

"...Creativity is born from anguish, just like the day is born from the dark night. It's in crisis that invention is born, as well as discoveries, and big strategies. Who overcomes crisis, overcomes himself, without getting overcome..."

- Albert Einstein

The list of countries in the top 20-or 30-places in the Global Innovation Index of the World Organization of Property (WIPO) or in the World Economic Forum's Competitiveness Ranking (WEF) keeps a close relationship between traumatic historical moments such as wars, natural disasters, conflicts and economic crises and the ability-or need-to make bold, even risky, political decisions that ended up forging the foundation of their long-term economic success.

Let us see some cases to try to illustrate this hypothesis. The countries that won and lost the Second World War are today world powers where innovation, with its invaluable-albeit not a panacea- tool of intellectual property, played and still plays a fundamental role in their success. Europe as a whole, Germany, the United States and its allies and Japan surged forward in an accelerated path and are today the most technologically advanced world economic powers. Finland, which ranks among the highest in all innovation, competitiveness and education rankings, was invaded by the former Soviet Union in 1939 and forced to give up 10 percent of its territory but managed to maintain the foundations of a strong state and a market economy, fundamental for its takeoff years later in a model country based on education, R+D+ I and a single common vision of the country in the medium and long term. And that happens in Finland where, in addition, the climate and geographical situation are adverse and, in those years, had few highly qualified human resources.

Korea is another example. After the fratricidal war and the territorial division it decided, in a totalitarian regime, to become a power in matters of technological innovation as a model of development and international insertion. Korea has (2015) 205,000 patent applications filed in the PCT (acronym in English for Patent Cooperation Treaty, administered by WIPO), mostly national (160,000).

Israel invest 4.8% of its GDP in R&D and, without entering into political considerations, feel that they live in a challenging and even hostile geopolitical environment where innovation and their IP policies are strategic for their development. And their future.

In terms of science, technology and innovation it is possible to conclude that these events unleashed strategic decisions that radically shaped the vision of the country where its external commercial insertion with added value through the use of technological and non-technological innovation managed to transform adversity into successful public policies in the medium and long term. They triggered creativity after survival. With this purpose, the number of researchers and the investment in basic and applied research in science and technology were increased; legislative frameworks were created, promoting incentives and reliability; priority was given to the training of highly qualified human resources for the long-term strategy and adequate resources were allocated. Finally, processes were developed that culminated in the commercialization of innovation in the market, the design of competitiveness agendas, productivity systems and the creation of friendly and predictable business climates.

There are few or no low-hanging fruits to be harvested from innovation without the minimum conditions mentioned above. Innovation (Schumpeter, 1939), of which IP is a fundamental tool, but not an end in itself, is a long-term commitment. There are no immediate results but they are trial and error processes that require certain verticality, discipline and patience. There are no miracles. It needs more than a political mandate of 4 years. It begs to be a long-term political and economic commitment by all parties and the private sector. It requires a truce in the political arena and the conscious decision to pull all in one direction.

To further show that economic crisis unleashes innovation, 2008 saw the number of patents (knowledge) filed drop slightly to stabilize in a short period of time and grow again in a crisis as a demonstration that some countries and companies see R&D+I as a way out of desperate times. Even today, with a global economy slowing down, patent applications in particular continue to grow at important rates. In 2013, 2.6 million patents were requested, a growth of 9% over 2012. In industrial designs and utility models, growth has been uninterrupted since 2003. The United States, China, Korea and Japan today represent 77.4% of patent applications through the Patent Cooperation Treaty (PCT) Latin America 0.6%, which indicates that the United States and northern Asia generates almost 3/4 of the planet's knowledge, although Chinese patents are not yet of high quality. In any case, and only as a fact, Boeing, Panasonic and

Philips, individually, have more patents than Latin America as a whole. (www.wipo.int/ipstats/en/wipi/index.html)

Latin America is, to a degree, like much of the developing world, with few notable exceptions. It generated thousands of scientific publications and few patents. Uruguay is perfectly described in "Gracias por el Fuego", a novel by Uruguayan renowned writer, poet and critic Mario Benedetti, when one of his characters at the end of the first chapter, says "this country is not capable of having a disaster of great magnitude". Extrapolating finely, and with some relief that we escape tragedy, in developing countries there seem to be no conditions of dramatic or transformational events. Adversity is silent in times of prosperity so there will be no audacious decisions that countries in the situation described above, would assume. Therefore, the awareness process will be gradual and painful unless government authorities and the private sector understand that the exponential growth of knowledge in a few countries makes the technological gap so wide that developing countries are sentencing themselves to being marginalized from the knowledge economy.

Perhaps there is a real possibility - and also a transformational one - if the region is to fast-track the process of external insertion in a head-on manner to transform into an open and competitive economy where innovation adds value in the productive chain and the country increases the technological density of its exports by prioritizing sectors, opening markets and competing through the signing of bilateral, plurilateral or regional free trade agreements, given what seems to be a long impasse in multilateralism. Both processes, that of innovation and that of external insertion, can and should work in a complementary and cohesive manner.

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