



## Introduction

**"Innovation is the specific instrument of entrepreneurship. The act that endows resources with a new capacity to create wealth."**

Peter F. Drucker



**Image 2. First Wave: the agricultural societies.** Source: <http://tao-dnd.blogspot.de/2009/07/agriculture.html>



**Image 3. Second Wave: the industrial societies** Source: [www.wikipedia.org](http://www.wikipedia.org)



**Image 4. Third Wave: Information age.** Source: [www.theglobalfool.com](http://www.theglobalfool.com)

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**Image 5. Fourth Wave: ?**

At this moment the words *technology* and *innovation* seem to occupy the first plan in the stage of life. I will (deliberately) focus my article on people. I don't contempt technology or innovation, but I want a momentary change in one's perspective.

We live in turbulent times, where changes are happening at a pace that we (individually and collectively) apparently cannot follow. It seems that we live overwhelmed by the number of possibilities that are presented to us.

My intent in this article is to show that:

- we have to learn and adapt to this new level of complexity in the world
- digital technologies do have and will have a highly relevant role in this new step
- humans must have consistent aesthetical and ethical positions, besides the technical one

What I'm suggesting is the need for a new adaptation. It's no news that mankind has already been through some of these, like the three waves Toffler indicated<sup>1</sup>:

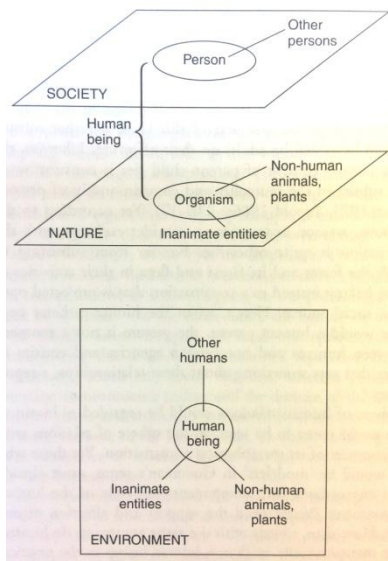
- 1<sup>st</sup>. The settled agricultural societies;
- 2<sup>nd</sup>. The industrial society
- 3<sup>rd</sup>. The post-industrial society (Information Age)

But I would even start earlier than that, with what was probably the first and one of the most lasting adaptations of man in the world: the hunting-gathering, or foraging. Many defend the similarity between the hunter-gatherer and the economic man, in the way they both are individuals acting with the objective of self-realization (or satisfaction) within an exterior world full of possibilities – risks and opportunities. But I, in the following of Ingold or Schweder, argue against this idea.<sup>2</sup>

<sup>1</sup> (Toffler, 1980)

<sup>2</sup> More about this argument in Chapter Two of (Ingold, 2000, pp. 27-39)

I believe there are a far more complex relationship and interaction between man and context:



**Image 6. "Western anthropological (above) and hunter-gatherer (below) economies of knowledge."** (Ingold, 2000, p. 46)

"(...) *hunter-gatherers take the human condition to be that of a being immersed from the start, like other creatures, in an active, practical and perceptual engagement with constituents of the dwelt-in world. (...) [By opposition], the classic Western perspective of the mind detached from the world, and therefore it has to build an intentional world in consciousness, prior to any attempt at engagement. (...) Within this one world [the hunter gatherers one], humans figure not as composites of body and mind but as undivided beings, organism-persons, relating as such both to other humans and to non-human agencies and entities in their environment.*" (Ingold, 2000, pp. 42-43)

Consequently, the uniqueness of human beings comes from the fact that they occupy what Shweder calls *intentional worlds*<sup>3</sup>. For us, things do not exist "in themselves", as indifferent objects, but only as they are given form, meaning and emotional value within systems of mental representations. In this sense, the environment of human beings is culturally constituted.

I will get back at this further on. For the moment let's focus on the present condition. The overstimulation of contemporary life leads to what Simmel called a *blasé* attitude. Together with globalization effects – the cosmopolitan – here we have a dangerous cocktail:

"Combining the two, we get the *blasé* cosmopolitan who is at home everywhere and nowhere; who believes everything and nothing; who is good at dispassion but not at involvement; who is rendered indifferent due to overstimulation; and who may feel numb much of the time, either afraid of or unaccustomed to feeling deeply." (Ellin, 2006, pp. 8-9)

This, of course, raises a quite essential question: within the basic *where do I come from?* and *where am I going to?* we are naturally answering either with passivity or precipitated decisions. The past is seen as *merchandise* (data) that we accumulate but don't understand. And the future is – as Innerarity<sup>4</sup> puts it – the dumpster of the present.

It seems my article is heading to the typical catastrophic futuristic prevision, which we have seen in so many books and

<sup>3</sup> (Ingold, 2000, p. 29)

<sup>4</sup> INNERARITY, Daniel, *The Future and its Enemies*, 2009.

movies. Or falling in the radical (and unrealistic) positioning against any technological development. Well, if we know something about technology is its *irreversibility*: once it's out there, there's no way back.<sup>5</sup>

So I'll try to go slowly into my vision.

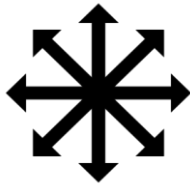
First we'll go deep into one recent phenomenon, the tendency for hybridization, with special focus on the techno-human condition within the complex condition we inhabit.

Secondly, focusing on the 3 dimensions I consider constituting the frame-basis for our intentional actions.

In the end, I hope that my vision starts to emerge to you, as it did to me.

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<sup>5</sup> Allenby addresses this characteristic in the first two Chapters of *The Techno-Human Condition*



**Image 7. Chaos symbol by Fibonacci.** Source: [www.wikipedia.org](http://www.wikipedia.org)

**“In scientific fields, and especially in complex systems, they use the word “emergence”, not “generation”, when describing something new.”**  
(Shinohara, 2010)

## Hybridization

A hybrid is generally described as a model born from two or more different entities, which achieves something neither of the previous could achieve individually. It was initially used to describe physics and genetics phenomena, but is now broadly used. Hybrid energetic systems, genetic systems, trans-humanism, globalization, transsexuals, prosthesis, artificial intelligence, etc., are examples of hybrid emergences. All of them share the integration of different features to the mutation and emergence of new ones.

Our world became so complex with the infinite number of nuances, trends and flows, that chaos seems to be the only word which is big enough to characterize it. But chaos is a complex order, where chance and uncertainty are present – as in Life. So, maybe it’s better we start to think in how we can think and steer the new dimension of complexity our life has reached, instead of going with the *it’s too complex to be understood* or the ignorant aggressive *it is better a bad decision than an indecision* attitudes. Acknowledging our social limits to growth, performing according to our biological rhythms and recognizing our ignorance in a humble way are definitely must-do’s. Now, being voluntarily ignorant and try to hide it is just irresponsible. But, back to chaos:

*“[In a chaotic state a] great deal of energy is wasted. And, at first glance, that seems a negative loss. However upon reaching a certain level, it will be condensed into a powerful force. To achieve this, one must jettison all the force so far expended when this energy is sublated. What is created at that moment is a new order. Take the example of an older period when ancient empire is the first order. But as this order gradually expands, it begins to break up. Then, a chaotic state starts to seek the next step. Through a repetition of confusion and conflict, the next order will appear. Thus, I can also say that chaos is a force or activity that advances toward the future.”* (Shinohara, 2010)

One of the fresher and more consequent visions I have seen about the contemporary complex state-of-the-art is the one by Allenby. In it, he states that individual humans and technology are coextensive:

*“Technology is always part of the context, and to see it as exogenous to the human in some über-Cartesian spasm of solipsistic individualism is simply wrong.”* (Allenby & Sarewitz, 2011, p. 36)

Among the first examples he provides are the use of pharmaceutical pills to change our physical performance, or the use of Internet data search engines as an auxiliary powerful memory. Besides the most obvious ones, like prosthesis.

He divides the world in three big layers of complexity. Of course the boundaries between them are fuzzy, but, the higher the level is, the more sensitive it is for contingency and unpredictable phenomena. I synthesized it in this table, also providing an example<sup>6</sup>:

	Concept	Example – Railroad
Level I	<b>FUNCTIONALITY</b> (cause-effect): technology used to accomplish something	Moving people and goods faster, between cities ( <b>diminish time-space scale</b> )
Level II	<b>SYSTEMS COMPLEXITY</b> : here we have the same as in Level I but embodied in a complex socio-technical system, much less predictable and more complicated than Level I	Adaption for a unique system of time; increase of industrial scale production and shift in management and operations
Level III	<b>SYSTEMS INCOMPREHENSIBILITY</b> : technologies do not act in isolation; they are connected to other technologies, and to social and cultural patterns, institutions, activities, and phenomena that may interact in ways that no one is able to predict or control	Substantially helped to create the modern industrial capitalism, the modern firm, the modern communication network, the modern urban landscape (physically and psychologically), and the modern sense of time. Also, strategic and military power between nations

This theory comes in line with the one from Ingold that I previously mentioned, as well as the Drucker’s one about the imperative of knowledge workers:

*"We must stop to see technology (and the world) as something outside our cultures and institutions, and to recognize it as a part of us."* (Allenby & Sarewitz, 2011, p. 157)

*"The more the organization becomes an organization of knowledge workers, the easier it is to leave it and move elsewhere."* (Drucker, The New Society of Organizations, 1992, p. 8)

Until now I believe that all the theories are working very well together, complementing and reinforcing each other. So, let’s take a step further, and talk about the triangle that constitutes the basis for human action.

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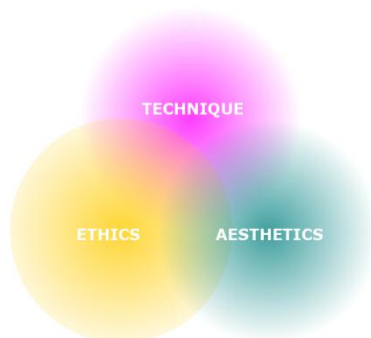
<sup>6</sup> Check (Allenby & Sarewitz, 2011, pp. 31-85)



## Aesthetics, Ethics and Technique

***"In particular, enhanced intelligence cannot tame two essential realities of the human condition: conflict over values and uncertainty about the future."***

Peter F. Drucker



**Technique** dimension is largely associated with the Drucker's notion of knowledge as a primary resource for individuals. Or the Allenby's Level I: applied knowledge to produce an effect.

**Ethics** *"involves systematizing, defending, and recommending concepts of right and wrong behavior."* (Internet Encyclopedia of Philosophy, 2014) For me, at the core of this concept is the notion of conduct, more than the notion of aesthetics which is also present.

**Aesthetics** *"is a branch of philosophy dealing with the nature of art, beauty, and taste, with the creation and appreciation of beauty. It is more scientifically defined as the study of sensory or sensory-emotional values, sometimes called judgments of sentiment and taste. More broadly, scholars in the field define aesthetics as "critical reflection" (...).* (Internet Encyclopedia of Philosophy, 2014)

You might ask where am I going with this. Isn't this what Drucker stated? Well, I think this is a bit more ambitious. When he mentioned<sup>7</sup> Kaizen's premises<sup>8</sup>, it seems to me there's a misconception in nowadays concept:

*"better begins to seem a lot like a synonym for "more" – and, indeed, as in the case of education, one might suspect that the real forces behind enhancement are efficiency, productivity and growth, not the higher values that are so readily bandied about. [The optimal worker] is to be hired by firms that value their increased productivity and economic output, not their "happiness" or "freedom", in a society that measures its achievements in terms of gross domestic product and comparative advantages over other societies (...)." (Allenby & Sarewitz, 2011, p. 26)*

The ethical and the aesthetical dimensions are totally absent. Or, more accurate, *neglectably* present.

*"We inhabit Level III, but we act as if we live on Level II, and we work with Level I tools."* (Allenby & Sarewitz, 2011, p. 160)

<sup>7</sup> Check (Drucker, The New Society of Organizations, 1992)

<sup>8</sup> **1.** Continuous improvement of everything, **2.** Learn to exploit its knowledge and **3.** Innovate [in an organized way] and systematize

## A possible future

*"The most important thing in communication is hearing what isn't said."*

Peter F. Drucker

My vision of the future is one where all of these dimensions are addressed in our actions. I say actions, because they won't be just a product or a service. They will be a lot of simultaneous things, with an embedded answer to some questions such as:

- **Who will benefit from our venture? Who won't benefit? Is there someone who's going to be harmed?**
- **What are we consuming for the *mise-en-scène*? How will it be kept? (here not only ecological, but also economic and social fields should be considered)**
- **What values or intentions are behind them? Who holds and thinks about them?**
- **Are there alternatives?**
- **Are they integrated within the existing context?**
- **What's the motivation, in emotional and affective terms, supporting it?**

Digital technologies come in here as an instrument for analysis and scenario simulator. They can extend our abilities of data processing in speed and scale. Our known limits can be enhanced or surpassed with the aid of digital technologies. We can rely on their potential, as long as we understand the multiple implications of our actions.

In the last years a lot of devices appeared in our lives, which follow an integration principle: phones that interact with other devices; TVs who operate in the Web; digital devices who take biological measurements; augmented reality; virtual connections between physical spaces. But then, when we ask the questions...the answers are quite frightening, aren't they? It's a bit like the viral message some months ago about Facebook: *Whenever you don't understand what's the product...then you are the product.* In the media we hear about smart-phones, smart-cars, smart-buildings, smart-cities,... but they are not the ones who have to be smart. We are.

The multitude of technologies has to be steered in order to serve people. Big Data and Artificial Intelligence allow us to go beyond our limits, but we can't allow information being more important than people. Their advantages cannot serve primarily an economic outcome, without considering social and ecological





**Image 8. Frame from Her, by Spike Jonze. 2013.** Source: kurzweilai.net  
(Credits: Warner Brothers)

impacts. The need for a balance between all of them is the key. This might seem an unachievable proposal. But do you remember the first times you heard about ecological sustainability? Well, it didn't seem that people would be that worried about it in such short notice...

The big defenders of technological development always defend themselves with the argument that they are trying *to improve the quality of life*. So, let's improve it! Devices have to be enablers to save us time, not to waste it. This earned time should allow us to be less exposed to stress; to work less hours and allow more people to have access to a job: to be more available for family/friends; to take care of ourselves. Unless you want to end up like the Dürer's angel: melancholic, standing in front of all those instruments, but with no clue of what to do with them (Image 1, on the cover).

The last concept to retain is that integration means pluralisation, and not concentration. It seems that we need to start using our skills to draw more fulfilling communication paths, instead of concentrating everything on the Web. If we are, for example, near each-other, why should we be sharing digital information through the web? Isn't there a way of not jamming the Web with redundant information, which could be exchanged through other channels? And, physically speaking, we know that we can use global channels to exchange goods, but do we really need to go global for all of them? A reflection about the several interaction layers should be made: local, regional and global.

Finally, let's make a small test for my three-vector model. I'll use Spike Jonze's movie's story - *Her* - to do it. The most remarkable thing in this movie, for me, was how natural and digital technologies were integrated in Theodore's daily life (Technique); and that that really allowed him to have more time to dedicate himself to do things which are intrinsically human and aesthetically superlative: write letters by hand, having a spacious and beautiful house, moving in an harmonious city (aesthetic). But then, the recreation of an emotional and affective relationship through technology is an emergence from Theodore's complex environment that crosses an ethical line. It is for this that I see a future where we, scholars, entrepreneurs or collaborators, must be building a strong cultural body for each one of us. **Rather than conceiving strategies to fulfill cause-and-effect immediate needs. After all, like Drucker said, culture eats strategy for breakfast.**

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<sup>9</sup> The metaphorical reference to the Dürer's angel came from this article.