

독일의 'Industry 4.0'과 인사·노무 분야의 영향

「월간 인사관리」는 지난 5월 15일 서울그랜드하얏트호텔에서 독일의 저명한
경영컨설턴트이자 미래연구가인 HUS 인스티튜트 창업자인

크리스토퍼 페터카(Christopher Peterka) CEO와 김성국 이화여자대학교 교수의 대담 자리를 마련했다.

이날 몇몇 국내 최고위 인사담당자(CHO)들도 자리를 함께 해주었다.

주제는 독일의 '인더스트리 4.0' 추진현황에 대한 분석과 함께

4차 산업혁명의 '파괴적 혁신'이 고용시장과 기업의 인적자원관리 및 노사관계에

어떤 영향을 미치게 될 것인지에 대해 전문가로서의 의견을 청취하는 시간을 가졌다.

(대담 정리·김성국 교수)

페터카 CEO는 1978년생으로 젊은 나이에 리히텐슈타인에서

The HUS. Institute, 남아공에서 Gannaca라는

IT 및 경영컨설팅 기업을 창업하고 현재 CEO직을 맡고 있다.



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저서 「모멘트 리더십」 그 외

GERMAN INDUSTRY 4.0': IMPLICATIONS ON HR AND LABOR MANAGERMENTS

The monthly magazine 'Insa Gwalli' (meaning HR management) arranged a talk between Christopher Peterka, a renowned German business consultant and futurist, who founded and manages *THE HUS.Institute*, and KIM Seong-guk, professor at Ehwa Woman's University. Several chief human resources officers were also present. The topics were the current development of the German 'Industry 4.0' and how the 'disruptive innovation' caused by the 4th industrial revolution would affect the labor market and the industries' HR management as well as labor relations. We enjoyed listening to Peterka, a specialist in those topics.

Mr. Peterka (born in 1978) founded *THE HUS.Institute* in Lichtenstein and *gannaca*, an IT and business consulting firm, in the Republic of South African. He is the CEO of the two organizations.

Kim: Thank you for finding time in your busy schedule. Please introduce yourself to the Korean readers and let us know the purpose of your visit to Korea.

Peterka: In 1990s when we experienced a huge boom in dot-com companies and their success, I, at that time just a sixteen-year-old lad, also set up a dot-com company in Germany. But in the early 21st century the bubble burst and the conglomerates with capital strength again began to dominate in the market. At this I thought it's undesirable for big businesses, indulged in their status quo, just to try to keep their market share, not to look to the future. That caused me to establish *THE HUS.Institute*. It's a consulting firm specialized in M&A and IT and at the same time a research institute for business administration. That was in 2002. I had my business registered in Lichtenstein, a small country located between Swiss and Austria. That's because Lichtenstein is a small but strong country known for a business-friendly atmosphere and a rapid decision-making process in the government as well as in the industry - for example, public services are available just with a phone call. They are ideal conditions for venture business. And the purpose of my visit to Korea this time is to give a lecture on blockchain. The Bitcoin Center Korea invited me for that. I'm honored to meet high-ranking HR management officers in Korea.

Kim: Today's topic is "German efforts to advance *Industry 4.0* and its implications on HR and labor managements". I'd be thankful if you could

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describe the current situation in Germany and the influences that the digital transformation has on employment.

Peterka: Germany traditionally has competitiveness in engineering and manufacturing. But German industry now worries about the sustainable growth of its engineering and manufacturing. As IT-giants like Google and Amazon extend their business into manufacturing, German manufacturers are not sure whether they can attain sustainable growth while remaining competitive. In 2011 the 'Industry 4.0', an innovation project based on digital technology, was born out of the joint efforts of the government and the industries. That offers an alternative route on which the German corporations could attain sustainable growth in this digital era. Today, digital technologies like the internet of things, artificial intelligence and robotics swiftly reshape the worksite in German: companies turn into smart factories and corporations like Vaillant and Viessmann, which have successfully carried out their innovation in renewable energy sectors, appear as new market leaders in the climate change and the energy sectors. On the other hand, cryptocurrency markets are growing fast, threatening the existing finance industry, and the blockchain technology is acclaimed as a most innovative technology of the 4th industrial revolution. Challenged by totally new types of payment methods used by Google, Alibaba and Amazon, the German finance industry, though conservative, is working on ideas to cope with this situation.

Kim: Some predict a dismal future. They say that digital transformation would affect the employment and end up with job losses. What do you think about this?

Peterka: It's estimated that also in Germany about 500,000 jobs can disappear till 2030. To reduce the impacts on the labor market the German government and the industries have started a cooperative project 'Arbeit 4.0' and offer the courses for IT trainings and reeducation. At the same time, it tries to slow down job loss as much as possible. While most of the conglomerates have already prepared for the massive job losses caused by the digitalization, this is not the case with small and medium-sized businesses. So, they're supposed to be mostly affected. To reduce the job losses, German corporations analyze big data in order to develop new types of business models, to train their employees and to take up cloud working (that is, flexible manpower). Businesses that provide corporations with cloud workers are emerging.

Kim: I think it meaningful that for the tasks related to the digitalization human resources are recruited from the outside every time when needs arise but the other tasks are covered by the regular employees of the company. And it seems desirable that the core manpower required for the 4th industrial revolution is trained by the state or any other external organizations. I'd like to ask for your opinion on this.

Peterka: I can agree to your points. But in my opinion, in the era of digital transformation the needs for HR can't be sufficiently met when only those externally trained are available. Intense communication over platforms and the digitalization require corporations to put appropriate human resources into appropriate places at appropriate time. Thus, lots of German corporations tend to internally train those core human resources.

Kim: I'd like to know the changes that the 'Industry 4.0' brings about inside the corporations.

Peterka: With the introduction of 'Industry 4.0' autonomous spirits within teams are emphasized, so the authority is distributed downwards and the leadership is shared among team members. An ICT company in Berlin, which develops into a so-called 'unicorn startup company', is said to have two rules about their team management and strictly keep them. One is to keep a team in quite a small size under 20 persons and the other is to give the youngest the last word when arguments can't be settled in the team. In this way team members are made to actively participate in team activities and the influence of senior members can be reduced. This makes sense for an ICT startup company in the recent business environment where a rapid and correct decision-making is always asked for.

Kim: When the 4th industrial revolution conspicuously improves the productivity and continues to decrease the labor demand, companies can't keep their employment in the end. But new innovative digital technologies are surely accompanied by new jobs. So can't we say that if companies make a soft landing on new technologies, disastrous situations like massive job losses can be avoided?

Peterka: Considering the current level of technologies and the rate of change, I think that if companies keep creating new jobs, job losses can be balanced out and we could avoid any serious damages for the next 10 years. But then the rate of technological changes will be much faster than that of today, so the time is expected to come when new jobs cannot catch up with job losses. After all, I think that someday any structural means wouldn't help to stop works and jobs from massively disappearing.

Kim: The implementation of the 'Industry 4.0' is supposed to increase the demand for training programs since one has to adapt him- or herself to new technologies. What efforts are being made in Germany by the government and the industries in order to train human resources for the 'Industry 4.0'?

Peterka: By the time when the 'Industry 4.0' project was set out in 2011, Germany tried to build a nationwide 'platform' in cooperation with the private sector like Siemens, Deutsche Telekom, Bosch and Fraunhofer Institute. Topics like the standardization of products and process, R&D, network systems, labor and vocational education, and legal frames were analyzed. And in 2016 a white paper *Arbeit 4.0* was published. It was a report on the last two-year research and discussions that the 'Industry 4.0' had triggered. In that report the German government proclaimed that 'humanization of labor' is an indispensable principle despite technological innovations, and suggested alternatives for the reeducation and reassignment of industrial manpower, the innovation of school systems etc. In line with the findings the German government puts more emphasis on the so-called MINT subjects (mathematics, informatics, natural sciences and technology) at the secondary level and is supporting the subjects with subsidies.

Kim: And finally, what's your advice for the Korean companies that plan to cope with the 4th industrial revolutions?

Peterka: At the moment I'm observing the works and jobs that the 4th industrial revolution, in other words disruptive innovation, pushes out of the scene, and bringing them into the 'Red List' of my own. It's important to identify those disappearing jobs. But I'm convinced that it's more important to have a list of jobs that should be created. If such a list of 'blue occupations' is prepared in cooperation with other stakeholders (especially the Korean-German Chamber of Commerce and Industry) and made publicly available, corporations and CEOs can have useful information at hand.

SUCCESSFUL TRAINING INSTITUTES IN THE DEVELOPMENT OF HUMAN RESOURCES FOR THE 'INDUSTRY 4.0' ERA

We'd like to name two training institutes as the ones that're successfully preparing the trainees for the '*Industry 4.0*' era.

The first one is the *Blockchain Competence Center Mittweida* (BCCM), an affiliated organization to the *Hochschule Mittweida* (University of Applied Sciences Mittweida), which is located in a small city Mittweida in the federal state Sachsen, a region that belonged to East Germany. The center is subdivided into three thematic fields: IT & Crypto Competence, Financial & legal Competence, and Industrial Applications Competence. Students are trained practically as well as theoretically in blockchain technology and get a master's degree. Blockchain technology was little known in earlier years of the center and applicants were few. As the technology recently becomes popular through Bitcoin etc., the application is soaring. A lot of students, employees and ordinary people from all over the world sign up for the non-degree program *Blockchain Spring & Fall School* (<http://blockchain.hs-mittweida.de>). The popularity of the courses lies in two factors. One is the high quality of training courses with excellent interdisciplinary curricula. That was possible because some professors of this 150 year-old university had started to study the blockchain and thus collected years-long experience even before the digital revolution like '*Industry 4.0*' became popular. The other is the alumni that work as blockchain and Internet security specialists all around the world.

The second one is the *European School of Management & Technology Berlin* (ESMT). It is a private graduate school of business administration, which was founded in 2002 by 25 German top-ranking corporations, and all of its courses are given in English. The core competence to be aimed at includes leadership, innovation and data analysis. In addition to a regular MBA course, there is also a special MBA course for executives. Every year about 3,500 students from 28 countries enroll at the school. 38 professors from 18 countries take care of them and another 40 visiting professors also give lectures. ESMT Berlin is different from other business schools: One is that it was established and is run by private corporations. And the other is a program called 'Customized Solution'. This program offers a praxis-centered training on business administration. Students are involved in the real management process (product development, workflow improvement etc.) of companies, discussing with employees and trying to come up with solutions. Regarded as an innovative course that enhances the management competencies in the era of the 4th industrial revolution, the program is popular among students. Furthermore, ESMT Berlin makes efforts to push for the globalization of its services: By signing for double degree programs and cooperative projects with the American MIT, it has embarked on producing talents who are competitive not only in Europe but also in America.