

## World Material Forum 2016 : Preparing for longer term challenges

The first meeting of the WMF, held in Nancy in June 2015, stressed the potential disruption in materials availability linked to the exponential growth of the needs of the middle class consumers throughout the world.

The present slowdown in global growth and the dramatic drop in prices does not eliminate or alleviate the consequences of such a massive trend. Beyond the short term easing of materials availability, the problem remains acute, and we need to keep on mobilizing energies to solve it. The purpose of our 2016 edition will be to elaborate on the conditions at which we can match exponential needs with new opportunities. We will see that new opportunities can offer massive progress, either by technology breakthroughs or by continuous innovation. And we will see that these opportunities will give us the means to match those exponential needs.

A first decisive question is simply “do we have a risk of shortage of raw materials, either bulk or critical, after the unexpected strain on resources due to the growth in China?”. The simple answer is generally “no”. This is good news, but materials sourcing will require sophisticated forecasting.

A second decisive question is “how can we measure progress in materials management at local or at global level?”. We have experienced in the discussions around climate change and realized that setting a measurement of carbon, and putting a price on it, are key success factors in reducing CO<sub>2</sub> emissions. Such lesson is also valid for materials, but we are lacking adequate KPIs. Those we have today are either too rudimentary (the 70 kg of raw materials used to produce a 100 g smartphone), too general (the ratio of materials / GDP), or too sophisticated (the life cycle analysis), to be used by corporate leaders, academics and politicians in order to make decisions and drive materials efficiency. Finally at the end of the day, it is simply about using “less and longer”. And therefore measuring how we progress on the levers that underpin “less and longer”. An important part of our discussions will thus be dedicated to approaching what would be those adequate operational KPIs, or at least setting the terms of the debate.

After the two plenary sessions that will deal with the availability of raw materials and how to drive “less and longer”, we will have a fascinating review of the potential contribution of technologies that have the potential to develop in an exponential way, mainly due to two factors: digitalization, infusing manufacturing process as well as design and research; and globalization, which accelerates the spreading of innovation. In today’s

world, the exponential development of technology relies on , both users and producers globally collaborating in the search for solutions.

And in parallel we will show that continuous innovation in sectors like packaging, housing and mobility, either in developed or in emerging markets, also offers huge potential of progress.

2016 WMF will therefore allow us to answer the simple question: is there a way to produce “less and longer” to such extent that we can match the explosive needs of the growing middle class of the planet with exponential innovation. And we will realize that decoupling economic growth with materials use and dividing by 2 the materials intensity of our growth is not blue sky thinking. If you compound a progress of 10% on each of the components of the “less and longer” roadmap - and the workshops will show you that this is doable - the dream can become reality.

But to secure and foster this roadmap, our interest will go to the question of regulation. It seems that leaving only to the market the task of arbitrating between long term concerns and short terms benefit puts at risk the sustainability of our development. As for climate change, an appropriate level of regulation is definitely required to address the question of potential scarcity of resources on the long run, for the benefit of all. The market forces must be driven by an appropriate regulatory framework.

Finally, developing and mature countries do not face the same urgencies and should not accept the same levels of constraints. What is the appropriate model for those two groups of countries ? Is there a common ground and how to converge? At what level should regulation take place, and how to enforce it?

In a nutshell, the best way to predict the future is to shape it : decoupling economic growth with materials consumption requires a breakthrough in mindset as well as technologies that will shape the future in materials. Our forum will try to raise and document the legitimate questions that underpin this breakthrough, with the humble ambition to elaborate a framework for discussion rather than to propose a definitive set of solutions. Thanks in advance for your contribution, and enjoy those two days