Disruptive Innovation and Memetics:

How to accelerate change and transformation in business modeling, organization and development

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Abstract

The aim of this article is to provide different keys for interpreting problems, both in business as in social life, in order to define a possible approach to see what change we need and what transformation we can do.

I will present my proposal through a simple and flexible methodology to define problems and solutions together: *Eco-Cultural System Method*[1], applied to up and running projects.

The hardest activity is to make a sufficient number of experiments to test the ECS-M based on memetics discipline and disruptive innovation theory and provides results according with academics perspective (i.e. using scientific approach) and with business perspective (i.e. improving organizations profit or reducing their loss).

We know only a small part of the natural and cultural world, and we should learn to 'fill' the gaps, to fill those cultural distances that keep us tied to proven methods and approaches.

In some areas it is difficult to question the *status quo*. In economics as in politics the "eco-cultural systems" are often closed and based on a dogmatic approach. This prevents a peaceful evolution of rules, roles and behaviors.

To achieve a rebalancing of the relationship between these different entities, we suggest different perspectives… and the Eco-Cultural System Method provides simple criteria to:

- frame problems and solutions,

- apply and adapt them to eco-cultural systems.

This research tries to identify new forms of coexistence and collaboration between socio-economic entities.

The imitation of solutions leads a rapid spread of new models and allows us to fill those empty spaces that economic and social institutions consider unattractive, because are out of their conventional frameworks and models.

In a memetic perspective *To Imitate* is the key behavior for spreading solutions, and *not conventional models* are key elements to disrupt and innovate the conventional evaluation of solutions: mixing a scientific discipline and a business theory we can build a different way to see and to do things, accelerating changes in any kind of organization.

If we stay on the edge[2] of organizations in which you are moving normally, it is easy to see something different. Through knowledge exchange with experts in memetics and in disruptive innovation, and thanks to new object made by young entrepreneurs and talents, it has been possible to analyze and investigate solutions already known around the world: from *Kickstarter* to *Rolling Jubilee*, from *MyMorpholio* to *Connected the Film*.

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[1] You can see more detail about ECS-M on my previous article: "Reinvent and Reorganize the Work in Time of Crisis - A memetics perspective for implementing solutions in education and coaching" - ISSN 1935-4819. More information are available on my blog: http://www.solotablet.it/blog/disruptive-projects

[2] see "The Fractal Geometry of Nature", B. Mandelbrot - ISBN-13: 978-0716711865

Much and interesting analysis has been said about these projects and certainly more in depth what will happen here[3]: in this article the interest is in 'instructions to see' a solution, and its 'ease of imitation': if a solution is easy to imitate it will spread rapidly, with many variations, deviations, more or less efficient ones... Else, this solution remains interesting but doesn't become a disruptive innovation.

From memetics perspective, cultural objects evolve like natural objects and for this reason there are solutions that can be incubated for a long time and after they can emerge and disrupt previous solutions.

A change happens when and where we have the right environmental conditions as well as the right elements. And change the way of seeing and then approaching problems is one of the 'environmental conditions' necessary to ensure that a transformation begins.

In order to catch the first signs of this kind of 'disruption', we need to distance ourselves from the problem. "To distance from a problem" mean to have a general overview of what is around the same problem even without distinguishing problem from solution, objects from environment.

It is more or less the same thing we do when we look at a galaxy through a telescope or a tissue through a microscope ... so once again our 'scope' depends on our knowledge... and we create models to represent reality based on our 'vision of scope'.

The limits and potentialities of modeling depend primarily on the observer; then, many observers will provide a more complete model, and increasingly refined over time, but never stable for a long period of time.

It is not difficult to see here a new-Darwinist approach: if we accept the possibility of a paradigm shift, we can also find that solutions of problems are beyond boundaries we have established, based conventionally on a reference system we use to measure the success or failure of a settlement, a good from a bad performance.

A disruptive innovation is mainly an innovation that introduces a disturbance in environment so strong to occupy not only the market place, but also roles and rules with competitors and consumers, reinventing in a certain way a reference system, namely the market itself. Memetics helps us to explain human culture according to an evolutionary approach: self-learning and self-repairing are behaviors based on imitation… starting from imitation we can organize our solutions.

Research hypothesis and execution

The article seeks to support this hypothesis:

Memetics can be considered a disruptive innovation in modeling, organization and development of socio-economic environment.

If we consider disruptive innovation in a market like a "change" in the "cultural code" which defines market, disruptive innovation in economics is a metaphor of evolutionary leap in eco-cultural systems… and memetics is like a method we can use to disrupt our current paradigms.

To represent eco-cultural systems, we drew the Venn Diagrams: a simple and effective way to display the context (business, schools, government agencies). This formalism also allows us to create visual analogies with natural entities: an embryo, a molecule, cells that interact with each other.

In this way it is also possible to display transformations that - over time - can occur in harmony with the cultural dimensions that characterize our eco-cultural system.

Companies that learn to see and to represent itself as a "living-thinking organism", they are quick in adapting to environment changes.

We define a "memetic cell" whose contents are knowledge, experience, and all things that are related to the scope of our observations.

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[3] on disruptive innovation and memetics in business, I suggest to visit the following Focus Groups:
http://www.linkedin.com/groups?gid=3713352&trk=hb_side_g
http://www.linkedin.com/groups?gid=1837479&trk=hb_side_g

If we speak the language of economics and finance, we have a description of reality that is not giving the expected results: still today we apply "sustaining changes" to an inadequate paradigm, and suggest "incumbent transformations" to an unsuitable process.

If we speak the language of memetics, we provide to economy and finance new words, verbs and metaphors to modeling reality and to organize the real activities. In this way, we can consider to have a broad description of reality that shows those expected results exist elsewhere, i.e. out of conventional reference systems.

Let me give a simple example… how is "eco-cultural system of numbers"[4] evolved? We can start from the natural numbers, then add rational numbers, and after the real ones, etc. This eco-cultural system is changed simultaneously with the rules that we have defined and applied to describe, share and spread the evolution of that part of reality we have learned.

What is Disruptive Innovation

Disruptive innovation, is a term coined by Clayton Christensen, and describes a process by which a product or service takes root initially in simple applications at the bottom of a market and then moves up market, eventually displacing established competitors.

As companies tend to innovate faster than their customers' needs evolve, most organizations end up producing products or services that are too sophisticated, too expensive, and too complicated for many customers in their market.

*(source: http://www.claytonchristensen.com/key-concepts)*

Starting from this definition of Disruptive Innovation and using Venn Diagram, we can represent market into a eco-cultural system in this way:
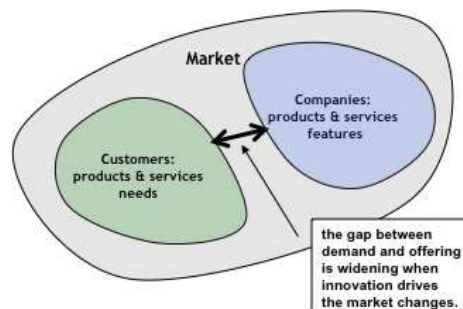
Companies pursue these sustaining innovations at the higher tiers of their markets because this is what has historically helped them succeed.

By charging the highest prices to their most demanding and sophisticated customers at the top of the market, companies will achieve the greatest profitability.

However, by doing so, companies open the door to disruptive innovations at the bottom of the market.

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[4] for more information, see: https://en.wikipedia.org/wiki/Number
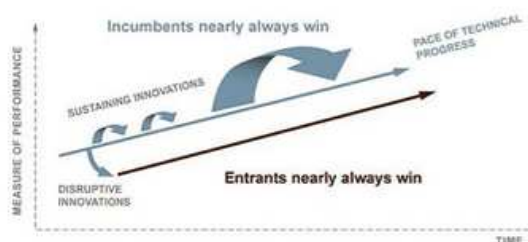
An innovation that is disruptive allows a whole new population of consumers at the bottom of a market access to a product or service that was historically only accessible to consumers with a lot of money or a lot of skills. (source: http://www.claytonchristensen.com/key-concepts)

Giving up a two-dimensional function in which they are listed concepts of time and performance, we have translated the Christensen's definition of the observable 'disruptive innovation' using another convention, just based on the use of Venn diagrams:
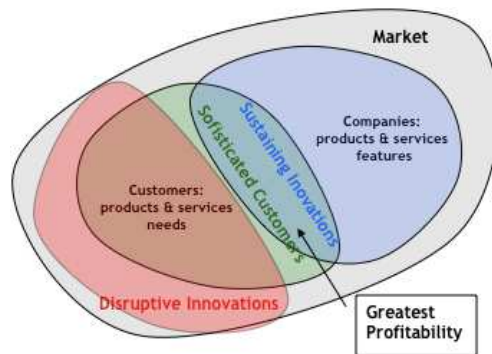
Characteristics of disruptive businesses, at least in their initial stages, can include: lower gross margins, smaller target markets, and simpler products and services that may not appear as attractive as existing solutions when compared against traditional performance metrics.

Because these lower tiers of the market offer lower gross margins, they are unattractive to other firms moving upward in the market, creating space at the bottom of the market for new disruptive competitors to emerge. (source: http://www.claytonchristensen.com/key-concepts)

The trend of profit related to innovation and customers who can access it, is represented by this Gaussian:
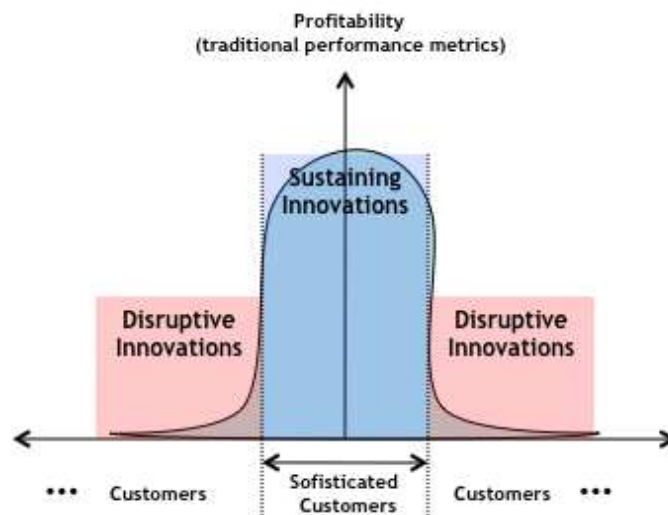
Starting from Disruptive Innovation peculiarity, if we look at innovations' trend in time and space (where "space" is the penetration in given and/or new markets) we can see that the growth opportunities for disruptive innovations are greater than for sustaining innovations.

Sustaining innovations are closed in a customers range: rich, skilled and sophisticated ones. Disruptive innovations can expand themselves in new markets and suggest new measures of performances.

If we list the most popular disruptive innovation in the market we can find this list:

Some examples of disruptive innovation include:

Disruptor	Disruptee
Personal computers	Mainframe and mini computers
Mini mills	Integrated steel mills
Cellular phones	Fixed line telephony
Community colleges	Four-year colleges
Discount retailers	Full-service department stores
Retail medical clinics	Traditional doctor's offices

All these disruptive innovations are tangible objects. And in this list we can identify two different clusters: the first one is a set of products (phone, pc and chip), the second one a set of places (schools, shops, offices).

We can say in these 25 years the structure of objects that we use and the structure of the places that we frequent have been changed in a disruptive way... does it influence our thoughts, our behaviors and our actions? We will try to answer this question introducing Memetics.

What is Memetics

Memetics can be simply understood as a method for scientific analysis of cultural evolution.

Proponents of this discipline suggest that memetics has the potential to be an important and promising analysis of culture using the framework of evolutionary concepts.

"...Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperms or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation"... [Richard Dawkins, 1976, The Selfish Gene]

This picture is a possible physical model:

Source: http://www.phoenix5.org/glossary/gene.html

"If a scientist hears, or reads about, a good idea, he passed it on to his colleagues and students. He mentions it in his articles and his lectures. If the idea catches on, it can be said to propagate itself, spreading from brain to brain... When you plant a fertile meme in my mind you literally parasitize my brain, turning it into a vehicle for the meme's propagation in just the way that a virus may parasitize the genetic mechanism of a host cell..." [Richard Dawkins, 1976, The Selfish Gene].

And this picture provides a possible view of their physical organization:
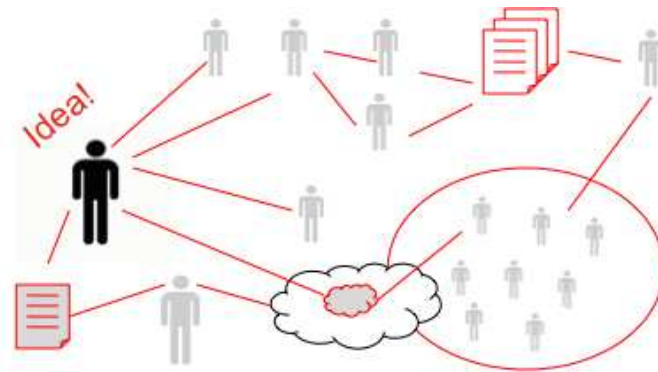
"Our minds and cultures are designed by natural selection acting on memes, just as organisms are designed by natural selection acting on genes. A central question for memetics is therefore 'why has this meme survived?'. Some succeed because they are genuinely useful to us, while others use a variety of tricks to get themselves copied. From the point of view of the "selfish memes" all that matters is replication, regardless of the effect on either us or our genes"... [Susan Blackmore, 1999, The Meme Machine]

The central role of memes is very important and makes clear that in adapting and changing rules, we have to focus on contents and on relations between contents.

http://freethinkerperspective.blogspot.it/2012/07/how-natural-selection-selects.html
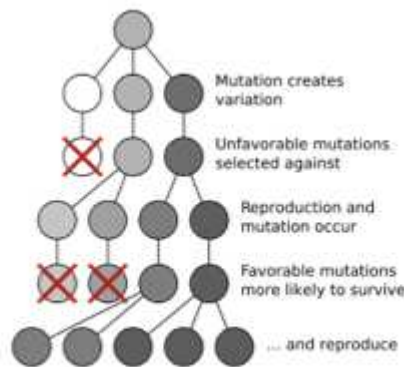
"Memetics has been used to provide new explanations of human evolution, including theories of altruism, the origins of language and consciousness, and the evolution of the large human brain. The Internet can be seen as a vast realm of memes, growing rapidly by the process of memetic evolution and not under human control..." [Susan Blackmore, 1999, The Meme Machine][5].

Internet has a big impact on human relations: means free software, low cost technologies, social networks, clouds services, peer to peer models, crowd sourcing … all are tools to accelerate changes in human organization. Connectivity and Collaboration characterize the new generation of Business Software.

Involving people, defining commons values and indicators, simplify role and interconnection between people and offices, can increase number and values of contributors to solve problems. In business it means simplify role and interconnection, increase number and value of contributors to solve companies' problems. If any person can participate directly to the destiny of a company, his/her behavior could evolve in any direction. Connectivity and Collaboration characterize the next generation of People in Business.

Can a company already struggling to address this change? How much does it cost?

"Let's turn our gaze to the everyday practices and we will demonstrate that the Memetic Time is much faster than Genetic Time.

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[5] for more information: http://www.susanblackmore.co.uk/memetics/about%20memes.htm

When a practice takes place every day (like brushing your teeth or going to work), the time of a generation of each daily practice is 1 day. In this range this practice is born, lives, dies... it can change, and can test its effectiveness, and therefore, ensures its descendants...

The average length between human generations is 10,000 days (≈ 27 years).

We can therefore say that memetic evolution is 10,000 times faster than the genetic evolution of a human being. This means that in 3 years we have gone through more than 1,000 generations of daily practices... and 3 years to achieve the evolution of a company starts to become a reasonable time...” [Pascal Jouxtel, 2012, Effectiveness of Living, source: http://prezi.com/luqxz4kcofve/catalysez-la-metamorphose/]
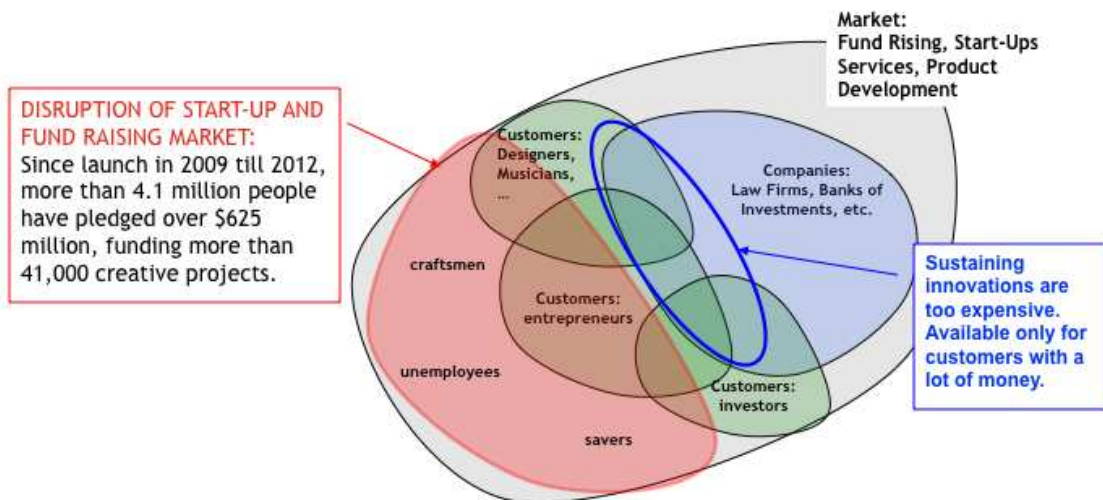
To give evidence of this possibility to entrepreneurs, managers of public agencies and deals, we analyzed: Kickstarter, My Morpholio, Rolling Jubilee, Connected the Film.

In these practices we can see different ways to achieve changes and transformations in modeling, organization and development.

These projects requested from 1 to 3 years to "disrupt" their market boundaries… and innovate the customers' relationship with products and services.

KICKSTARTER

"Kickstarter is a new way to fund creative projects.
The filmmakers, musicians, artists, and designers you see on Kickstarter have complete control over and responsibility for their projects. Kickstarter is a platform and a resource: anyone can launch a project on Kickstarter as long as it meets the guidelines."

Market:
Fund Rising, Start-Ups
Services, Product
Development

DISRUPTION OF START-UP AND FUND RAISING MARKET:
Since launch in 2009 till 2012, more than 4.1 million people have pledged over $625 million, funding more than 41,000 creative projects.

Customers:
Designers,
Musicians,
...

Companies:
Law Firms, Banks of
Investments, etc.

craftsmen

Customers:
entrepreneurs

Sustaining
innovations are
too expensive.
Available only for
customers with a
lot of money.

unemployees

Customers:
investors

savers

mymorpholio

"The Morpholio Project is a group of applications that reinvent creative processes for designers, artists, photographers and any imaginative individual…
The Morpholio Project is both a set of utilities as well as a vibrant community."

DISRUPTION of TOOLS and SERVICES for DESIGN & DEVELOPMENT:
From the market bottom line the new ideas, new prototypes can emerge… young artists, designers and developers have a free chance to show their abilities, through:
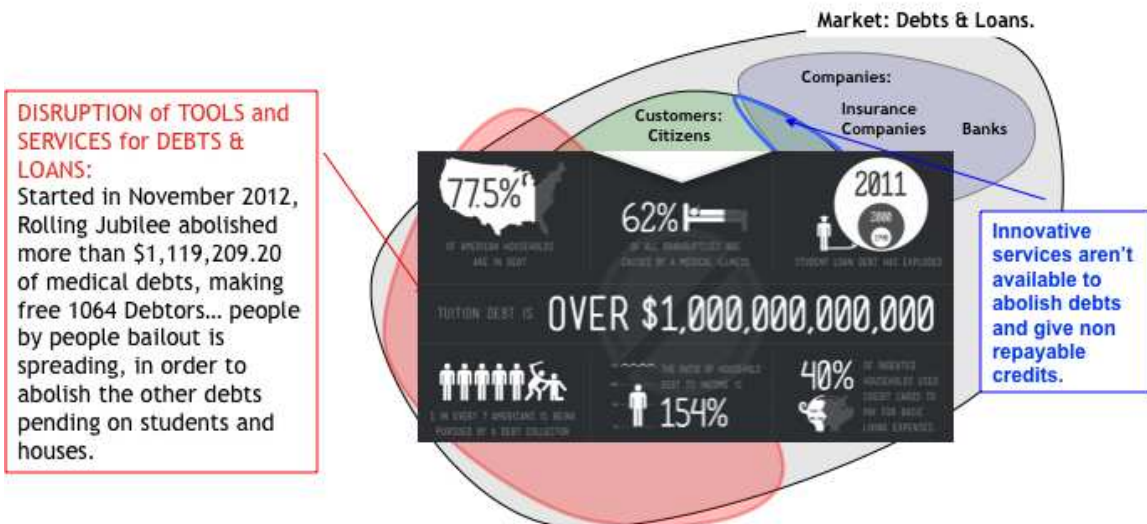- free APPs for drawing and reviewing projects;
- free cloud services for share technical solutions and suggestions with a skilled community.

Market:
Platforms and Services for DESIGN & DEVELOPMENT

Customers: Designers, Architects, …

Companies: Firms in CAD/CAM/PDM software, Firms in HW and Services for Design and Development

New talents

Customers: Sw developers

Crowd sourcing

Customers: Engineers

Community members

Innovative packages and services are too expensive, available for sophisticated and rich customers.

ROLLING JUBILEE

"The Rolling Jubilee intervenes by buying debt, keeping it out of the hands of collectors, and then abolishing it. They are going into this market not to make a profit but to help each other out and highlight how the predatory debt system affects our families and communities. Think of it as a bailout of the 99% by the 99%."

DISRUPTION of TOOLS and SERVICES for DEBTS & LOANS:
Started in November 2012, Rolling Jubilee abolished more than $1,119,209.20 of medical debts, making free 1064 Debtors… people by people bailout is spreading, in order to abolish the other debts pending on students and houses.

Market: Debts & Loans.

Companies:

Customers: Citizens

Insurance Companies

Banks

77.5%

62%

2011

TUITION DEBT IS OVER $1,000,000,000,000

154%

40%

Innovative services aren't available to abolish debts and give non repayable credits.

"Connected is not just a movie, it's a community that grows around the concept of interconnection between people and things ... through cloud computing, mobile device, it involves users in generating contents, based on collaboration and knowledge sharing. It moves people imagination and brings a chance to independent movies production and distribution."
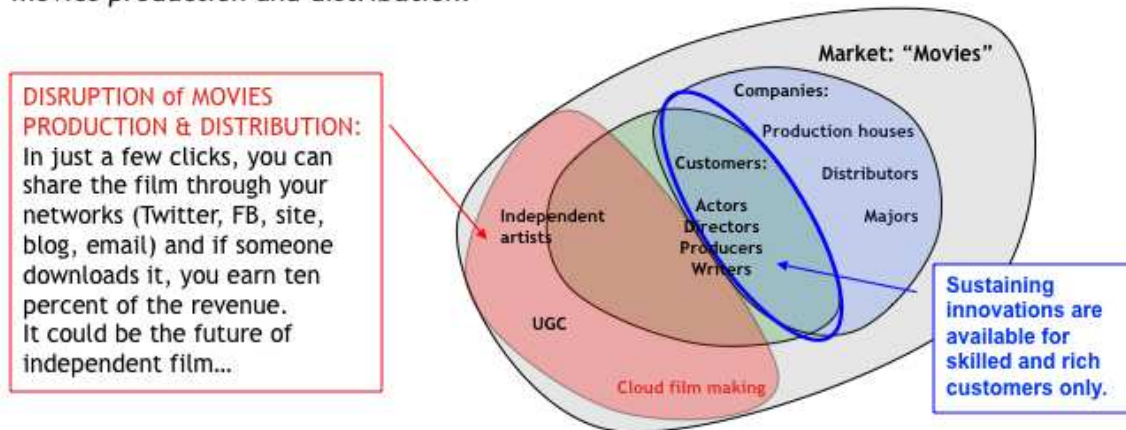
Conclusion

Through Disruptive innovation we can wide the scope of products and services and thus explores new needs and new demands from market and society. But, staying in our box we cannot see and then adapt our box to environment.

Not all the disruptive actions are innovative, but their solutions pose a basis in order to rework theories and practices in a memetic perspective. If we think about our box like a living entity, it will seem easier to guess that its mutations are closely linked to the surrounding environment.

Disruptive Innovation is like a new reference system to convey energy and skills to adapt our eco-cultural system (schools, companies, public offices) to following disruptions:

> –crisis of capitalism,
>
> –slowness of bureaucratic engine,
>
> –waste of financial systems,
>
> –high unemployment at all levels.

Memetics helps us to see ourselves as "observable entities" in eco-cultural systems.

We can think about the evolution of human being as the evolution of the solutions we put in place in the past and we will try to implement in the future, looking to distinguish the toxic memes and encouraging the spread of useful memes.

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Links to case histories:

http://www.kickstarter.com/

http://www.mymorpholio.com/site.php

http://rollingjubilee.org/

http://connectedthefilm.com/