

# Reform of Human Resources Work Offered by HR Tech

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Efforts have been spreading to sophisticate human resources work with cutting-edge technology in what is known as HR Tech. HR Tech is a portmanteau of HR (Human Resources) and Technology such as fintech. Hitachi Research Institute has been working on research to find out how HR Tech utilizing IT can improve the work efficiency of Human Resources departments and management personnel and how HR Tech can contribute to corporate management.

## **1. Environmental Change of Human Resource Departments**

### **1.1 Social Change**

Competition in the acquisition of human resources by corporations has been spreading around the world. Millennials who are also referred to as digital natives are the generation of workers that joined the labor market after the year 2000. Now, Millennials make up the largest number of workers in workplaces and are becoming more influential. In the meantime, the use of digital information by management has also accelerated due to progress of networks and devices.

Japan is facing imminent challenges such as the decrease in workforce due to the low birth rate and aging population, prolonged stagnation of growth in productivity, and long working hours.

Amidst these environmental changes, the visualization of human resource information is required for the diversification of human resources in response to the globalization of companies and assignment of appropriate personnel to the most appropriate positions. In addition, how to conduct work and the roles of human resource departments also need to change drastically.

### **1.2 Technological Progress**

Corporations are able to acquire a wide variety of human capital management information such as activity and attendance management by email, internal SNS, and smartphones, etc. in real time as well as on a large scale, and as a result, corporations are now able to use such information as big data. Through networks, information sharing and bilateral communication are also possible. By connecting these data and communication tools with AI, challenges can be extracted and solutions can be examined.

## **2. Impact from HR Tech**

What kinds of changes will enterprises see from the evolution of HR Tech in the future?

### **2.1 Work of Human Resource Departments**

#### **(1) Improvement in Hiring Efficiency**

In hiring, analysis of the definitions of required personnel has been carried out for quite some time, but the digitalization of data has made the analysis and use of such information easy. Human resource departments in some companies have begun work on using AI for analyzing the definition of human resources toward the acquisition of talented personnel. By clarifying the definitions of required personnel based on data analysis of talented employees at companies, the screening of documents will speed up and the accuracy of job interviews will improve. As a result, better adaptation of the personnel to the organization and the work and an increase in the retention rate of new employees are expected.

#### **(2) Sophisticated Analysis of Human Capital Management**

Technological progress is making a contribution in the aspect of human capital management as well. For example,

we see progress in the “visualization” of personnel information from the addition of photos and work history to basic data such as names and qualifications or tagging to personnel information that makes analysis in multiple aspects easier. Consequently, data can be analyzed from all angles and management personnel are able to carry out the systematic development of leaders for the next generation based on objective evidence. The discovery of human resources is also becoming more efficient. Companies can review their human resource portfolio flexibly, which will improve performance as an organization.

## 2.2 Administration Work at the Worksite

In addition to upgrading the work of human resource departments, HR Tech has a function of organically connecting three parties, namely, human resource departments, management personnel at worksites who manage staff members and project members, etc., and general employees. Recently, more systems have human resource data dashboard functions for management personnel, and management personnel are now independently able to revise, analyze, and review their staff development plan and work plan by directly accessing human resource-related data. For evaluation systems such as target management, functions to support management personnel for the timely coaching of staff members improve communication and raise the level of performance. This enhancement of functions transfers some functions of human resource departments to management personnel, and as a result, the problem solving ability of worksites improves.

## 3. Pre-emptive Management by Data Analytics

While HR Tech promotes early detection of challenges by visualizing human resource-related information in real time, some corporations have begun to upgrade work by using AI, etc.

### 3.1 Predictive Response by Noticing Signs

AI that learns and uses a tremendous amount of data is transforming work as we know it mainly based on implicit

knowledge obtained from experiences and intuitions of human resource staff members. Responses based on behavioral predictions of employees by using human resource-related big data have already begun.

“Workday” provided by Workday, Inc. analyzes past data on the number of resigned employees and number of replacements from machine learning, etc. and projects risks such as the scale of talented employees with the potential of resignation and the cost estimate for replacing such employees. These functions provide support to decision-making by human resource departments and management personnel at worksites and reduce risks by pre-emptive management.

### 3.2 From Predictive Response to Prescriptive Response

Similar to other fields, the signs of further upgrading of analysis phases from the predictive response to prescriptive response can now be seen in multiple aspects for AI use in the HR Tech field. AI mines ideas and perspectives that have gone unnoticed by human resource staff members using data analysis and provides specific advice on action.

Works Applications Co., Ltd.’s “HUE” uses accumulated past case example data and analysis results to provide appropriate individual explanations for work when staff members conduct the corresponding work for the first time. In addition, HUE has a schedule management function to send out appropriate alarms when there are delays in routine work. In this way, HUE provides appropriate advice to users for the next action, and as a result, HUE significantly improves the convenience of work of employees and management personnel.

## 4. Challenges in Improving the Maturity Level of Data Use

An abundance of subject data for analysis is important in the use of HR Tech. Actions based on the following are necessary for the effective use of data (Table 1).

### (1) Technical Challenges

To increase the availability of data and obtain correct analysis results, improvement of accuracy of data by cross-checking multiple data is necessary. In addition,

standardization of the data format and data definitions to be recorded is an important task for increasing compatibility and versatility among different systems and companies and expanding the use range.

## (2) Challenges in Information Management

Compliance with guidelines regarding the protection of personal information of the country and measures such as separate management of employee numbers and personal information including Individual Numbers which are assigned to each citizen of Japan are inevitable.

Standardization of terminology and definitions of human resource-related data and expansion of mutual certifications of skills and qualifications will expand the range of HR Tech use.

Hitachi Research Institute positions HR Tech as technology that contributes to the resolution of social challenges such as work style reform and improvement of labor productivity and will continue to research HR Tech.

Table 1 Challenges in Data Use

Classification	Challenge	Direction of Response
Technology	Data Credibility	<ul style="list-style-type: none"> <li>Improvement of accuracy by cross checking multiple data</li> <li>Securing transparency of the data analysis process (Becoming a black box due to deep learning)</li> </ul>
	Data Compatibility	<ul style="list-style-type: none"> <li>Simplified approach such as BI tool instead of data integration</li> <li>Standardization activity (The Society Of Human Resource - Markup Language, HR Open Standards, etc.)</li> </ul>
System	Privacy Protection of Employee Data	<ul style="list-style-type: none"> <li>Compliance of national guidelines</li> <li>Improvement of anonymity by data management where acquired information is separated from personal information</li> </ul>
	Quantification of Human Resource Definitions	<ul style="list-style-type: none"> <li>Due to the inauguration of organizations that promote the use of HR related data analysis results in management such as LeBAC, progress of accumulation and sharing of quantified know-how</li> </ul>
	Common Certifications of Qualifications, Skills and Records of Completed Courses	<ul style="list-style-type: none"> <li>Certifications commonly used within corporate groups and industry organizations by use of blockchains (consortium chain)</li> </ul>
	Digitalization of HR Related KPI	<ul style="list-style-type: none"> <li>Accumulation of empirical values of digitalization through efforts for data health in case of health management</li> </ul>
	Fostering Data Use Culture (Management & Worksites)	<ul style="list-style-type: none"> <li>Tool provision to make data use easy</li> <li>Education activity through introduction of data use case examples and use of statistics specialists and data analysts</li> </ul>

Prepared by Hitachi Research Institute