Social Innovation

Konica Minolta continues to create new value for society by providing innovative solutions and products with a focus on social and environmental sustainability.

Related SDGs

Our Concept

Focusing on Social Issues and Creating New Value

Social concerns such as climate change, resource depletion, and population decline have emerged in recent years. Against this backdrop, the Sustainable Development Goals (SDGs) were adopted at the United Nations Sustainable Development Summit in September 2015. Corporations are expected to play a role in achieving these goals, and positive corporate action has become more important than ever.

Konica Minolta is proactively addressing this need by incorporating state-of-the-art digital technologies, such as the Internet of Things (IoT), artificial intelligence (AI), and robotics into its core technologies. The company is working to transform its business to focus on providing solutions to pressing global issues.

This transformation seeks to contribute not only to the achievement of the SDGs, but to enriching people’s lives.

Contribution to SDGs

Social Issues
- Deteriorating social infrastructure
- Declining workforce/Declining birthrate and aging population
- Growing information security risk
- Doctor shortage
- Terrorism and natural disaster threat
- Rising medical costs
- Climate change
- Resource depletion
- Nursing care staff shortage

Vision
- The company seeks to leverage various social issues. The industry leads to solutions for reforming the workflow used in offices, medicine and nursing care.

Key Actions
- The company is focusing on technologies that contribute to new businesses.

Key Measures
- Promoting new business innovation
- Promoting business innovation Centers (BICs)
- Entrepreneur development at the ESP Research Institute, Inc.

Materials
- Micro-fabrication
- Core technologies
- Imaging
- Robotics

Business Innovation Centers (BICs)
- BICs in the five major regions of the world
- BICs with approximately 100 projects focused on market characteristics and changes in the business environment in each region.
- Venture companies are currently moving forward with new perspectives by collaborating with universities and BICs.

Workflow reform
- Reducing environmental impact
- Marketing reform
- AI
- Advanced ICT
- IoT
- Predictive maintenance
- Activity monitoring
- Manufacturing reform
- Solution

Greater efficiency in nursing care
- Solution

Visualization of Steel Fractures Inside Concrete Bridges, the Non-destructive Inspection Solution Using AI and Magnetic Sensing for infrastructure deterioration. Called the Non-destructive "Kunkun body"* first body odor detector, Kunkun body, in Japan, Asia Pacific, China, Europe, and North America, brought a product to market. BIC Japan developed the "Kunkun body," and began selling it in fiscal 2017.

For the product development, BIC Japan brought the product to market. BIC Japan developed the "Kunkun body," and began selling it in fiscal 2017. This was achieved by effectively incorporating external technologies, such as the results of collaboration with universities and venture companies. They are currently moving forward with new perspectives by collaborating with universities and venture companies.

This initiative has been well received for effectively addressing this need by incorporating state-of-the-art digital technologies, such as the Internet of Things (IoT), artificial intelligence (AI), and robotics into its core technologies. The company is working to transform its business to focus on providing solutions to pressing global issues.

This transformation seeks to contribute not only to the achievement of the SDGs, but to enriching people’s lives.
Business Development That Contributes Solutions to Social Issues

Background and Issues

To remain a company that is valued by society, Konica Minolta must continue to develop innovative technologies that contribute solutions to social issues. Based on this concept, the company is focusing on increasing its capacity to contribute solutions to social issues when developing new businesses.

Vision

Konica Minolta believes that reforming the workflow used by people who work in offices, medicine and industry leads to solutions for various social issues. The company seeks to leverage its technologies, human resources and networks to create a wide range of businesses that help to solve the issues faced by its customers and society.

Key Measures

- Promoting new business development through core technologies and open innovation
- Promoting business development at the company’s five Business Innovation Centers (BICs)

Major Initiatives

Worldwide, Five Business Innovation Centers (BICs) with about 100 Projects

Konica Minolta operates BICs in the five major regions of the world—Japan, Asia Pacific, China, Europe, and North America—with the goal of generating new thinking and creating innovative businesses.

Experienced professionals from other companies and organizations have been appointed as directors of operations at each center. The BICs are incorporating diverse, new perspectives by collaborating with universities and venture companies. They are currently moving forward with about 100 projects focused on market characteristics and changes in the business environment in each region.

In fiscal 2017, solid results were obtained: four projects brought a product to market. BIC Japan developed the world’s first* body odor detector, “Kunkun body,” a device that makes odor visible, and began selling it in fiscal 2017. For the product development, BIC Japan brought the product to market in just two and a half years from the planning stage. This was achieved by effectively incorporating external technologies, such as the results of collaborative research with the Osaka Institute of Technology to analyze the problem of odor.

Another BIC project is helping solve the social issue of traffic infrastructure deterioration. Called the Non-destructive Inspection Solution Using AI and Magnetic Sensing for Visualization of Steel Fractures Inside Concrete Bridges, the project was selected as a finalist at the 5th IoT Lab Selection held by Japan’s Ministry of Economy, Trade and Industry. This initiative has been well received for effectively addressing this social issue.

* Source: Study to verify that “Kunkun body” is a world first (as of January 12, 2018): ESP Research Institute, Inc. survey (December 2017 to January 2018)

Non-destructive inspection to visualize fractures in steel materials inside a bridge

Related SDGs
Social Innovation

Close Up 1

Using Information and Communication Technology to Find Nursing Care Solutions for Problems Faced by a Super-Aged Society

Social Issue
Increasing nursing care workload is intensifying physical and mental stress for staff

The number of people needing nursing care in Japan has continued to grow in recent years. Due to a shortage of care workers, workloads have increased for individual caregivers in nursing care facilities. As these caregivers also need to be constantly on alert for unexpected incidents, the increase in their mental stress has become a major concern.

Konica Minolta’s Innovation
Care Support Solution contributes to improving nursing care workflow

Konica Minolta offers the Care Support Solution, which transforms nursing care workflows, in order to free nursing care staff from heavy workloads resulting in physical and mental stress.

This system detects certain resident behaviors using near infrared cameras installed on the ceiling along with sensors that detect movement, and then notifies nursing care staff through their smartphones. Since the system makes it possible to know when residents have awoken, gotten out of bed, fallen or in cases of abnormal breathing, it helps the staff to provide detailed explanations to residents and the information also ensures they can take the right steps to prevent recurrence. We have also seen a change in the satisfaction level among nursing care staff due to the resulting work efficiency and improvements. In the future, we would like to continue being a facility that our family members.

Main Functions of the Care Support Solution

01 Resident video check, offering assistance on-site
02 Safety confirmation notifies in cases of abnormal breathing
03 Documents evidence in cases of falling or toppling
04 Creates on-the-spot care records
05 Instant and reliable information sharing
06 Remote microphone encourages resident independence

Social Issues

- Japan has become a super-aged society, with one in four people over the age of 65 and a growing number of elderly needing care.
- Approximately 2.49 million care workers will be required by 2025, but it is a challenge to secure nursing care personnel.
- The number of patients per care worker has increased, the labor environment has become difficult, and it has in turn become difficult to secure nursing care quality.

Workflow Transformation

Operation efficiency
Creation of extra time

Improving satisfaction level of care recipients
- Improving nursing care service quality
- Improving sense of security

Improving nursing care staff satisfaction
- Reducing overtime hours
- Securing break time
- Reducing physical and mental stress

Improving the satisfaction of nursing care facility administrators
- Differentiation from other facilities
- Reducing nursing care staff turnover

Related SDGs

- SDG 3: Good Health and Well-being
- SDG 8: Decent Work and Economic Growth
- SDG 3.4: Reduce the number of deaths and injuries from road traffic accidents

Documents: evidence in cases of falling or toppling

Remote microphone encourages resident independence

Uchiyama, Meglus Inc.
Anshin Seikatsu Facility Director
Nishi-Gotanda Care Home

Mari Komazaki
Tatetiko Hashimoto

Documents: evidence in cases of falling or toppling

Remote microphone encourages resident independence

"Take care when getting out of bed."
activated the nurse call button, it helps the staff to determine the best response method after understanding the situation. Since smartphones are used to keep nursing care records and share information among staff in real time, the system reduces the amount of walking required in a large facility, thereby greatly improving the efficiency of work. Additionally, since the system makes it possible to extract and record what happened before, during, and after a fall accident involving a resident, the causes and proper response measures can be investigated at an early stage, while also providing a sense of security for nursing staff and the resident’s family members.

The facility where this solution was introduced reported an average efficiency improvement of 30% for nursing care staff. The extra time that the system saves nursing staff can now be used to enhance resident self-sufficiency, such as rehabilitation assistance. It can also be used for education and training for nursing staff and for general administrative work. This has improved the satisfaction of residents and staff.

In addition to workflow transformation in nursing care facilities, Konica Minolta is focusing on home care. Going forward, the company will analyze behavior data involving elderly individuals and home nursing caregivers. By linking home medical support and lifestyle support with optimum timing, Konica Minolta will be able to help realize more efficient home nursing care. This will help create a society where the elderly can feel secure about the nursing care they receive.

**KPIs for the Care Support Solution**
(in a nursing care facility where it was implemented)

<table>
<thead>
<tr>
<th>Time spent by nursing care staff on walking and record keeping</th>
<th>30% improvement in work efficiency</th>
</tr>
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<tbody>
<tr>
<td>Satisfaction level among nursing care staff</td>
<td>100% (as of June 2018)</td>
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**Voice of a Customer**

“It changed our nursing care staff to be more engaged in their jobs.”

Until recently, we did not emphasize efficiency because we thought that would get in the way of our commitment to put resident care first. However, since we introduced the Care Support Solution, the nursing care staff happily using terms such as “operation efficiency” and “operation improvement.” The staff are able to use their smartphones to receive nurse calls from residents, to easily share information with each other, and for record keeping. Since the system also captures video of incidents such as injuries and falls, they can retrieve accurate information. This helps the staff to provide detailed explanations to residents’ family members, and the information also ensures they can take the right steps to prevent recurrence. We have also seen a change in the satisfaction level among nursing care staff due to the resulting work efficiency and improvements. In the future, we would like to continue being a facility that our nursing care staff would want to recommend to their own parents.

**More time for staff education and to support other facilities**

Since we can look at the monitor and determine the urgency of the incident, wasted movement has been drastically reduced. As a result of the new system, we can now have two people looking after three floors at night, instead of needing a person for each floor. That enabled us to add an additional person during the daytime. Previously, we also had to open the room doors to check on the residents during the night, but now that is no longer necessary and residents are able to sleep better. As a result of introducing this system, the facility was able to reduce the working hours per month by about 600, which is almost equivalent to the hours worked by four employees. Going forward, we would like to use that surplus time for external training, onsite education, and support for other facilities.

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**Facility Director**

Uchiyama, Meglus Inc.

Anshin Seikatsu Facility Director

Nishi-Gotanda Care Home

Mari Komazaki Facility Director

Tatehiko Hashimoto Facility Director

Nishi-Gotanda Care Home

Tatehiko Hashimoto Facility Director

Nishi-Gotanda Care Home

Eri Yamanaka Facility Director

Anshin Seikatsu Uchuya, Meglus Inc.
Initiatives for Precision Medicine that Contribute Solutions to Social Issues in the Healthcare Field

Social Issue

Improving patient quality of life while reducing healthcare costs has become a major social issue.

Treatments for cancer mainly consist of surgical treatment, anticancer medicine treatment, and radiation therapy. Among these, the benefits and side effects of anticancer medicine therapy vary greatly depending on the patient. Some medicines are costly and have risk of side effects, but still are not delivering the desired response rate. If the physiological characteristics of patients at the molecular level, such as genes and proteins, can be determined, and patients can be accurately grouped by these characteristics, the treatment, medication prescribed, and prevention can be made more accurate and efficient, thereby dramatically improving quality of life for patients.

Konica Minolta's Innovation

Supporting drug discovery as well as accurate and efficient cancer diagnosis utilizing technology developed for photographic film.

Pharmaceutical companies are developing molecularly targeted drugs for precision medicine. The medicines are expected to be more effective and have fewer side effects because they attack only specific cancer cells. Konica Minolta has material and image processing technologies which it originally developed in photographic film.

Konica Minolta’s Vision for Precision Medicine

By using fluorescent nanoimaging technology based on these technologies, certain proteins and cellular tissues can be made to emit bright light. The number and position of these proteins and cell area can then be determined through automatic analysis, thereby making accurate and efficient cancer diagnosis a reality.

Pharmaceutical companies and medical institutions already have great expectations for this new technique, welcoming it as a revolutionary technology that can be broadly applied in areas such as medicine development, clinical trials, and pathology diagnosis. In addition to these innovative technologies developed in-house, Konica Minolta has also obtained expertise through corporate acquisitions. It is now in the process of integrating its own technologies with world-class genetic analysis technology from Ambry Genetics Corporation, along with biomarker* search technology and techniques for numerical analysis of complicated biological information from Invicro LLC.

Moreover, pharmaceutical companies are working to shorten the R&D time for molecularly targeted medicines and cancer therapy medicines. There is a new movement to reduce the cost and time required for clinical trials by clearly identifying subjects for which certain medicines will be effective. Shortening of R&D time is expected to lower the price of new medicines and help control healthcare expenses.

* Indicators of body condition such as genes and proteins contained in blood, urine, etc.

Related SDGs

Close Up 2

Remote Healthcare Using Portable Medical Devices and AI

Addressing the Challenge of Doctor Shortages

In Bangladesh, lifestyle-related diseases are skyrocketing, especially in rural areas far from medical facilities, equipment, and doctors. In order to improve the quality of patient care and reduce the social security costs of medical examinations as well as the time required to travel between urban and rural areas, efforts are made to create a system whereby a rural clinic can take patient X-rays and make the appropriate diagnoses. A cloud-based system for uploading X-rays and making online diagnoses has been developed in collaboration with the Japan International Cooperation Agency (JICA) for its fiscal 2017 survey of developable businesses (SDG businesses) to help solve issues in developing countries.

In January 2017, Konica Minolta began conducting a diagnostic pilot project in the remote area of Jaipur, Bangladesh. By using X-rays taken at a X-ray examination by using mobile imaging and AI image analysis technology, the images are sent to a rural hospital where doctors can view and diagnose conditions. Konica Minolta is contributing to the productivity of working people.

In specific industries such as manufacturing and hospitals, solutions that address issues in offices as well as specific industries such as meeting documents and invoices. They also continue to develop activities that introduce and expand sales in emerging countries.
Workplace Hub Transforming Workflow at Business Sites

Social Issue

Many countries are working to increase productivity and improve work environments

Improving productivity and work environments is one of the key themes for the sustainable development of society. In Japan in particular, where the labor force is shrinking due to a declining birthrate and an aging population, work-style reform is being promoted to improve labor productivity while offering flexible work options.

Konica Minolta’s Innovation

Promoting work-style reform with Workplace Hub and other solutions

Today’s workplaces must deal with large quantities of electronic data, as well as printed information such as meeting documents and invoices. They also must consider the conversations, physical movements, and health conditions of the people working there. By digitizing all this information, bringing it together, and analyzing it with the latest technologies such as artificial intelligence, invisible issues in the office can be identified. Konica Minolta’s Workplace Hub (WH) is a platform that supports customers’ business transformation and work-style innovation by offering solutions to problems that customers themselves are not yet aware of. By providing solutions that address issues in offices as well as specific industries such as manufacturing and hospitals, Konica Minolta is contributing to the productivity of working people.

Addressing the Challenge of Doctor Shortages in Emerging Countries—Remote Healthcare Using Portable Medical Devices and AI

In Bangladesh, lifestyle-related diseases are skyrocketing, and quickly responding to patient needs is a critical issue in the healthcare field. In rural areas, where nearly 70% of the population lives, there is a shortage of medical facilities, equipment, and doctors. In order to receive medical treatment, patients must travel considerable distances to urban areas.

To address this challenge, Konica Minolta proposed a system whereby a rural clinic can take patient X-rays using portable equipment. The imaging data is then uploaded to the cloud, allowing urban doctors to view the X-rays and make the appropriate diagnoses. A diagnostic pilot project was launched in January 2017, providing the first full-scale medical examination service for that region.

Furthermore, in order to realize an even more cost-effective medical examination service, Konica Minolta is currently collecting data to enable the incorporation of AI and analytical technologies into the system in order to screen out suspected abnormal X-ray images and to automate the primary screening. This project was adopted by the Japan International Cooperation Agency (JICA) for its fiscal 2017 survey of businesses (SDG businesses) to help solve issues in developing countries. Konica Minolta will continue to develop activities that introduce and expand health examinations in Bangladesh.

X-ray exam using mobile imaging equipment