
The Fourth Industrial Revolution, Creative Industry and Intangible Cultural Heritage

Soosung Lee

Managing Director of Roland Berger's Seoul Office

Shortly speaking, the fourth industrial revolution is 'the future that is already here.' Discussions on new technologies such as smart factories and machines, IoT, cobots, or 3D are undergoing actively within industries that are exploring to level up productivity to a new dimension. And some advanced companies are already running projects using those technologies. But it is also true that many companies and individuals are still stuck in the paradigm of the third industrial revolution while there is a common understanding among them that the paradigm of the productivity increase by the third revolution has come near the end of its life span.

The economic principle of manufacturing by the third industrial revolution is based on assuring the cost and price competitiveness through mass production. However, since 1990s, the manufacturing in advanced countries has not grown much in terms of profits and sales, compared to the invested capital, as was affirmed. Moreover the assets formed by investment have lost much of their flexibility and hence ROCE (Return on Capital Employed) drastically dropped. In some countries like France manufacturing failed to earn even the depreciation expense, so deindustrialization is seriously undergoing. This proves the very life

span depletion of the third industrial revolution paradigm, and counter-argues about the need of another industrial revolution for a level-up of productivity.

Manufacturing in Korea is also facing serious challenges. Flagships companies such as Samsung, Hyundai, LG, and SK are all manufacturing based. The portion of their manufacturing is 30% higher than that of G7 countries. Moreover, as a matter of fact, their contribution to national employment or growth does not reach the level they used to. If they do not well respond to this revolutionary paradigm shift the resulting damage to them would be as great as the overwhelmingly higher portion of their manufacturing base.

Unfortunately Korea is a step behind in preparing for the fourth industrial revolution. In so-called fundamental industry 4.0 technologies, such AI, IoT, 3D printing, and Cloud, Korea substantially lags behind with a long distance ahead to catch up. Interests at the government level were first shown in 2015, which was quite late compared to either in Germany or the USA where the government level initiatives began from 2010 and 2011 respectively. Even China started the operation named 'Made-in-China 2025 project' in 2014 at the government level.

Then how should Korea react to the fourth industrial revolution? In many countries the policy for the fourth industrial revolution is led by governments. It is necessary for the government to set up principles and priorities for implementation according to the national industry conditions and issues. For example, for Korea whose employment issue is at the top priority of socio-political agenda the industry 4.0 solutions for smart factory may be better conceptualized in terms of replacement rather than augmentation.

Since January 2017, the company Roland Berger Strategy Consultants put its utmost know-hows and core capacity in the 'The 2nd Korea Report' project that was collaborated with Maeil Business Newspaper. As a sort of national level consulting the project put focus on the survival strategy of Korea in the era of the fourth industrial revolution. Roland Berger suggested that Korea should accept the fact that it's pretty much lagged behind in the race and therefore seek bone-cracking catch-up strategies for the fourth industrial revolution. In fact, catch-up strategies are not new to us in Korea. The rapid economic growth of Korea so far was achieved through the timely managed phases of chasing and reversing according to catch-up strategies.

There are some technologies impossible for Korea to catch up and some others economically wiser to borrow paying royalty rather than develop from scratch. So, the primary emphasis should be given to the areas where higher efficiency is expected instead of unconditional overall catch-up strategies. Roland Berger found out the core potential of Korea lying at big data. The vice-president and head of Roland Berger Asia-Pacific Denis Depoux said:

“Big data in the era of fourth industrial revolution is a 'new capital.' The economic structure is turning unavoidably to benefit the company holding big data. Unlike the past industry revolution where capital investment was most important, now is the time when big data is the most important capital. To countries like Korea the fourth industrial revolution can become both a risk and an opportunity to reset its system. So big data is much more important. Big data can open a new horizon to all industries, including the daily growing big data-loaded AI industry.”

And big data creates new jobs. Countless new jobs of data manufacturing and processing are expected to emerge anew which flow beyond language barriers and hence national borders.

For Korea to win the race for big data it should catch two rabbits at once: one is to improve regulations and the other to strengthen the information security. In fact, due to regulations many data are blocked from turning to big data in Korea. A quick sight of data opening may show a collision with information security. But such a simple perception would block innovation. So it is necessary to judge which data to publicize and which to protect, and then closely and delicately coordinate to improve regulations accordingly.

In the same note, we can think of creative industries in terms of the fourth industrial revolution. Creative businesses are the representative industry 4.0 that can produce a higher value and maximize ROCE with relatively low capital accumulation. Intangible cultural heritage can become the base of such creative industries. Maximizing capital efficiency requires maximizing profits from selling products or services. Industry 4.0 is a precondition to make it happen. Based on this condition, intangible cultural heritage contents will produce economic values.

In order to preoccupy a new industry including creative industries we have to see their future in clear perspectives and then develop and implement the contents and the business model based on competitive intangible cultural heritages.