This relationship of life, liberty, and the pursuit of happiness are slightly different than virtue and order. Life is fundamental and all other rights are derived from it. Liberty is the actions that individuals take in order to obtain objects of desire, in this case pursuit of happiness. When liberty is parasitic it kills the desire to pursue. When pursuit is parasitic it kills the action of liberty. In both cases, life has the fundamental right to preserve itself.

Historically a government's sole purpose has been to ensure the security of their citizen's life. A secure environment allowed citizens the access to opportunities and the freedom to obtain the objects of their desire. For centuries monetary exchange has been the conduit that enable the growth of economic, cultural, and social capital. Much like the relationship that virtue and order play into Justice. An individual's desire to act towards an object is rooted in their field of experiences and opportunities. The more that the societal object of our desire is removed the individual's field of experience and opportunity then the individual's object of desire will shift from the societal to the local. American's pursued wealth in order to obtain happiness. Recently LifeTwist (Mellon, 2013) conducted a survey and noted that a growing number of Americans have replaced the desire to obtain wealth with the desire to live a fulfilling life as a mode to happiness. This mainstream shift in conjunction with cultural values tied to the Latino population creates an imbalance.

Creating tomorrow isn't an easy task, but Houston is embracing the challenge. They are beginning to pave the road that will allow them to strive towards maintaining existing economic base, while nurturing the spirit of entrepreneurship. Collaborating the minds of the Houston Independent School District and local business leaders in order to create strategies aimed at addressing the impending knowledge gap for existing industry, while focusing on teaching our children 21st century skillsets. All of these efforts revolve around continuing to entice young professionals to move to the city and to address the needs of the fastest growing population group.

Insights on Tomorrow

In the turn of the century information technologically infiltrated and proceeded to saturate nearly all aspects of our society. We, as individuals, have greater connectivity. This has aided in the growth and adoption of societies' newest form of monetary exchange, symbolic capital. Just as economic capital gains value from the accumulation of goods and resources, symbolic capital gains value from a network of trust and cooperation. Society has and will for some time continue to value ones influence and power via their monetary worth. In contrast, a person who harbors symbolic capital is valued by their reach of ability to influence. Their goods are executed agenda's while the resource is their network of people.

Building a Legacy

Houston is culturally divided. The majority of Houston's citizens lives in poverty and is present orientated. They may dream about the future, but on a daily basis economic strains and cultural values reinforce living for the enjoyment of the moment and not worrying about tomorrow. These citizens that are experiencing economic success are future orientated. They make plans, set goals, and work to actuate their achievements. Within ones orientations are citizens modes of motivation. Many are experiencing a shift from the monetary means that were considered the conduit to obtainment of the object that would fulfill their desire to be happy. When we think of Houston as a body of people, there isn't an identity, nor is there a concentrated purpose for the community as a whole. The plurality of cultures, values, and objects of desire should be address and is incorporated into and building Houston's 21st Century legacy. Our society is in the midst of a new game and the old rulebook no longer applies.

Trust and Cooperation

Houston must bridge the gap between the needs of its economic base and those currently residing in poverty. Both sides have their reasons for not seeking cooperation. Regardless, there are ways foster mutualistic relationships that will enable growth for all parties.

Poverty: Addressing the lack of opportunity that exists in many parts of Houston is pivotal. Currently trapped in the cycle of poverty, local businesses aren't able to justify opening storefronts in locations that do not harbor buying power. This is understandable and justified. A bad investment is what it is. This doesn't mean that poverty must remain stuck in a downward system. Today, there are a multitude of examples on how alternative complementary currencies are helping elevate those in poverty. The city of Houston could play an active role in fostering this partnership. A complementary currency isn't backed by its local government, but is often "backed entirely by the community's own resources and insured by a system of group guarantors" (Brown, 2012). There are several nations that use this type of system to elevate their poor and have done so with success. Allowing the act of exchange of one's action for products and services, including health, in a community perpetuates community growth and identity.

Education: The educational system in Houston has been very proactive, but there still remains an opportunity for further growth. Today's youth want a better life and many feel that they are able to obtain it. When they drop out, it's generally due to social conditions. Houston Independent School District can shelter children from their environment by offering them structure, consistency, and routine that is needed to bind a new perspective on life. The Seed Foundations is a charter school that began in the east coast. The school served children in extreme poverty by offering them "an integrated program that brings, under one roof: academic, residential, mental health, physical health, social, and enrichment programs (The Seed Foundation, 2013). The boarding school houses students from Sunday night to Friday afternoon and the children return home during the weekend. These programs have shown impressive results with nearly 94% of their graduates continuing onto to college.

Identity: Who we are as individuals, our value, dreams, and ambitions are fundamentally tied to the security of our environment and the opportunities available to actuate and obtain desired goods. Society can create a system to educate children, but this still does not alter their perspective on available opportunities in their location and experiences. These local experiences of every day life create mental pathways towards how children see themselves obtaining what they consider the "American Dream".

What version of the "American Dream" does Houston's youth harbor? The majority of Latino and African Americans still believe that hard work will bring success. The reality of these youths having the ability to actuate their belief falls into the realm of blurred lines. Statistically, many youths born in poverty will remain in the cycle of poverty, while only a handful make it out. Caucasian youth overwhelmingly have lost faith and are looking for fulfillment elsewhere. All three of the demographics are either present-orientated or navigating towards a present-orientated future.

Can Houston replenish "The Great Crew Change" with its existing rulebook? No. Can Houston fix poverty with the existing rulebook? No. Will Houston maintain its Cultural status and continue to diversify their economic base with the existing rulebook? Over time, no. Their rulebook is designed to motivate future orientated people that are motivated by the obtainment of wealth as a conduit for their desires.

The shift from future to present orientations alters values, but more importantly it shifts one's motivations. It is important for Houston to recognize that they are failing to provide liberty to the majority of youths in the city. Houston needs to learn from their failure by holistically listening to their youth; understand their beliefs, their environment and how this formulates drives and desires. In order for the city to stay the best in the nation and meet 21st century demands, it must start by fostering a mutual relationship that over time will grow over time trust. But, most importantly this relationship will maintain the cycle of consumption needed to maintain future growth.

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Figures

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INNOVATION, EDUCATION ACCESS AND SOCIAL INCLUSION: THE DYNAMICS OF THE YOUNG ENTREPRENEURSHIP IN BRAZIL FROM THE UNIVERSITY INCUBATORS.

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1. Introduction

The emergence of an information society¹ demands an economic structure that favors innovation, giving prominence to the universities that must have a proactive role in the knowledge use within the entrepreneurship mechanism. From the creative cumulation²- Mark II- (Bergek et al, 2013), the university incubators are facilitators of the knowledge spillover, reducing entering costs of a new product in the market. Given the strong correlation between economic development and entrepreneurship (Audretsch, 2007)³ these institutions are essential in the strategy of growing and positioning of the economies in a more competitive global context.

In Brazil, one of the emerging countries that will lead the world economy in the next decades⁴, the innovation and the entrepreneurship are strategic to expand the social advances reached since the macroeconomic policies started in the 1990s. The investment in research and development (R+D) is essential to diversify the commodities exports model that anchored the growth in the past decade and show its depletion since the financial crisis of 2008, because in a country where 60%⁵ of the population is young and that has a policy of expansion of the university education, it is necessary to the creation of new jobs to absorb the qualified labor force that enters the market yearly, allocating the new college graduates and multiplying its consumer market, what makes the university incubators a social ascension tool.

Therefore, the transformation of the economy from the innovation is needed to keep the growth rhythm, and this is clear when analyzed the evolution of the investments in R+D in the past decade: it increased in average 145% between 1998 and 2008, and, in 2012⁶, Brazil was one of the only countries that invested the minimum of 1% recommended by OECD in the sector, value that reached 1,25% of the GDP in 2011⁷.

Looking for to create "job creators" (Llana, 2010), from the expansion of college education, when in 1990 11.2% of the population in the age range 18-24 years old was attending college and in 2010 25.48% was attending college, Brazil has

¹ The big data society. (Cukier y Mayer-Schoenberger, 2013).

² This theory assumes that the new knowledge created on the laboratories of the big companies and in the universities that is not commercially used generates entrepreneur opportunities, thereafter the entrepreneurship is the endogenous answer to the investment that was not fully appropriated by the established companies.

³ Higher levels of economic growth are the result of higher entrepreneur activity, once the entrepreneurship serves as mechanism to facilitate the spill over and the commercialization of the knowledge. This hypothesis received empirical support: there were analyzed 327 counties in Germany, where it was found that the higher economic activity correlates to higher number of new companies.

⁴ In 2001, Jim O'Neill, the head of Global Research in Goldman Sachs created the acronym BRIC to refer to the Brazil, Russia, India and China, economies he thought that would lead the economic growth in the next 50 years.

⁵ Source: IBGE, 2010.

⁶ Source: European Union, 2011.

⁷ Fuente: Global Entrepreneurship Monitor, 2013.

invested in university incubators as a way to increase the partnership enterprise-school, coordinating the chain between product development and marketing and supporting the fixed costs of the new companies as protects them in its initial stages as a strategy to furtherance entrepreneurship from innovation. The evidence is in the numbers: the university incubators have multiplied in the last 10 years, from 170 to 420, generating 6300 start ups and creating 33 000 jobs posts⁸.

This strategy uses the local entrepreneurship ethos: Brazil is the third country in entrepreneurs in the world, behind the China and the United States⁹. Also, it translates the market maturity, where, in 20 years, it get inverted the relation between entrepreneurship for need and for opportunity: from 2 to 1 in 1990 to 2 to 1 in 2010, transformation that has as base not only the better macroeconomics scene but the college education expansion¹⁰.

As the young compounds the biggest part of the structural population pyramid in Brazil¹¹, and they also represent the range that is more entrepreneur, being responsible for 56,9%¹² of all new business, it gives an own dynamic to public policies to furtherance innovation from the model of university incubators, because the expansion of the college access allows the education on entrepreneurship, subject that is researched in almost all superior education centers.

Business management is considered a way to educate the entrepreneur talent, building the capacities to establish a new project. Therefore, the incubator is the logics step in this series, giving conditions to put into practice this knowledge through a structure that facilitates the development of new businesses. (Chandra, 2007). The incubators are the result of this premise, that the entrepreneurship can be organized as a educational process, from formal and informal aspects. (Etzkowitz, 2002)

From the triple helix¹³, Brazil has innovated in the business incubators concept¹⁴, working in an environment of ideas generation, promoting products and services that makes the difference in the competitiveness and growth of companies (Etzkowitz, 2002) because it adapts the technology to the local needs¹⁵. The aim is to improve the business environment at macro level from the promotion of the micro level (Chandra, 2007). In 2010 Brazil occupied the 4th position in the world in the index of university incubators and technological parks in number of business¹⁶

⁸ Source: ANPROTEC, 2011.

⁹ Source: Global Entrepreneurship Monitor, 2012.

¹⁰ Source: ibis ibidem.

¹¹ Although the Brazilian government classifies as young the age range among 18-24 years old, to university benefits and the age range among 18-29 years old to specific subsidies and incentives to entrepreneur in the Small and Medium Enterprises projects, the majority of the aggregated data regards the population among 18-35 years old, including towards the university incubators that absorbs in majority, graduate students and researchers, those for their condition become beneficiaries of the supra aid, reason that we choosed this age interval to this analysis.

¹² Source: Brazilian Government, 2013.

¹³ The triple helix is made up from the government, the university and the enterprise, being the interrelation among them essential in a society based on knowledge. In Brazil, the triple helix became a movement to generate incubators in an university context. (Almeida, 2005).

¹⁴ Main objectives of the Brazilian incubators: promote the economics development, the job creation and facilitate the trade on technology. (Lalkaka y Schaffer,1999).

¹⁵ As an example we have an incubated project in the Genesis Institute at PUC-RJ that developed a software to control buses in the city of Rio de Janeiro, given the chaos in the local traffic.

¹⁶ Source:University Incubators Index, 2012.

The necessity to adapt technologies to the local culture and to promote the entrepreneurship so the college graduates can create jobs instead of looking for them has given an unique configuration to the university incubation environment in Brazil: it was created from initiatives between enterprise, university and government, answering the local needs, what reflects in incubators that acts in areas as design, culture and social incubators¹⁷, beyond the high technology that predominates worldwide and that is created from centered policies from the government. Focusing in social incubators, the Brazilian model transfer knowledge created in universities to the peripheries, a social inclusion tool, as aggregates value at the economy.

The peculiarities of the Brazilian market also reflects a trend in the incubators: the importance of the soft services more than the hardware, because the bureaucratic costs to open and keep a company (the Brazilian cost that ranks Brazil the 130th in the Doing Business Ranking) overcome the fixed costs with equipment and physical space, turning the incubators in spaces where management is essential, different from the consolidate model worldwide where the emphasis is on the hardware.

2. Incentives to entrepreneur: the young dynamics

2.1. The macro level: entrepreneur environment

The entrepreneurship in Brazil has been a symbol of social ascension and for that reason is attractive to the young that enter in the labor force. The class "c"¹⁸ is the one that most entrepreneur- represents 55,2%¹⁹ of the total- and it's a model of social inclusion that impulse the consumption in the past 2 decades, although its development is in the services expansion given the restriction of seed capital and know how. This impulses the entrepreneur model, given that the expansion of university education opened doors mostly to young of the classes "c" and "d".

Therefore, the insertion from the entrepreneurship becomes strategic to absorb the specialized labor force and generate incentives to the Young graduates to participate of the incubation programs in its university centers, as this model receives financing from the government that solves not only unemployment in a direct form, but that through the creation of entrepreneurs gives training and employment to scholars, mostly students or college graduates, way of direct subsidy to the incubated companies

This incentive can be maximized for a curriculum that teaches entrepreneurship and business management notions in the universities. In an integrated way the students learn about entrepreneurship and develop a business plan. This business plan can become an incubated Project inside the university, what makes these incubators proactive in the prospection of new entrepreneurs.

¹⁷ The social incubators have as their aim the empower of communities through the capacitation of entrepreneurs and the generation of enterprises that uses social technology. The incubators of culture and design phocus the creation of enterprises to possibilitate the transformation of ideas into business from its economics viability.

¹⁸ Class "a": income superior to 20 minimum national wages, class "b": 10 to 20 minimum wages class "c": 4 to 10 minimum wages class "d": 2 to 4 minimum wages class "e": up to 2 minimum wages.

Source: IBGE, 2013.

¹⁹ Source: Global Entrepreneurship Monitor, 2012.

The demand in the economy works as a catalyst to entrepreneurship among Young, from the search from innovation. The country growth from the 2000s and mostly since 2008 was sustained by the consumption of the classes "c" and "d". The class "d" represents 39% of population, being compound mostly by services without qualification (babysitters, chauffeurs, cooks). The challenge to supply they need on goods and services is essential to the expansion of the income and the social inclusion, where the social incubators become an important coadjutant in this strategy. Regarding technology the investments in infra-structure are guaranteed by the need of new projects.

Therefore, from an economic model that took 32 million from the poverty²⁰ and still needs to include 42 million, the demand for a new consumer market is generated, where the innovation is essential to make available new Technologies in a new equilibrium price. It's important to resolute that the Brazilian market is too divided due the social and cultural differences (the continental dimension) and this creates economics niches.

The wages paid in the private sector to college graduates in its junior level and the dynamics of the labor market that obstacles the ascension in the consolidated companies, together with changes in laws regarding the access to the public sector career work as incentive in the decision to entrepreneur, because it makes the Young population, the most vulnerable in the labor force, more willing to accept the risk of the enterprise activity and puts its prize in a reduced equilibrium level.

For that reason, the opportunity to entrepreneur becomes high, given the possibility of equal gains in the short run to those of entering in the private sector (due the exogenous limitations in the public sector) and higher in the long run, market that becomes distorted favoring the entrepreneurship.

Regarding the university incubators, the numbers put clear the importance of the universities in the national policies: the number of journals has increased (20,1% between 2005 - 2007), the number of researchers increased faster than the another G20 members between 2000 and 2010 and the government invests a higher percentage of its GNI (5.1% in 2011) in education that the other G20 members²¹.

2.2 The micro level: how the young assimilate the incentives to entrepreneur

The framework is favorable to entrepreneur, although the full employment that reached 5,4%²² in 2013. The entrepreneurship index among the young is higher than the other age ranges, despite the older ranges have more capital and experience in the business administration

It is evident that the macro incentives explain in part the high entrepreneurship index in Brazil among the Young, but is also need to analyze how this population²³ reacts to these incentives to study the impact of policies that furtherance university incubators can have in the national economics.

²⁰ Source: IBGE, 2012.

²¹ Source: OECD, 2013.

²² Source: IBGE, 2013.

²³ In 2012 the average payment a graduate received was R\$ 1500,00 compared to the average of R\$ 1792,62 to non college graduates (IBGE, 2012) and, despite the full employment levels of the past years,

Through an standardized questionnaire, that used quantitative and qualitative techniques, it were interviewed 20 young Brazilians, being 10 founders of companies incubated (sample A) and 10 of non incubated companies (sample B), as an attempt to synthesize the entrepreneur ethos to find trends in the university incubators model.

When it's compared the sample A to the B, it is found as convergence that the Young, because they have more access to information than its counterparts in the past, manages better the big data society than the older generations. They have more years of schooling (more than 80% have studied more than at least one of its parents). Its ideas are the result of an intense culture interaction that was facilitated by the opening and gain of importance of the country²⁴.

Thereafter, to entrepreneur means gives initiative power, representing more autonomy and possibility to put in practice their ideas and knowledge. This results in more inclination to sacrifice higher initial incomes when they have to face the risk of entrepreneur.

This risk is minimized when its compared with the structure of the consolidated companies, where the process of ascension is not transparent and there is no guarantees of keeping the job. They look for to win in the long run the safety that the labor market does not offer²⁵.

It worths to mention that the traditional companies had as advantage to offer resources in training and networking, what today is supplied by the a bigger access to the information and connection, from on-line courses to social networks.

Another common point is the trend to the Young to integrate the social life with the labor life, need that is not supplied by the big corporations, what becomes in important factor in the decision to start a business

The mainly convergence found was that almost all the sampling (100% of A and 60% of B) attended or attend business training courses and value innovation

The sector of technology services was the predominant in both samples, translating the context of higher education and little access to capital among the young. Even in the incubators, the process of product development becomes limited by the available technology in mostly of them.

The main divergence was among the developed products: for its own environment, even in the social incubators, almost all entrepreneur projects were innovative, against 20% if the sample B²⁶.

the age range of 18-24 represented 35% of the unemployed, what creates incentives to the young population to entrepreneur.

²⁴The social network were pointed among all the samples as essential to divulge and search for new technologies into their business. Although 70% of the sample B has said that its technology wasnt innovative, they have plans to access foreign markets through the development of new services.

²⁵ In both samples, all young answered that they were willing to sacrifice higher initial incomes to open their business, despite only 20% of the B sample would earn more working in a third party company than they earn at their start up. Due the high requirements to enter in an university incubator, where only the projects with higher potential are selected, 60% of the sample A would earn more on the short run working in a third party company.

²⁶ According to ANPROTEC, the main requirement to a company be selected in an incubation project is to have a product that aggregates innovation.

Common point in almost all the answers (16 of 20, being 9 of sample A and 7 of the B) is that the Young entrepreneur because they want to cooperate with the society, what is based on the social responsibility ethos that makes that more than 70% of them have participated of volunteer activities, from NGOs to civil association. To start a business is a way of being a change agent and create income, potential to social incubators.

3. Trends to the universities incubators in the absorption of the college graduates

The expansion of the university education²⁷ will allow the delivery of services of higher aggregate value with potential to have a new configuration, what coincides with the structural change that Brazil looks for, because innovate and entrepreneur is strategic to keep the social advances given the of restraints the agro exports model faces, and, mainly, in the integration of the new college graduates in the labor force, young that are qualified to perform in a society different from the production equilibrium that predominates in the country today.

In this sense, the expansion of the university incubators is essential to facilitate the spillover of knowledge and integrate the chain between development and trade. This expansion is relatively simple in Brazil, given the main obstacle to open and maintain a company in the country is the bureaucratic cost and emphasize

This expansion is facilitated by the endogenous model of incubation that includes the social incubators and the not purely technological as design and fashion²⁸. Therefore, simple structures, that put focus on shared spaces, in networking between university and enterprise and in the knowhow of this institutions in the business management becomes prominent, with easy diffusion of the model

An university curriculum that emphasizes the management and the entrepreneurship and stimulates the opening of new business generates positive impacts to the social incubator model, when it generates Constant input of new companies, accelerating the innovation speed in the Brazilian economics, as the faster is the technological transfer, higher is the number of resulting companies.

When its analyzed the answers of the standardized questionnaire, its perceived the force of the incubators, because they furtherance innovators business. The partnership university-government-enterprise, when it increases the incentives to start ups and when it follows an endogenous model, that includes the social incubators, is essential to the knowledge spillover in the Brazilian economics, reducing the entering costs in the market, key variable to open a business in the country, channeling energy of a young population that has an own dynamics: the access of to information and the need of autonomy in the management process.

Furthermore, the impact of these initiatives, that also aims to solve specific problems of the Brazilian economy as the social inclusion and the expansion of the consumption of the poorer population, generates positives externalities in the macro level.

²⁷ Within the DWBS (1997) model, that compares content of production factors among graduates and non college graduates.

²⁸ From music to fashion, the creative economics has been always the Brazilian vocation.

The link between university and enterprise, through the incubators accelerates the technological development, protecting the companies in its most vulnerable stage: the first years of life, at the same time that it protects the Young entrepreneur, with a structure that includes the fixed costs and the human capital, enjoying the population range more willing to take risks and that has more capacity to entrepreneur in absolute numbers.

Although only 6.800 business are incubated yearly in average in the country, compared to the almost 700 000 started in the same year, when we consider the young among the entrepreneurs, it results that almost 2% of the incubators projects are enterprises of young, giving an entrepreneur dynamic to the labor market in the 18-35 years old range, marked by innovation and high growth potential, acting as social inclusion tool.

The investment in the short run, channeled from the public and private sectors in R+D from the university incubators signals the success of the model and aggregates predictability to the technological development in the country, at the time its stabilizes the labor market to the young: only in hardware, that is not the predominant model in Brazil, in the information technology area, Intel will invest US\$ 152 million between 2013 y 2018 to software development in partnership with 7 universities, among them Universidade de Brasília, Universidade de São Paulo and the Universidade de Campinas. The government will also inject US\$ 254 million²⁹, what summed to the US\$ 102 million of Microsoft to build a research Center in Rio de Janeiro between 2013-2017 and the US\$ 508 million of Cisco in the same period (Shreeharsha, 2013).

This investments are potentiated by the energy sector, in which only Petrobras Will US\$ 4.5 billion in the next 5 years to develop an innovative chain from the suppliers. The investment will be directed to the Cenpes, the research Center of the company that is located in the Universidade Federal de Rio de Janeiro. This attracted foreign companies that operates in the energy sector as Schlumberger, FMC Technologies, GE, Halliburton, Cameron, and Baker Hughes, that see Brazil as a positive destination to investments and recognizing the quality of the national universities have signed partnerships in intellectual property with the Brazilian oil company (Marlin, 2013).

Therefore, the model of the triple helix its strategic to the demand creation to the new college graduates, at the same time that expands the economics activity and generates new jobs in sectors of higher aggregate value, that can use the labor of the young without entrepreneur profile, playing together with the macroeconomics scene and the education to entrepreneur that furtherance the start of new business.

Considered that the number of new business derivate of technology is determined by the innovation speed, the university incubators are the essential column in the twist to the society of information, reducing entering costs, solving endogenous problems of demand and giving conditions to the incubated companies to specialize, becoming a tool of social inclusion from the need to integrate a new labor force in the economy in Brazil (Apex, 2013). 228mvs

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²⁹ Its not computed the monetary offer of the Development Banks.

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MEXICAN YOUTH AND CHILDREN: FUTURES VISION ♦

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Introduction.

Children and young people of today are the ones who will be living and will decide the long-term future; in any case, they are those who have more future ahead. They are usually considered the transformers of the present, the creators of futures, but in spite of it, their opinions and visions of the future are rarely taken into account; their ideas and proposals are no listen to, or not unless these are expressed within the format of the adult world. Kids and young people are thus reduced to a role of spectators of a present reality which excludes them as builders of their own future, and as heirs of a future being built today by adults and that frequently threatens the possibility of achieving their dreams and aspirations. If the capacity of children and young people to think about the future, to create their own future visions, is not favoured, they will be ever more present and less future. Without a future idea, of a future that goes beyond the time horizon when they will stop being children and young, they will remain trapped in a transitory and ephemeral world where they will be passive subjects faced by a reality dictated by the adults.

Not taking into account today the interests of tomorrow's generations is equivalent to colonizing the future from the present, something we have no right to do. In so far as the future depends on what we do or do not today, and given that future generations have no voice in the choices about the future made today, it becomes important to cancel the least possible number of their future options. As many other things when thinking about the future, this is no easy task. What we call desirable futures today are desirable according to the values of those of us who define them as such. But, will they also be desirable for the children and young people who will be forced to live them as a present? Which are the aspirations and dreams for the future children and young people have? How can we avoid canceling them with our decisions when we do not even know them or know little about them?

In practically all countries the basic education systems include several (obligatory) subjects for children and young people to learn their history (and History is just but a set of narratives which interpret the past); in contrast, in practically no country there is at least one subject which helps them and teaches them to think in their futures (to Guild narratives which interpret the future, possible and desirable). The tutelage attitude of adult societies over children and young people (conditions which are transitory and vary according to the time and place) is such that they seldom worry about the manner in which children and youngsters envision the future. Children and youngsters are considered immature beings to whom with great enthusiasm we deliver their future, but we rarely teach them to think about it.

Although in the past in several countries there have been different exercises oriented to the exploration of futures visions of children and young people (more numerous in the case of the youngsters), what we know about their images of the future is not much. Children and young people are not considered "experts" and, therefore, they are not frequently considered valid subjects for consultation. This is

♦ I thank Enric Bas and Mario Guilló for their invitation to write this essay, in spite of my warning about not having enough field data to do a proper job.

unfortunate, particularly in countries whose young population represents a high proportion of the total, such as Mexico, where half of the population has less than 26 years of age, and a little less than a third has between 15 and 29 years of age. There was never before in Mexico such a high proportion of young people as there is today.

Although there has been in Mexico a great absence of efforts toward analyzing the way youngsters perceive the future and the specific future visions they hold, there are a few surveys (not necessarily guided by such a purpose) which allow some speculation about the topic. The first part of this essay includes a personal interpretation about part of what can be said from these surveys about the perception Mexican youngsters have of the future. It is worth cautioning that in general the results of surveys such as those used here tend to respond more to "what ought to be" than to "what is"; that is, the answers are idealized representations of reality.

The field data about the way Mexican children build images of the future and the content of their images of the future are practically nonexistent¹. Some of the difficulties faced when exploring the images of the future of children derive from the lack of pertinence of the typical tools of futures studies. Thus, the second part of the essay incorporates some proposals for obtaining empirical information about it. These were elaborated as an integral part of some futures studies projects that, unfortunately, for diverse reasons, could not be completed.

Futures of Mexican young people.

Young people in Mexico, and surely also elsewhere, constitute a very heterogeneous group, perhaps more today than in the past. In abstract, "youth" is just a label². There is not a unique manner of "being young"; among the young people there are multiple social practices (worries, interests, economic and social positions, educational levels, practices of cultural production and consumption, etc.). A youngster in a marginal rural community probably shares only the age with a young urban university student. The socioeconomic and cultural conditions, and the social fragmentation associated with them, added to the needs for differentiation, produce a great diversity, which makes it difficult to make generalizations about the youth. On the other hand, the empirical data about the visions of the future of Mexican youngsters are scarce, and can only be derived from surveys of a more general purpose. The nature of these surveys allows interpretations apparently not always consistent and which seem to change with time.

Mexican youngsters live today (as many adults also do) a difficult objective situation of instability and transitory temporality, in an environment of corruption, violence, impunity and distrust. In Mexico, as in other Latin American countries, social exclusion (poverty, unemployment or sub-employment, marginality) has been a constant that a great proportion of the population has been forced to accept. About 52 million Mexicans live in poverty conditions and some 11 million in conditions of extreme poverty. And some of the characteristics of social exclusion (such as unemployment) are more notorious among the youngsters. Youth is frequently associated with a desire of change, with transformation and innovation,

¹ In 2005 Concepción Olavarrieta, chairman of the Mexican node of the Millennium Project, organized a contest among Mexican children and young people to reward the best essays dealing with the fifteen challenges of the millennium. The contest was held several years, and was later extended to International entries. Unfortunately, these essays were not preserved.

² Bordieu, Pierre, *La Juventud no es más que una palabra*, Sociología y Cultura, CONACULTA/Grijabo, Colección Los Noventa, México, 1990.

with vital energy and generation of expectations; yet, the experience of many Mexican youngsters passes by an environment of difficulties and lack of opportunities to express such features. Six out of ten Mexican youngsters do not attend high school or university studies, and seven million of them do not study nor work. With the euphemistically called "labor flexibility", today Mexican youngsters can expect to find jobs ever more precarious, less stable and with no guarantees³, and some no jobs. Others are employed in jobs for which they are over qualified; and some more emigrate. In the labor sphere, what Mexican youngster can obtain in the legal field is very limited and generates hopelessness; there remains unemployment or the way to informality, both in "legal" activities (informal commerce, for example) and illegal activities (smuggling, theft, drug trafficking). According to the National Institute of Statistics, Geography and Informatics, unemployment among the young is already higher than 10%, and only 30% of university graduates finds a job one year after graduation, and of those lucky to find a job only a third finds it in activities related to their field of study. In 2011⁴ only 39% of youngsters declared having worked at least one hour during the previous month, and among those who worked, 47% received between 140 and 420 US dollars per month. 66% of the families of the young people could barely cope with all their expenses; only 20% of the families could save part of their income. The precariousness of employment is clear: for 74% of the young people the most important feature of a job is that it is secure, even if that means there are less possibilities to progress. According to the National Survey on Addictions, four out of ten Mexican youngsters are alcoholic and 1.5% of them are drug addicts. The rate of homicides of young people is around 6 to 7 per one thousand. Suicide is now the third most important cause of death of the young (after cancer and automovil accidents), and the rate of suicides grew more than 70% during the last decade of the past century. In spite of all that, paradoxically, even though the experience of many youngsters is marked by great difficulties and lack of opportunities, in 2012 85.5% of the Mexican young people declared they were satisfied with the life they have had until then⁵.

According to the young people the current Mexico is far from the country dreamt by them. In 2009 only 11% of the young people considered that Mexico was totally or very close to the Mexico of their dreams, while 51% considered it was totally or very far from the Mexico of their dreams⁶. Worst than that, using the image of an automobile as a metaphor of the direction of the country, 27% considered that it was standing still or moving in reverse, while only 16% thought it was moving forward in third or fourth gear. But on the other hand, not only do the Mexican young people overwhelmingly say that they feel happy (according to the National Survey of Youth Values of 2012⁷ a 92% of them declare they are happy; and according to the media company Viacom a 93% are happy⁸), but the proportion

³ In 2005 almost two thirds of the young did not have a contract in their first job; in the group of the poorest homes those who did not have one reached 95%.

⁴ National Youth Values Survey of 2012. See <http://www.juridicas.unam.mx/invest/areas/opinion/envaj/resultados.htm>.

⁵ *Ibid.*

⁶ Rodríguez Woog, Manuel, y Guido Lara, "Sueños y aspiraciones de l@s mexican@s", *Nexos* on line, february, 2011, http://www.nexos.com.mx/documentos/suenos_y_aspiraciones_de_los_mexicanos.pdf. These are the results of a survey done by the companies GAUSSC and Lexis in 2009. Although this survey was not directed exclusively to young people, but to Mexicans in general, Manuel Rodríguez Woog was kind enough to provide me with the corresponding tables disaggregated for the age groups between 15 and 29 years of age. The results for this group do not differ significantly from those for the population at large.

⁷ National Youth Values Survey of 2012, *op. cit.*

⁸ Survey of the media company Viacom covering young of 24 countries in the five continents, published in 2013, where Mexico is the country with a highest percentage of happy youngsters.

who feel happy is higher than that prevalent in other countries (according to Viacom).

A few years back, in 2005, 63% of the Mexican youngsters (aged between 12 and 29 years) thought⁹ that it was preferable to have a life plan, while 28% thought it was better to adapt to events. This leads to thinking that almost two thirds had future goals and objectives and considered that they could act in order to achieve them (although only 27% of them were truly convinced they could realize their most wanted projects, more than half of them had a certain degree of confidence in being able to realize them). However, in parallel, half of those Mexican youngsters were in total agreement with the statement "The future is so uncertain that it is better to live life a day at a time", and at least another 25% were at least partially in agreement with that statement. This is a vision which privileges the present and casts doubts in the capacity to plan. In fact, at least among the group of young of lower income, youngsters seem to "live the present with great intensity, without an important weight in their daily lives of the notion of mid and long term future"¹⁰. Their priority to plan their lives, on one hand, and their perception that it is preferable to live their lives one day at a time, on the other, are two ideas which are not easily swallowed together. Apparently Mexican youngsters in 2005 thought of future goals with a high degree of confidence in being able to reach them, although future uncertainty advised them to center in the present. Perhaps Mexican youngsters trusted that, in spite of the harsh conditions and future uncertainty, a miracle or the Guadalupe virgin would allow them to reach their goals (three quarters of them believed in miracles and almost 90% in the Guadalupe virgin¹¹).

A survey by GAUSSC and Lexis¹² in 2010 seems to confirm the vision of an uncertain future among the young, but at the same time their trust in being able to realize their dreams. Only 21% of the respondents totally or partially agreed with the statement that Mexico has a defined course and direction, and barely 19% believed that the country is moving in the right direction, while 31% was totally or almost totally in agreement with the vision that Mexico is like a ship moving adrift, and 39% thought that the country is traveling through a wrong course. But in contrast, 46% of them were in total or almost total agreement with the statement that Mexicans do know where they are going, 34% with the statement that Mexicans have a common dream (however, when that dream is expressed in concrete terms the answers are multiple and disperse), and 62% with the statement that dreams are something which can be realized. On the other hand, barely 16% believed that Mexicans do not know where they are going, 25% that we do not have a common dream (41% estimated that each Mexican works for himself or herself, and only 19% considered that Mexicans work as a team), and 10% that dreams are something unrealizable. In contrast with what was said in the previous paragraph, the results of this survey show a certain orientation of the young toward the future; while barely 17% believed that the past matters most to Mexicans, 38% declared that what matters most to Mexicans is the future.

In spite of the harsh conditions they have faced (a mediocre economic growth during the last three decades, poverty and marginality for most of them, decreasing purchasing power of the minimum salary and income stagnation, and growing violence and insecurity), more than two thirds of the Mexican young people

⁹ National Youth Survey 2005. See <http://cendoc.imjuventud.gob.mx/investigacion/encuesta.html>.

¹⁰ Castillo Berthier, Héctor, "Los jóvenes populares, ¿cuál futuro?"

¹¹ National Youth Survey 2005, *op. cit.* In the National Youth Values Survey of 2012 (<http://www.juridicas.unam.mx/invest/areas/opinion/envaj/resultados.htm>), the percentage of young people who believe in miracles and the Guadalupe virgin is still high, but lower than in 2005 (74% and 79%, respectively).

¹² Rodríguez Woog, Manuel, and Guido Lara, "Sueños y aspiraciones de l@s mexican@s", *op. cit.*

considered in 2005 that they had a better economic situation than their parents when they were their age, and between two thirds and four fifths believed that their sons will have more opportunities to get a job, a better education, better health services, an assured old age, and capacity to save money (the last two in a lower proportion)¹³. In 2012 this vision was even stronger: 88% of the young people considered that they would have equal or better opportunities than their parents to get a job; 92% to obtain a better education; 92% to have health services; 79% to have an assured old age; and 81% to have more capacity to save money¹⁴. In other words, according to the National Youth Surveys, the Mexican young people have a clearly positive view of their future and see themselves as links of a continuous chain of progress. However, the results of these surveys show a clear contrast with those of the survey conducted by the opinion companies GAUSSC and Lexis for the journal *Nexos* in 2009. In it, 49% of the respondents considered that their parents lived better or much better than they do, and only 17% that their parents lived worst or much worst than they do. In contrast, 41% considered that their children would live better or much better than themselves and 25% that they would live worst or much worst than themselves. Thus, according to this survey, the current generation of young people looks at itself as a “punished” generation (living worst than their parents and worst than their children).

According to the 2005 National Youth Survey, the three things that the young people would like to have most are a job (58%), a good economic position (48%), and a family and children (36%). This differs significantly with the very low proportion of those who among the three most desirable things expected in the future selected happiness and satisfaction (2.6%), living in a better and more just country (1.8%), or having a better quality of life (0.9%). The economic reality and the hope of having a family are clear winners over well-being and justice; for Mexican young people “having” clearly weighted more than “being”. Among their more important fears for the future were: death (31%), lack of good health (28%), lack of a job (24%), failure (18%), and having economic problems (17%). The problems of the country (9%), and loneliness (9%) occupied a second plane among their future fears, and not being able to be happy (3%) or drugs (2%) were not part of their youth pathos.

In the past, since the 19th Century, but particularly in the 20th Century, the transit from the past to the future was marked by political decisions made mainly within the sphere of public power. Within it the possible new foundations of the country were embroidered, and the strategies were designed to convert them into empirical realities. From outside power, frequently and with intensity, a critical thought about the lived reality was weaved, suggesting different nation alternatives, but always (or almost) aspiring to gain the public power to be able to bring them to reality. The future passed thus by the exercise of public policies. It now seems that Mexican youngsters do not perceive it that way, showing a marked indifference for politics and the public sphere. If in the past youth participation was highly institutionalized and sought changes in the economic and social structures, today the young seem to prefer horizontal and informal networks, more flexible and unstructured, and to seek changes in concrete daily issues. According to the 2005 National Youth Survey, barely 17% accepted reading, seeing or listening in a regular fashion to programs or news about politics or public issues, while 41% said they never do it or do it only in very special occasions. 40% mentioned having no interest in politics and another 40% said it had only a marginal interest in it¹⁵. A

¹³ National Youth Survey 2005 (Encuesta Nacional de la Juventud 2005), *op. cit.*

¹⁴ National Youth Values Survey of 2012 (Encuesta Nacional de Valores en Juventud de 2012), *op. cit.*

¹⁵ According to the survey of GAUSSC and Lexis of 2009 (Rodríguez Woog, Manuel, and Guido Lara, “Sueños y aspiraciones de l@s mexican@s”, *op. cit.*) 67% of Mexican young people show little or no interest in politics.

similar percentage (40%) considered that they have to participate in politics when it is compulsory, and a 30% said not to know when one should participate in politics. 43% thought that the best way to participate in politics is voting (but another 35% declared not to know when they must do it), and almost two thirds expressed it is worth voting, although the majority of them thinking it is compulsory. In spite of this, barely 45% thought that democracy is preferable to other forms of government, and according to almost half of the respondents democracy is useful only to elect who will govern (only 15% identified democracy as a means to solve injustice, 6% as a means to have their demands heard, and only 2.3% as a means to improve the country). A few years later, according to the 2012 National Youth Values Survey, politics was considered some or very important by only 38% of the Mexican young people, while, on the other hand, family (for 99%) and Money (for 93%) were considered important or very important.

If public policies are an instrument to achieve a desirable or preferred national future, better than the present, and if they are built within the political sphere, one has room to question if the disinterest Mexican youngsters show for public matters and politics is articulated or not with the adoption of a present without past or future, and an individual future rather than a collective one¹⁶. In a recent article, Guillermo Sunkel, based on information of the Latinbarometer (an opinion survey conducted among the Latin American population), suggests that the sense of national belonging of Latin American youngsters "has more roots in the future than in tradition"¹⁷. However, this is probably only relatively true: trust in the future seems to be above all in personal and family future, but not in the collective (national) future. What young Mexicans want is for their personal future, not for the future of their country. In fact, the results of the GAUSSC and Lexis survey point to a fracture between young Mexicans and their country, with a marked individualism and lack of interest in those issues that go beyond their personal and family spheres. According to that survey, while 82% of young Mexicans thought they could do everything or much to change their personal future (and only 3% thought they could do nothing or very little to change it), barely 35% thought they could do everything or much to change the future of Mexico, and 27% thought they could do nothing or very little to change it. On the other hand, only 21% of young Mexicans agree to sacrifice personal benefits if this contributes to the development of Mexico, while 28% declared they would do whatever brought them personal benefits even if that brought no benefit to the country. Reinforcing this vision, 62% of young Mexicans considered that the family is above the country and only 9% believes that the inverse is true.

Several could be the reasons for the disinterest young Mexicans show in politics and the public sphere. According to the 2012 National Youth Values Survey this disinterest has to do with the perception of the young that politicians are dishonest (37%), with their lack of understanding of politics (23%) or their perceived lack of time to spare in politics (14%). Thus, they participate in politics only when they consider it is compulsory (26%), they have information and responsibility (20%), they think they will obtain some benefit (17%), or when they feel that they have to protest in favor of a just cause. In Mexico, as in many of the Latin American countries (and others), politicians, weather they belong to political parties or to the group of public servants in office, are among the worst evaluated social actors.

¹⁶ See García Canclini, Néstor, "Los jóvenes no se ven como el futuro: ¿Serán el presente?", *Pensamiento Iberoamericano*, No. 3, 2008,

<http://www.pensamientoiberoamericano.org/xnumeros/3/pdf/pensamientoIberoamericano-75.pdf>.

¹⁷ Sunkel, Guillermo, "Sentido de pertenencia en la juventud latinoamericana: identidades que se van y expectativas que se proyectan", *Pensamiento Iberoamericano*, No. 3, 2008,

<http://www.pensamientoiberoamericano.org/articulos/3/83/0/sentido-de-pertenencia-en-la-juventud-latinoamericana-identidades-que-se-van-y-expectativas-que-se-proyectan.html>.

According to the 2005 National Youth Survey, only 8% of young Mexicans believe in federal congressmen, 7% believes in the police, 15% in the federal government, 18% in the President, and 21% in the Supreme Court. By contrast, 79% believes in the family, 56% in doctors, 41% in teachers, 43% in public universities, and 32 in priests or religious ministers. Similar results were obtained in the 2012 National Youth Values Survey and the 2009 GAUSSC and Lexis survey. Young Mexicans show strong links with their families, believing they can trust their members, receive their support, and share with them. But they distrust the ruling class, the institutions, and their fellow nationals in general.

With the adoption of neo-liberalism and the associated retreating processes of the public sector, the pretence of public well being for the people has been transformed into the well being for businesses and markets; the economy, or more precisely the financial issues, began to occupy in an increasing manner a space which previously belonged to politics. Thus, it seems that young people no longer expect well being or great benefits from the management of public issues. According to the GAUSSC and Lexis survey, while only 9% of the young people consider that they and their families have had a substantial share of the national wealth, 44% considers that they have had no share or a very small share of that wealth. A 19% believes that the citizens have a debt with Mexico, while 38% considers that it is Mexico who has a debt with its citizens.

According to the 2009 GAUSSC and Lexis survey¹⁸, for young Mexicans the individual priority has to do with economic topics (employment, income level, poverty, etc.); however, they consider that the main problem of the country today does not refer to the economy, but to insecurity and delinquency¹⁹. In the future, for more than half of the young (56%) the main problems they and their families will face are: in first place, economic (economic crisis, unemployment or precarious employment, high prices and inflation, poverty); in second place, far behind, insecurity and delinquency; and in third place deficiencies in the legal system (corruption, impunity, injustice, violations to the legal framework). As for the main features of an ideal Mexico, almost four out of ten young included a safe country without violence, whereas only two out of ten pointed to a country with employment and economic development, without poverty. Thus, it seems that in the eyes of young Mexicans a precarious but safe and peaceful life is preferable to a life of abundance but insecure and violent. The mismatch between individual and national priorities manifested in the opinion of young Mexicans may be interpreted as an additional sign that they do not expect much from the sphere of public policies to solve their problems. Yet, the issue of growing violence and insecurity cannot be easily discarded as a worrying topic of young Mexicans. A high percentage of the violent crimes registered in the country are committed by adolescents and young people²⁰. On the other hand, young people also represent a high percentage of the victims of such crimes²¹. The importance of insecurity is clearly manifested in the preferences of young Mexicans: in spite of being a group associated with the search of spaces of freedom (assertion of their being), faced with the dilemma of security vs. freedom, 39% chooses the second even if it means

¹⁸ Rodríguez Woog, Manuel, and Guido Lara, "Sueños y aspiraciones de l@s mexican@s", *op. cit.*

¹⁹ These results contradict those of the National Youth Values Survey of 2012 (Encuesta Nacional de Valores en Juventud de 2012), *op. cit.*, according to which Mexican young people include among the three gravest problems of the country poverty (57.0%), unemployment (47.4%), insecurity (41.5%) and corruption (35.2%).

²⁰ According to data from 2008, young people between 18 and 24 years of age were responsible for 33% of homicides, 29% of violations, 39% of robberies, 19% of possession of forbidden weapons, and 18% of cases of sexual abuse.

²¹ According to the report *Youth Violence in México (La violencia juvenil en México)*, World Bank, June 2012, in 38% of the homicide cases registered in the victims had between 10 and 29 years of age, having grown very importantly between 2007 and 2010.

not having the first, but a similar percentage (34%) prefers having security even if it means losing freedom²², which no doubt is worrying.

Once more according to the GAUSSC and Lexis survey²³, 61% of young Mexicans trust that dreams can be realized²⁴, while only 10% believes they cannot. In spite of the high level of confidence on the part of young Mexicans that they will be able to fulfill their aspirations, 52% of them consider that the situation of the country (which is seen as bad and far from their ideal) will exert a strong influence in the possibility of actually succeeding. 69% believe that, even in adverse conditions, their personal effort will be determinant to actually realize their dreams. As a reflection of their individualism, 41% consider that their personal and family efforts will be the most important factor for their success, while for 21% the determinant factor will be the collective effort of all Mexicans as a country. Which will be the main problem they will face possibly preventing them from reaching their goals? For 66% of them the low quality of the available jobs in México; for 61% that the laws are not obeyed; for 57% the bad quality of education; and for 55% the lack of a shared common effort by all Mexicans.

Thinking in the future of the country, the desires of young Mexicans are divided in almost equal fashion between everybody in Mexico having what is needed for a decent life (55% of respondents) and Mexico being a world power (45%)²⁵. But maybe that is the result of what they understand by "having what is needed for a decent life" (fundamentally issues of economy and employment and material goods; for 63% as a first choice and for another 63% as a second choice), and by "being a world power" (which is also linked to topics of economy and employment, equality and poverty, and an image of development in 57% as a first choice and 60% as a second choice). In any case, half of the young Mexicans totally (or mostly) agree that Mexico has everything that is needed to move forward (while only 20% totally disagree with this statement), associating the country's assets with topics of human resources (27%) and natural resources (33%), and its liabilities mainly with institutional deficiencies (25%) and issues linked to a lack of positive values (17%). As for their life aspirations, the first choice, more education (29%)²⁶ and employment and good income (23%); as a second choice, employment and good income (29%), possessing material goods (20%) and having their own family (17%); and as a third choice, possessing material goods (25%), a better Mexico (17%) and employment and good income (15%). Education appears to be a desirable and important element for young Mexicans, but it is instrumental. Education matters in as much as it leads to a better job and a better economic position; its role to explain and better understand the world that surrounds them, to give a higher meaning to their lives, to enjoy everything that education allows, is practically absent.

At a global level, it seems that several factors, among them the development of new communication media and social networks, are weakening, or at least transforming, the national "being" (identity), and maybe this could be playing against the interest of the young in politics and the public sphere²⁷. However, such

²² National Youth Values Survey of 2012 (Encuesta Nacional de Valores de Juventud de 2012), *op. cit.*

²³ Rodríguez Woog, Manuel, and Guido Lara, "Sueños y aspiraciones de l@s mexican@s", *op. cit.*

²⁴ According to the National Youth Values Survey of 2012 (Encuesta Nacional de Valores de Juventud de 2012) (*op. cit.*), 74% of Mexican young people believe or firmly believe they will be able to realize their most yearned projects in the future.

²⁵ Rodríguez Woog, Manuel, and Guido Lara, "Sueños y aspiraciones de l@s mexican@s", *op. cit.*

²⁶ According to the 2012 National Youth Values Survey (*op. cit.*), 52% of Mexican young people believe that to be successful what matters most is a good education; as a result of it, 54% expect to have a good job.

²⁷ In the case of Mexico, it should be taken into account that at present less than 40% of young people have a computer or are connected to Internet. Thus, the impact of these technologies to which the virtual

a weakening of the national identity does not have a solid empirical basis in the case of young Mexicans; in 2012²⁸ 92% of them declared feeling proud of being Mexicans. Mexico is far from being the country of their dreams, but, paradoxically, in spite of it and the fact that family is more important to them, they feel proud of having been born in Mexico and of being part of it.

Although the answers about the future visions of young Mexicans are complicated and in any case only tentative, it seems that their life strategies are more flexible and probably more oriented to the short term²⁹ that in the past. The velocity of changes in practically all orders, but in particular in the field of technology, and the corresponding compression of time, in an environment of high uncertainty, leads to a much higher discount rate of the future among the young, and thus their attention focuses more in the short term and, if possible, in strategies of immediate retribution. For an important proportion of them, the present is a matter of survival or subsistence; tomorrow exists only if you survive today. When circumstances allow it, young Mexicans navigate through informality, in a wide sense, at work, in the acquisition of consumption goods, in their social relations, etc. If in the past studying, working, and marriage were part of the central preoccupations of the young, the dislocation of the being to become consumers, of individual liberty in freedom of consumption and free markets, have apparently placed the center of attention in connectivity and consumption, and today these last belong to the kingdom of the instantaneous. Young people are thus ever more present and less future. And given the adversity of their present, their declared high level of happiness is maybe just a masquerade to evade their harsh daily reality.

Finally, in answering the question of the most desirable feature for a future Mexico³⁰, 33% of young Mexicans declare they want an honest country, with justice, and respectful of the law; 20% of them prefer an egalitarian country, which cares for those who have less; a further 14% prefers an educated country; 10% an economically developed country integrated to the rest of the world; 8% a healthy country caring for its children and old; 8% a country where everybody has enough to cover their basic needs in order to live in peace; and 6% a country which cares about the environment. No doubt this points to a fragmented vision of the desirable future for the country. None of these ideal features was selected by at least half of the young respondents. And no doubt, it is a picture of an ideal Mexico where the immediate desires of employment, higher income, and economic tranquility, clearly expressed by the young in their answers to other questions, are now blurred.

The futures in Mexican children: Possible tools and instruments.

If the exercises oriented to know which future visions are shared by young Mexicans have been very scarce, those directed to know future images held by Mexican children are practically non-existent³¹. Determining the future aspirations

social networks are associated is important but still relatively limited. Those without access to them see their socializing capacities diminished: “If I don’t have a computer I will be left out of what is socially meaningful”. Winocur, Rosalía, “Procesos de socialización y formas de sociabilidad de los jóvenes universitarios en la red” (unpublished), quoted by García Canclini, Néstor, “Los jóvenes no se ven como el futuro: ¿Serán el presente?”, *Pensamiento Iberoamericano*, No. 3 (see <http://www.pensamientoiberoamericano.org/articulos/3/75/0/los-j-venes-no-se-ven-como-el-futuro-ser-n-el-presente.html>).

²⁸ National Youth Values Survey of 2012, *op. cit.*

²⁹ In none of the National Youth Surveys a precise meaning of “future” is given, and it is thus impossible to know if it refers to the short range (say five years) or the long range (25 or more years).

³⁰ Rodríguez Woog, Manuel, and Guido Lara, “Sueños y aspiraciones de l@s mexican@s”, *op. cit.*

³¹ In 2012, just before the Mexican presidential elections, an organization called Nuestro México del Futuro (Our Mexico of the Future) produced and circulated a video played by children, titled “Uncomfortable children demand the candidates”, showing in an exaggerated and grotesque manner the

and desires or fears of the children poses, as said in the introduction of this essay, particular difficulties. Traditional tools used in futures studies have been designed for adults, mostly knowledgeable in a given topic. The means of expression employed, as well as their format, are generally inadequate for children. Thus, to obtain the future visions of children new instruments are required. If future visions are the fundamental force which drives everything else in our lives, how can we help children to build their own?

In the year 2000 we designed an ambitious project entitled "Mexico Vision 2025". Its objective was to build several scenarios for the possible evolution of Mexico to the year 2025. The project included building regional scenarios (Mexico was divided into seven regions integrated by groups of states geographically contiguous) and developing scenarios for nearly two dozen topics, using different quantitative and qualitative methods, within a relatively complex structure and weave. The project had the support of the Presidency of the country as well as that of several organizations of the civil society, academics, businessmen, politicians of all colors, etc. As part of this project we had planned a whole set of activities directed toward obtaining the images, expectations, dreams, doubts and fears which Mexican children and young people had about the futures of Mexico. Unfortunately, the project aborted soon after it started for reasons which lie outside the aim of this essay, and thus this objective could not be realized. Nevertheless, some of the instruments which could be used to collect the futures images of Mexican children had already been designed, and some of them had been already tested in a preliminary and experimental manner.

Among young people it is possible to apply standard tools of futures Studies (futures Workshops, STEEP, Delphi, etc.), but to apply these with children is not easy. Thus, in collaboration with an extraordinary interactive science museum for children (Museo del Papalote, Mexico City), we designed several alternative tools. Some of them were oriented to determine the general attitude of children toward the future, while others were directed to obtaining their visions of the future.

To determine the children's attitudes toward the future, for example, the following activities were proposed:

- (a) Developing four short sequences of animated drawings to be presented to the children, each of them representing a different attitude toward the future, asking the children after they had seen the four to select the one more similar to their idea of the future and their life. The four sequences would be: (i) First, a trip in a rollercoaster, that the child would see as if he was a passenger. There would be ups and downs, turns and twists, and he would be unable to modify the trajectory. He would only see a small piece of what is in front of him as he approaches it. He could try to guess along the trajectory if what follows is a turn, a curve, going up or down, or the end of the trip, but he could not modify the route. The future would thus be predetermined and set, without the possibility to change it. (ii) The second would show a big river, with a rubber raft floating in its surface, where the child mounts as an oarsman. The riverbed is fixed, but the oarsman can come close or far from the Banks, transit through or avoid the rapids, avoid the crocodiles or shoot them, etc. Suddenly an earthquake opens cracks and throws the top of a mountain blocking the river and opening a new riverbed. The future as something which may be radically altered by big external

scourges of national life (corruption, insecurity, violence, unemployment, poverty, etc.), with the final statement "If this is the future that awaits me, I don't want it". The video was strongly criticized for the use and abuse of the children actors and the incorporation of ideological biases appealing to the unconscious.

events, with men having very limited margin of maneuver; (iii) The third would place the child as an observer of an ocean from high above the air. A ship sails from a port and can select different destinations. The child selects one and can design different routes to reach it. The captain of the ship takes advantage of favorable currents and winds and avoids obstacles when the lookout announces they are on sight. Once an obstacle is avoided, the captain maneuvers to return to the selected route, or the child may select a new route to arrive to its destiny. Other ships and captains navigate against the currents, in big waves, suffer accidents, and come close to the selected destiny but do so very tired. Yet others unfold sails and let the wind push them in an unknown trajectory. The preferred future as something which can be selected, and once one does so, one may take advantage of opportunities and avoid risks to reach it, trying to get to it against whatever obstacle appears (with no anticipation), or, on the other hand, one may just let the external environment to decide for oneself and drive us to an unknown, not necessarily preferred, destiny; and (iv) A fourth sequence which places the child inside a casino, in front of an enormous table. Different players throw dices at the same time; dices run around everywhere; they stop at different times, showing different sides which tell the child how to move next. The future as something totally uncertain, as mere chance, where if things had happened in a different manner they would have produced a different future.

The child would know that whichever his choice of sequence the answer would be right. However, alter his Choice of sequence, the game could end with a message pointing out that scientists and futures researchers think that our future is colder to the third sequence, and that thinking about the future has advantages and can be done within certain limits.

- (b) Designing a simple questionnaire with a series of statements, where the children would answer selecting one of the following answers (or their equivalent): totally disagree; disagree; more or less disagree; more or less agree; agree; and totally agree. The questions, just to illustrate, could be of the following kind: (i) I think that as time has passed by humans have made progress and will continue to do so; (ii) My future is already determined; if I have an accident it is because it was my destiny; if I do well it is because I am lucky; if things go wrong it is because I have bad luck; (iii) We don't know (nor can know) what the future will bring us; good things or bad things could equally happen; (iv) Some people can predict the future without making any mistakes; (v) If I knew many of the things which are happening today, I could foretell my future; (vi) Only God knows what is going to happen to us in the future; (vii) The future will be very different from the present; there will be many surprises; (viii) Wise men can predict fairly well if it is going to rain, or which team is going to be champion; (ix) For those who lived before us it was easier to know what was going to happen to them in the future; (x) The future cannot be foretold, but we can do things today so that it is better; (xi) If we don't try to imagine the future, it will be less likely that we can build the future we like; (xii) When I am 25 years old Mexico will be very similar to what it is today; (xiii) When I am as old as my parents are today many things are going to be different; (xiv) If I imagine the future I like, and I work hard to build it I will certainly get there; (xv) Imaging the future is hard, but doing it is worthwhile; etc.

Several strategies were also designed to determine the images children had for the future of Mexico. The following are a few examples.

- (a) Perhaps the simplest (and one which has been popular in several exercises in different parts of the world) is the use of drawings, asking children to draw how they imagine their environment (house, neighborhood, city, country, school, etc.) will be in a far future (when they are adults, when they already have children, when they reach the age of their parents). Alternatively, one may ask them to draw how they think the long term future of a specific thing will be (the schools, houses, transports, environment, toys, etc.). We did some experimental tests with this tool. Children visiting the museum who were interested and volunteered were invited to a special room provided by the museum where colors and paper were freely available. The majority of the drawings reflected "standard" worries about the environment (sometimes showing positive views, sometimes depicting a somber future), the unity of families, technological developments, security, and poverty issues. Other children answered through their drawings to the question "what I will be when I grow old", representing themselves as engineers, doctors, teachers, etc. In all, nearly one hundred drawings were collected. The collection of drawings thus obtained was, however, still insufficient to draw serious conclusions. A bigger sample could have made this possible, allowing ideally comparisons by age, sex, regions, type of family unit, etc. Although most of the drawings were "standard", there was an outstanding drawing (unfortunately lost when the project was interrupted), by an eleven years old boy, which we were planning to use as the front cover of all the reports of the project. Behind the counter of what appeared to be a pharmacy, a man was mixing substances coming from different containers. In the back there was a shelf where one could read the tags specifying the contents of the containers waiting to be used: family, education, health, water, environment, houses, etc. The future was thus presented as a result of a combination of different factors in different doses.
- (b) Different short stories were designed about the future of Mexico, set in the year 2025. Each was a draft describing a possible scenario for the estate of the country in that year, but all the descriptive elements of the story (a maximum of 15 to 20 of them) contained multiple options out of which the children had to select the one they preferred. There was also one question of open answer in each story. All the stories started with the statement "We are in Mexico in the year 2025. You are as old as your parents are today (year 2000). Can you imagine it? Now, please help us complete the following story. We want to know how Mexico will be when you grow older". The story followed with the descriptive elements they had to choose from. As an example (the effectiveness or difficulties the stories could have were never fully tested), one of them was:

My name is _____, and I live in México. We are in the year 2025 and Mexico is [(i) similar; (ii) different; (iii) very different] to how it was 25 years ago. Then I was too young, but I still remember well how it was. Today children live [(i) much worse; (ii) worse; (iii) the same; (iv) better; (v) much better] than then. The food is [(i) the same; (ii) similar; (iii) somewhat different; (iv) very different] from what we ate when I was a child, and it tastes [(i) the same; (ii) much better; (iii) better; (iv) worse; (v) much worse] than before, and it is [(i) much healthier; (ii) healthier; (iii) equally healthy; (iv) less healthy; (v) more harmful] than it was. Today children exercise [(i) much less; (ii) less; (iii) about the same; (iv) more; (v) much more] than they did when I was a child. I remember that when I was growing up there were a lot of poor children in Mexico. Today there are [(i) many more; (ii) more; (iii) about the same; (iv) less; (v) much less] poor children. Schools in 2025 are [(i) bigger; (ii) about the same size; (iii)

smaller] and the classes have [(i) less; (ii) about the same; (iii) more] students than when I was a child. Today going to school is [(i) more fun; (ii) equally fun as; (ii) less fun] than before, because_____

When I was a kid adults worked [(i) much more; (ii) more; (iii) as hard as; (iv) less; (v) much less] than today, and they were payed [(i) less money than; (ii) about the same money as; (iii) more money than] today. I think that Mexicans are [(i) less; (ii) equally; (iii) more] proud to be Mexicans than when I was a child.

Given that the stories were very short, each dealt with different aspects of the national reality, always trying to include only issues to which children could easily establish a link.

A variant of this tool was a short play where two actors played a script situated in the future, part of which was improvised according to inputs received from the children. The players made pauses asking the children to complete a sentence or a situation. For example, one of the actors could say: "We are in Mexico in the year 2025 and today we Mexicans are...", letting the children to complete the sentence. The answer could be, for example, "fat", "better", "richer", "more intelligent", "bigger", etc., and the rest of the script would follow according to the answer following a general script. This tool, which requires very agile and imaginative players, was never developed in the project, but a few years later a play based in known child stories was opened in Mexico city with a set up and great success among children.

A second variation was based in a collective build up of a future vision, where a group of 10 to 15 children would sit in a circle, with a workshop facilitator in the middle, who would initiate a fictional story about Mexico in the year 2025, that is when the children would be around 35 years of age. The facilitator would suddenly interrupt the story and would invite one of the children to come forward and continue the story, letting him talk for about 45 seconds, and interrupting him or her to invite another child to continue the story from there and repeating the process afterwards. At any time the facilitator could regain control of the story to stimulate the generation of ideas with questions, suggestions, jokes or funny lines, etc. The whole exercise would last between 15 and 20 minutes and would be recorded for later analysis.

- (c) As a different tool, a puppet theater play was conceptually designed, where puppets would tell anecdotes of achievements by creative celebrities who had future oriented visions, such as Leonardo da Vinci, Jules Verne, Thomas Edison, etc. At the end of the play, children would be asked, how come these people could imagine things that did not exist and, even more important, how did they imagined the changes those things could bring into peoples lives once they existed? Children would then be invited to be the new Jules Verne or Leonardo da Vinci, and to draw a scene of the life they imagined they would live in the future, giving a brief explanation of their drawing in the back of the page. Children a little older would be invited to write a short description of some of the inventions they though would come into being in the future (the next 25 years) and the impact these could have in their daily lives.

- (d) A further tool designed (but only experimentally applied in a limited manner) was a simulation exercise of a radio station cabin. In it, in front of a microphone, children would be told to imagine they were 25 years older, and they would be interviewed by a facilitator (acting as an anchorman) about the present as if it were their past, that is, as if they were commentators of a future time, in a complete immersion exercise (with sound effects, voices, applause, etc.). The idea was to try to get the children out of the clichés and phrases learned from adults and get them to imagine the future in a freer manner. Topics selected would be outside those belonging to the formal processes of school teaching, and they would be discussed from their own points of view, starting with simple questions easy to understand. Four possible radio settings were proposed: (i) A news program where a couple of imaginary "news" of the future would be told and children would be asked to comment; children would be asked which news of the (future) day they suggested and why; (ii) The "cube", where children would be asked to give their opinion on a set of topics which were kept in a cube which has stored information between the years 2000 and 2025, asking them to advise the children of the year 2025 (the imaginary listeners of the program) about the mistakes made in the year 2000 in order not to repeat them; (iii) The "Explorer cicada", about the adventures of a cicada and its observations about the world, to ask the children, imagining they live in the year 2025, what they do in their daily life and how that differs from what children in the year 2000 did; and (iv) "Acitron" a program with "chamoy"³² flavour (bittersweet), a program about gossip and superficial trivialities in the year 2025, being the school and home the first victims, where children would talk about different (fictitious) people and what they think about them.

All programs would be recorded and would later be edited for their final presentation, in order to underline the best ideas (more creative, counter intuitive, original) of each program.

- (e) Finally, another of the proposed ideas (which was never put in place physically) to help children create future visions was to build at the Museo del Papalote a kind of "time tunnel". The start of the tunnel would be the present, and after going through it (with appropriate visual and sound effects), the children would arrive to the future, the year 2025, where they would find a cardboard figure with the six faces of a cube to be built. Each face of the cube would have a label with the title of a topic, and the children would have to draw there how they found things in that topic in the year 2025, to later build the cube and "send it to the present". A second version of this idea was to have at the end of the tunnel (the future) strange objects, drawings difficult to understand, cards with strange signs. A facilitator would then organize a workshop with the children where they would provide ideas as to the possible purpose of the objects and the meaning of the drawings and signs in the cards.

The tools mentioned above are certainly far from exhausting possible ways to explore the images of the future held by children; they are just some open ideas (and not all have been tested). The truth is that we still have a long way ahead to learn new ways to help children to generate their own visions of the future and to help them express these visions by different means. We should dedicate more efforts and resources to do so. It must be worrying for any country that their children and young do not participate in an active manner in the construction of their own future. Kids and young do not deserve to be seen as passive objects of a

³² The "chamoy" is a Mexican dehydrated fruit prepared with salt, chili, sugar, vinegar and water, with a mixture of sweet, hot and acid flavor.

fixed destiny defined by the adults; their role must be that of subjects builders of the future. We should learn to take advantage of their capacity to imagine and learn how to channel it as an important input to guide our decisions about the (their) long term futures.

SOME ELEMENTS OF THE NEXT GLOBAL ECONOMIC SYSTEM OVER THE NEXT 20 YEARS¹

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Capitalism and socialism are early industrial-age systems. Surely new systems are possible.

With increasing global interdependence and the speed of change, even greater economic disasters may be possible than the 2009 financial crisis and resulting great world recession. If so, can such future disasters be prevented or reduced? Could this be the tipping point for new systems to be created? Are there elements or attractors that might make it possible for the emergence of new economic systems to benefit humanity?

To explore these questions, The Millennium Project conducted a Real-Time Delphi² questionnaire. Literature searches, interviews, feedback from the Project's Planning Committee, and group discussions generated a list of 35 elements (not policies, events, developments, or goals) that might help shape changes in the economic system over the next 20 or so years.

The new elements do not have to replace previous elements, just as the industrial age did not replace agriculture. Each element could be the subject of a book, but for the purposes of this questionnaire the descriptions were presented as very simple statements.

Participants selected by The Millennium Project Nodes around the world³ were asked to think of the 35 elements as attractors from which the next economic system might emerge. They were asked to rate how important an element might be for improving the human condition on a scale of 1 to 10, with 10 being the most important. They were also asked to briefly explain their ratings in terms of why the element might improve the future and/or how it might make things worse.

About 270 people logged on to the on-line questionnaire. Of these, 217 participants from 35 countries answered at least one question. Many respondents revisited the questionnaire several times, adding new responses, changing previous entries, and commenting on narrative reasons added by others. The rise in number of participants over the 27 days that the study was open was continuous, suggesting that a longer period would have attracted even more respondents.

The elements below are listed in order of how important the international RT Delphi panel thought they were to improving the human condition.

¹ This article is drawn from research published in the 2009 State of the Future published by The Millennium Project, Washington, D.C. www.millennium-project.org.

² T.Gordon, Real-Time Delphi, Futures Research Methodology version 3.0, The Millennium Project, Washington, D.C.

³ A list of Millennium Project Nodes and their activities are available at:
<http://millennium-project.org/millennium/nodes.html>

Ethics becomes a key element in most work relations and economic exchanges.	8.36
New GNP/GDP definitions that include all forms of national wealth: e.g., energy, materials, ecosystems, social and human capital.	7.96
Global commons—air, climate, oceans, biodiversity (bees necessary for agriculture, etc.) supported by international agreements among countries for very small (less than 1%) tax on selected categories including currency trading and international travel. The funds collected would amount to several hundred billion dollars per year for global public goods.	7.75
Collective intelligence—global commons for the knowledge economy.	7.74
On-line and in-classroom educational systems: continually updated curriculum on the evolving economic system and its elements.	7.64
Simultaneous knowing—time lags changed or eliminated in information dissemination with much greater transparency.	7.61
Value of natural resources used in production is included when pricing goods.	7.56
Women's political-economic roles essentially on par with men (including recognition that women are penalized more than men in an economic crisis).	7.25
Greatly increased public disclosure required of "tax havens" and secret accounts.	7.10
Wealth, redefined as experience and no longer simply the accumulation of money or physical things.	6.83
Alternatives to continuously creating artificial demand and growth.	6.80
New simple ways for individuals to invest directly in start-up companies and individual researchers.	6.73
Flexi-time (when work can begin and end at any time).	6.68
Self-employment via Internet—Individuals seek markets for their abilities rather than jobs—individual as global holding company with many companies each with different products/services.	6.64
Synergistic intelligence vs. competitive intelligence.	6.60
Non-ownership as distinct from private ownership or collective or state ownership. A current example is open source software and the Internet.	6.60
New economic theory that accommodates many new "goods" that grossly violate the classical assumptions of "private goods"? i.e., information, which has a negligible marginal cost after being produced.	6.59
Individual and national intelligence as an economic competitive advantage; e.g., improved individual brain functioning and the quality of national collective intelligence systems.	6.59
Globalization—Geographic location increasingly less of a factor.	6.51
Tele-everything, connecting essentially everything not yet connected.	6.49
New financial rules such as reinstating the uptick rule on all stock exchanges, percent of leverage, number of financial instruments between value and investor.	6.45
Management by understanding as distinct from management by objectives or authority—each employee understands the whole organization, making decisions in fast-changing environment.	6.25
Transinstitutions—combined institutional actions, conducted across institutional lines.	6.24
Global minimum living wage applied per local conditions.	6.21
Internet as the principal trading market, bypassing New York, London, and other current trading floors.	6.15
A new global reserve currency to relieve pressure on the US dollar (e.g., Special Drawing Rights from the IMF, as in the Chinese proposal, or a basket of other currencies).	6.03
Labels on financial instruments, something like nutrition labels on food.	5.86
Permanent property rights of indigenous peoples' bio-resources.	5.77
Global mechanisms for automatic financial stabilization; e.g., international convention for an automated system (expert software) to make financial policy changes as economic conditions change, conducted initially in larger economic countries.	5.02
Single global currency.	4.94
Artificial life (as computers were a key element in the information economy, so too artificial life might be a key to the next economy).	4.58
Internationalization of labor unions.	4.40
Automatic annual assessment of individuals' economic performance in the previous year (similar to credit rating).	4.03
Artificial economies emerging in virtual worlds (e.g. Second Life), which include both mirror images of our real world economy and a far richer palette of values and metaphors driving these virtual economies.	3.98
New local currencies that are valid only in some cities and local areas.	2.73

Table 1. Importance Elements

The study generated a broad range of views. The highest level of agreement among the participants was about the role of collective intelligence in the knowledge economy.⁴ The greatest amount of disagreement was over the following five items:

- Global mechanisms for automatic financial stabilization; e.g., international convention for an automated system (expert software) to make financial policy changes as economic conditions change, conducted initially in larger economic countries
- Single global currency
- Artificial life (as computers were a key element in the information economy, so too artificial life might be a key to the next economy)
- Internationalization of labor unions
- Labels on financial instruments, something like nutrition labels on food.

The average of the international panel's ratings was the highest for the following five elements as having very beneficial impacts for the future of humanity:

- Ethics becomes a key element in most work relations and economic exchanges
- New GNP/GDP definitions that include all forms of national wealth: e.g., energy, materials, ecosystems, social and human capital
- Global commons—air, climate, oceans, biodiversity (bees necessary for agriculture, etc.) supported by international agreements among countries for very small (less than 1%) tax on selected categories including currency trading and international travel; the funds collected would amount to several hundred billion per year for global public goods
- Collective intelligence--global commons for the knowledge economy
- On-line and in-classroom educational systems: continually updated curriculum on the evolving economic system and its elements.

Of the five economic elements listed below that were judged to be the least important for improving the future, the last two were also in the most controversial category:

- New local currencies that are valid only in some cities and local areas
- Artificial economies emerging in virtual worlds (e.g., Second Life), which include both mirror images of our real world economy and a far richer palette of values and metaphors driving these virtual economies
- Automatic annual assessment of individuals' economic performance in the previous year (similar to credit rating)
- Internationalization of labor unions
- Artificial life (as computers were a key element in the information economy, so too artificial life might be a key to the next economy)

The international Real-Time Delphi panel was also asked to give their judgments about how each element could be positive and negative for our future. In this way we can think about who to prevent the negative consequences and increase the likelihood of the positive consequences. Remember, we are looking out to the next twenty years.

⁴ An example of a collective intelligence system is the Global Futures Intelligence System. It can be viewed at www.thepm.org

Positive and Negative Consequences

Approximately 800 comments were received from 217 participants. The full text is available in the Global Futures Intelligence System in the Economics section under the Research Menu. The following presents some distilled highlights of the comments offered by the respondents about why the five top-ranked elements will improve the human condition and how they might make things worse.

1. *Ethics becomes a key element in most work relations and economic exchanges* was the highest ranked element (importance 8.36 on a 10-point scale, with 10 being the highest, and with the second highest agreement rate; 0.86). Although it is widely accepted that decisionmaking should include ethical considerations, questions remain: Whose ethics? What does a "right" ethical system mean, and based on whose system of values? How can morality be introduced into decisionmaking at all levels and for everyone?

Positive aspects: If the current global recession is the result of massive and cumulative moral lapses, then ethics has to be a key element to prevent or reduce a repeat of our current situation. Ethical reasoning and morality will increase humanity's boldness to create new economic models. Defining the elements of global ethics should be a key to defining the elements of the new economic system. Large organizations are moving toward this now. A morals-based economic system would result in a more equal distribution of income and wealth and thereby enable democracy to work better for people and institutions. It would level the playing field for corporations. But the test comes for a person, company, or country when a decision based on moral principles conflicts with a decision based on profit or other gains: will moral courage prevail? International trade is about trust and honesty. Ethics increases exchange efficiency among disparate groups. Although difficult to do, create measures for ethics.

Negative aspects: In a world with differing views regarding ethical behavior, people with ethics might not always make it. Ethics may get in the way of "lucrative" deals, disadvantaging the more ethical people. Sometimes ethics will be considered as an obstacle to development. Mafiosi, local politicians, and interest groups will not adopt the new ethical standards unless higher levels of society participation can be achieved. A small number can exploit the ethical attitudes of the rest of the world. The more weight you place on ethics, the more devious will unethical people become. Lack of ethics is detrimental to mental development.

2. *New GNP/GDP definitions that include all forms of national wealth: e.g., energy, materials, ecosystems, social and human capital.*

(Importance: 7.96; level of agreement: 0.78) The present definitions are deficient. They do not account for the degradation of the environment but do include negative activities like smoking. Decisions that optimize GDP may not provide a guide to a better life. Measures of life quality (such as UNDP's Human Development Index and The Millennium Project's State of the Future Index) are being developed; the missing aspect is a universally accepted list of factors to be included.

Positive aspects: Whether the new measures are additions to the GDP or are entirely new, the added factors might include those seen as necessary for human survival, comfort,

equity, and sustainability. Also, the issues associated with the removal of production of detrimental products have to be faced. United Nations organizations have already proposed new methodologies to evaluate national GDP definitions. Some alternative indicators already exist such as the Happy Planet Index, the Index of Sustainable Economic Welfare, the Genuine Progress Indicators, or the Human Development Index. The new de-materialization economy, the knowledge economy, will have to use new definitions of wealth. Twenty years is a short time for a change like this to happen and include relevant variables. When such measures are in place, governments and commercial organizations will have new ways to identify and track the consequences of policies and compare progress against history and achievements and progress among similar states.

Negative aspects: While there are obvious benefits that flow from these new measures, there may be opposition to their introduction based on complexity and lack of familiarity. There are concerns that the data are insufficient and, being somewhat “soft,” could be manipulated to undervalue natural resources. Can there ever be agreement about what such life quality measures should include? How to value ecosystems? Migrations to and from a country is a better indication of the state of the country. Rather than modifying or replacing GDP measures—which has been attempted—we need to work with more comprehensive measures of development, welfare, level of living, and happiness. As a lot of work has been done in this direction, what is really needed is adoption of such comprehensive concepts and measures by statistical agencies, and incorporation of such information in decisionmaking processes.

3. Global commons—air, climate, oceans, biodiversity (bees necessary for agriculture, etc.) supported by international agreements among countries for very small (less than 1%) tax on selected categories including currency trading and international travel. The funds collected would amount to several hundred billion dollars per year for global public goods. (Importance: 7.75; level of agreement: 0.83) International travel taxes collected at airports by airlines and currency trading taxes collected by banks would work but would require an extraordinary international diplomatic effort to reach agreements about how the money would be spent.

Positive aspects: Global recognition of the universal value of these public goods is the essential starting point for a genuine new future economy. The economic value of global commons is not well understood, and hence not yet seriously valued, but it will be. Either we save the bees or we go to artificial agriculture. Without healing such market failures, we destroy the foundations of our existence. It is time for humanity to move from self-centered adolescence to global adulthood by having global taxes for the global commons that are necessary for future generations. Survival depends on such taxes and agreement. Subject to democratic control, such taxes could solve a lot of problems, from illegal fishing to chemical dumping. With computers, GPS, and satellites, there is no reason we can't do a better job of regulating the global commons. If we assume there is “no free lunch,” then some form of financial sustainability model must be in place to support the global commons (compared with leaving individual nation-states to deal with it). This will facilitate a more balanced civil discourse around their maintenance.

Negative aspects: Who controls the allocation of the billions of dollars of funds collected? While the need is clear, it is idealistic to believe that effective controls can be implemented soon or on any reasonable scale. It is risky to put too much power in one world

government. Opportunities for fraud increase. The transparency and the rules have to be set up very clearly. Patrolling the bounds of the commons and controlling access will be costly. Public funds are inefficient, lacking proper supervision. However, the idea of this way of financing international help for poor countries seems very interesting.

4. Collective intelligence—global commons for the knowledge economy. (Importance: 7.74; level of agreement: 0.88--the highest) Collective intelligence should help decisionmakers make better decisions in essentially all areas of human activity. Those who cannot effectively tap this knowledge commons will be at a disadvantage. It is reasonable to assume that nearly universal access will be possible over the next 20 years.

Positive aspects: This should become a major element in the emerging knowledge economy for creating wealth. In the next 20 years, if collective intelligence is an emergent property from the synergies among data/info/knowledge, hardware/ software, and experts that continually learns from feedback for nearly "just in time knowledge," then it should help decisionmakers around the world make better decisions in all areas of the economy, reducing waste, pollution, and redundancy and finding better opportunities, key people, markets, etc. This could be a great turning point in world awareness, with access being a universal right helping to make conversations more civil and enlightened. It should reduce wars, financial meltdowns, and climate problems and create a level playing field in education and lifelong learning.

Negative aspects: Some power elites may fight its evolution. As global intelligence takes root there will be serious periods of adjustment. That will cause pain. Sometimes, pain is necessary. Authoritarian governments will restrict access to the collective intelligence or at least limit access to what they see as favorable to their interests. Some groups will be disadvantaged in this new knowledge economy as a result of lack of education or disinclination to tap new knowledge sources.

5. On-line and in-classroom educational systems: continually updated curriculum on the evolving economic system and its elements. (Importance: 7.64; level of agreement: 0.83) Teaching the evolving economic system in primary school through to adult education will lower the likelihood of a recession in the future by improving individual fiscal awareness and responsibility, promoting understanding of risk, and improving the system oversight and accountability. However, whose curriculum? How to ensure it really will teach the evolving system rather than just perpetuate the present one?

Positive aspects: Continually updating curricula on the evolving economic systems and its elements is crucial for the continued improvement of the economic system, which should help prevent future financial and economic crises. It would help globalize the understanding of the economic system, set international standards, eliminate the lag time in transmission of knowledge, and hence improve personal and institutional decisionmaking. Many people believe that the current recession resulted, at least in part, from a lack of consumer education and sophistication about financial instruments and therefore people were gullible when mortgages became too alluring and financial instruments too complex to understand easily. It follows that one line of defense is better education about the evolving economic system and its elements to make more responsible adults.

Negative aspects: Designing curricula to accomplish a social end raises significant questions about deliberate manipulation of the content to suit the purposes of government or other institutions. Who selects the material? Would the material be based on the truth of the evolving system or would the present system just be perpetuated? Would the material be coordinated internationally? Who guards against self-serving and distorted designs? Teaching remains key for building a better system, but would the teaching be based on some common and better, more ethical values, or just on perpetuating the present deficient one?

A Brief Synthesis of Some of the Other Elements

Simultaneous knowing—time lags changed or eliminated in information dissemination with much greater transparency. This would reduce bad decisions made due to untimely information, improve the efficiency of markets, and help narrow the rich-poor gap. Socioeconomic and political problems are often due to information asymmetry. Transparently responding to feedback in real time should eventually increase wisdom. Some time lags are needed for authentication. The availability of real-time information should not always be equated with better decisions. Accelerating complex systems with feedback can make those systems move toward instability. The perennial problem is how do we know what is true? The assumption is that feedback and transparency counter false information, but will that be sufficient to counter sophisticated disinformation efforts and even information warfare?

Global mechanisms for automatic financial stabilization; e.g., international convention for an automated system (expert software) to make financial policy changes as economic conditions change, conducted initially in larger economic countries. Although this element was the most controversial one, the general attitude was that the concept is very good, presuming the system would be neutral. An abundance of diverse narrative reasons were provided, ranging from short “a global system needs global regulations” to much elaborated explanations on the advantages and necessity of such a system due to increased global interdependence, as well as on the potential shortfalls, such as the danger of increased corruption, fraud by hackers, or even possible supremacy by state or non-state agents.

Alternatives to continuously creating artificial demand and growth. Great innovations will be required to enable cultural, economic, and political systems to change the physical consumer societies. Since conventional media tend to promote the consumption society, the public shift to alternative media may be required. Whatever the alternatives turn out to be, they will create distortions in the operation of efficient national and global markets for goods and services. Given finite resources and increasing population, something has to give. Maybe continued technological evolution and expanding cyberspace could manage continued growth.

Self-employment or one-person business via the Internet—Individuals seek markets for their abilities rather than jobs— individual as global holding company with many companies each with different products/services.

Every location that offers an Internet connection becomes a potential place of work;

overhead is greatly reduced; easy and low cost way to start a new venture; globalization helps the individual; urban congestion would be reduced; children can see their parents more often, who could oversee their tele-education; and creativity is stimulated. But the stress from competition among individuals could be significant. Education would be important to prevent unskilled people from being left behind. Online clearinghouses (like eBay) could match potential employers with available knowledge workers, bidding auction-style to match assignments and workers at given fees. Skilled people who can easily communicate their unique abilities will have an advantage. Unemployment may be reduced. This will be both one of the drivers and one of the best indicators that the new economy is emerging.

Non-ownership, as distinct from private ownership or collective/state ownership. A current example is open source software. This element received the greatest amount of text from the participants (hence this distillation is a bit longer than the others). Acceleration of complexity drove the need for open source software and may do the same for new forms of non-ownership of features of nanotechnology and artificial biology. Non-ownership is neither private ownership nor public/ state ownership; it is shared ownership of those who use it to generate wealth. In the same way, software consultants and companies make money on specific applications of open source software; in the foreseeable future, people and companies could make wealth with other forms of non-ownership phenomena. For example, if/when molecular manufacturing (nanotechnology factories) capacities are available as non-owned, companies and consultants could make income from their specific applications. This might also be possible when new life forms are created through genomic processes. Information and knowledge are not subject to problems associated with the tragedy of the commons; information and knowledge are not depleted with use but can increase in value. Non-ownership releases capital and human ingenuity to work on important areas of human need and will assist the poor to catch up in terms of knowledge and technology.

Open source norms of transparency, permeable access, and collaboration might aid scientists to help achieve novel solutions in a manner that is superior to conventional R&D. It enables a large number of people to contribute to and benefit from the development of knowledge and technologies that would otherwise be prevented or at least delayed by the complex structures and hierarchies of the society. Non-ownership enables a focus on "access to" rather than an "ownership of " goods and services. Yet quality control can become a problem with non-ownership, since the standards for, and responsibility for, quality may not be firmly established. It is possible that quality problems will be self-correcting from shared feedback.

Conclusions

The majority of the 35 elements were seen by the majority of the participants from around the world as growing over the next 20 years to contribute to the emergence of an economic system to help improve the prospects for humanity. With more than two billion people living on \$2 or less per day, water tables falling around the world, energy sources changing to reduce climate change, and world population adding another 2 or so billion people in the next 37 years, the global economy will evolve.

The future elements and comments about them are offered to stimulate a better

conversation about how to make the global economic system work to better address our challenges. The great global recession offers an opportunity to rethink our assumptions, explore new elements, and improve the rules of the global economic game.