Tonkin 2006; Halpin 2007; Mathes 2004) generated by the users of Wordpress, Delicious, Youtube, Facebook and other social networks; in many occasions, they have brought us in territories different from what we expected.

Another fundamental source for the research was the participant observation in some local hubs of grassroots fashion in Milan, and the realization of a public round table with a follow up of meetings and conversations with the participants.

Finally, we have consulted some actors of networks contacted for previous researches on the milanese creative scene. Unfortunately, we have not been able to analyze quantitative data, because many datasets that refer to our questions are old, not updated, or they contain only data about specific countries that cannot be used in a comparative perspective.

Nevertheless, we are firmly convinced that the qualitative data are strong enough to point in very precise directions.

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The system of organization developing in Delicious and Flickr was called a "folksonomy" by Thomas Van der Wal in a discussion on an information architecture mailing list (Smith, 2004). It is a combination of "folk" and "taxonomy." An important aspect of a folksonomy is that is comprised of terms in a flat namespace: that is, there is no hierarchy, and no directly specified parent-child or sibling relationships between these terms. There are, however, automatically generated "related" tags, which cluster tags based on common URLs. This is unlike formal taxonomies and classification schemes where there are multiple kind of explicit relationships between terms. These relationships include things like broader, narrower, as well as related terms. These folksonomies are simply the set of terms that a group of users tagged content with, they are not a predetermined set of classification terms or labels." (Mathes 2004:3-4)

A path towards networked artisans

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Some major changes in the social and economic structures of European countries occurred during the last decades. The phenomena related to globalisation and digital revolution reshaped the goods and symbols social forms of production, introducing new factors and variables, and changing the role of immateriality in the production of value.

The end of fordist economy and the off-shore reorganisation of material production bore a new asset in consumption markets, oriented towards an increasing customisation of material and immaterial contents (Toffler 1980; Lash and Urry 1994; Harvey 1989) . Markets multiplied and differentiated enormously their focus thanks to just-in-time forms of production.

The increasing role of design in production and an always-increasing design value attached to contemporary products are the main consequences of this trends (Molotch 2003) . Such shift is not only related to the necessities of combining hardware developments and users needs but it's also strongly linked to a new demand for the customisation of material and immaterial products.

The rise of web 2.0

In recent years, the development of digital technologies provided new fuel for the increasing of third sector. As well-known, the first step of digital revolution was the production of customised software tools for the exploration of user-and-institutions-provided-data. The so-called web 2.0 was a second major

development;we can define it as a managerial and technical approach to data organisation, that gives more importances to the possibility of uploading and aggregating the information uploaded by the users (O'Reilly 2004).
Social networks users became able to produce and upload easily their contents through the use of blogs, wikis, tags, social bookmarking systems; at the same time, they started to aggregate their researches results and to develop their social capital by technical means (Beer and Burrows 2007).

The importance of creative production in contemporary economies is increased, both as a consequence of the growing space kept by digital contents and because the design-oriented differentiation of markets.

Prosumers and the long tail
The prosumer trend of co-creation is strictly connected to new market organization chances given by the mutating organization of the web. From this point of view, the phenomenon known as the Long Tail Effect is probably the most interesting emerging process: it's an e-commerce strategy based on selling small amounts of rare items to many customers instead of selling big volumes of a small number of popular items (Anderson 2006; Brynjolfsson, HU, and Smith 2006)[2]. In other words, the Long Tail valorizes niches instead of hits, linking economies of scale with non-massive productions and reducing enormously stocking costs because of the on-demand production facilitations[3].
The old 'postmodern' version of the brand, in which symbolic innovation was di-

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2 The long tail effect is easily understandable if seen as a statistical distribution; as a matter of fact, it's a market application of long-known Pareto-tail (Lorenz 1905) .
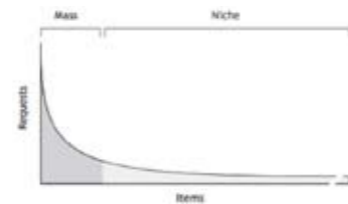
3 Notable examples of companies that have incorporated long tail patterns in their business model are: Netflix is a service offering online flat rate DVD and Blu-ray disc rental-by-mail and video streaming in the United States (http://www.netflix.com/); eBay.com, an online auction and shopping website in which people and businesses buy and sell a broad variety of goods and services worldwide. (http://www.ebay.com/); Yahoo! Inc., a corporation that provides Internet services worldwide (http://www.yahoo.com/); Amazon.com, Inc., an American-based multinational electronic commerce company (http://www.amazon.com/); iTunes Music Store, a software-based online digital media store operated by Apple Inc (http://itunes.com/); Audible.com, an Internet provider of spoken audio entertainment, information, and educational programming (http://www.audible.com/); Second Life, a virtual world accessible via the Internet (http://secondlife.com/); the Grameen Bank, a microfinance organization and community development bank started in Bangladesh that makes small loans (known as microcredit or "grameencredit") to the impoverished without requiring collateral (http://www.grameen-info.org/); Compartamos Banc, a Mexican microfinance bank (http://www.compartamos.com/); Kiva Microfunds, an organization that allows people to lend money via the Internet to microfinance institutions in developing countries around the world (http://www.kiva.org/).

rected towards practices the only use value of which was to legitimise financial and consumer market over-valuation, is coming to an end. It is being replaced by a more participatory 'prosumer' culture with a creator focus on concrete use value (Arvidsson 2005, 2008; Zwick, Bonsu, and Darmody 2008) .

Considering this new situation, it's important to understand the shift that is occurring in the social representation of creativity. In its traditional common sense definition (inherited first from the Romantic tradition and then from the popularisation of psychological discourse), creativity was mainly view as a "magic" or "mythologic" characteristic related to individual genius and charisma (Grmek 1981) . Thanks to this, the aura of creativity attached to material and symbolic goods was one of the main engines for value production (Benjamin 1963). To consume a product somehow related to the individual creativity of its creator meant a partial sharing of the creativity itself.
The diversification of consumption markets progressively extended the label of creativity to a wider range of products. This put an increasing number of consumers in the position of being "creative" and "special" (Niedzviecki 2006) . Today, the importance of creativity is spread to the point that some scholars are hypothesizing the emergence of a new social class composed by creative economy workers (Florida 2004) .

Individual creativity vs. collective innovation
The emergence of Web 2.0 and ethical economy is questioning seriously the traditional conception of creativity and its relationships with society and markets. In the past, a number of scholars outlined that is not possible to consider creativity as a mere result of individual processes. At the contrary, creativity should be seen as the outcome of socialised processes that link visions, know-hows and implicit knowledge through social practices of sharing (Melucci 1996; Jedlowski n.d.). From this point of view, individual creativity is highly encouraged by panoramas marked by social innovation.
The thought of Benkler reframes these approaches into the concept of commons-based peer production (Benkler 2006), that we can define as a system linking volunteers communities in the production of open-copyright contents[4]. The main characteristic of peer-products is that they are designed in a way that constitutes them as a common. It means that they can be used, shared, transformed by other users and then re-socialised in the common pool. According

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4   Well-known examples of peer-production are the computer operating system Linux and the online encyclopaedia Wikipedia.

to Benkler, the result of these processes is a "networked information economy", defined as

> "a system of production, distribution, and consumption of information goods characterised by decentralised individual action carried out through widely distributed, nonmarket means that do not depend on market strategies" (ibid).

Even if the core of Benkler's thought is applied to non-market processes, it can generate profits[5] once it's enhanced by spin-off companies that work in the same commons-oriented way or trough crowdsourcing systems[6]. Phenomena like the Web 2.0, the long tail effect, peer-production and crowdsourcing are reshaping the meaning of innovation, from a social and economic points of view[7]. On one side, social innovation[8] processes benefit from more fluid and dynamic methods that are able to work with a peer-to-peer approach instead that a point-to-many (M. Bauwens 2008) . On another side, economic innovation is changing rapidly, as highlighted by Von Hippel:

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5   For an overview of peer-to-peer business see the wiki of the Foundation for P2P alternatives http://p2pfoundation.net/The_Foundation_for_P2P_Alternatives

6   Crowdsourcing is a neologism composed by the words "crowd" and "outsourcing" that indicates the act of taking tasks usually performed by contractors (or employees) and outsourcing them to a specific community of people (the "Crowd") (Howe 2006) in systems of mass-production.
Here a list of notable examples of companies engaged in peer-to-peer economies trough crowdsourcing systems: Slashdot, a technology-related news website (http://slashdot.org/); Wikipedia, a free, No[4] web-based, collaborative, multilingual encyclopedia project (http://wikipedia.org/); SourceForge, a web-based source code repository (http://sourceforge.net/); InnoCentive, an "open innovation" company that takes research and development problems in a broad range of domains such as engineering, computer science, math, chemistry, life sciences, physical sciences and business (http://innocentive.com/); Cambrian House, a crowdsourcing community that pioneered the technology to tap crowds for the best software ideas (http://www.cambrianhouse.com/); iStockphoto, an online, royalty free, international microstock photography provider operating with the micropayment business model (http://www.istockphoto.com/); Threadless, a community-centered online apparel store (http://www.threadless.com/); Mob4Hire, a 2.0 company that focuses on crowd sourced mobile application testing services and market research related to wireless telephony (http://www.mob4hire.com/).

7   Don Tapscott and Anthony D. Williams have coined the term "wikinomics" to identify all the emerging phenomenon related to mass collaboration like peer-to-peer, crowdsourcing, etc (Tapscott and Williams 2006) .

8   Social innovation is a key-feature in recent sociological theory and in EU actions; it refers to new strategies, ideas and practices to meet al kind of social needs enlarging "the economic and technological reading of the role of innovation in development to encompass a more comprehensive societal transformation of human relations and practices" (Moulaert 2009:1) . Social innovation has been at the core of EU FP5 founded project SINGOCOM (http://users.skynet.be/bk368453/singocom/index2.html) and of EU FP6 founded project KATARSIS (http://katarsis.ncl.ac.uk/).

> "according to the user-driven innovation model, companies can rely on users of their products and services to do a significant part of the innovation work. Users want products that are customized to their needs. They are willing to tell the manufacturer what they really want and how it should work" (Von Hippel 2006:18).

DIY and makers culture

According to the followers of the peer-to-peer economy theory, we are entering a period of ever more socialised innovation which is accompanied by a new and more radical D.I.Y. culture where also material production becomes diffused and networked (Bauwens 2009; Arvidsson 2008) . This emerging trend is clearly visible in new projects that are applying the methodologies of peer-production not only in immaterial economy but also in the material one. Partially inheriting the underground tradition of hacklabs[9], MIT set up a Center for Bits and Atoms (http://cba.mit.edu/) and a FabLab (Fabrication Laboratory, http://fab.cba.mit.edu/) that aim at an interdisciplinary spreading of material open production in a wide range of academic and economic fields (Mikhak et al. 2002; Thompson 2005). Many fablabs are growing in different parts of the world, both in developed and developing countries[10], demonstrating that is possible to self-produce the goods generally perceived as limited to mass production. Fablabs insurgence is made possible by decreasing costs for highly technological tools such as laser, plasma and water jet cutters, Computer Numerical Controls machines, rapid prototypers that allows 3D printing with plastic, and printed circuit board milling[11].
Fablabs are only the most renewed and technologically advanced vanguards of an international cultural tendency known as "makers culture", that includes a wide range of actors, technologies and goals (Steeg 2008). Benefiting of tools provided by the web, an increasing number of individuals and groups are exploring the possibilities given by open 2.0 manufacturing and distribution in

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9   Or hacker laboratories (Domínguez 2007). See also http://www.hacklabs.org and http://hackerspaces.org/wiki/Hackerspaces .

10   For a partial list of Fablabs around the world see http://fab.cba.mit.edu/about/labs/

11   It worths while to consider that this technologies have been boostered mainly by new media artists interested in investigating the consequences of parametric and code art in the physical world. See the work of Marious Watz on Geneator X http://www.generatorx.no/ .

fields such as design[12], architecture[13], clothes[14] and prosthetics[15]. At the same time, several start-up companies, like Ponoko (an on-line platform to merge the interests of "creators, digital fabricators, materials suppliers and buyers to make (almost) anything" "with a vision to reinvent how goods are designed, made and distributed worldwide" (http://ponoko.com)) and Makers Market (an online market for DIY goods of all kinds - art pieces, clothes, toys, high-tech - http://makersmarket.com), are working to provide services to producers interested in Do It Yourself.

Networked artisans are switching continuously from bits to atoms and from virtual spaces to the real ones, organizing makers meet-ups that try to answer multiple needs in terms of technical exchange, leisure, economic feedback and social capital enhancing.

Another crucial recent development in economy that is crossing makers culture is the relatively recent trend of start-up companies based on "open innovation" strategies; such companies are characterised by the use of a great variety of external actors and knowledge, and they are increasingly involving makers in their production processes (Chesbrough 2003; Laursen and Salter 2006).

Makers culture is connected with already existing web-based "how to" networks that spread Do It Yourself knowledge through innovative technological supports, such as video and infographics[16]. This trend is particularly relevant if it's considered together with other three tendencies:

- the development of video-centric social networking sites like Youtube or Vimeo, that allows users to upload video contents and to evolve discussion threads trough visual contents[17];
- the rise of users generated "video tutorials" for all conceivable kinds of human activities;
- the spreading of folksonomies, user-driven non academic organisations of knowledge that rearrange informations through the use of web tags (Mathes

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12   See the work of Massimo Menichinelli (Menichinelli 2008) at http://www.openp2pdesign.org/ .

13   Open architecture has a special focus on cheap and fast architecture for critical areas; see http://openarchitecturenetwork.org/ .

14   See Craft, a website dedicated to "transforming traditional craft": http://craftzine.com/ .

15   See the Open Prosthetics Project (http://openprosthetics.org/).

16   See Instructables http://www.instructables.com/. See also "2020 Forecast: Creating the Future of Learning": the platform provides tools in order to reconcile bottom-up developments in education with the traditional top-down hierarchy with a special focus on makers culture (http://www.futureofed.org).

17   This means that users can post a video "in reply" of the video posted by someone else.

2004; Guy and Tonkin 2006).

According to 2020 Forecast, we have to aspect 5 main changes in learning related to the emergence of makers culture:

1. "Expect the maker economy to influence traditional curriculums, school to work programs, and vocational training";

2. "The maker economy will give new meaning to efforts in project-based learning and purpose driven knowledge acquisition";

3. "Design will become an effective entry to learning critical skills, ranging from designing production teams and work processes to physical goods themselves";

4. "Cooperation across disciplines, skill domains, and national boundaries will trump competition as makers demonstrate the value of open, cooperative practices";

5. "Kinetic learning from interacting with physical objects and materials will open up new ways to experience complex concepts and principles" (2020 Forecast n.d.).

This picture of makers culture is particularly interesting if we put in relationship with some recent theoretical developments in social sciences.

First of all, the considerations about how the convergent and viral nature of digital worlds is conditioning the general conception of culture. Many scholars have recently observed the tendency to a weaker role for institutionally set trends; this means that the traditional role of institutions in symbolic systems selection, organisation and hierarchisation is moving towards more distributed processes (Wood 2004; Parikka 2007; Deuze 2007)[18].

Secondly, the "traditional" conception of subcultures is shifting to a "post-subcultural" approach. Subcultures have always been central in the understanding of innovation related to DIY, because they are mainly forms of bricolage involving the reassembling of material and symbolic goods in search of a form of spectacular consumption that declares alterity in respect of the rest of society (Hebdige 2002). The proliferation and hybridisation of symbolic sub-systems, around whom cultural identities aggregated themselves, is moving in the direction of a mash-up of signs and symbols, where to define identity and subcultural borders is becoming increasingly difficult. This led many observer to describe post-subcultures as a condition where the strong link between identity and 'symbols' has been rendered much weaker (Muggleton 2000; 2003).

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18 Please not that such hypothesis doesn't necessarily means that the link between culture and power is becoming more democratic. See O'Neil for an analysis of new forms of power emerging in virtual communities and 2.0 culture (O'Neil 2009).

Finally, transformations in general economic trends have produced an overabundance of workers in the creative field. This subjects are experiencing, on one side, increasing difficulties in finding an equal placement in labour markets (Christopherson 2008; Gill and Pratt 2008) and, on the other side, they are involved in economies in which passions and ethics are at the core of value production (A. Arvidsson et al. 2008).

Conclusions

Do It Yourself comes as no surprise. Even in the age of mass production a small number of individuals continued to make things on their own. But, as we have seen, the present-day situation is characterised by some unique features:

1. open approach from the point of view of copyright;
2. peer-to-peer production and co-creation;
3. unforeseen chances given by technology, both from the point of view of production (desktop manufacturing) and circulation (platforms for sociability);
4. cross-fertilisation among different know-how ad disciplines;
5. technology revisions: a core technology gives rise to new implementations of existing projects;
6. technology clustering: groups of products tend to cluster around a core set of technology and integrate with one another;
7. customisation/specialisation: with free and open source software small groups are capable to customise a large project to specific needs[19];
8. green motivation: a tendency to reuse and recycle that is frequently a conscious refusal of planned obsolescence of mass-produced goods;
9. rise of the professional amateur: an emerging field in-between hobbyists and professionals[20];
10. quest for authenticity: many of the actors involved in makers culture need to compensate both the lack of human face-to-face interaction in virtual worlds and the feeling of alienation generated by mass-markets;
11. emergence of grassroots economies[21] that moves the focus from mass production to ethical, personal, political and sustainable values of the goods[22];

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19 Points from 4 to 7 are a citation from the voice "Commons-based peer production" on Wikipedia (http://en.wikipedia.org/wiki/Commons-based_peer_production).

20 "People participate in peer production communities for a wide range of intrinsic and self-interested reasons....basically, people who participate in peer production communities love it. They feel passionate about their particular area of expertise and revel in creating something new or better" (Tapscott and Williams 2006:70) .

21 See the Grassroots Economic Organizing (GEO) http://www.geonewsletter.org/ .

22 Points from 8 to 11 are a citation from the Future of Making Map (Institute For The Future 2008).

12. overabundance of law-paid creative workers that have developed a different conception of the value attached to their work;
13. viral diffusion of culture and tendency to post-subcultural aggregations; rising of the open innovation start-up movement.

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