Fondazione Giangiacomo Feltrinelli, Laboratorio Expo

Patto della Scienza: Technological and social innovation

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Executive summary

The scientific community has an intellectual duty to question itself on issues of radical importance and the responsibility to identify what is the problem, opening up space for an exchange of ideas and knowledge on the important theme “Feeding the planet”. Several issues are at stake. Firstly, the need to increase the availability of quality food for a growing population, confronting the dynamics of access and distribution of food resources have at a global level and developing production systems that are at the same time both efficient and fair. Secondly, the issue of environmental sustainability: it is crucial to identify solutions that will ensure energy for all, by also questioning the impact that our food preferences have on the environment. Sustainability is concerned with lifestyles, with the territories, with traditions and the multifaceted and ever changing nature of food cultures.

In this socio-economic context, the goal is to identify areas of intervention in which it is urgent to address the challenge of social sustainability: protection of collective goods, redistribution of wealth, new mechanisms of participation; and to support, in a dimension that opposes the dynamics of strongly unequal contemporary growth through social innovation and new forms of urban governance.

From these pressing issues, the researchers involved in the project LabExpo, have identified twelve main questions that need to be addressed in order to move toward a more sustainable planet. These questions are very diverse, ranging from food security to governance practices, and address the many facets of sustainability in contemporary societies.

The main questions are the following:

Food security

The latest estimates by the United Nations report that 805 million people are chronically undernourished, thus highlighting food insecurity as a widely spread phenomenon caused by complex issues strictly intertwined with another compromising availability, access, utilization and/or stability of food resources. In order to tackle such issues, single actions taken by stakeholders operating
independently are not sufficient, nor effective. Instead, coordination is central to create an environment conducive to the implementation of tailored measures ensuring food security. In this regard, social participation, inclusion of vulnerable groups, and the adoption of an integrated approach taking count of technical, political and social aspects, are paramount. Particularly, agriculture is a game changer in addressing food insecurity and hunger worldwide. Public and private partners at all levels should thus act in concert in order to implement *ad hoc* initiatives both at policy and field level to raise agricultural productivity, promote farm and non-farm activities, strengthen value chains and access to market, reduce vulnerability to environmental crisis and close the gender gap.

*Safe and nutritious food for all*

Even when access to food resources is ensured, food security is at risk if those resources are neither nutritious nor safe. Undeniably, all over the world a large portion of the population is dealing with healthy issues related to malnutrition and foodborne diseases. As food safety is strictly dependent on how food is processed, stored and consumed, clearly emerges the necessity of raising awareness, simplifying rules, improving skills and infrastructures, adapting food safety monitoring and management systems in order to guarantee healthy nutritional status worldwide.

Healthy nutritional status is furthermore guarantee by balanced energy and nutrients intake resulting from good care and feeding practices, food preparation, and diversity of the diet. This, combined with the physical activities, determines the nutritional status of individuals. Due to the complex framework, a systemic approach, as nutrition sensitive agriculture and food system programs, are a sustainable- environmentally and socially - and gender-sensitive answer to re-establish a human healthy nutritional status in synergy with the environment worldwide.

*The way to future food production*

Since the 1960s world population has grown from three billion to more than seven billion. Such a growth came along with a significant increase in food
demand requiring the intensification of production processes that gradually led to the depletion and deterioration of finite natural resources. Fertile soils, water, biodiversity and energy have long been mismanaged, which compromised the sustainability of modern production systems and threatened global food security. The need to rethink, design and implement more environmentally sustainable and socially just production systems is thus getting urgent. In this framework, the agroecologic approach appears promising, as it is based on more biodiverse and resilient production systems less dependent on external inputs. Similarly, a more efficient use of water resources, the implementation of innovative and smart solutions for valuing alternative energy sources and reducing agricultural inputs, the definition of strategies to reduce food waste and the inclusion of consumers in designing sustainable production and consumption patterns are increasingly relevant.

Aesthetics of Food and Cultures of the Senses

Likes and dislikes of food are social constructions shaped through the cultural elaboration of the sensorial experience. Taste is a form of social action through which societies discriminate between friends, enemies and guests, building ethnic, class and gender differences. Their transmission from one generation to the other leads to the awareness of who we are and the memory of what we have been: by mean of them, identities and belongings are defined. The issue of taste is a political one: the homologation and privation processes linked to tasting experience, act as deculturation and dependence patterns. Furthermore, the impoverishment of tastes is not only due to a simplification of flavors, but also to the loss of symbolic dimension, to the inability of creating meaningful relationships, whether “around the table” as much as by the retailers and the producers as well.

Food and Belonging: bodies, territories and agri-cultures

Patterns of food production and consumption are approached by anthropology as tools of identity construction at the collective as well as at the individual level. Following large-scale industrialization of agriculture and agro-business, food cultures have radically changed in southern and northern countries: a disjuncture has imposed more and more between the farmers or those who
produce food, the consumers and their territories, as well as between cultures and ‘agri/cultures’. In this scenario, emergent and innovative patterns of production, distribution and consumption, are redefining the symbolic and collective dimension of food (Gruppi di Acquisto Soldidale and Des in Italy, Amap in France, seeds banks, rural networks of food security). At the same time a growing number of individuals have become aware of the over determined nature of their alimentary choices and have voiced critical concerns towards the assimilation of aliments void of identitary character, and have embraced a new-found interest in the idea of food as a means to assert identity.

Food Heritage

It is in the category of Intangible Cultural Heritage whose definition is increasingly contested and not adopted by all UNESCO state members that food practices officially enter into the dynamics of heritage institutionalization. Central to the issue of food heritage are the anthropological critics to the notions of tradition and authenticity as well as the attention given to the process of transmission in the definition of a cultural heritage. Indeed, the challenge posed by the cultural heritage is that of moving from the original etymology of the legal term, which is conceived as private heritage often selectively transmitted from the family through father, towards a notion of cultural heritage which is shared, recognised, consciously and democratically participated in by everybody.

Collective goods

Common resources have an important redistributive function, being a vehicle for direct and equitable access to important means across all socio-economic strata. They also work as a sort of ‘social glue’, which can contribute to a group’s sense of belonging, cohesiveness and cultural resilience. Collective goods are common-pool resources that are de facto used by specific groups in time and space, namely by collectivities at different levels: local, national, regional, global. Collective goods can comprise a variegated list of tangible and intangible items, around which potential conflicts may arise because the protection of access of one collectivity may stand in contrast – and reduce – the access of another one. Protecting collective goods is crucial for the scope of
feeding the planet, yet the challenges to face are many and complex, including large-scale abuses, unclear or unfair definitions of property rights as well as the lack of shared consciousness.

Social sustainability

Inequality is expected to play a major role in the post-2015 development agenda. Situations that create and perpetuate social disadvantage play a major role for access to food and for malnutrition, too. In line with the Human Development Paradigm, social sustainability can be interpreted as the set of circumstances in which large asymmetries of human freedoms and opportunities within and across generations are being avoided. Currently, asymmetries in the world can be traced back to different factors, such as increasing wealth concentrations, inequality of opportunities, or lack of agency and participation. In tackling food insecurity – and in a broader sense social disadvantage – a main challenge is to actively promote shared responsibility: top-down interventions and bottom-up movements involving different actors and complementary actions are both necessary in order to feed the planet. Responsible consumption and production localize global problems; and changes in institutions, policies and practices can globalization local concerns.

Access to energy

Access to modern energy services, intended as access to electricity and to clean cooking facilities, is a fundamental condition for sustainable development, given its key role in the provision of clean water, sanitation, healthcare, reliable and efficient lighting, heating, food security, mechanical power, transport and telecommunication services. A large share of the global population still lacks access to electricity (1.3 billion) and relies on traditional methods and fuels to cook and heat (2.3 billion), with serious danger for health. Reaching the target of universal access to modern energy, while ensuring environmental sustainability and economic development is a great challenge that involves everybody, at all levels: international organizations, governments, firms, civil society and individuals.

Socio-economic development
Socio-economic development has become an issue because continuous economic growth has come to a halt and there are serious threats of decline and stagnation in many western cities. In general, cities face major difficulties in creating economic opportunities in a framework of high competition, shrinking markets and reduced resources. The contributions collected from experts all over the world point to new forms of production in the postindustrial city, in particular a collaborative mode of production based on the sharing of knowledge and skills, which has begun to emerge in several industries. In envisioning the possibilities of economic development, it is important to take into account the debate about the role of these new forms in the future of urban economies. What is certain is that they are emerging thanks to resources and conditions which are peculiar to cities.

**Governance**

The urban governance processes are progressively losing democratic dimensions and egalitarian substance because of the asymmetric influence of powerful élites, particularly economic ones. The weakening of representative democracy is causing the disaffection of the ordinary citizen from politics institutions. Politics has become a private affair whereby decisions are made through exchanges of favours between the elected and the lobbies. Alongside these tendencies, number of events, processes and phenomena have emerged that, despite not being prevalent, allow for some countetntendencies to be registered, showing seeds of change at different levels in the system of urban governance. Some of these phenomena are connected with new technologies and with the role these can have in facilitating inclusive governance Other phenomena are manifested in politics itself, participatory budgets for instance; others concern the role of non-profit organizations or civic society enterprises that promote activities and services that are not provided by the state; others still are connected to urban social movements.

**Social cohesion**

The issue of social cohesion concerns the need for the city to overcome disruptive features of our “liquid modernity”, such as fragmentation and individualization, and, more importantly, increasing inequalities, social
polarization, marginalization and exclusion. In the face of these disintegrative processes, we discuss emerging practices of social innovation that aim to respond to unmet social needs through the re-organization of socio-spatial relations, the activation and empowerment of individuals and communities, highlighting their potential to resist and counter these exclusionary and socially corrosive trends.
In search of the human city

Feeding the planet means feeding the cities, since the majority of world population today lives in urban areas; as more and more people move from rural areas to urban centers at a sustained rate, this will become even more evident in the future. As a result of these global urbanization trends, feeding cities has become a major challenge. In order to enable sustainable development of the city, health and well-being, cultural diversity and cultural identities, access to nutrition and food security for its inhabitants, we must undertake a complete reconsideration of the entire food system, from the growing and farming of food to its consumption and the subsequent disposal of waste. Cities, particularly in advanced economies, are engaged in food strategies that confront the wide variety of their developmental paths and the different ways in which the economy and society interact. Detroit and New York are the most prominent examples of food policy and the promotion of urban agriculture (Morgan 2009).

The importance of cities, however, goes well beyond the increasing number of people living in them. Cities play a key role in socio-economic development: 67% of the European GDP is generated in the metropolitan regions (i.e. large urban areas with more than 250,000 inhabitants) where 59% of the population lives. At present, cities are engaged in the remaking of political and economic space; it is within major cities and city regions that major transformations have occurred as dynamic reactions to the most recent economic and financial crises and attempts to revive socio-economic development have been devised and implemented. Spatial and social changes reflect the shifting away from manufacturing and real estate as drivers of urban growth to the new, emerging focus on knowledge, innovation, creativity and art in fostering socio-economic development in urban areas (Scott 2008; Storper 2013). As places of production and consumption, cities can be engines of innovation and mines of opportunities, particularly when mechanisms of integration are at work in sustaining a harmonious development of society and economy.
The idea of “feeding the planet” challenges us to ensure that we build the city along an integrative path, resulting in what we have called “the human city”, a city that can be easily viewed with the “eyes of humanity”, as suggested recently by Amartya K. Sen in his essay on global justice. In contrast, contemporary development trends are increasingly pushing cities away from a path of socially just and sustainable development that could offer a decent life to all city-dwellers; even in cities with a vital economy, we are witnessing a dramatic decoupling of economic growth from social development, resulting in all sorts of problems.

Our goal in what follows is to highlight the main obstacles that prevent the “human city” from flourishing and to identify seeds of change that represent a potential, if not already a definite trend, for transformation in the direction of the human city. Three issues are particularly pressing: a) socio-economic development, b) democratic governance, c) social cohesion.

Socio-economic development has become an issue because continuous economic growth has come to a halt and there are serious threats of decline and stagnation in many cities. In general, cities face major difficulties in creating economic opportunities in a framework of high competition, shrinking markets and reduced resources. The contributions collected from experts all over the world point to new forms of production in the postindustrial city, in particular a collaborative mode of production based on the sharing of knowledge and skills, which has begun to emerge in several industries. In envisioning the possibilities of economic development, it is important to take into account the debate about the role of these new forms in the future of urban economies. What is certain is that they are emerging thanks to resources and conditions which are peculiar to cities.

The issue of democratic governance concerns the need for the city to identify new forms of political participation able to translate citizens’ needs into policies and actions. Capacity building, learning and capabilities, accountability and transparency are all issues at stake when discussing forms of democratic and inclusive governance. On the one hand, there is a broad consensus as to the need to open up public decision-making processes and make them more
inclusive; ICT technologies are seen as a strategic opportunity to enable such inclusive processes. On the other hand, many processes point to a weakening of democratic foundations and to an evolution toward post-democratic, oligarchic regimes.

The issue of social cohesion concerns the need for the city to overcome disruptive features of our “liquid modernity”, such as fragmentation and individualization, and, more importantly, increasing inequalities, social polarization, marginalization and exclusion. In the face of these disintegrative processes, we discuss emerging practices of social innovation that aim to respond to unmet social needs through the re-organization of socio-spatial relations, the activation and empowerment of individuals and communities, highlighting their potential to resist and counter these exclusionary and socially corrosive trends.

**Socio-economic development**

The concentration of businesses, workers and consumers in cities produces socio-economic development. In the last thirty years, however, increased international competition has brought profound change to the urban economies of major industrialized countries. The knowledge economy, a new model of production based on ICT, innovation and knowledge, has emerged as the driving force of economic development, provoking dramatic changes in the way industries organize. Socio-economic development in European cities has become increasingly uneven and problematic in its effects on cities.

Due to increased international competition and the reduction of transportation costs, a substantial part of manufacturing production has been delocalized to emerging countries with low salaries and less restrictive labor and environmental regulations. A profound process of restructuring - in the form of a substantial outsourcing of segments of the production process and of management functions - has been implemented in all industries. The combined result of delocalization and restructuring has been a massive loss of both skilled and unskilled jobs, the destruction of human capital along with local knowledge and expertise. In addition, there has been a general fragmentation of large firms
and an increase in the number of small and medium-size firms, which are often subcontractors. Smaller companies have become even more vulnerable to competition and market instability, which is reflected in increased vulnerability for workers as well.

Rapidly expanding sectors such as high-technology industry, financial and business services, media, fashion and cultural products (Amin 1994) have progressively replaced manufacturing industries. These new knowledge and cultural industries constitute the core of an emerging new economy in which cognition and culture play a fundamental role; in this emerging cognitive-cultural economy (Scott 2008) which has expanding foundations in science, knowledge, information and calculation, key sectors are those incorporating high added value from creativity and knowledge (Sassen 2009).

The concentration of assets in major metropolitan areas favors the development of this new economy: cities are sites in which many specialized but complementary firms are concentrated, where informal learning and innovation diffusion take place thanks to the presence of knowledge institutions and the proximity among highly skilled workers (Storper 2013). Major cities are also strategic nodes in global networks and are thus able to influence the reorganization of the relationships between economy and politics to their advantage.

All cities, however, face the brunt of international competition and struggle to find a distinctive path of development; models of the “creative” or “smart city” are centered on creativity and innovation, in whatever field they may find application. Indeed, creativity and innovation seem to have become the ultimate asset of every city in the construction of what makes a city unique, or at least more “special” than its competitors. As a consequence, in each country cities outbid one another with tax and infrastructure giveaways to lure “creative” new business to their turf; in this competition, cities enter into a zero-sum game in which few cities succeed and the vast majority lose, while resources are shifted away from policies designed to improve the lives of cities’ inhabitants to those whose purpose is to attract businesses and high-skilled workers (Molotch
2014), which ends up reinforcing inequalities among and within cities (Storper 2013).

Even when a city wins this competition and establishes itself as creative and/or smart, its performance often fails to fulfill the promise of generalized, high-quality socio-economic development. Particularly in large metropolitan areas, the new creative class is highly differentiated: there is a prestigious upper tier of high-level cognitive-cultural workers able to reap the fruits of globalization and join the global elite, and a lower tier which sees very little in the way of material rewards. It is within knowledge and creative work that project-based employment has quickly become established as a common practice, to the extent that one may speak of a substantial morphological transformation towards a freelance knowledge workforce (Gandini 2015). Among these creative freelance workers, a large segment lives in precarious and insecure conditions, characterized by low income, informality and reduced contractual protection. As McRobbie notes, “The creative sector finds itself full of young people who are burnt out, exhausted, unable to consider having children, and often self-exploiting on the basis of the ‘pleasure in work’ factor” (2010, p. 33). Nonstandard forms of employment have become the new standard in this industry, resulting in instability in terms of work flows and careers along with a dual labor market characterized by disparities in social protection: on the one hand an increasingly small group of insiders with stable employment and access to social supports (Kalleberg 2009), and on the other a growing number of workers with little or no social protection. Below the lower tier of the creative class there is an expanding new underclass which provides services for the maintenance of the basic functions of the city and the reproduction of the upper social groups. These low-wage and precarious service workers are often “working poor”, as salaries from these jobs are likely to be inadequate to provide for basic family needs.

More recently, as a reaction to the creative & smart city model and its consequences in terms of social problems, cities are called upon to pursue paths to socio-economic development more attentive to sustainability and social inclusion. Instead of one recipe for all cities, diversified and customized strategies are to be devised, on the basis of the specific strengths and
conditions of the locality and a clear and widely shared vision of its future. European cities are expected to follow different development trajectories so as to exploit their diversity and points of strength; competitiveness in the global economy has to be combined with sustainable local economies by anchoring key competences and resources in the local economic system and supporting social participation and innovation. This “smart specialization” growth model, proposed by the EU programme Europe 2020, calls for knowledge, governance arrangements and collaboration across all stakeholders -- public, private, the voluntary sector, academia, citizens -- which are very hard to mobilize. This model, however, has little to say about the issue of shrinking cities in Europe; these are cities which have seen the outflow of capital and human resources and have suffered from both a lack of entrepreneurship and a low level of innovation and intellectual engagement; in such cities with a long-term demographic and economic crisis the dominant growth orientation may intensify the negative consequences of shrinkage.

The recent economic and financial crisis, whose negative effects have yet to completely unfold, has further reduced opportunities and resources available for the socio-economic development of cities. The financial crisis has produced an unexpectedly severe contraction in private and public investments, which has in turn resulted in reduced industrial production, a contraction of GDP growth and general stagnation in the major industrialized economies. The aftermath of the economic crisis has been a dramatic increase in unemployment and lowering of salaries for those employed in all sectors, with deleterious effects on the level of internal demand. On top of this dynamic, the high level of public debt in several countries has led to a sovereign debt crisis and speculative attacks against selected member States of the European Union. In order to avoid financial default, bailout measures have been enforced with the support of the International Monetary Fund and the European Union. In exchange, the countries involved have accepted a set of austerity measures designed to control the public debt through the reduction of public expenditures, which has resulted in further decreases in consumption and the cutting of social welfare systems. Consequently, many European cities are experiencing marked
increases in social and economic inequality and a general decline in the quality of urban life.

The challenge at hand is to identify and analyze the potential drivers of socio-economic development that is both sustainable and inclusive. In what follows we present promising examples of a new phase of socio-economic development, seeds of renewed economic vitality and concern for the making of the “human city”.

**What are some prominent examples of socio-economic development in the city and who are the actors/drivers of this change?**

Since 2000s, a rich set of new forms of economic enterprise has developed, especially in the sectors more intensively dependent on knowledge, creativity, and innovation such as those impacted by the Internet and digital revolution (Castells 1996). These unconventional forms of production, in which, with the aid of the Internet, the creative energy of a large number of people is coordinated into large, meaningful projects without relying on traditional hierarchical organizations or monetary exchanges and rewards, has been defined by Yochai Benkler (2006) - partly relying on the work on the traditional commons developed by the 2009 Nobel Laureate Elinor Ostrom (1990) – as Commons-based peer production (CBPP).

Commons-based peer production (CBPP) is a new and increasingly significant model of social innovation based on collaborative production through the Internet. This new model of production is based on distributed, non-proprietary and self-organized cooperative networks.

This production is commons-based because it is not built around the asymmetric exclusion typical of property. Rather, the inputs and outputs of the process are shared, freely or conditionally, in an institutional form that leaves them equally available for all to use as they choose, at their individual discretion. (Benkler 2006). The best known example is the online encyclopedia Wikipedia, a free online encyclopedia that is collaboratively edited by volunteers over the Internet. Anyone can be a contributor to Wikipedia, whose wiki system makes it easy for any reader to modify a Wikipedia page. Since its inception in
2001, Wikipedia has grown to host over 25 million freely usable articles in 285 languages. Its revealed informational value seems to be enormous to society, as it receives more than half a billion unique viewers each month.

The common goods are produced through collective societal innovation processes, which are based on cooperation instead of competition among projects and individuals. The production of goods is the result of voluntary acts of individuals who cooperate freely and organize without monetary reward as the primary incentive. Given the strong impact of voluntary participation the traditional hierarchical structure is replaced by new mechanisms of horizontal, participatory governance (Bauwens 2005).

This principle of social cooperation as a form of organizational governance is now applied to a vast range of projects; from Free Software to Community gardens, from time-banks to Maker projects.

These projects have proven not only to be a source of social value to society, but in many cases have an economic impact as well. Indeed, several commons-based peer production projects have created innovative commercial products, outperforming market-based organizations in economic sectors ranging from Information Technology to the manufacturing sector. For instance, the operative system GNU/Linux is one of the three most popular operating systems (after Windows and the Mac OS), used by millions of people. The success of GNU/Linux is based on the fact that it is a commons that everybody can use, improve and share. Linux is most popular with companies that need reliable servers. It is frequently used for high-performance applications – more than 90 percent of the world’s 500 fastest supercomputers use Linux. Another case is the web server Apache, which has been the most widely used web server software in the world since 1996 by companies as well as single users (W3techs, 2015).

Successful examples, however, are by no means confined to the digital world.

Open hardware projects design physical products by freely sharing blueprints, design documents, and bills of materials. In the field of electronic hardware, the Italian Arduino project is especially well known. Arduino is an open-source
electronics prototyping platform based on flexible, easy-to-use hardware and software, which is intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments. In mid-2011 over 300,000 official Arduino had been commercially produced, and in 2013 over 700,000 official boards were in users' hands.

Another example of commons-based peer production oriented toward the production of physical goods is the automotive company Wikispeed. Wikispeed is a United States automotive manufacturer, a non-profit company with R&D inputs from a global think-tank collaborating using open source licensing. Their modular light-weight vehicle tied for 10th place in the Progressive Insurance Automotive X Prize, outlasting more than 100 cars from companies and universities around the world. Collaboration on new product development is open to anyone in the world, regardless of background, by remote-pairing with an experienced team member and pulling tasks from a team’s prioritized backlog of tasks. Team Wikispeed has over 1,000 members from more than 20 countries (Wikispeed, 2015).

This new form of production is driven by the logic of economy of scope rather than economy of scale, creating meaningful products with real value of use. An economy of scope exists between the production of two goods when two goods which share a common cost are produced together such that the common cost is reduced. The effect of an economy of scope is to increase the efficiency of production as a result of increasing the number of different but related products offered. In commons-based peer production, this is mainly achieved by mutualizing infrastructures, both immaterial (open source knowledge, code, design) and material (co-working, fablabs, car-sharing) and using distributed machinery in distributed workplaces to allow local production in micro-factories, through the process of manufacturing on demand, while achieving scope through global immaterial cooperation in the design of the products, the design of the machinery required to produce them, and even the processes through which to make both design and production (Bauwens 2015).

Community-organized production places are rapidly emerging as a global fact. The global Fab Lab/Maker space network spans over 220 laboratories on five
continents. These laboratories have emerged as an innovative mix of cultural, technical and co-productive practices; located mainly in large cities, they are modern open workshops whose goal is to produce “almost anything”.

These laboratories are on the one hand local nodes of an interconnected global network, and on the other hand the first case in which the practices of the production of collective goods that grew out of the digital sphere moved out to physical production.

In these collaborative spaces, users collaboratively create projects to build solutions to local or global problems. Most importantly, once the product is completed, all the information necessary to reproduce it is shared online through internet platforms. For instance, “eCars – Now!”, a project developed by a maker community in Finland, aimed to convert cars with internal combustion engines (ICE) into electric cars by replacing the ICE with an electric motor, together with batteries and all the needed electronics, software and so on. The community created a conversion manual describing the conversion process and released all the information needed for building the components and the software for the control systems and built a prototype vehicle as a model for independent companies to perform such conversions commercially.

This project led to the creation of a very diverse set of local entrepreneurial projects in different countries, which are producing sustainable cars by transforming the original project to fit local needs.

The output of collaborative production is open and can be shared also with traditional economic actors.

In so doing, they are reinvigorating the local economic system.

These knowledge sharing practices and the resulting openness of their products thus have the important effect of allowing the diffusion of innovation and ideas, which in turn is a stimulus to local entrepreneurship and acts as a powerful driver of economic growth.

The possibility of sharing innovation and ideas, combined with the agglomeration of local entrepreneurs and companies around fabrication
laboratories, seems a feasible and sustainable way to implement the “smart specialization” growth model proposed by the EU programme Europe 2020, in which the mix between knowledge sharing and local empowerment through new digital technology and local skills can mobilize new resources for the economic development of cities.

As Rifkin (2014) emphasized in a recent book, one might think of a future in which global open design communities could be accompanied by a global network of micro-factories producing locally, following a model such as those proposed by open-source car companies like eCars - Now! and Wikispeed.
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