ParisTech REVIEW

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Seven articles on tomorrow's economy

1 – The economics of the multitude

An interview with Nicolas Colin & Henri Verdier
Cofounder and Partner, TheFamily
& Executive Director, Etalab

The digital revolution is not only a matter of technologies. The players involved can be described as radical innovators, whose work has a direct impact on social exchanges - from friendship to trade. The shock wave is gradually spilling out of our screens and hitting the rest of the economy. The concept of multitude helps us grasp what is at stake.

ParisTech Review – In a book recently released (*L'Âge de la multitude*, "The Age of the Multitude", ed. Armand Colin, May 2012), you stated that the digital revolution had already taken place, but that the digitizing of the economic and social fabric is still in process, by the dissemination of new economic and industrial models. Platforms, the real infrastructures of the world of tomorrow, are often as powerful as states. However, they heavily rely on their exchanges with the multitude, which is at the center of the game. What do you mean by the "multitude"?

Henri Verdier – This concept originates from a philosophical trend launched by Antonio Negri and Michael Hardt, taken up and developed in France by Yann Moulier-Boutang. According to these authors, the multitude has superseded the proletariat. We are all deeply submerged inside cognitive capitalism, grasped by its needs, involved in increasingly immaterial work. We handle concepts – or even affects. We are asked to defend our "employability". We all belong to this intelligent, auto-organized and fluctuating ensemble: the multitude.

Nicolas Colin – This concept describes perfectly the new social world but it offers another advantage as well: it translates into other languages what the Americans call "the people" – both understood as the masses but also as the individuals which form part of them.

Indeed, you wrote that "technology is not responsible for global changes" in the opening of a book about the digital revolution. Should we take it as a provocation?

Henri Verdier – This is a crucial statement. Technology is obviously underlying the digital revolution. However, the latter is based above all on deep changes in the relations of production, the exchanges and the social bonds. It has an anthropological dimension.

We could speak of a new industrial paradigm, and even of a change of civilization. In this new rising order, what seemed to us the most significant, above macro-economy and scientific progress, was the role of radical innovators: those who grasp the scientific and technical possibilities opened by technological progress and make a totally new synthesis out of it. Inventors, investors or even the multitude: none of their ideas are necessarily technological. They open a new world of exchanges and interactions that simply did not exist previously.

The digital technology was born far back into the 1950s, with computers and telecoms. The first version of the Internet was released in 1971. As you can see, the real revolution only happened much later: it involves interfaces and ergonomics, the way the general public has access to these technologies. Take for instance Apple or Facebook, two players that have changed the world: innovators are at the heart of these adventures and do not work on technology as such. They are visionaries, capable of imagining and implementing new uses and new forms of exchanges.

Nicolas Colin – We both have managed companies and that's probably the reason why we emphasize the role of radical innovators at the expense of more technical players. In France, we tend to explain everything by a logical chain of hypothesis and deductions… However, the breakthroughs accomplished by the digital revolution did not respond to any smooth chain of events. It wasn't anything like a planned development, but much more of an emergency plan, how to foresee the next move without necessarily being able to explain it.

This all-pervading experimentation philosophy implies many losses and eventually, some wins. That's an important fact. We shouldn't underestimate the importance of the economic system that supported the digital adventure. Despite many weaknesses in the venture capital model of the Silicon Valley, we can't deny the fact that it provided funds for the hatching and dazzling growth of many players on which the former economic system would never have placed a bet. The venture capitalist is crucial actor of the digital revolution. Just like Hollywood seeking its next blockbuster, the venture capitalist aims at developing an investment portfolio made of high-potential projects. This naturally leads him to look for the players who claim to change the world.

The radical innovators, supported by an economic model encouraging high-risk adventures, are at the heart of the digital revolution. That's what sets this revolution aside from the first industrial era, when the players and structures were quite different: capital lockup, key role played by engineers, production of goods as the ultimate goal and scale of value. Fundamentally, it was about taming raw materials and energy to produce goods. That's why the key player was the engineer: he knew how to tame the forces of nature and organize them into a production chain. It was the golden age of intellectual property. Plans, patents and methods were at the heart of processes that were the key to industrial growth.

The industrial era has had its criticisms which, in turn, have helped us understand it. When you speak of the "consumption era" which eventually followed (mass media, publicity, marketing and on-demand politics) and that came just before the digital era, you wrote that the rebels outside a system are always its best markers. Does the digital world really have any rebels?

Henri Verdier – Yes, there are indeed criticisms and they could help us understand what is at stake, by revealing the fault lines of the system. These criticisms can be grossly divided into three main groups: libertarian, capitalist and neo-Marxist.

The libertarian criticism is voiced by the pirate parties, hackers and the Anonymous. It is led by those who believe in the free contribution aspect and want to protect the non-commercial from any contamination by the commercial world. It can seem naïve and even elitist, in a certain way. At the same time, these criticisms also stress on a potential threat: the API-sation of the Web. In other words, the Web as a global innovation platform, open and interoperable, with an end-to-end architecture is gradually pervaded by proprietary platforms, closed and efficient.

There are also advocates of the former order, who seek to preserve the old world and more specifically, the concept of intellectual property as one of its pillars. Or others who imagine (a little too naively, according to us), that we could tax what's new to support the economy of the old system. That's what we call the capitalist criticism.

As for the neo-marxist criticism, it is led by intellectuals such as Toni Negri, who analyzes how "immaterial work" supersedes industrial work – at least from the point of view of symbolic domination. Immaterial work transforms knowledge, information, communication, linguistic and even affective relations, in the exact same way industrial work changed all of these fields a hundred and fifty years ago. Just as the latter, immaterial work spreads its influence over all forms of production, although it concernes only a small part of the global production concentrated in a small part of the

world. As Negri explains, in the industrial period, all forms of work as well as the society entered the industrialization process. Today, work and society enter a process of digitizing, become smart, communicative and affective. The new capitalism blends cognitive forces and emotions. Work is entirely in the hands of workers and at the same time, workers are deprived of their own production: that's the main focus of the neo-Marxist criticism. Taking back control of the situation and fleeing from this alienation is their major issue. But in a hyperfluid and hyperdense world, it's extremely difficult and this implies a considerable amount of work on the relations between producers and consumers, on the forms and situations that will enable a new harmony between humans and things.

Nicolas Colin – We could imagine a fourth possible type of attack, led by consumers outraged by the violation of their private life and the use of their personal data; or simply wanting to win back part of the surplus value of the intellectual property that they increasingly create.

It makes even more sense if we think that they are confronted to monopolistic giants that could be accountable… In a world both as open and fluctuant as the Web, how can we explain the rise of these new "empires"?

Nicolas Colin – We must first of all recognize the strategic vista of these players: they are often discoverers of new continents where they can set foot before anybody else to grow their empire. But there the effects of concentration can also be quite extreme: an empiric law seems to prevent two players to be active on the same market. It's a recent phenomenon: the me-too players, as they were called, were very successful during the 1990s, when firms would copy one another. Today, the idea of building a competitor to Google, Amazon, Facebook or LinkedIn is a mere dream. These firms have conquered millions of users in a country like France before even opening a commercial office.

Henri Verdier – One of the keys to this dazzling and crushing growth is the so-called scalability. The ability for a firm to provide the same service to 10 or a 1000 times more people in a matter of weeks or even a few months, without need to change the structure of their offer (design, servers, commercial activity…). That's possible in the digital world, whereas the rise of a monopoly in the physical world is much less probable. The speed at which the actual monopoles have acquired their position has also drawbacks. Let's not forget that in a three years' time, there may no longer be any Facebook around – in others words, maybe nobody will no longer be active on Facebook, because some other player will have discovered a new world where social exchanges will take another form.

Nicolas Colin – By thinking about these monopole effects and the possibility of their dissolution, we come closer to the concept of multitude. You and me, we are the multitude: users who will swarm on a product but who might leave it just as fast. The multitude is powerful and cannot be hold captive. Taking advantage of the multitude is the key to power. But you can't do it against the multitude.

Dominant positions are often won thanks to the strategic intelligence of firms that have been able to use the power of the multitude by channeling part of the resources they have deployed or acquired thanks to it. Technological knowledge for instance, codes, but also access to the public… These big "monopoles", as you called them, are in fact platforms. They offer part of their resources to smaller actors, hoping these actors will build their own applications. The design of the platform organizes the flow of value between users and catches as much as possible the creative power of the multitude. As long as this exchange happens, the monopoly can grow. But whenever these firms decide not to play anymore, the multitude detects the temptation of closure and the danger of being hunted and runs away towards another continent, towards the next move.

This leads us to the separation between platforms and applications, which is at the heart of your book.

Nicolas Colin – The link between these two concepts is at this day, a fundamental structure of the Web. Moreover, it is crucial to understand what is at stake because this structure is pervading the rest of the economy.

From a certain point of view, a platform is an application that has succeeded and taken full advantage of its potential. A platform is born when a provider of online services realizes that this service can be offered to other segments of the market in different ways. Therefore, if the provider wants to protect the relevance of his service, he must create different versions of it. He has a choice: to continue to

offer the service himself by creating different versions, or offering his resources to a third-party and sharing the benefits.

Henri Verdier – Sometimes, the choice of creating a platform is not necessarily driven by a need to vary the offer. It is more "holistic": a firm decides to put a resource at the disposal of creators (other firms or the public) because it feels that it is the only way to give full value to that resource, even if it escapes in directions they never would have imagined.

We would like to emphasize the fact that this strategy of platforms is not specific to the digital world. Just the opposite: we tried to analyze to what extent most big institutions of the former economy could convert to platform strategy, based on the multitude.

Today however, the power of the big platforms often comes with selfish attitudes: Facebook keeps to itself the use of Facebook credits, Apple or Amazon take substantial shares in the value that flows through their platforms. Should we fear a petrification of the Web?

Henri Verdier – Indeed, we are today in front of an unprecedented situation. In 1995, nobody was as big as the Web. Today, several big players can make this claim legitimately. There is indeed a movement of petrification and of domination, which is not only about commercial power or the number of users but reaches to the very nature of the big platforms. In the past, infrastructures would depend on states: today, they depend on private giants.

Some firms have reached such a critical size that they could change the face of the Web on their own. Their power has consequences on many other spaces, in the "real world". Berkeley and Stanford are aching to recruit the best researchers who go and work with Google – and for good reasons: setting aside their salary, they will be able to work with a matchless mass of data, gigantic processing power and their projects will have impact on a global scale. Arguably, these big monopoles are also producers of public welfare – a status which they could be forced to assume. The regulation of these over powerful platforms is a question worth debate.

In these conditions, is the distinction between profit and non-profit still of any relevance?

Henri Verdier – To go further, we need to examine the relevance of the concepts that organize our world. Laurent Gille reminds us that the market economy, relying on monetary equivalency, was developed quite recently, during the 18th century. The digital economy does not totally obey to its rules: parts of the exchanges that take place on the Web remind us of pre-market economy – service for a service, barter, symbolic or non-monetary payments, etc. A great deal of our private life is absorbed by the economic sphere, with the new economic value of social exchanges, of our activities as producers, editors, prescribers. None of this is without problems: should we protect the non-market fields or accept and simply manage this trend? Should we consider ourselves satisfied with a copyright system that provides income, in France, to approximately 12000 persons when at the same time, so many great firms take advantage of the conscious production of Internet users?

The market economy order is brought to its limits by the current evolutions. That can be very clearly seen when we consider the evolution of industries that where built during the last two hundred years on the strong ground of intellectual property. In no more than a few years, Wikipedia destroyed five major encyclopedias: with the optimization of digital resources, many services will go free because it's much more effective to take advantage of the creative power of contributory economy than grow these services yourself… Is this process liberating incomes or destroying value?

Nicolas Colin – Both, of course… and I would add that it has become necessary to dispel a well expanded illusion. During the last ten years, we believed that the digital field would create jobs. However, it never created many jobs, at least directly. Rather, it helped to destroy bureaucracies and rent situations. The unprecedented optimization (in the field on consumption and services) lowers the amount of labor, but not the volume of activity: upstream of labor, a whole new chain of activity has been created: surveillance, auto-training, e-reputation, connections, exchanges and experiments…

To give ourselves a chance to answer your question, we will have to enlarge the field and more generally, use the concept of externality: value is created elsewhere and cannot be easily measured nor traced. Value will not be spontaneously transformed into jobs but will ask for an efficient and clear

strategy that will take advantage of the value to create useful jobs, with good salaries – here and now. Industrial jobs will rise from the ashes of an economy fueled by the multitude. But this rebirth will have to be supported by an adequate industrial policy.

Henri Verdier – If we come back to the platform model that we have mentioned earlier, what's at stake is to internalize the externalities. In other words: bring back part of the value created outside the industry or the firm. Platforms are organizations able to understand that value is created outside their own boundaries and trying to stimulate this activity to pick up its fruits: whether by retrieving part of the monetary value that has been created (publicity, pay services on the hosted applications) or by increasing their number of users and consequently securing their central position. Basically, a platform is something mid-way between a cathedral and a bazaar. A place for a market (and not a market-place). The authority doesn't decide for any construction plan or service content; nor does it let the crowd shout messily. It organizes a plan, a structure and leaves the individuals express their opinions. Just think of all the restrictions set by Twitter and of how it gave birth to this unique form of global conversation.

This strategy is not only shared by platforms, but also by applications. They borrow modules from other applications and take advantage of the users to finalize and optimize their services, through a system of trials and interactions that deconstructs the very idea of finished product. Whenever the product is finished, it's time for a new version.

What must be taken into account is that the digital economy in now spilling out of our screens: the transformations we were speaking of are visible on the Internet but also in the rest of the economy; and beyond, until the definition of public services and states. The latter could be considered as platforms and take inspiration from the strategies chosen by large digital platforms, if they want to protect their relevance, in the eyes on the public, that is: the multitude.

Nicolas Colin – In this new world of continuous innovation, the chain of values is constantly reexamined, reconstructed. The new economic world is dominated by a fundamental instability. The "new empires" are nothing else than those that are capable of reinventing themselves skillfully, by constantly proposing new services and new exchange configurations. Will they hold? They won't be the only ones to decide. The multitude, from which they hold their power, could turn aside if they it doesn't feel correctly treated. Other continents could be discovered, to which the multitude could emigrate – without any regrets.

2 – Not for free: creating new revenue models

Interview with Saul Berman & Jerry Wind
Global and Americas Leader for the IBM Strategy and Change Consulting group & Professor of Marketing, Wharton School of Business

The phenomenon of free has hit many businesses hard, particularly media businesses. But companies like Google, Amazon or Apple have proved successful redesigning their business model. By the way, who pays for free content? And what will business models look like in the future?

Knowledge@Wharton – In 2008, Chris Anderson, the editor of *Wired*, wrote a famous article, "Free: Why $0.00 is the future of business." Was he right?

Saul Berman - It depends on how you want to interpret the question. He suggested that content would increasingly be free and that free was a much better price than near-free. I argue that somebody is paying for it somewhere. So, in some cases it may be free to the end consumer, but the point is that it is not really free. It is being paid for: maybe by an advertiser, maybe by a sponsor, maybe by somebody who wants access to a group of people for other purposes or somebody who is bundling it with other products or services they offer. But in one form or another, it is not free. Somebody is paying for it and somebody is seeing that the people who create the content will continue to create that content and be reimbursed for it.

In the case of the music industry, which was one of the first examples of disruption, we can see in our analysis that music is worth more than it ever was. It just doesn't go to the music companies anymore. The value of music goes to the people who make devices for you to listen to your music on. It goes to the cell phone companies that enable you to download music. It goes to the concert promoters. Since there is more sharing of music out there, people know more about the artists, which, in many cases, means the attendance for concerts has gone up. Overall, the amount of revenue has actually increased, and it is really not for free, though it may at times be free – or perceived to be free, not that that's appropriate or legal – to the end consumer. Though, again, there has always been advertising. Some of these models have always been out there, where you can get things without direct payment.

Let's take a company like Google that provides Gmail for free. It helps to build a massive audience. It does not directly charge the consumer, but at the same time, it is able to monetize the traffic through the advertising that it is able to sell alongside the emails. Is there anything wrong with that sort of a model?

Well, when you say *wrong*, I am not sure we are into qualitative judgments, ethical judgments or economic arguments here. From an economic perspective, people are in business generally to make money, so somebody is making money out of the equation. The people who are creating the content are somehow making money, or they wouldn't be able to sustain their business in the long term.

So, again, back to my music company example. If the music companies themselves don't find a way to monetize the content they are involved with, either they won't be part of the equation or they will have to participate more so than they do today in some of these other revenue streams. We argue not only about how much money is associated with content, but also who gets that money. In many cases, what we are seeing is the money shifting to other people because the business models are changing.

But in Google's case, it is still Google that makes the money, just not on the email, but on the advertising. That's where the question comes up. What's wrong with that?

I don't see anything wrong with that. That is a business model or business proposition. I use the example in the book of the Gillette razor blade model. Historically, Gillette gave you the razor for free – or near free – and you paid forever for the expensive blades, on which they made a very nice profit. Well, what Apple did when they created the iPod – they gave you the music for free, or near free: 99 cents. That was the equivalent of the blades. They shared that money with the music companies very nicely – 70% or 75%. But all of a sudden the razor, or the device to listen to the music on, became very expensive and they kept all the money on that. So they shifted the proposition. There's the opportunity in each of these innovations around different mechanisms for compensation, whether they be payer, pricing or a different model. There are going to be opportunities for the value to shift.

Jerry Wind, you are a professor of marketing at Wharton School. Do you think that sometimes what is perceived to be free is actually paid for – but in terms of information rather than cash? Is there any value to that?

Jerry Wind – The question is from whose point of view. If you look at it from the consumer point of view, I would suspect most consumers will perceive the products that they get for free as free because they don't see the advertisement as a payment. From a consumer point of view, free may be a great component of the value proposition of deferring. But I think the key point that Saul is making – and which I really like in the book – is the idea that it is important to start paying attention to the business model and the revenue model, and to ask, how are you going to make money eventually?

Google is a great example. The overall Google proposition – or the business model – is still very valid. They make money off of this. Can they make more money if they start charging for Gmail or for some of the other components? That is a different question. But there is real value in focusing the attention of management on what your revenue model is. How are you going to make money? Look at this in the broader context.

Saul Berman: You have to look at, as Jerry is saying, the broader consumer experience. That experience is the combination of content, hardware and software. It is the integration of those pieces and the creation of the experience that often gets the value. The challenge is who is going to control that value in these different mechanisms for monetizing. Is it going to be the hardware company? Is it going to be the software company? Is it going to be the content company? Is it going to be a fourth party that puts all those propositions together? That is where the interesting challenge is and the opportunity to make more money even if, as you say, it may be free to the end consumer in terms of the direct pricing model. There may be indirect payment by somebody else or otherwise to monetize.

You focus a lot on workable business models in your book. When it comes to business models for information goods, do you think that free could be one price point along a continuum of prices for information goods?

Yes. There can be a free-to-the-consumer model for the basic service, and then you try to get everybody to trade up to what Chris calls a "Freemium" model, where you charge more for additional services. Take an automobile, which we talk about in the book as well. The value-add in an automobile includes the sensors, actuators and intelligent information that comes from them.

So we can now provide help with navigation. We can provide entertainment services. We can provide concierge or restaurant reference services in the car now. Increasingly, just like the car companies may have made money in the past for selling you after-market service on your vehicle, now they have improved the quality of the vehicle, and they may make more money from these subscription-based entertainment or other types of concierge and information services. That may be where they make a lot of their money in the future. Now who gets the money out of that is still an open question. But the

adoption of the information sensors, actuators and connectivity – those devices can now control the refrigerator or the washing machine or the heat or the security system in your house at the same time. So there is a world of possibility opening up and the question is, how will that work as every product becomes more information-based?

One industry that has been hugely disrupted by free content is the publishing industry. What are your thoughts on survival strategies?

Jerry Wind - First, let's link it back to the previous question in terms of digital product or information product in a single price or continuum. I don't see really any distinction between information products, or digital products, in general, and regular products in terms of product line when you have to start thinking about a product line offering. The product line can be from free to whatever price it is. The key is going back to what Saul was describing before – the move from product to service to integrated offering, a tall solution, and, most importantly, the customer experience. Each one of these is a value of social business and, therefore, the willingness of a given segment to pay for this.

The same thing is true in the publishing area. People still want to hear, read and find out about the news. They just don't want to read it in the traditional form. There is also a segment that may be lagging behind – a segment like me. I still like to read *The New York Times* on paper and for the feel, but I am part of a shrinking segment. What you have to realize is that the market is heterogeneous. That's one of the key things we know about marketing. Therefore, you want to offer the news in a variety of ways. Furthermore, it is a re-definition of news. What is a newspaper? Is it only news? Is it entertainment? What is the nature of the offering? I think the publishing industry is now in a situation where they see an opportunity to re-invent themselves, to ask, what is the value proposition? What are we trying to offer consumers and how do we integrate news with entertainment? From some data we have seen, my understanding is that younger people get most of their news from Jon Stewart. What is the competition of the newspaper to a Jon Stewart–type show and delivery? It is a great opportunity to innovate – a great opportunity to rethink what publishing is and what it is we are trying to do. In general, I think that Saul's book offers a great opportunity for companies to reinvent themselves and to rethink how they can come out with a more innovative solution. You will not be able to innovate if you just stay within the boundaries of your old industry definition. By rethinking business models and revenue models, there is a great opportunity for innovation.

Let me give you one of my favorite examples, which is the music industry example again. The industry was under all this pressure. Albums sold from $9.99 typically online. Songs sold for 99 cents until the industry got Steve Jobs to let them raise that price a little. But a ring tone, which is a 10-second clip of a 99-cent song, people were paying $2, $3, $4 or $5 for. Now bits of your overall content are worth more than the whole. That is a pretty good business model if you can make it work.

If you are a book publisher or a newspaper publisher, increasingly you are able to take the archive, and you are able to monetize content from it, in some cases, for more than the original newspaper or the original magazine would have cost you, or a chapter in a book for more than what the Amazon price on that book might have been.

If you look at what has been happening recently among young people in the Middle East, the vast majority of them have been getting their information not from newspapers, magazines or even radio or television. They have been getting it from Facebook and Twitter, especially because of the curbs that the government put on the Internet. Both of those happen also to be free services. How should people think about revenue-generating models in publishing?

Saul Berman - First, they are not totally free. Facebook makes a lot of money from advertising, though many people don't realize it is even there. But they are making a lot of money on it. So, again, it is being monetized. The other point is as you get more of that information and use it, it is creating stars. It is creating new vehicles around the people who become famous for sharing content over these services. Those people are finding other ways to monetize the celebrity or the status that they have created by being an authoritative source who contributed to something. So both the provider and the individual are increasingly going to find ways to monetize, or they are going to have to find something else to do with their time.

Do you think that, in publishing, content creators are being eclipsed by the so-called "content curators"? And what are the implications?

There is a big role for curation as a value-added service. There is a big role for analytics. Companies like Bloomberg have long created value around the analytics. We have told people in the information publishing space, beginning five years ago, that they have to do more than just, if you will, provide the information. They have to provide people the tools and capabilities to do different things with that information and they have to provide analysis and insight. Increasingly, it gets back to the point we make about the experience. There are lots of different ways to monetize, which we outline in the book. You can monetize with different audiences in different ways.

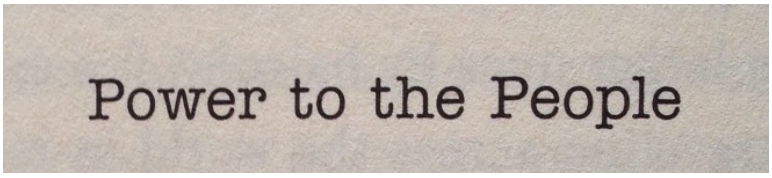
You have examples in your book about innovative business models involving Progressive, Redbox and so forth. Could you give us some more examples?

We are all familiar with some of the ones in the music space where now you can buy singles. You can buy ring tones. You can buy à-la-carte individual tracks. But companies, like Netflix, came along and turned what was a pay-per-view or buy media experience into a rental media experience. Redbox came along and provided a less service-oriented, go-to-a-vending-machine, lower-price way to get that content. So we talk about the idea of variable pricing. You can sell different things to different people at different times. The airlines go further with dynamic pricing. They will sell not only different things to different people at different times, but the price will change at different days or times of the day. So there are lots of different ways. What is new is that you take them to another industry in many cases. We talk about Zipcar in the book. Instead of buying a car or leasing a car, you can subscribe and rent it by the hour, by the day, or whatever you want. You get charged for your usage of that vehicle, and the vehicles are staggered all over and you can go use them. There are examples of advertising in spaces where they have never been used before, such as the phone business. Instead of paying for information services, you can listen to an ad and get free information services. Even in industries such as medical, now we are seeing people experiment with pricing based on results. In some cases, where drugs have not been approved by insurance companies, some of the medical drug companies are experimenting with, "You pay us if it gets results for you." If it is in the experimental stage and hasn't been approved and your insurance company won't pay it, take the drug. If it lowers your whatever and improves your medical condition, then pay us for it.

So some of these models – or most of them – have always been around some place. The challenge is now applying them in different ways to different businesses. In the book, we categorize them into three categories. The first category is pricing, where you change the direct price and the way you price to the end consumer. This applies in a B-to-B world as well, where we used to invest in assets and build capabilities in companies. Today, we might outsource them and pay somebody over time. We are still paying, but we are paying in a different way. Payer innovation is the second category, where someone other than yourself pays. We are seeing many more ways to do advertising, sponsorship or performance-based types of payment that are indirect and from other people. And, finally, package innovation, where you package it with something else or sell the parts as we suggested in the cell phone or the publishing case. What we think is the real challenge for most companies is they are going to have to have multiple ways of monetizing for different consumer segments who will want to pay in different ways. Some will say, in effect, "I want it to be free to me. I will pay in some other form." Others will pay directly: "I don't want the advertising. I don't want anybody having my name." Even there, there are going to be different ways of doing it. As I say, the challenge is how do you do this in a way that makes sense to the different segments and then be able to manage that complexity in your business?

3 – Intention economy: from the fringes to mainstream?

Interview with Doc Searls
Alumnus Fellow with the Berkman Center for Internet and Society, Harvard University



Vendor relationship management is on the rise. Though for the last ten years a powerful trend has driven marketers to trap consumers and collect their personal data in order to anticipate their wishes to the point the very idea of choice was questioned, disruptive ways of managing this relationship are emerging. Will consumers recover their freedom?

ParisTech Review – Your starting point seems to be an assumption: people's tolerance to intrusive marketing practices is getting lower. Is it a question of privacy?

Doc Searls – Yes, privacy issues are involved, but it's only one side of the question — the protection side. People feel exposed, and that unwelcome liberties are being taken. The other side is freedom, of action and of expression. One should have the ability to make choices, and not just between what's being offered by sellers in the marketplace.

Let's face it: the so-called "attention economy", which is the basis of online trade nowadays, has made such progress that marketers have gained a huge power. A number of tools have been developed to track and trap people. "Big data" has added more tricks to this toolbox. And as a consequence the customer's freedom of choice tends to become a mere fiction. A "free market" today is "your choice of captor."

How did it happen? To make a long story short, in order to get our attention content producers and advertisers have developed techniques and strategies that transformed most of the pages you watch on your screen. These pages used to be designed for anybody; they are now "personalized." That is, full of contents and suggestions focused on you. In a near future even the prices of the suggested items will be defined according to a consumer profile over which you have little if any control. This is quite far from the principles of free economy.

Should we see this as a plot?

Of course not. The basic idea behind the attention economy is a practical one. With the Internet allowing almost unlimited access to a huge variety of content, your attention becomes the limiting factor in the consumption of information. So the challenge for content producers and intermediaries is to better manage the flow of information. They do it by creating filters to make sure the first content a viewer sees is relevant – i. e. consistent with all the information they managed to get about this viewer.

The problem is that advertising and trade are the first beneficiaries of these techniques that radically transformed online shopping. By focusing on you, and by getting personal with you, the content managers (these managers are actually algorithms) narrow your view to what they think you should see. Much context is lost in the process. You may not know what the seller has to offer beside what they're showing you — or what they think you are. When all sellers are busy personalizing, the commercial world around each person literally shrinks. So does the celebrated freedom of choice. And

so does the quality of information each seller gets from its consumers and customers, because the system forces both sides to wear blinders.

This phenomenon is part of a larger trend that sees the most powerful players create silos, and their clients have little options besides paying their fare to the Giant. But several signs suggest a reversal. Lower tolerance to what is seen as excessively intrusive practices, increasing suspicion towards sellers, growing irritation against targeted ads… it looks that "we, the consumers" may be tired of this grip.

Are we talking about a revolution?

Except among hactivist minorities, I don't see any revolution or radical refusal coming. It's one thing to make bittersweet jokes about the AppleStore or Amazon, and another to stop using these platforms. What I see is a subtler, though more efficient way to regain some of the power we have given up over the years. I call it the "intention economy". It's a reversal of initiative, with active customers driving markets, instead of passive consumers being driven by sellers.

Note that I make a distinction between "consumers" and "customers." A consumer (or, online, a user) may not be paying for anything, while a customer pays. In some cases there is no overlap between the two. For example, Google's consumers — the users of its search engine and other free services — are the product being sold to the company's customers, which are advertisers. Commercial broadcasting has worked the same way for many dozens of years as well, with a complete split between consumers and customers. In the intention economy, the actors that matter most are the consumers who are also customers, because they have money ready to spend, and are not just consumers whose attention is being sold to marketers.

In the shift from an attention economy to an intention economy, we move from one based on a push to one based on pull — in which the demand side takes the lead. In a nutshell, you could put it this way: it starts with the customer's ability to declare and discuss his or her intentions. Each of us should be able to express our needs, our wishes, our preferences and policies regarding use of our data. It also requires intelligent sellers, able to respond to clear signals of intent.

In a way, it is a revolution, with technologies building on these emerging dynamics and shaping different relationships between vendors and customers. One could see this revolution not only as a reversal, but also as a development of the ever more personal relationship between vendors, customers, and ordinary consumers as well. It's also about rebalancing relationships.

Can you tell us more precisely what customers might be able to do in order to rebalance and better manage their relationships with the vendors?

The most urgent issue for individuals — consumers and customers alike — is to control the flow and use of personal data. Right now we are shedding data in huge amounts as we go about our business both on the Net and off. We need better control of that flow than we have now, when nearly all the controls are on the side of the data collectors.

First, you will need your own space to store your own transactional data (for example, receipts from purchases), your own preferences and policies regarding use of your data, your relationships with sellers and with other entities, such as government agencies, and the data you are willing to share in order to do business in the marketplace. This space in the past has been called the personal data "store," "locker" or "vault"; but the term that has the most traction now is "personal cloud." Big business has been talking about its own "clouds" for years, and now individuals will have their clouds as well.

Second, tools are already emerging that will allow you to tell whole markets what you want, how you want it, where and when you should be able to get it, and how much it should cost. We call this "intentcasting." There is a limited degree of this within social platforms; but true intentcasting should not be limited to any existing commercial entity. You should be able to securely "advertise" your purchase intentions to sellers willing to listen and respond, without giving up any more data about yourself than you like. This can't be done in today's biggest social systems (Facebook and Twitter), because you are just a consumer with them, and not a customer — and (in Facebook's case) because they are busy selling data about you to advertisers.

Third, you should be able to have your own terms of service and privacy policies; and these should be ones that can be matched up between you and sellers or site operators. Customer Commons (http://customercommons.org) is working on this right now with the Cyberlaw Clinic at Harvard University's Berkman Center. It's early in that process, but at the end of that work Customer Commons will have a list of terms anybody can use, much as artists can choose licenses from Creative Commons (which also began, in some ways, at Berkman).

Fourth, you should be able to build your own loyalty programs. This is the exact opposite of the silo model that is trapping consumers nowadays.

It's all about the individual being in control, and building up his or her own power in the marketplace, not about shifting power from sellers to buyers. Greater freedom and power for customers will mean better market efficiencies and more opportunities for sellers to make money and earn the true loyalty of customers.

The intention economy will be built around truly open markets, not a collection of silos. As I say in *The Intention Economy: When Customers take Charge*, "Customers don't have to fly from silo to silo, like bees from flower to flower, collecting deal info (and unavoidable hype) like so much pollen. In the intention economy, the buyer notifies the market of the intent to buy, and sellers compete for the buyer's purchase. Simple as that."

Simple… and not so simple. We could understand your model as a jump from implicit intentions, deduced from our online behavior by algorithms, to explicit intentions, declared by individuals. But don't you forget our laziness?

This is obviously an issue, and we, promoters of the intention economy, should always remember that there is a world of difference between web activists and the everyman. Actually putting the customer in charge is a cultural shift and quite a challenge. So let me be clear that I'm not counting on everybody's sudden decision to spend one hour per day managing his or her data. But I'm observing an emerging trend, led by both pioneer individuals and firms. Activists have started to shake the structures of attention economy, and among firms some outsiders already come up with easy, practical solutions. Even governments are now embarking on VRM, be it with private data in the UK, public data in the US or in France with a Fing initiative, Mes Infos. The whole thing started as a niche, but it may become mainstream in a couple of years.

Why should it become mainstream?

Because of relationships. Relationships are at the very heart of Web 2.0. We – I, you, everybody – have undergone a dramatic change in less than a decade: in any relationship, we literally crave to have our say. We don't accept any longer to be passive. The only way we feel at ease with an institution, an authority, a teacher — and also a vendor, is to have the possibility to be respected as an active part of a relationship. A wallet is not part of a relationship; a person is. The intention economy is built around more than transactions. It acknowledges the fact that relationships and conversations matter. This is why we talk about vendor relationship management (VRM).

I see the attention economy, with its tools designed to track you and guess what you want, as a first step towards recognition of the personal dimension of online relationships. Algorithms help vendors to get personal with you. But it is also a way of crushing the very heart of a person: his or her freedom. And I sincerely don't think it can last for long. As soon as true relationship tools are available on the individual's side, and as soon as some of them get viral and spread, people will catch up through VRM — not for the pleasure of managing things, but because they can get more done though an actual relationship than through a system that's more like "one hand slapping" than two hands shaking.

You once wrote that "the intention economy grows around buyers, not sellers," adding that it leverages "the simple fact that buyers are the first source of money." What could motivate some vendors to join this movement?

Their own interest, of course. By equipping buyers, you give markets a voice — and better ways to spend money. Isn't it a vendor's dream? Marketing was invented because markets were mute. Marketing spoke for markets because individuals couldn't speak for themselves — not effectively. Today, markets — that is, individuals — are gaining fresh means to express their needs, their

preferences, their policies. It won't take long for smart firms to see what kind of advantage they can take from this new ability on the customer's side. In the long run, the winners will be those who managed to recognize that the customer is the partner in a genuine relationship, rather than just an "asset" or a "target" to be "captured."

I will give you the example of an event platform. Eventful.com enables users to find and post local events anywhere in the world, but also lets them demand events and performances in their town and spread the word to make them happen. At last count, there were more than 126,000 demanded events on Eventful.

Another very interesting example is Chinese. It is the tuangou ('team purchase') phenomenon, which involves strangers organizing themselves around a specific product or service. Think electronics, home furnishings, cars and so on. These likeminded then meet up in real-world shops and showrooms on a coordinated date and time, literally mobbing the seller, negotiating a group discount on the spot. Popular Chinese sites that are enabling the crowds to first group online, then plan for actual real world shopmobbing, are TeamBuy, Taobao and Liba, Combined, these sites now boast hundreds of thousands of registered members, making money from ads or commissions from suppliers who are actually happy to have the mobs choose their store over a competitor's.

There are many startups in what we call the "intentcasting" space: where the customer does the advertising — of his or her own wants and needs — and the vendors do the listening.

There's Intently, OffersByMe, Redbeacon, Thumbtack, Ubokia, PingUp and others. Some, such as AskForIt, aggregate demand, to produce group buying results.

Talking of how to manage the relationship, are the tools already in place?

There are a number of technical things that are needed: a robust way for customers to manage their own online identities without getting trapped in any vendor's silo, a way for customers to only share the aspects of identity that they want to share with a particular vendor (perhaps anonymously), and a robust way for vendors to interact with those customers. All this suggests an infrastructure, and one is now taking shape. It's called the personal cloud. Think of this as a personal platform in virtual space. It might be on a device in your home, or your hand, or out on various servers in the world. What matters is that this cloud is yours alone.

Personal clouds have emerged as a hot topic, with lots of development going on, just in the last six months. There is a very active mailing list, lots of gatherings, and a wiki.

As for the big commercial platforms, VRM presupposes a number of customer rights that are quite far from their practices. For instance, individuals should have control over their own data, and how it flows. That data might include transaction histories, health records, membership details, etc. – and each of us should have our own ways to to share that data selectively, without disclosing more personal information than we wish. We should have the ability to control how our data is used by organizations, and for how long. This ability should necessarily include the option to delete data. It might also include an opt-out or even an opt-in for advertising.

Actually, the entire advertising industry may have to change its practices – for an excellent reason: efficiency. Advertising is a form of economic signaling. Old fashioned brand advertising actually worked well because it wasn't personal. It simply made clear the name of the brand and what it stood for, or what its advantages were. The size of a media buy was also an economic signal of seriousness. It said "this company can afford to advertise." But today's "adtech" advertising online is often highly personalized, and what it signals is often very wrong, because it's based on some machine's algorithmic guesswork rather than truly knowing and respecting you. Also, it doesn't do a good job of the old brand type of signaling, where the consumer sensed why the ad was there, and how big and serious the company was.

In fact both brand advertising and personalized adtech are inefficient, because most of the money spent on it is wasted. But 0% of a customer's intentcast to a marketplace is wasted if results come of it. And, since an intentcast in most cases is money ready to be spent, sellers should flock toward the economic signal the intentcast produces.

Meanwhile, advertising is in need of reform. We may require a new language, with universal signs showing, at a glance, the provenance of an ad. It should be as clear as possible when an ad is personal or not, when it is tracking-based or not, and whether it's welcomed by the individual. Approaches to all of this are in the works among VRM developers as well, and I expect lots of cooperation, in the long run, between VRM developers and advertising companies.

4 – Goodbye services, goodbye goods: welcome to the solutions economy

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Enterprises are now able to collect all kind of real-time information about the needs of each consumer. They can provide innovative products that are neither goods nor services but something else, in between, that could be called solutions. Around these solutions we are witnessing the emergence of original business models, and more generally, of a new economy.

What *is* a solution? Let's attempt a definition: a solution consists in providing on-site goods or persons to the consumer, tailored to the consumer's specific needs, based on live information concerning him/her or his/her environment.

Solutions can also be remote-controlled actions in fairly simple situations where these actions can replace that of a person: activating a firewall in case of a fire alert, starting the heating system, etc.

Solutions also include situations where the consumer reacts to information concerning him/herself, for example by adapting his/her physical activity according to the information given by a bracelet with a sensor, or by responding to a failure, leakage or intrusion at home while his/her absence…

Solutions are beyond the obsolete distinction between secondary and tertiary sectors of the economy (manufacturing and services). Hence the more appropriate designation as "quaternary." Solutions do not ignore industrial products, but they use them in a different way: production of goods, in the traditional sense, is simply about manufacturing and selling. In the best case, it also provides after-sales service. Solutions are focused on downstream use, by consumers themselves. They are basically focused on real persons (i.e. *human-centric*).

In what form will solutions be offered? The most likely scenario is that they will be marketed as packages that respond to an entire category of needs, rather than to an isolated need. The distributor's role consists in tailoring a solution package for each customer and in verifying the effectiveness of the series of actions included within the package. For example, there will be solution packages for thermal renovation of homes, others for persons who are losing autonomy. Packages will integrate a control procedure that will assess effectiveness of what is expected.

This evolution will bring a number of adjustments in regulations. A solution is neither entirely a product nor a service. However, national regulation (taxation in particular) as well as international regulation (WTO) is often different between products and services.

Without completely eliminating traditional sectors, the implementation of solutions will revolutionize our economy to the same degree as when the industry revolutionized craft economy during the first and second industrial revolutions. Production methods and lifestyles will change drastically.

From purchased goods to available goods: towards circular and functional economy

Solutions will allow consumers access, from their living place, to goods that they used to buy through different forms. Creating value will no longer rely on production and sale only; it will move downstream, by assisting consumers in their use of a product during its complete life cycle.

For vehicles, solutions have taken the form of car sharing or car-pooling. In car sharing, companies will offer consumers with mobile access to information that will allow them to find the nearest vehicle from their location. Employees will be charge of maintaining vehicles in good conditions and moving them to locations where consumers wish to find them. Sophisticated processing of the data provided by routes used in the past will enable companies to optimize their management. For consumers' convenience, these solutions should be articulated with public transport so as to know which steps to follow, by providing information on the starting point and ending point. Through various actions, consumers will be able to reserve seats in different means of transport when travelling from one location to another.

Similarly, appliances will no longer be purchased as such. Solutions will make them available to consumers where they live. Companies will need to know about the appliances needed by each consumer, organize the delivery and installation of devices, help consumers use them, provide maintenance and eventually remove them for recycling. To simplify consumers' lives, these solutions will be offered in integrated packages consisting, for example, of all home electronics and appliances, calibrated according to the needs and wishes of each target consumer. The advantage of these integrated packages is not necessarily cost-wise – *i.e.* the sum of the purchase price of each unit *plus* the price of various after-sales services – but provide a better satisfaction of needs and put manufacturers in a position where they can handle the goods they produce throughout their complete life cycle, in order to minimize their impact on the biosphere. If manufacturers keep the ownership of their products, it is in their interest to optimize life cycles and take in charge, for example, the complete recycling of their products.

Quaternary solutions should therefore achieve the ultimate goal of green economies: functionality and circularity. Changes in behavior will not be imposed on consumers and companies for the sake of the planet. They will be endogenous to this economic model. Companies who provide available goods will want to do it with maximum efficiency and profitably; they will be encouraged to recycle goods because they are owners of their products and they will recover them at the end of their life cycle; furthermore, they will provide their products with the best possible care because they will be responsible for their replacement in case of malfunction; finally, they will produce them in a way that they will last longer. Companies will also reduce their diversity to match the capabilities of consumers because they will be called to assist them in case of problems. They will be pushed to operate in a new field of value downstream of the production chain, instead of striving to create ever more diversified products.

From services to a limited number of individuals to packages of solutions for all

In terms of household support, solutions could drastically change daily life. This need has always existed but the products were always underdeveloped because mechanization technologies were not appropriate to do so efficiently. They remained minimal and confined to specific populations within the context of household-employers or social services for people with loss of autonomy.

These packages will vary according to a person's age. Some are suitable for children, others for middle-aged people or for older people. Other packages can provide solutions based on professional activity, tastes, health… Let's mention some of the solutions that these packages could offer: fire detection at home, information on all kinds of parameters relating to the environment in order to optimize the use of heating or pause all appliances that consume energy when the door is closed,

supervision of children on school trips, exchanges between parents and teachers, exchange of information between seniors and their families sent by health professionals who take care of them at home…

But the best way to understand what these packages are is to look at packages designed for persons in loss of autonomy. Indeed, one can easily understand the interest of staying at home rather than moving to a retirement institution: living at home, in a completely different way to live longer in good health. These packages are adapted to people who are still relatively independent. They should be able to extend this period through adapted prevention exercises.

The elderly access these packages through a user-friendly tablet which offers the following applications: personal (tweet, photo album, messaging, shared calendar…), culture and entertainment (stimulation games, virtual museum tours, kitchen recipes, access to Wikipedia…), news (local press, national and local radio, television programs, Internet or video…), home automation (alerts on parameters such as temperature, humidity, carbon monoxide, pollution with interventions triggered by user-defined thresholds…), home care and health (health journal, consultation of medical tests by authorized third parties, access to the shared medical records, slide show for prevention according to pathology, information on vaccines, physical action and sports from the pedometer and performance graphs over time…). Tweet exchanges are provided among all interested users. Exchanges between professionals in charge of "solutions" (extranet operator, health professionals, stakeholders, caregivers, family…) and users are also possible. For example, persons with loss of autonomy can be asked to choose the meals provided every day, to provide information about their health…

Boosting the manufacturing industry

When goods are made available, they are no longer purchased but integrated in solutions bought by consumers. But this doesn't relegate the industry to a secondary place, quite the contrary. Do we think for one moment that wheels or engines of a car are less important than cars because consumers don't purchase separate wheels or engines, but the whole vehicle? Today, manufacturers position themselves as solutions providers, by focusing on the value of the downstream chain: from servicing and maintenance to more sophisticated services. A company such as Bolloré, through its Autolib service, belongs to this niche: emphasis is less on the product (the Bluecar) than on providing an integrated service that offers availability, mobility, insurance and maintenance.

The interest in the product changes in nature. For cars, for example, we are far from the differentiation and multiple-option strategies of the recent decades. All Bluecar are identical. Similarly, solutions will be competitive only if integrated goods are manufactured in the most efficient possible way, by using productivity gains allowed by digital technologies, wherever innovations are possible. Another prerequisite is that market must be large enough to make profits. Solutions are technically validated, but too expensive to implement if they are not widely shared.

Overall, solutions will encompass the industry and occupy the heart of quaternary economy. The arrival of these new end products shows that the debate between industry and services is over. The choice is no longer between goods and services, but about developing new solutions that integrate goods and are based on a strong and renewed industry.

The new positioning of goods in the value chain will even allow to boost the industry. Goods that are made available will be different from those we know today. This is still difficult to show because goods integrated in existing "solutions" look like those we buy. For example, Velib bikes are weighted to avoid being stolen. They should look like "neo-bikes" that include technological innovations, chain-free, ultra-light weight, scratch-proof, accessible and payable with a chip embedded in the smartphone, with an alarm that is set off when the geographic boundaries of their use are exceeded, with a push-in system to move them from one place to another… and the system for bicycles should be the same as for cars. We still have a long way to go!

The development of the vast sector of "quaternary solutions" should allow developed countries to regain a comparative advantage in relation to emerging countries. Based on the evidence that emerging countries will quickly have the same knowledge and expertise as developed countries, a comparative advantage in developed countries can only be achieved through their ability to use their knowledge and expertise to offer products capable of satisfying consumers who have been able to

equip themselves since two centuries. The solutions economy meets the aspirations of demanding consumers who not only want to have more, but live better. Solutions are products of this specialization. Solutions can transform our cost disadvantage, resulting from our early presence in technological development, into a comparative advantage by producing products adapted to our higher life standards.

The growth of "quaternary solutions" greatly expands the range of possibilities in this direction. But as it relies on an increasingly precise and effective knowledge of individual consumer data, the development of this industry can reach frightening levels. Let us never forget that the protection of personal data is an essential part of our democracies.

Markets will do their work according to needs. This draft vision of a promising economic, social and environmental sector can trigger a public debate about how to grasp the best opportunities and manage risks effectively. It is in any way to impose a concept from above. This wouldn't make any sense: quaternary economy cannot be decreed. It is being built as we speak. The cycle which began with the industrial revolution is at an end while this still marginal phenomenon will possibly be at the heart of the economy of the future.

5 – Can functional economy fit square pegs in round holes?

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Economists, as well as companies, increasingly care about the ecologic crisis. Various approaches are emerging that all strive to reduce the environmental impacts of the production and consumption of manufactured goods. Among them, functional economy triggers three dramatic mutations, regarding value estimation, ownership and the relation to time. The company's business strategy is no longer focused on selling a greater number of products, but on aggregating a greater number of users. In a conventional economic model, the company can increase its profits by reducing the life cycle of products; whereas in a functionality approach, the provider must maximize the number of uses of its offer by designing sustainable products.

The development of green technologies is the ultimate solution that has been proposed to mitigate the energy footprint of industrial societies. However, it does not address all environmental issues. The design and development of these technologies require the extraction of natural resources and imply expensive processes and devices. In addition, they often overlook the rebound effect resulting from the interaction between these technologies and social practices: once equipped with energy-efficient

technologies that reduce the burden on their budget, consumers have a strong tendency to overuse them, as has been observed for low-energy bulbs. At the end of the day, green techs only deal with the energy sources deployed in a particular socio-economic system, whereas sustainable development calls for a drastic reworking of the same system.

Other approaches seek to integrate economic, social and environmental issues. For instance, circular economy – sometimes referred to as "cradle to cradle" – seeks to limit the flow of energy and raw materials, by aiming at a closed loop model: the producer reintroduces end-of-life products into the production loop. What was once considered as waste can then be transformed into a usable component and the producer can consider a revaluation of his assets (renovation, reuse, recycling, etc.), while drastically reducing the environmental impacts of his production.

Another approach, collaborative economy – or economy of sharing – promotes a distributed, peer-to-peer, economic vision. The consumer becomes part of the production process by allowing third parties to use his property: the owner of a car leases it to drivers without a vehicle (e.g. CityZenCar), a private individual rents his unoccupied guest room to tourists (e.g. Airbnb). This pooling of goods dramatically increases their use. Indeed, this sharing system provides a limited number of goods to a large number of individuals, without having to limit their needs. The access to goods increases, without necessarily boosting contaminating activities, as illustrated by the example of car sharing.

In a similar perspective, *functional economy* belongs to powerful trend of servitization of products. It is based on providing an access to the functionality of goods rather than their property rights. In this configuration, consumers don't, for example, buy a vehicle but request a service that provides them with mobility; a professional business no longer needs to invest in a photocopier, but contracts a printing solution (for instance, Xerox). Functional economy intends to support sustainable development without adding an additional burden on the shoulders of economic growth. Beyond the disappearance of use on sale, this particularly ambitious approach cannot be understood without contemplating the three mutations it triggers: value estimation, ownership and the relation to time, all of these crucial features are reconsidered in the light of functional economy.

Decoupling economic growth from the flows of raw materials

In response to increasing scarcity of raw materials and processing problems of industrial waste, functional economy intends to reduce the overproduction of manufactured goods. Unlike the traditional market approach, value no longer results from the intrinsic value of a product, but from the commercialization of its uses. Products can be considered as a medium of value. Goods should therefore be used to their full capacity and also be sustainable, to allow the service provider to maximize profits.

The automotive market is a shining example: consumers do not buy a vehicle but seek a provider who delivers a mobility service that is billed on a per-use basis i.e. the number of kilometers traveled. In a conventional market, it is in the manufacturer's interest that clients frequently renew their vehicle(s); whereas in the logic of functional economy, for a car sharing service such as Autolib', the service provider must lengthen the life cycle of its vehicles to maximize the number of kilometers and ensure business profitability. In the case of Autolib', this idea is embodied by the extended life of the LMP (Lithium Metal Polymer) batteries that equip the Bluecar fleet – approximately 200,000 kilometers according to the service provider.

The company's business strategy is no longer focused on selling a greater number of products, but on aggregating a greater number of users. In a conventional economic model, the company increases its profits by reducing the life cycle of products; whereas in a functionality approach, the provider must maximize the number of uses of its offer by designing sustainable products. Functional economy is therefore the exact opposite of the so-called planned obsolescence that contributes to the accumulation of waste electrical and electronic equipment (WEEE) and the emission of greenhouse gas (GHG).

The durability of goods can also be extended beyond the product life-cycle: in the case of standardized goods, parts or components can be restored by replacing faulty pieces. What was considered as waste can be transformed into a usable component, provided that the goods are designed from the outset as entirely modular and upgradable. Under these conditions, the company can reassess its goods, measuring and developing their capacity for renovation, reuse, recycling, etc. Extending their

circulation time will allow a better return on investment and therefore greater profitability, while drastically reducing the environmental impacts of production.

As such, the print service of the manufacturer Xerox achieved a record 92% rate of recycling and reuse of waste equipment. Xerox was an early mover and since 1999, they have saved approximately $200 million by adopting this method.

Functional economy is related to the so-called "circular economy", since the reinstatement of end-of-life products in the production loop resembles to a closed circuit production model. To do this, producers must remain the owners of the goods they offer.

Property rights not to be transfered

In addition to the extension of product life cycle, the non-transfer of property rights ensures the maximization of the income of the service provider, while allowing a better management of the whole life-cycle costs of products. Indeed, in a model of mass production, the cost of using the product, such as energy, or expenses related to maintenance and servicing, are charged to the consumer. Meanwhile, the cost for destroying obsolete or defective products and those related to waste treatment are not borne by the producer either.

The manufacturer thus generates negative externalities, such as economic and environmental costs, that are imposed to third parties. In a functional economy, rather than seeking a posteriori to transfer these external costs to the company (for example, through taxation), the provider remains the owner of the product. As such, he is responsible for all the economic and environmental impacts that will occur during the product's life cycle.

Service providers include the product's long-term costs, including operating, maintenance, servicing and destruction. This is a crucial incentive to reduce energy consumption, from the product design to its reintroduction into the market. This unexpected approach, from the point of view of the service provider, is only possible if the company is able to compensate the operating costs of its products and bring its business model into a virtuous cycle.

This compensation happens when the service provider considers its products as assets, and takes interest in ensuring regular maintenance to support the investment, that will in turn capture value. The very fact of being the owner of the product until the end of its life cycle allows the provider to reintroduce part of the capital in the production loop, and thus renew the offer at a lower cost.

As such, the technology developed by Michelin, as well as the specialized maintenance staff they provide, allows them to extend the life of the tires they designed for trucking companies: new tires, regrooved tires, retreaded tires and eventually, tires regrooved for a second time.

This model seems very attractive for providers but one crucial issue remains: how to ensure a satisfactory quality of service for consumers?

Long term contracts

Since the consumer doesn't purchase a property right, but a limited right of use over a period of time, the contract with the provider ensures the consumer with an access to a service with a predefined level of quality. In a traditional sales model of property, the vendor will commit to medium-term or very short-term contracts; whereas in functional economy, the vendor accepts the terms of a contract with medium to long-term results and secures the needs of customers. Here again, a balance must be found for the sake of the provider: the contract must specify the conditions for a normal use within the rental period of the product and mitigate the risks of deterioration.

Non-possession may indeed free clients from their responsabilities and undermine the efforts of service providers to extend the life of their products. The case of Velib' is a good illustration: from 2007 – the year the service was launched – to 2009, 16000 bicycles have been damaged and 8000 more have been stolen. This represents an overall cost of 8.5 million euros. Consumers should gradually change their habits enherited from the from the throw-away society era. This change of behavior could be supported by public authorities. Thus, an awareness campaign was organized by Paris local authorities, which helped reduce vandalism on Velib' by 46% between 2009 and 2012.

Another strong edge of functional economy is that the initial investment is borne by service provider, not the customer. As shown by a survey on carsharing led in 2013 by the research unit 6-t (in partnership with France Autopartage and with the support of ADEME), an increasing number of private owners have accepted this new paradigm: through the membership of carsharing services, the number of households that don't own cars increases by 40%. The providers can thus circumvent resistance to prices for those of their products that require heavy investment. Through their business to business activities, Xerox and Michelin were able and open their business strategies to a rental and service-based logic in order to expand their markets, despite the price of their products. The longer the term of the contract, the more the provider will be sure to get a reasonable return on investment; and the more sustainable the investment, the more profitable will the business model get.

For consumers, the benefits of this type of contract do not only depend on a satisfactory and consistent level of service, but also on the definition of a customized offer. Indeed, unlike models where the competitive advantage is translated into the pricing policy, functional economy introduces a customization strategy that takes into account the needs of customers in order to provide them with a level of stable performance.

The offered solution, which includes the access to products and services, is co-designed through a dialogue between a customer's request and the expertise of a service provider. This process greatly limits the existence of oversized offers, for which the number of unnecessary options often justifies prohibitively expensive sale prices. This is often the case with software suites that offer features that will be used by a minority of users only.

Ruptures and reconciliations

The implementation of a functional economy model requires disruptions, not only with the usual representation of the value chain – which affects most departments (production, marketing, human resources, management, management control, etc.) – but also with the non-transfer of property rights, an innovation that could unsettle more than one consumer. On the one hand, the renunciation to property is hampered by the ostentatious and emotional values conferred by the possession of goods. How are we to express our social status without resorting to the external signs of wealth and success provided by objects? On the other hand, the transition from a mass consumption regime – at its peak with the practice of planned obsolescence – to a system of consumption linked to product durability, is a drastic change and will certainly require a period of adaptation.

The logic of use involves designing solutions that integrate products and services. It therefore requires to redefine the core businesses of the companies specialized in the production and sale of goods. The issue is then to understand the strategies to manage change and get people to work on the basis of this new business policy.

Ultimately, functional economy contributes to sustainable development far beyond reducing energy impacts and obsolescence: the service-based logic can lead to the creation of local jobs that are non-relocatable, by developing maintenance activities, training, personal services, etc. This dynamic will most certainly be backed by local authorities, always ready to bring their help to the sustainable economic growth of their area.

6 – Circular economy, front-stage soon?

Yves Legrain
Researcher, former member of France's Economic, Social and Environmental Council

In industrial spheres, the trend towards circular economy is drawing increasing closer attention. Some companies have identified in the recycling business an opportunity to develop new activities, while others see eco-design as a means to raise profit margins, while yet others see a way to re-think their corporate organization. Corporate image is part of the changing scene, but the circular economy concept is now a real industrial concern. Nonetheless, a lot remains to be done to make it fully operational. The challenge is now to see the concept reach maturity.

The concept of the circular economy is not new: the first models go back to the early 1970s. However, there are two reasons why the process took time to develop. The first is both cultural and social. We have a thematic here that was originally adopted by the pro-ecology movements and was integrated into an activist approach. For a long period, the underlying concept remained in the margins of the corporate world; even today, numerous leaders are still reticent.

The second reason relates to the abundance of raw materials since the mid-1980s, associated with the liberalization of global markets and the end of the Cold War. As Didier Julienne explained in a ParisTech Review interview, "in the 1990s numerous commentators were hailing the 'peace dividend' brought on by the collapse of the Soviet block and the spread of democracy. Vanishing frontiers were to usher in a new era of prosperity, increasingly efficient markets would provide commodities." Then the rapid growth of the emerging countries positioned the issue of the raw materials front-stage and, for certain critical or strategic commodities, such as rare earths, oil, or water, we are witnessing some rough-shod competition for existing resources. Besides, political risks came back to the fore, notably in connection with energy source and procurement. Solutions include vertical integration, for corporate structures, securing access to resources and rediscovery of certain mining strategies, for nations. We now recognize that we are living in a world with limited resources. All these elements contribute to explaining a new interest in the circular economy, which has gained in maturity.

Circular economy is in the air

What precise meaning can we ascribe to a circular economy? The French National Waste Council (CND) has offered the following definition: *"a circular economy is a production and exchange system taking into account sustainability and recycling of goods and their component parts, such that they may return to the status of new raw materials or reusable objects."*

Professor Suren Erkmann, chair of industrial ecology at the University of Lausanne, remarks that a totally circular economy simply cannot exist, if we are to comply with the laws of thermodynamics: "Even when we recycle matter, there is always a loss of matter and energy due to the mechanisms of

entropy." François Grosse, advisor to the Chairman of Veolia Environnement, adds: "There is no way we can procure resources and not lose some of them in the process. But we should strive to keep the amount of goods circulating in the economy above the amount of the flow of input and output. That's the heart of the model."

The concept of a circular economy can be extended to the macro scale, an ambitious project that best fits 2050 rather than today's world. But the concept also underlies a series of innovations that relate to both industrial and economic processes: an extension of value chains downstream, valorisation of wastes, development of new activities, and new work on the upstream segments.

We observe a multiplication of experiments carried out by start-ups such as Nerovia, who valorise waste urban water effluents, or multinational groups such as Veolia, who have industrialized recycling activities and are learning to valorise new added value segments.

The economic challenges in development and maturation of these new models are potentially very important on the scale of a country (in the UK, the industrial potential is deemed in excess of 5 billion pounds, cf. this article in The Guardian) and for enterprises. Reducing consumption of raw materials contributes positively to corporate competitivity, anticipates on possible supply difficulties and reduces environmental impacts due to production processes – impacts which are no longer invisible outsources but can be translated in terms of costs in the corporate accounts, in a context that reveals more stringent regulatory constraints on pollution and the emergence of a carbon tax in Europe and in China.

Only ten years ago, there was frequently talk about greenwashing to denounce companies who indulged in PR, saying how exemplary they were at supporting sustainable development. This is not so frequent today. The motivations of the corporate world are diverse. Some see recycling as an opportunity to develop new activities, while others are looking favourably at eco-design to bolster their profit margins by reducing costs. There are also those who see a chance to rethink their corporate organization structures. When Rhodia made a move to adopt "green chemistry," their intention was not to upgrade the company's image, but to make a move to reposition their activities and differentiate their products. This is not a PR operation, but more akin to strategic market positioning.

In like manner, the principles that underpin a more circular economy are at the heart of the functional economy, where producers remain proprietary of their goods and sell the right to use them. For the operation to be economically viable, producers find an interest in eco-designing their activities by setting up a circular economy for the raw materials they transform, thereby maximizing the rate of use of tangible components in the production as a whole.

Thus refurbishing and repairing Internet 'boxes' and TV decoders is now a disputed market for specialist companies. This new form of industrialized repairing meets the interests of Internet access suppliers who hire out boxes to their customers, and encoded TV channels such as Canal+ who provide their subscribers with specific decoder boxes. The box owners, who supervised the design, are encouraged (in Europe and in the USA via specific regulations) to improve box design in order to optimise repair work – inasmuch as this tends to lower overall life costs. The most recent designs of box such as the *Neufbox Evolution* incorporate a continuous design upgrade eco-design process.

We can also mention products like aircraft tyres, with an annual production of 1.5 million. Michelin, one of three world leaders in this sector, have developed a tyre re-tread technology along with an original business model where the tyre manufacturer remains owner of the tyres produced when mounted, assuring re-treading for the user companies at the most opportune time. In short, Michelin is no longer selling tyres, but aircraft landings.

Generalizing the transition

In the field, both public and private actors are mobilized. Certain companies are anticipating the changes by working on their supply-side, on product design, on service offer, and some – as we can see in the pulp & paper sector – are even changing their business models. Regions and local authorities are also moving to adopt more circular economies for their administrations, to be used as local development levers. An example often cited it the Kalundborg Eco-industrial Park in Denmark, where waste matter and activity by-products become the raw material input for another activity. On

the site the Energy E2 Asnæs Power Station also produces plaster used by its neighbouring company BPB Gyproc A/S to turn out BA13 plaster boards commonly used in the building trade.

Some companies who claim to be adepts of a circular economic approach have in fact and above other considerations, found that it provided for an excellent sales pitch. Recently the US Federal Trade Commission (FTC), as reported in the Guardian issued a strong reminder to 15 plastic bag makers about making fallacious eco-friendly claims. But these misleading claims attest to the fact that the concept of a circular economy is gaining ground with the consumers. The range of strategies and motivations, the numerous experimentations in the field, underscore the dynamics of such approaches. The trend of numerous corporate acts, important expertise and research activities and the implementation of various public and private incentive financial support measures, can all be seen as part of an evolution for industry to become more economic in terms of its use of raw materials. In this sense, a more circular operation of the economy is now placed on course, either in the eco-design stages, or in repair work or reconfiguration, recycling or industrial ecology. Nonetheless, a lot remains to be done to make the changes fully operational.

The challenge today is to see the system mature. This is no obvious move, even when the underlying technologies are totally up to date. If we look at the case of the US company Novelis, #1 in the world for aluminium recycling processes, this company has invested over 200 million euros in a recycling plant in Nachterstedt (Germany), to produce the raw materials for its evercan, comprising 90% recycled aluminium. But the major drink producers are not following Novelis and prefer to stay with their normal, traditional suppliers. For other products, it is the customers who do not follow, either because it would upset their habits, or as Mike Pitts (Innovate UK) notes, because they are not given the opportunity to benefit from the gains associated with new circular models.

In order to progress from the current emergence phase, a growth in circular economics requires there be a form of coordination, *i.e.,* calling for public support and monitoring.

Educating consumers and setting up a regulatory or fiscal framework are part of the process. But there is also a call for industrialists to be coordinated too, in terms of a true economic policy. For the industrialized countries, in particular, a major challenge consists of spelling out a road to re-industrialization, competitiveness and protection of the environment. Several studies do make a direct causal relationship between adopting a new industrial model, a return to a growth trend, creation of jobs and reduced greenhouse gas (GHG) emissions. Of note here is the trend of *What if* Reports and the MacArthur Foundation Reports, as well as the economic studies carried out for the Caisse des Dépôts bank to assess the French Government incentive Investments for the Future programme and studies carried out by Ademe (the French National Environmental Agency).

To transform isolated initiatives into sustainable paths, we must first remove the technological and cultural brakes. This calls for a political stimulus taking into account the uncertainties and questioning as well as the scale of time needed, since changes such as we are discussing here are all long-term, *i.e.,* several decades will pass before we see a reversal in major consumer trends and the way we use raw materials. Resource-related public policies must, as is already the case for climate change, choose a target horizon two to three generations ahead.

Public authorities can play *a minima* a role as facilitators and coordinators, in a variety of formats depending on the scale we are addressing: at a national level, for instance, this can take the form of a sectorial accompaniment, but also regulatory and fiscal constraints. We must never under-estimate the need also to have a regional level, if only to encourage and adapt the measures to real local situations.

In order for this public effort to be deployed appropriately, we must bring a degree of rigour to a nebula of innovations which has not yet proven its coherency. Various approaches that lead to reduced consumption of raw materials are integral to a circular economy. Notwithstanding, the concept is not as yet fully stable and it is interpreted in varying manner according to the promoters' ambitions.

What parameters can be selected?

To start with, we can dispel certain misunderstandings. One risk is to perceive the circular economy as a sustainable system, whereas an economy that consumes far too much resources can be circular. In like manner, we cannot draw a clear-cut analogy with biological eco-systems.

The living world has continuously imbalanced dynamics that evolve according to a both a long term and a slow process; only a short to mid-term vision gives you the impression of having an idyllic stability. In contradistinction, enterprises can change their activities and product lines rapidly and, in sense, ecosystems in a circular economy have no special reasons allowing them to avoid the instability we see in the global economy.

We should not be asking more from a circular economy than it can offer: it does not represent a *changeover* from an industrial to an ecological standpoint, but simply an optimization – albeit on a hitherto unknown scale – of the way we consume raw material resources.

This more modest and less militant approach characterizes a maturation phase in which circular economy proponents are engaged and as we witness, in France, the activities of working parties set up in the wake of environmental conferences and the First 'Assises' of a circular economy, and in Europe through the recent European Commission communication Moving towards a circular economy: A zero waste programme for Europe or as embodied in Japanese and German law and in the 2008 Chinese initiative.

This evolution reveals a closing positions of ecological militant concerns, of the commitment of public authorities and of the interests of the industrialists seeking new opportunities to grow market wise and all actors will agree here to the prime necessity to deal with problems in a concrete manner – seen by some as an issue for public policy framing and by other as a business opportunity. Any acceleration of the process depends on the commitment of engineers who apply a basic approach, eco-design and a systemic approach, industrial ecology.

Eco-design is based on the traditional principles of product design, focusing on economic and technological parameters, to which new considerations are added for the purpose of reducing negative environmental product impact, from the initial product design phase to its end-of-life. An eco-design approach therefore incorporates items that relate to use of raw materials, to fabrication, assembly processes and distribution but also to the use modes (sustainability, reliability, repair) as well as end-of-life cycle decisions such as reusing the product or its component parts, in terms of the possibility to separate component parts in order to valorise some and eliminate others, *viz.,* those dangerous for the environment or for our health. It is during the design and development phases of a given product that action must be taken since 70% of the product costs and 80% of the environment impacts are in fact pre-determined, from the moment the product in question was originally designed.

Potentially, eco-design potentially involves all industrial enterprises. It is integrated to a more ambitious approach developed over the past two decades. So-called 'Industrial ecology' has been built up as a specialty round a theoretical corpus associating engineering sciences, earth sciences (thermodynamics and biology), social sciences, law and economics. The building of a conceptual, rational and scientific basis, on which the bases of industrial ecology can be laid, allows us to transcend the traditional descriptions appertaining to circular economies, which occasionally introduce ideological overtones; we can then apply the concepts clearly to concrete cases.

Industrial ecology does not entertain dreams of attaining industries that will blend in with Nature. Nevertheless, there is a refusal to oppose natural and industrial eco-systems. Industrial ecology tries to see how nature and industry can best fit together. In this case, the reasoning applied must be placed in a continuum running from those eco-systems only slightly affected by Man, to largely anthropic systems, or even totally artificial systems.

If we return a moment to Suren Erkman's views, we can describe an industrial system as a certain flow/stock configuration in terms of matter, energy and information; industrial ecology seeks to optimize the 'circulisation' of product and waste flows as well as shared, mutually beneficial, services.

A scientific approach here seeks to gain a better understanding of the interactions among various economic activities and our biosphere. Two major methodological approaches can be used: on one hand, industrial metabolism (analysis of matter energy flows and stocks) and product life-cycle analyses. In eco-systems, the various species of organism come together according to their characteristic associations; in the industrial systems, we must look for the best associations (fertilizer-cement; beetroot-biofuels; pulp-paper…) that can be optimized on the scale of several enterprises

taken together, or sectors, or Regions and even the industrial system as a whole. Seen in this light, industrial ecology is not just limited to re-using wastes and by-products of a given enterprise as the raw materials for other enterprises. On the contrary, there must be a commitment to demonstrably show that there can be a new value chain that can only be operated and managed by actors who agree to cooperate with each other. Diversity, complexity and overlapping of files forces the actors, in a sense, to work together.

Geographic factors are important. The relevance of the boundaries within which the 'circularization' is to be organized depends on the nature of the goods (value, weight, intrinsic danger) and the local industrial infrastructures (adapted capacity and technologies in both the recycling phase and the re-use processes for the recycled raw materials). We must also take into account the supply diversity to guarantee regular material flow. Thus, the principles underlying industrial ecology can be applied not only to industrial partnerships at either local, national or cross-frontier levels, but also to territorial development via implementation of industrial and territorial ecological measures.

These partnerships can be complex and, dare I repeat it, call for a coordination which is an all-important question. It can also call for public intervention, but can be integrated to the design phases of several partners concerned, notably the consumers themselves. In this case, we talk of eco-socio-design to describe an approach in which the varying (socio-cultural, political, aesthetic, economic) points of view are all taken into account when designing products. Environmental and social damage or benefits can also be identified in this approach and likewise taken into account for each phase of a product life cycle, so as to both improve choices where either beneficial or deleterious impacts on the environment are involved and to improving the quality of life for certain partner parties. A framework approach developed by the Eco-Design Pole at Saint-Etienne presents the special features and requirements needed in their approach, inducing necessarily– according to the proponents – a novel, partner-participative, form of management.

This move to gain in coherency among actors from different horizons and with differing interests, calls for a transverse approach that goes beyond the framework of traditional compartmented sectors and organizations. The hopes for success in taking these measures depend on the capacity of the local actors to mobilize their forces, to exchange and to collaborate. The actors involved can be enterprises or individual actors working for territorial development. Their commitment is part of a local development dynamics with the will to re-structure the economic situation through success in discovering and implementing coherent complementariness among activities, valorisation of resources and territorial 'anchoring' of the activities.

The underlying technological dynamics, drawing largely on engineering sciences, lies at the heart of the process. This is primordial to encourage and enhance the transition for today's industry-intensive system to a sustainable system serving Society's needs.

7 – Is social innovation the future of the economy?

ParisTech Review Editors

As a theme, social innovation emerged in the 1960s, driven by management theorists like Peter Drucker and social entrepreneurs such as Michael Young, founder of the Open University. But only in the last decade has it really taken off, by redrawing the sometimes blurry line between business and civil society, one drawing inspiration from the other and vice versa.

It is often said that today we live in the world of Joseph Schumpeter, who highlighted the cycles of creative destruction animating capitalist economy. The Austrian economist notably pointed to two renewal factors: technological innovation and the role of entrepreneurs. Technological innovation can take on several forms: product creation, new production processes, new organizations of production, new markets or new source of raw material or energy. And the entrepreneur is precisely the one who endeavors for innovation, striving to meet the challenge with his drive and achieve success.

As for business and management models, they have long risen to the point of now being on par with technological innovation. The art of organizing manpower and of skillfully streamlining interactions within the workforce is core to the creation of value. Some economists go further, by asking whether social innovation could play a similar role tomorrow.

In 1970, James Taylor defined it as "new ways of doing things in order to meet social needs." It can involve two types of stakeholders: activists, and as in Schumpeter's analysis, entrepreneurs. Whether its commitment is with charity or with social emancipation, the action of the former is traditionally played out *despite* the market, in its interstices. As for the latter it is quite the opposite: their ambition is to *expand* the market by bringing their business to it, either by competing with existing players, by offering new services or new products, or by targeting new customers.

Profit vs. non-profit: an outdated distinction?

For a long time, the distinction between *profit* and *non-profit* has had the trappings of obviousness: it was so naturally self-evident that questioning it made no sense. At the most a few contact areas could be pinpointed such as the existence of forms of capitalism concerned with their social impact, from pioneers like Frederic Le Play to the social doctrine of the Church (in the late nineteenth century) and today's CSR. In addition, as early as the 1950's, sociologists like George Friedman have emphasized the enterprising character of activists, the professional qualities they display, and the managerial and organizational capabilities that are required to run an organization.

But in essence, these two worlds diverged in their purpose: it was either making money or helping others. However, in the course of the last ten years this distinction has started to fade out. The new forms of social entrepreneurship that are emerging today need to be scrutinized because they may well prefigure some of the aspects of tomorrow's economy.

As early as 1994, Peter Drucker observed that "non-profit" was but a legal term that merely means that under U.S. law these organizations do not pay taxes: whether they are directed towards profit or not has no impact whatsoever, "neither on their function, nor their behavior."

All things considered, it would not be the first time. The mutual insurance companies historically founded by the workers of the nineteenth century were the very womb where social insurance systems of the present day were born – the latter being one of the pillars of modern capitalism, as in absorbing significant financial flows to pay millions of people, they provide consumer society with consumers alleviated from worrying about the next day.

More recently, the development of *open source* systems and the fascinating economic uses of free services have shown how the profit economy could revitalize itself by incorporating non-profit exchange. Networks like Facebook have revealed that social interaction has economic value. Yet the distinction between business entrepreneurs and social entrepreneurs was precisely based on these diverging finalities or outputs. What happens with such a differentiation if the creation of social ties is to become the core for new economic activities?

Social creativity and entrepreneurship

In a symposium held in Paris in November 2011, Arnaud Mourot, managing director of Ashoka for French-speaking Europe, told an original story which showcases the interpenetration between the two worlds. In India, an NGO which funded cataract surgery suddenly saw its funds dry up. While not very expensive, many families were unable to afford it. Then an American volunteer had the idea to have them pay anyway, but based on what they could give: it appeared that they could afford a budget of about fifty dollars, and on that basis what the NGO was able to build was not aid from a charity, but a business model. This volunteer turned into a contractor, manufacturing intraocular lenses in large quantities. He now runs a profitable company and has contributed to restore sight to four million people. So, at once, one has profit *and* non-profit.

Large companies are taking keen interest in the "bottom of the pyramid", the socio-economic group that is both the largest and the poorest, who represent 2.5 billion people and that, regardless of its poverty, constitutes a substantial proportion of global purchasing power. Almost nobody had truly measured its potential until the famous article by C.K. Prahalad and Stuart L. Hart, "The Strategies for the Bottom of the Pyramid" was published on the Internet and then by the *Harvard Business Review*; it then went on in expanded form to become a best seller. While it suddenly fell in the category of profit stakeholders, this economic segment remains associated with practice characteristic of non-profit, which may bring the two groups to mingle, as the example of cataract surgery has shown. In this particular case, the success of the social entrepreneur is a function of his ability to mutate into a regular entrepreneur, while the businessman he is would never have arisen without the volunteering spirit that drove him at the beginning of his journey. Both postures are inextricably intertwined.

In a recent communication, Julien de Freyman (ESC Troyes), Katia Richomme-Huet (Euromed-Marseille) and Robert Paturel (Université de Brest) have carried out a systematical study of the personal stories of businesspersons who, throughout their career or within the framework of a single activity, have experienced both postures. Entrepreneurial reality is complex, they found, because a middle ground reconciling economic and social motivations, societal entrepreneurship, has now added itself to the equation where there were previously only two extremes – traditional entrepreneurship and social entrepreneurship. Such an approach enables them to explore the various links between the three forms of entrepreneurship.

Thus a new template is emerging for business types, marked by a search for meaning. Kevin Cardona, in an article published in 2006 on the Observatory of alternative management, noted the emergence of a different paradigm, dominated by themes of self-realization and the refusal tasks that are at once imposed and meaningless. "If a company is in itself a small world of sorts, it is also a perspective on the world, one of its reflections, and one of the faces of society. Modern entrepreneurs are now aware of this responsibility and wish to part ways with a posture of mere consumption of the world." Business people driven by a commitment towards social innovation would then just be the most visible, and perhaps most radical portion, of a new business world.

The search for an innovation

Social innovation can thus be regarded as an experimental space which provides leeway for the renewal of services (commercial or public), but also of the main forces (the businessman, utility, and value) that drive our societies.

It needs to be studied, analyzed and appraised. However it's not that simple, for various reasons. First, right away integrating the concept of externality, that is to say, of collateral results that are impossible to measure is characteristic of these innovations. In the longer run, they may well develop a social efficiency that could go beyond the agenda of the initial project, by being a catalyst for social change and by contributing to the emergence of a new development model. But it remains difficult to reduce their value to statistics that command public policy and investor interest.

How can greater recognition and development of such experimental spaces be achieved? Speaking at the aforementioned conference, Romain Beaume, professor at the Ecole Polytechnique (Chair of Innovation Management), rightly pointed out that for over 100 years, technological innovation has been the center of attention: be it through tracking, promotion, training of stakeholders, creation of dedicated private or public structures, tax policy, nothing has been neglected in fostering it. In contrast, social innovation is a practice at once ancient and very recent in the sense that its value has only been noticed in recent years. Institutions and economic tools liable to support its development are still of a rudimentary nature.

However models are emerging and new spaces appear. Speaking at the Paris Symposium of late November, Romain Beaume suggests that the steps taken towards social innovation relate to *design thinking*, which was developed at Stanford University and is now the core activity of companies like Ideo. While industrial design aims at optimizing the function, the value and the appearance of a product, the notion of design thinking applies to "situations of use." Resting on a method based on user-centered innovation (*human centric design*), it involves diverse fields: services, marketing, strategy, forecasting. And with this we truly have reached one of the central themes of social innovation: to play around new interactions and benefit from them, turning them into the engine of an exchange dynamic – in a word: to give them value.

So, if social innovation can become an intellectual and methodological model, could it in turn end up trapped into formulas and methods? Not unlike classic entrepreneurship, it is mainly driven by unusual characters, closer in kinship to the adventurer or the navigator than to the manager. Denis Harrison, former director of the Centre for Research on Social Innovations at the University of Quebec at Montreal, emphasizes the part played by creativity in social innovation, not only respecting its overall objective of advancing the well-being of individuals and communities, but also in relation to its "outstanding, non-standard character."

While it is fascinating to observe social innovation in action, there is no certainty that it can be reproduced, nor that one successful experience can be set as a solid reference. However, it is now crucial to promote its development, which by no means should limit itself to allowing initiatives to flourish on their own. Just as important is the challenge of supporting that development, especially by paying attention at the time of the rise, when momentum is being gained. This is where professionalization and training prove to be decisive. But how can social innovation be managed?

Managing social innovation

The question of managing social innovation was first posed by major foundations as they searched for projects that would be led by sensible, credible figures. These foundations are trying to develop intern capacities, as they must work both on identifying the most creative innovators and on helping them to develop their projects in an efficient way. The challenge is to keep creativity alive *and* to check that funds are spent as rationally as possible.

Stephen Huddart, who chairs the JW McConnell Family Foundation, insists on developing a capacity for social innovation within foundations and charities. This boils down, in short, to tuning in and empowering oneself and one's company to notice projects and nurture them. Stephen Huddart is a notable speaker in the seminar organized by Frances Westley, Chair of Social Innovation at the University of Waterloo (Canada) and co-founder of the Waterloo Institute for Social Innovation and Resilience ; for her part, she asserts that the crucial element in a project is to achieve sustainability.

Large foundations are facing issues that can be compared to the daily challenges of business angels. Risk-capital management is basically a mix of gambling and rationality. Part of this business is to leave innovators lead projects their own way, be they more qualified to innovate than to manage a company. Meanwhile, risk capital managers have to get results and report to investors, so they also

have to intervene within the start-up companies into which they decided to invest. The same occurs with foundation managers when they report to their sponsors. More than in any other field, decision-making requires taking different perspectives on the same project and being able to make strong choices.

This capacity to deal with several points of view and several logics is a crucial competence. It is the heart of a recent training project launched by HEC Paris, around alternative management. The aim is both to train efficient managers who will work in the social innovation field, and to educate future corporate managers with methods and experiences from the NGO and social work field. It's basically a cross-fertilization initiative, aiming to create a dialogue between different worlds. Founded in September 2006 by professor Eve Chiapello, the Alternative Management Major aims at anticipating evolutions in management and at deepening alternative approaches so that its students make sure they will be a step ahead in the world of tomorrow. Students from this Major may later steer towards different professional realms, from Goldman Sachs to field work in NGOs, but they will have one thing in common: they learned to develop a pluralistic vision of management practices.

Eve Chiapello regards the history of management as having built itself around a state of permanent questioning: "Today we are witnessing a proliferation of initiatives and proposals to change the world. The concept of sustainable development is a symptom of this situation: few people had heard of it ten years ago, and now it is taking the center stage! We must make sure that our students are fully in touch and awash with this effervescence that is teeming with novel ideas." Social innovation, thus, would be one of the elements leading to what Chiapello sees as the reconstitution of a "reformist nebula." Here, Schumpeter would have seen the beginning of a cycle of innovation: the invention, on the fringes of the current central model, of tomorrow's economy.