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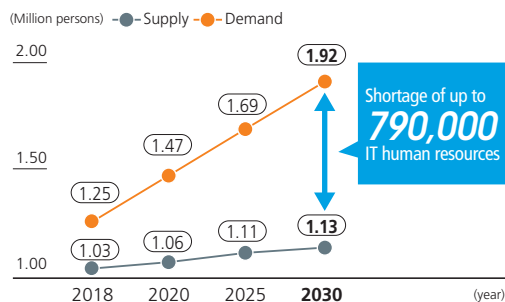
Daikin's Unique Approach to Developing AI and IoT Human Resources for Driving Innovation

Why is it important?

AI and IoT are Vital to the Creation of High Value Added Products and Services

With the arrival of the Fourth Industrial Revolution, the shortage of human resources capable of using artificial intelligence (AI) and the Internet of Things (IoT) has become a social issue. To achieve sustainable growth, Daikin must develop the human resources that can create higher value added products and services by linking AI and IoT to our own businesses and technologies.

Estimated Shortage of IT Human Resources in Japan



Source: Compiled by Daikin based on *Survey on Demand for IT Human Resources (Upper Growth Scenario) (April 2019)* by Japan's Ministry of Economy, Trade and Industry.

DAIKIN'S APPROACH

Established DICT as Part of Industry-Academia Collaboration

In December 2017, with the full cooperation of Osaka University, with which we have a comprehensive collaboration agreement mainly in informatics, Daikin established Daikin Information and Communications

Classes at Daikin Information and Communications Technology College

For current employees

AI Utilization (For Managers)

Fosters human resources who can plan and implement business or operational improvements utilizing AI and IoT

AI Technology Development

Fosters human resources who can develop AI technology

Systems Development

Fosters human resources who can engage in development needed to introduce AI into company systems

For new employees

Fostering AI and IoT Human Resources

Fosters human resources in AI and IoT solutions unique to Daikin who understand air conditioning technology, etc.

For all employees

AI Utilization

Raises awareness about improving AI literacy

Technology College (DICT) to foster human resources who can utilize and implement AI and IoT. DICT provides employees selected from a wide range of departments with unique training curriculum developed in-house.

During training, participants take part in lectures on basic knowledge of AI and how to use this technology, led by instructors from Osaka University. DICT also incorporates project based learning (PBL) based on actual challenges facing each department to foster experts who can utilize AI and IoT in business development and technological development.

DAIKIN'S PERFORMANCE

Fostering the Ability to Utilize AI and IoT to Resolve Frontline Challenges

Since fiscal 2018, we have held classes to foster AI and IoT human resources among new employees. Every year, 100 newly hired employees undergo intensive training at DICT for a period of two years. During the first year, participants acquire specialist knowledge in AI and IoT and learn about our core technologies, including air conditioning technology. In year two, one to two participants undergo practical training on one of more than 80 themes submitted by development, manufacturing, and sales departments. Through this PBL, participants master the ability to utilize the AI and IoT knowledge and technologies they learned in their first year on the frontlines by

Example of PBL 1: Improving Production Efficiency at Plants

Challenge	Production efficiency under a high-mix production system, which creates only the right number of products when needed, is determined by the accuracy of the production plan. However, there are gaps in accuracy because the production plan is formulated based on the experience of each person in charge and past results of production.
Aim	Develop an analysis tool that will support the formulation of the optimum production plan and that is easy to use by persons in charge. By increasing the accuracy of planning, increase production efficiency as well as rein in manufacturing costs and energy usage.

Example of PBL 2: Forecasting Sales for Residential Air Conditioners

Challenge	The shipment plan for a product is based on the sales forecast computed by a person in charge referencing past tendencies. However, actual sales of residential air conditioners are influenced by weather and temperature, making it difficult to create an accurate sales forecast.
Aim	Analyze big data covering past sales results and weather forecasts. Use the findings to determine a highly accurate sales forecast and the optimum shipment plan, which will ensure inventory is in stock and products are delivered to customers in the necessary amount at the right time.

identifying requests or issues from persons in charge representing a variety of departments and then proposing improvements. After the end of the program, participants are expected to not only employ their new knowledge and skills on the frontlines of our operations, but also play a key role bridging the company with outside entities and connecting departments together by promoting the utilization of AI and IoT company-wide.

In addition, it is vital to promote greater understanding of AI and IoT within the company to empower these human resources. For this reason, we are making efforts to increase literacy internally through lectures for managers and e-learning for all employees.



Voice

Providing Advanced Solutions with Systematic AI Knowledge

Yasushi Yagi
President, Daikin Information and Communications Technology College (Professor, The Institute of Scientific and Industrial Research, Osaka University)

AI and IoT technologies are keys to further upgrading the potential of manufacturing and industry. It is critical that we take a deep dive into learning and utilizing these technologies.

Above all else, learning must be fun. It must be a joy. By having them enjoy their two years at DICT, it is my hope that new Daikin employees acquire systematic AI knowledge and grow into "specialist human resources in advanced IT" that contribute to solving various issues not only at Daikin but for society as a whole.

NEXT CHALLENGE

Creating Innovation by Linking Our Technologies, Products and Services with AI and IoT

Daikin intends to train around 1,000 employees, including both current and new employees, to become human resources that can utilize AI and IoT by fiscal 2021.

In addition to fostering AI and IoT human resources to promote smarter production processes, prediction of product faults, and streamlining of operations, we will combine Daikin's core technology, products and services to create new innovation and contribute to solutions to energy and environmental issues as well as the further development of industry and technology.