

# Limina

n. 2

ACETI  
ALACA  
ALTERAZIONI VIDEO  
ASCOTT  
AYITER  
BARAVALLE  
BORGHI  
BORTOLOTTI  
CANALI  
CAPUCCI  
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GARTNER  
GREGOS  
IACONESI, BONIFAZI  
JAROMIL  
LEE

LOVINK  
LUDOVICO  
MELZER  
MIRANDA, CIASTELLARDI  
MONICO  
MOORE, COOPER  
MOSCHELLA  
MUFFOLETTO  
PATTI  
ROSLER  
SATU  
SHAPIRO  
TORRIANI  
TRATNIK  
VAN HAL  
VIEL  
ZIELINSKI

includes  
Siegfried Zielinski's  
Milano Manifesto

july 2012



# Limina n.2/2012

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# INTRODUCTION

## ALWAYS ALREADY NEW

*Francesco Monico*

This second issue, published by the Planetary Collegium M-Node and NABA Books, moves forward with the compilation of reflections produced by artists and researchers who participate in the mentioned program. The Planetary Collegium is an international network of research in, and between, the fields of art, philosophy, technology and science; it hosts researchers from around the world, and it was born from Roy Ascott's intuition, a pioneer in the cybernetic and telematic art, and outstanding figure in the field of higher artistic education. The M-Node, the Italian node of the Planetary Collegium, has been active at the Nuova Accademia di Belle Arti (NABA), in Milan since 2005. Its supervisors, those who allowed setting this program up, have guaranteed and developed its high-level of experimentation and research, they are established and well-known artists, researchers, professors exploring the field of information society and the impact of technologies on individuals.

Antonio Caronia is co-director of the M-Node. A graduate in Mathematics, he studies the social effects of technological innovation, topics regarding communication theory, and philosophy of language.

Pier Luigi Capucci is the main supervisor, he is a referent in the research on art and technologies at a national as well as at international level.

Derrick de Kerckhove, is Director of the McLuhan Program in Culture and Technology at the University of Toronto, Chair in French Literature at the same University, Chair of Research at the Washington Library, Chair in Sociology at the Università Federico II in Naples, and Professor at the School of Media Design and Film & New Media at NABA. He is an international figure whose work has influenced, and is influencing the development of post-narratives on technology, on humankind and on society. This volume is a compilation of the papers from the symposium. It took place in Milan on December 16th through the 18th 2010 at the Mediateca Santa Teresa; it was organized by Francesco Monico and Pier Luigi Capucci, in collaboration with Noemalab, Studio Canali, the Consulate of the Netherlands, and coin-

cluding with the Thirtieth Anniversary of the Nuova Accademia di Belle Arti, NABA .

The phrase Always Already New gives a title to the symposium; “always already” is to be found in Paul Ricoeur’s narrative, in the sense that “human action can be narrated...because it is always already mediated”, by signs, rules and norms.

The term “already” derives from the concept of past, of what has been communicated, from the point of view of an individual who is always already communicated by signs, rules and names that precede him/her.

It arises then an issue within the research practice when facing that which, precisely in this symposium, Professor Siegfried Zielinsky, Director of the Wilhelm Flusser Archive in Berlin, defines as a new term, namely ‘Test Society’, or rather, a society compelled to perform in real time a continuous revision of its cultural pragmatics, semantics and didactics.

This problematic is pointed out by the third term ‘new’, precisely the ‘already new’ that surrounds us and which any artist, thinker, researcher, has to face.

‘New’ derives from the old English *niwe*, *neowe*, of Germanic origin; related to Dutch *nieuwand* German *neu*, from an Indo-European root shared by Sanskrit *nava*, Latin *novus*, and Greek *neos* ‘new.’: now, that is born, recently arrived, that has not yet served, and is therefore eccentric.

An artistic and eccentric techno-cultural research, which derives the new terms from a post-modernism, post-structuralism, constructivism, that seem to be possible to describe only through the distributed representations of the theory of complexity. One distributed representation is not a representation in the traditional sense of the term. There are no symbols standing for anything, there are no grammatical relationships between them, and the system in itself does not need a semantic level of interpretation. The interpretation is grounded on experience, on praxis. And this kind of representation is specific of the arts, in which the artist becomes a device for the understanding of the human proportions through the practice of ‘making an artwork’. The work of art therefore assumes a dynamic and non-linear behaviour, or rather, it precipitates the precepts, the institutions, the concepts and ideas in a complexity of shared experiential practices, among the author and his/her public .

Following the path marked by the Theory of Complexity, the symposium describes a territory in which meaning is an holistic phenomenon (syncretic and always already vague): according to the American philosopher of human science Hilary Putnam, between a sign and the link (object/experience) to which it refers does not exist only one relationship, but many.

Meaning is thus generated by the activity of an ensemble, and not by a solist. The term 'holistic' then is referred to the fact that it is necessary to be confronted with a network of relationships when one is dealing with meaning. In this sense, the Planetary Collegium replaces the term 'holistic' with the term 'syncretic', understood also, and mainly, as a network of relationships 'not coherent among each other'. Today, the coherent vision of modernism seems to come to an end, because it is a rule still bound to the ideologies and currently it is not suitable to describe the 'Test-Society'.

Consequently, the meaning of the symposium is a syncretic phenomenon. Holism becomes opposed to positivism: Again according to Putnam, a positivist tendency of the late fin de siècle would like to reduce meaning to definitions which components would allow an interpretation in an atomic fashion. But meaning is 'analogical' and it cannot sustain a certain 'vagueness', and being always already vague, it cannot attain a rigid definition: the end of ideologies, post-modernity, the test society, push it to search not for coherence, but for a contingency that would not exist without vagueness.

Meaning is always already a normative belief. Charles Sanders Peirce advances that there are always beliefs (and desires) implied in meaning. No one has ever seen an atom, nor directly or indirectly, not even DNA helicoids, and not even well understood what is art, a term grounded, according to Ludwig Wittgenstein, on 'family similarities' (air de famille) and thus vague par excellence.

Among the artists and researchers, the understanding of what an atom, the DNA or art is, is founded on a system of shared beliefs and desires provided by the Institution and the system of references (technical, cultural); and, as not every artist and not every researcher has the same level of knowledge/experience regarding the atom, and amino acids, these same beliefs differ from one another creating a heterogeneous field of understanding. This heterogeneous field of understanding needs of the "principle of charity" to work, according to which the rese-



arch report is grounded on the interpretative charity that the audience grants to the researcher, that the public grants to art, assuming the general coincidence between the researcher's beliefs and those of the public: in other words, the reader would not be able to interpret the text if s/he cannot give the author the capacity to discern the truth, and vice versa.

Meaning always already depends on the environment. This topic brings us back to the Gestalt Theory and Marshall McLuhan's aphorisms on the figure/background relationship. What McLuhan describes so well using the Gestalt Theory is that our complex interactions with the environment play an important role in the grounding of meaning, what means that when changing the environment, the grounds of meaning also change, independently of any hypothesis of innateness. Therefore, texts are produced by the academic environment. Or rather, when changing the environment, the shapes of the texts are changed. Meaning is always already a historical concept. Meaning is a complex system and the state of complex systems is determined not only by external conditions (experiences), but also by the history of the system, and this is why it is important to publish these reports and to create a route .

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Another central idea behind the phrase "always already" is that once a certain point in time is reached, the point before does not exist anymore; in fact, the Test-Society is 'transient', problematic, and/or unthinkable. A classic example is that once and individual finishes reading Faust, s/he can say to have "always already" read Faust, and that the time before reading Faust, being already past, is, or has "always" been past.

Common extensions of this phrase could derive from this example: in our contemporary society, we could say that to have anyway read Faust is a pre-requisite of the contemporary mind. Another way in which this sentence could give thought a powerful dimension would be the idea that the contemporary subject, correctly conceived, "always already" has known language, and in a certain sense, is unconceivable to consider a pre-linguistic or pre-technological subject.

In the open, holistic, syncretic approach, in which meaning does not exist if not as a system of beliefs and desires in rapport to each other, the international dimension is highly relevant: the Planetary Collegium/M-Node PhD Program brings together researchers from all over the world working on advanced experimentation on the new forms of international research. This is

why the official language of the group of research is English, by now lingua franca of knowledge, and thus, LIMINA is also published in English, even if it is the publication of a British-Italian program of research.

This second issue opens with RIFLESSIONI-REFLECTIONS with an important text that Professor Siegfried Zielinsky, Director of the Vilém-Flusser Archive at the Berlin University of the Arts, chose to present at Always Already New 2010 with the title of “Milano Manifesto”, followed by Planetary Collegium President Roy Ascott, who presents “Second-Order Art and Entertainment. The Emergence of the e-gene in the Body of Art and its Future Mutation”, and Francesco Monico presenting “An Experience on Higher Education”.

The text by Geert Lovink, former director of the “historic” mediamatic and Founding Director of the Institute of Network Cultures, is “Media Studies - Diagnostics of a Failed Merger”; professor Pier Luigi Capucci presents an article on “Media Education, Education and Media”; tecnologist and futurologist Alan Shapiro presents “Transforming Computer Science into a Humanities Subject”; Antonio Caronia, one of the most original international scholars on the cultural and social impact of new technologies featured with the article “Learning Doesn’t Mean Submission”; Tine Melzer presents “Verbal Visualization”; Slovenian bio-artist Polona Tratnick presents “Interdisciplinary Approaches to Reflexive Art in Education and Research”; Fabio Fornasari e Sveva Avveduto introduce “Research, Art, Education: New Insights and Visions at the Crossroad of Social Media”; Argentine researcher Gabriela Galati presents “Non-Linear Models: Camilo’s Theatre of Memory & Warburg’s Mnemosyne Atlas as Archive Models for the (Virtual) Conservation and Communication of Knowledge”.

The section SGUARDI-GAZES is a compilation of critical essays that look for a way of proposing a taxonomy of the present. Musician and researcher Massimiliano Viel with the text “On and On”; techno-artivists Salvatore Iaconesi and Stefano Bonifazi present “Utopian Architectures and the Dictatorship of the Imaginary. A Selection of Topics in Favor of Holistic Education Paths, and the Role of the Fisheye in the Observation of Reality”; two theorists of techno-anthropology such as the Brazilian Cristina Miranda and the Italian Mattero Ciastellardi present “The Empowering of the Personal and Situated Dimen-

sions of Knowledge”, literature critic Emanuella Patti reflects on the issue of illusion and the fake within media society in the text “We Are a Dream in a Dream. The Illusion of Reality in Film Representation”; then architect Roberto Muffoletto develops some considerations on the end of education in relation to new media in “The End of Learning As We know It”; Israeli artist Tarin Gartner takes us back to the artistic praxis with “Performance Art and Relational Art: A Call for Modernist and Post Modernist Concepts”; British researchers James Moore and Barry Cooper present site-specific media design project in a collapsed industrial zone, “Climate of Media Ecology”; Icelandic scholar Fahrettin Ersin Alaca presents “A Management Theory for Art Education”; an artist focusing on technologies and sensorial simulation, Mario Canali presents “Homo Ridens 3.0”, Sarah Ciracì presents the development of her research in an article entitled “Art, Mysticism and Science”; Enrica Borghi reflects on topics related to artistic production in “The Value of Waste”; and multiple award-winning Sonia Cillari closes this session with an article on “Performative Spaces and the Body as Interface”.

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Finally the issue closes with ESPERIENZE - CASE STUDIES - which reveals the debt with the Anglo-Saxon pragmatism and thus the commitment to anchor the reflection to concrete and real experiences - with the following contributions: the European experience by Franco Torriani with “Artists Residencies: Towards a Mobility to Come?”, the fusion of the editorial with the artistic practices by Alessandro Ludovico in the text “A Brief History of Neural Magazine Project”; and radical thinker Marco Baravalle of the S.A.L.E. Di Venezia with the text “For the Crisis of the Culture Factory.”

LIMINA offers documentation on the research activities developed in the PhD research program M-Node at NABA, Milan, and of the Planetary Collegium CiiA-University of Plymouth network to which it belongs, and of everyone who, curious and interested, had approached this new reality of Italian, European, but mainly, global research. A special acknowledgement to the Director of NABA Academic Affairs, Elisabetta Galasso, who has believed in the program and has supported its building up and critically observes its development and evolution.

Francesco Monico

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University.  
Director School of Media Design Film & New Media NABA.

### *Notes:*

1. <http://www.flusser-archive.org/>
2. (Nda) The 'Principle of Charity' (Blackburn, Simon (1994). Blackburn, Simon, 1994, 2005, 2008, rev. 2nd ed. *The Oxford Dictionary of Philosophy*. Oxford: Oxford University Press. p.62.) assume a new post-human dimension through his development as 'Principle of Humanity', this will be developed in new study on and between nature, humankind and technology. The principle of humanity was named by Richard Grandy (assistant professor of philosophy at Princeton University) in 1973, states that when interpreting another speaker we must assume that his or her beliefs and desires are connected to each other and to reality in some way, and attribute to him or her "the propositional attitudes one supposes one would have oneself in those circumstances" - Daniel Dennett, "Mid-Term Examination," in *The Intentional Stance*, p. 343.
3. For more research on Roy Ascott's work, please see Limina previous issue, LIMINA1 - *Unidentified Narrative Objects - New Video Production and New Media Art*.
4. The Planetary Collegium M-Node is a PhD research program that grants a PhD degree, which is equivalent to the Italian "dottorato di ricerca". For an exhaustive description of the Planetary Collegium M-Node program, please see Limina1, or the website [www.m-node.org](http://www.m-node.org)
5. Always Already New 2010 is the continuation of New Media Art Education & Research organized in 2007 at the Centro per l'Arte Contemporanea Luigi Pecci in Prato, in 2008 and 2009 at the Centro Internazionale per la Fotografia FORMA in Milan; of which has taken part personalities from the art, culture and philosophy fields from Italy and the world.  
Cfr. Burham J. *Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century*. London: Allen Lane/Penguin Press
6. Cilliers (1998), Nicolis and Prigogine (1989), Serra and Zanarini (1990) and Jen (1990)
7. Blackburn S., (1994). 1994, 2005, 2008, rev. 2nd ed. *The Oxford Dictionary of Philosophy*. Oxford: Oxford University Press. p.62
8. Excerpt from "Outline of a Subversive Technopoetic – for a Libertarian Pedartgogy", PhD Thesis, Francesco Monico, 2010.

# The Empowering of the Personal and Situated Dimensions of Knowledge: Web 2.0 and Internet of Things

*Matteo Ciastellardi, Cristina Miranda de Almeida*

Bottom-up knowledge, situated knowledge, web 2.0, Internet of Things

The World Wide Web, in special the Web 2.0, favoured the growth of evolved and complex systems to control and manage information. That can be seen when we analyze two important features relating knowledge management in contemporary societies.

On the one hand, although the first phase in the formalization of online knowledge has been based on hierarchical classificatory systems (mostly ontologies), popular and informal taxonomies -called *folksonomies*- have been growing in parallel. These non-hierarchical taxonomies, supported by social networking tools, help making visible different forms of knowledge classification and interconnection: new classification tools open the possibility to society to manage knowledge by means of a collaborative attitude, in a sustainable way.

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On the other hand, one of the most relevant possibilities to further this collaborative approach is the Internet of Things that enables knowledge to be embedded and situated in the physical world.

The empowering of the personal and situated dimensions of knowledge triggered by Web 2.0 and Internet of Things generated an impact related to the definition of knowledge itself. The subjective influx relating the different layers of knowledge embedded in everyday life is shaping a new panorama in which “trusted” categories and concepts live together with subjective, “non trusted” definitions.

This paper will focus on the field of connected design, firstly to show that it is necessary to develop methods to deal with both forms of knowledge (trusted and non-trusted) in social media design; secondly, to explore which are the theoretical and practical possibilities to overcome some limitations of the actual paradigm; thirdly, to underline how information design, and specially social media design, can collaboratively define new guidelines to sustain and facilitate a bottom-up construction of knowledge in a specific field of application. The paper will present the contributions of Internet of Things to knowledge construction by analyzing a practical application -using QR Codes and Alphanumerical Strings- to the design process of an exhibition in Barcelona (Centro de Arts Santa Monica, Exhibition Condensed Matter) in 2010, developed by the authors.

## *Introduction*

“Condensed Matter. Cooking Science” is an exhibition that invited society to consider cooking, gastronomy and nutrition from a scientific point of view. The organizers of this exhibition turned the exhibition centre into a laboratory, and the laboratory into a place of experience, to open science to society. In the website of the exhibition “Condensed Matter. Cooking Science” (2010)<sup>1</sup> this statement appears:

Cooking science invites us to look at cooking, gastronomy and nutrition through the scientist’s eyes and see them as a truly cultural activity which brings a wealth of knowledge into play. Challenging the predominance of visual culture, our eating habits and the pleasure of food privilege the senses of taste, touch, smell and even hearing. Smell is capable of filling a sensory space with as much or more force as any other sense. Taste awakens a complex anatomy in which our genes play a part in predisposing us to follow a more or less healthy diet. Cooking also shapes the landscape, and the landscape in turn, with its specific geography and climate, determines the basic features of our diet. Perception and landscape define our cooking, but cooking also has a component of reflection and innovation based on scientific and technological research. Informed by this awareness, the new Catalan cuisine as exemplified by the Fundació Alícia is a major force for culinary innovation. Cooking transforms matter to and from its states of solid, liquid and gas to make not only it edible but also creative, surprising and suggestive. Nutrition and gastronomy work according to a phase diagram with a soft and ductile condensed matter that can trap gas in a liquid or liquid in a solid, reducing that liquid to a highly concentrated form.

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In order to do that, and to open the space of experience to society in a broader way, the organizers decided to offer the possibility to explore a second layer of contents by means of mobile phones and Quick Response Codes<sup>2</sup> and make the most of Web 2.0 and mobile technologies. In the same website, they continue to explain:

Condensed matter. Cooking science turns the Laboratory space into a place of experience at all le-

vels — a chance to take part in scientific research into why things taste bitter or the olfactory memory, to sample wine preserves and honeys, to feed your curiosity with a web site accessible to mobile phones and QR bar codes or to do some virtual cooking with the ingredients in the exhibition. The project also includes a range of activities such as workshops and lectures designed to raise our awareness of all the science there is in the kitchen.

For this exhibition 25 Quick Response codes (QR Codes) with Alphanumerical sub-codes were prepared (QR Codes+: in this case the alphanumerical sub-code permits to browse the electronic content using a traditional computer browser, inserting the alphanumerical code in the webpage of the exhibition website). The objective was to offer the public the possibility to explore and to interact with the installations, scientific surveys and multimedia art pieces by means of mobile technologies in the exhibition rooms.

This experience places us directly in the hinge of two of the most important trends in tagging: web tagging (to classify and enrich online information) and object tagging. The first one relates to the realm of the network while the second one relates to the connection between the physical and the electronic layers of reality by means of different technologies like Radio Frequency Identification (RFID)<sup>3</sup> and matrix codes like Quick Response codes (QR Codes+: QR Codes with an alphanumerical extension), among other systems.

While RFID tags are used to identify and track objects by means of radio frequencies, in the case of QR Codes it is a user-friendly system that is being increasingly used in different social areas such as art, marketing, editorials, cultural centres and activities.

Without the convergence of different elements like the capillarity of the network supported by open-source code, the employment of systems that allow the sharing data and the introduction of mass mobile that contextualize knowledge in everyday experience, the proposal offered by Condensed Matter would not have existed.

The system extended the exhibition environment into the virtual layer and allowed for a bottom-up interaction and sharing of knowledge that integrates the digital environments into analogical frameworks. The exhibition space was transformed into a hybrid environment of augmented reality, in which each one of the tagged elements turned into a hyper-node, an interface to access the electronic layer, the virtual place where benefits of Internet can be managed on demand and on-site by visitors.

Connecting the exhibition to Internet unified the cognitive structure and organization of information in a “hypertinent way”<sup>4</sup> (de Kerckhove, 2005:4) completing the cycle of information between two dimensions: the physical and the electronic. The same processes add fluidity and real time-ness to installations, art works or scientific experiments.

Together with tagging 25 pieces of the exhibition with QRcodes+, the exhibition rooms were equipped with devices provided with QRcode readers so that the public could add or browse texts, links, notes, bookmarks, comments, files and geo-referenced information, publishing them directly in the platform.

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### *Emerging Realities: Web 2.0, Folksonomies, Networked Mobile Technologies*

The development of different systems to control and manage information in Internet is expanding towards the configuration of complex augmented realities<sup>5</sup> in which physical and electronic forms of knowledge merge. The development of the electronic layer that could be accessed from the physical dimension of reality in these exhibition rooms is a good example of how the social practices in society of knowledge can be understood as an example of a complex phenomenon expressed in the different forms of the web culture (Lewin, 1992). The process of merging is supported by three elements: (1) different features from the semantic web (Berners-Lee, 2002); (2) the definition of new kinds of ontologies called folksonomies<sup>6</sup> (Davies, J.; Fensel, D. and Frank van Harmelen, 2003) and (3) mobile personal media (like mobile phones, smart phones, game consoles, tablets, etc.) that offer the possibility to access information in real time and everywhere.



Popular taxonomies -folksonomies-, as opposed to hierarchical classificatory systems typical of the first phase in the Internet, render visible subjective forms of knowledge classification and interconnection. Supported by social networks these new classification tools enable a collaborative and sustainable attitude of sharing knowledge on line.

The complex intermingling of these three elements (web 2.0, folksonomies and mobile technologies) poses a challenge to how society of knowledge is currently dealing with hybrid knowledge management. Fostering practices like the exhibition Condensed Matter could bridge the gap between everyday experiences and the virtual dimension.

### *Conclusions*

Addressing the question of how the use of networked mobile technologies can contribute to the already existing trends in the construction of digital knowledge in special to informal learning purposes, this paper suggests that it is necessary to develop new strategies based on a deep understanding of the possible uses of mobile personal technologies connected to some aspects that belong to the semantic web framework and based on new social forms to organize, manage and (re)distribute information.

The emerging strategies in digital reality and the exponential development of the web-based culture, call for a different approach regarding knowledge acquisition in everyday life that takes into consideration either in the analogical and the electronic dimensions of knowledge, contextualizing knowledge in both spheres.

Mobile technologies supported by semantic web and folksonomies place in the hands of users the power to make definitions, associations and variations, in a kind of defective semantics, founded on practice of co-tagging, mash-up and syndication different than that typical of computer-aided processes. This difference rests on the fact that mobile technologies directly situate online knowledge in the physical layer of reality.

They serve the powerful role of establishing a link between so-

cial, physical and technical tissues and this means not only to serve as tools but also to offer a hybrid way of interaction favouring situated and contextualized forms of knowledge.

Different personal forms of knowledge acquisition and creation can be fostered by hybrid strategies merging the original idea of the semantic web– and new forms of collective data creation, like tagging with mobile technologies. The arguments that support that assertion are various.

On the one hand, mobile technologies break the boundaries of the classroom and formal knowledge acquisition placing the access to knowledge in everyday physical and cultural environments (longlife informal learning) while the semantic web offers a new layer over these environments. On the other hand, mobile technologies can help increase digital literacy placing in the hands of a broader number of people the tools for knowledge management.

This can be specially observed in the process of substitution of the hierarchical features and ethno-classifications that dominated the first phases in the history of online knowledge by non-linear popular taxonomies (folksonomy) that have been emerging in which there are no pre-determined references. These folksonomies impregnate subjective patterns into the protective tissue of trusted knowledge. In the case of Condensed Matter social actors self-organize to trace definitions, associations and variations, developing a kind of defective semantics, founded on practices such as co-tagging, mash-up and syndication by means of which social actors concurred to develop different spontaneous and collaborative forms of “bottom-up” classification (Tapscot and Williams, 2007) that mirror the social actors’ conceptual model. As in any complex adaptive systems, the whole transcends the sum of its parts and small variations can cause effects that are not directly proportional to its causes.

The experience of connecting Condensed Matter serves as an outstanding example of how society of knowledge is challenged to broaden its capacity of translating complex information structures and hierarchies into a bottom-up approach to knowledge. Condensed Matter proposes a new way to deal with different levels of knowledge, for instance trusted and distrusted; mobile

and non-mobile, giving non-linear folksonomies a space of visibility inside a scientific project and in a situated way.

The use of mobile technologies supports the social trend towards bottom-up forms of knowledge construction based on strong online forms of collaboration, going beyond a communication needs and assuming a central role in relation to knowledge construction.

The experience in Condensed Matter reflects the transit from complex information to bottom-up knowledge by (1) giving the opportunity to exhibition visitors to experience the information flow from a situated practical experience (2) offering visitors the support to take active part in the process of construction of knowledge and to overcome the role of receptors; (3) making possible the merging of the virtual and material layers of the exhibition contents (4) recognizing that mobility is a central feature of social processes of interaction, information and knowledge.

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In synthesis, in the exhibition Condensed Matter mobile tools expanded the trend in which society is passing from a role of data receivers into the role of active propellers, promoters of knowledge connected to the Internet and added an extra layer to this process by situating online knowledge in relation to the physical world.

In face of this situation some changes should occur relating the dynamics of the semantic web and traditional ontologies, in order to make it possible the transition towards a bottom-up logic from a bottom-up everyday collaboration.

On the one hand, although the semantic web and ontologies together are currently the most advanced systems for creation and distribution of data, their own structures, based on a monolithic view of organizational hierarchy, can be considered contradictory with the emergent possibilities of developing really bottom up systems for knowledge management that mobile personal technologies place in the hands of users.

On the other hand, the visualization of data on mobile screens requires a change in the direction of sustainability and large

scale distribution: offering different kinds of platform design; developing open source tools to facilitate change; producing simple and accessible accesses to manage information and taking part in the process of bottom-up data construction. In this sense mobile technologies should be seen as an integrated framework for accessing and managing information and to connecting people to the digital environment by means of everyday gestures.

On the Web, each individual is free to organize information, creating subjective links between things. In this process categories and hierarchies loose strength and are substituted by fluid forms of relation and information architecture that constitute their own forms of order through disorder and ambiguity.

Tagging appeared as a practice to better classify information, encoding not only formal aspects relating items but also personal points of view. Social opinion expressed by means of tagging introduces a different dimension to the concept of knowledge. “Community-inspired” objects and different kinds of tagging appear due to technical facilities.

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## *Notes*

1. Condensed Matter. Cooking Science. *Materia Condensada*. Cuinar Ciencia. <http://www.materiacondensada.com/>(last consulted December 7th, 2010, h.11.30). The exhibition Condensed Matter was held in the Centro de Arts Santa Monica, Barcelona.

2. A Quick Response code is a matrix barcode that encodes different kinds of text and information (text, URL, numbers, email and other alphanumeric data). QR Codes can be read by QR mobile devices (traditional mobile devices with a QR Code reader software) with a camera, smart phones and scanners.

3. RFID is a kind of technology that allows for the identification, tracking and tagging of an object, a product, an environment or a living being using radio-frequency signals.

4. Hypertinence can be understood as the most pertinent responses to requests in Internet.

5. According to Barfield, W.; Caudell, T., eds (2001:27) an Augmented Reality (AR) is a system that “merges 3-D virtual objects into a 3-D real environment and displays this combination in real time. Unlike Virtual Environments (VEs), AR supplements reality, rather than completely replacing it. This property makes AR particularly well suited as a tool to aid the user’s perception of and interaction with the real world”.

6. In Philosophy the term ontology (lit. “speech about being”) is the study about the concept of being. Relating the Web, the term refers to the construction of an conceptual framework that describes the “essence” of a system using the classification and measurement of its key constructs. Ontologies are the structures able to maintain all entities in perfect hierarchical relation (Nirenburg and Raskin, 2004). Transforming actual hierarchical structures present in the very categories and relations used in traditional ontologies into flexible bottom-up forms of data classification –non-lineal folksonomies- is a challenge that is still being addressed by society.



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