Gilles BABINET: A systemic revolution for work and companies

I will talk about new forms of management in the 21st century. It is interesting to have some background history of what happened to work over the last centuries to better understand where we are aiming at. If you look at the history of organization and management, the first thing you see is the military. At the time of the first industrial revolution, we had no experience with large organizations and we basically copied the military, with a lot of hierarchy, pressure on workers, which was mostly a very basic organization of companies. Regarding regulation, it is interesting to see that there is a complete synchronization with the emergence of 'civil law' and the first revolution: the norm of this first revolution was civil law, the enhancement of what is called common law in the English-speaking world. Education was very poor then.

The second revolution was more sophisticated – production processes were more developed, we needed more skilled workers. There were three key names in this revolution: Henry Taylor, Henri Fayol and Max Weber. These three people invented what we now see as negative things: the administration, bureaucracy and the scientific division of work. These were the key elements of the world we still work in today. Social norms have changed, from civil law to social rights and, actually, one of the most important aspects is school, mandatory school, and the reason why we needed school is to train workers and give them graduation in order to implement them in the working process. Schools are, once again, a copy of the way factories work: industrial processes. It is important to mention this at this stage.

What are the attributes of the third industrial revolution? We now see that there is a revolution, although I believe it is not complete, in the sense that we don't yet see an increase in productivity and, as such, it's the main factor considered as the marker of an industrial revolution. However, it should come, and soon. Let me give, as an example, the recent output of Amazon, whose earnings, 2 weeks ago, amounted to $5 billion, versus $0.5 billion last year. Now that they've reached their critical path, they are probably more productive on the market.

In this world, the key elements are data – the main driver of this revolution –, platforms, which are able to gather a lot of features that can be assembled globally, and crowd: you can have feedback from users and enhance your offer quickly based on this feedback. Regarding the anthropological aspects, this revolution is flattening the world: everyone can more or less have access to the same degree of expertise, of knowledge. Regarding companies' production processes, everything we trusted in the past is almost obsolete. For instance, in terms of product strategy, the rule of segmentation, the rule of the 4Ps, is wrong now: the intensity of capital at work no longer works. The fact that you can maintain an advantage over your competitors with an IP strategy is no longer true either. This disruption is a complete new rule. It is not incremental innovation as it was before, which was basically an association of different techniques that already existed but that were able to bring a new level of experience and disrupt what was already here. What is probably more at stake here is probably open source, winner takes

all: there is basically a single search engine across the world, there are a few key social networks, there are a couple key retailers, and these platforms have almost no limits.

More and more, we see men compete with robots, that are able to bring productivity, and most of what we were able to do in Europe is now made in countries with low-skilled workers and, even there, these people are competing with robots. The country that buys the most robots nowadays is China, which buys more robots than Japan and Germany combined. This notion of breakthrough innovation is the most important thing for Silicon Valley CEOs. They focus on that because they know they are going from incremental innovation to breakthrough innovation.

We need to understand what makes these companies powerful. For us, it's the ability to bring the notion of breakthrough innovation on the table. You need to be able to organize collective intelligence at a level that could not even be imagined in the past. This is due to data and platforms, which are productivity tools that allow synchronizing workers, and the synchronization of groups of innovators is a key element of these companies' innovation strategies. Innovation strategies are not necessarily about R&D. They can be applied to marketing, user experience, retail, distribution and so on. The notion of breakthrough innovation can be applied to the hotel business, as proven by Airbnb for instance. What we see, mostly in the US, is a lot of thinking about what is the best innovation strategy process. You may have heard the words "Scrum", "Devops", "Agile". These are aspects of this breakthrough innovation. Hierarchy is no longer valid. When workers can be synchronized in a way that everyone knows what others are doing, this represents a productivity gain. The cost of hierarchy amounted to 30 percent of an organization in the 20th century. Companies can be much faster if this is removed.

We must be able to organize workers so that they can synchronize themselves with each other. What we see most in these companies are platforms; in companies like Facebook or Google, people rely a lot more on these platforms than on their hierarchy, which they don't use anymore – they don't even know who their superior is. However, thanks to the platform, they know what they are supposed to do. Subsidiarity is crucial, and efficiency in those companies means being able to synchronize groups of workers at a very high level. One could think that this is interesting but doesn't apply everywhere, e.g. industrial companies. Well, General Electric was able to synchronize up to 17,000 workers on the LEAP plane engine, quite successfully as this engine is probably one of the biggest business successes ever: 12,000 units have already been sold but not a single one has been produced yet.

One of the key words of this new organization of labor is 'platform'. The second thing is the need for quicker feedback. What happened previously was that you needed to wait a long time for feedback (years for customer experience, product quality…). With platforms and data, you can have immediate feedback. This shortens the innovation cycle. Workers, product owners, need to be able to react very quickly to this feedback. The example of the LEAP engine is very interesting because, not only is it the most innovative engine thanks to the Agile way of building it, but it is also an extremely innovative engine because it relies on data: 80,000 censors are

included in this engine, as opposed to less than 500 in previous engines. These censors enable three things:

- Pilots can better understand the flying curve they need to take. An engine is a unique piece of work and, thanks to its personal characteristics, the flight needs to be organized in a certain way. In doing so, you can save energy and limit the engine's usage.
- The maintenance supply chain can become extremely efficient. When you want to change one single piece on the engine, you can organize the supply chain so that it arrives exactly where the plane is, and that limits the 'non-usage' of the plane.
- All the information coming from different engines can be uploaded so that you can see what you need to improve thanks to the data you get. The cycle of innovation, of enhancement of this engine is much shorter than it was in the past.

The business model has changed: you don't send the engine anymore; you send the engine's availability times. This is what is probably going to bring, in the future, a lot of productivity gain. We are not there yet, because most corporations don't have platforms. They have ERP, based on silos, on hierarchy. Few companies copy Google or Facebook and this is why it is not really a revolution. You may have heard about the debate between Robert Gordon and other people. Gordon claims that there is no revolution, that we are entering secular stagnation, while others say that we can discover the productivity gain. I believe it will happen very soon, and beware of those who are not ready, because I believe that it will be so efficient, in any sector, that there will be winners and losers.

The last important point to this aspect is the fact that, given that there are shorter innovation cycles, workers need to be trained all the time. The reason why there are so many young people in the Silicon Valley is that you need people who are just out of training, and they will be kicked out as soon as they are no longer needed – soon. This does not build a society; you cannot fire people when they are 30/35 because you want more agile workers trained to the more recent innovation and techniques. One of the main challenges of this new era we are entering is to be able to completely recycle the education process, which is still a military organization, meant only to pour knowledge into our brain, which kills us. We need an education system that makes us agile, that allows us to go with this notion of disruptive innovation. I was kicked out of school when I was 15, I never went back, and everyone told me that it was a mistake. I had to develop specific skills to survive in this world. Without knowing it, I decided that the best was to go along with the notion of disruptive innovation, to think differently, in order to create some value and become an entrepreneur.

The key challenges we have to go through are:
1. To understand the nature of this digital revolution, with the notions of platform, feedback and crowd;
2. To organize companies and the education system in order to cope with this new system.

If we fail to do that, we will have a lot of problems.