

# Meiden Customer Center

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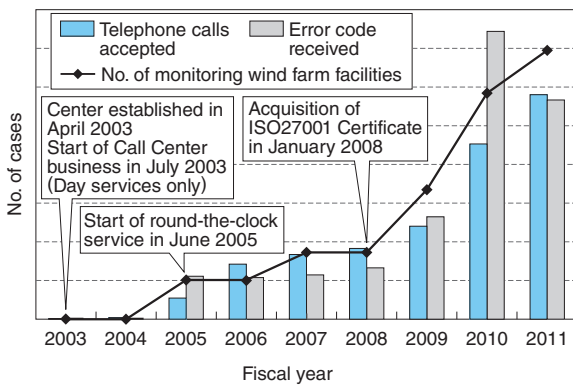
## Abstract

The call center is a first-contact point that links an enterprise with its customers. It comes in a variety of modes according to the type and scale of business. In terms of functions, it is classified into both a message receiving (inbound) business and a message forwarding (outbound) business.

Meiden Customer Center is our “window to the customer” for the Meiden Group. It works as a call center mainly with the inbound business. In addition, it also serves in the remote monitoring of customer facilities and the operation of supporting business for wind power generating facilities. Through the above-mentioned activities, we are offering 24/7/365 services trusted by our customers.

## 1 Preface

Since June 2005, Meiden Customer Center became a customer service organization offering round-the-clock services (24/7/365 service). At present, the availability of the call center is high and the number of incoming telephone calls shows an increase of about 13 times more compared with 2005. Fig. 1 shows the trend of incoming calls for telephone information services and the number of conducted remote monitoring and error code receiving services.



**Fig. 1** Transition of Incoming Calls for Telephone Information Services and Number of Conducted Remote Monitoring and Error Code Receiving Services

Trends of incoming telephone calls and remote monitoring and error code receiving service are shown since 2003 when Meiden Customer Center was established.

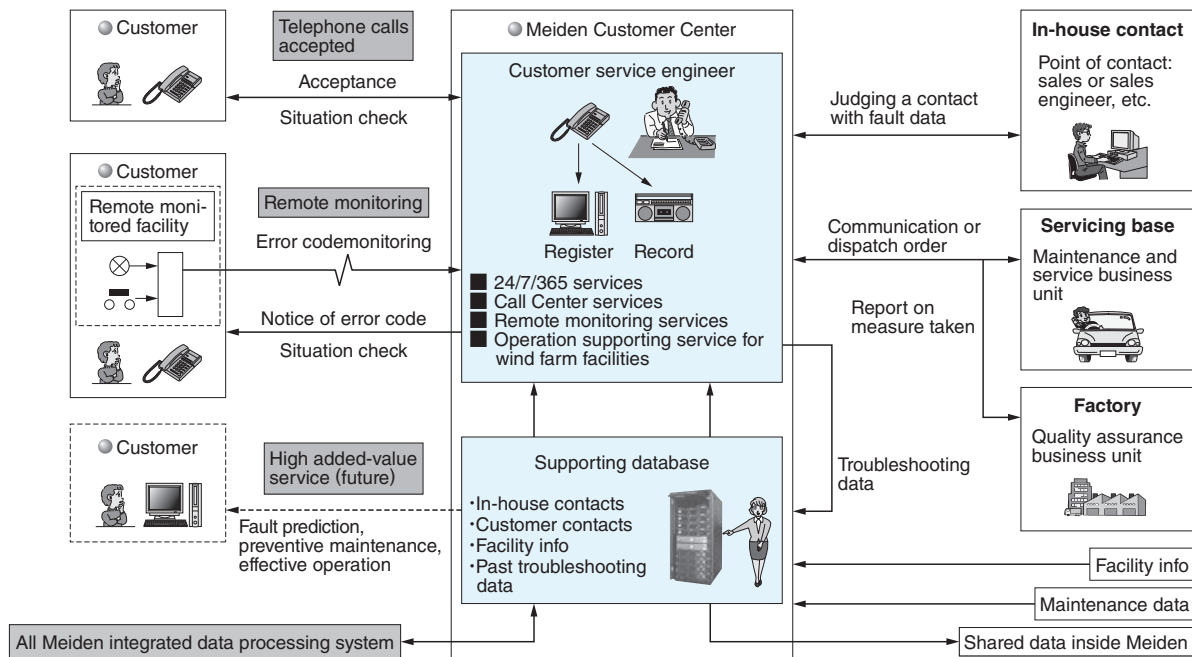
In regard to remote monitoring service business, power incoming and distribution facilities are monitored in 27 locations and the operation of more than 70 wind farm facilities is supported. In particular, compared with cases in 2005, the number of wind farm facilities being monitored has increased up to 3.5 times. As such, the roles of operators have also increased; therefore, both the capacity improvement of call accepting and the modernization of facilities subsequently became pressing requirements.

Meiden Customer Center dedicated itself to the effective arrangement of the operation environment, efficient operation supporting business for wind power generating facilities, and activities for Information Security Management System (ISMS). Such activities are intended for the qualitative improvement of business. Subsequently, a system was established that can offer prompt and favorable services to the customers. Fig. 2 shows the service network at Meiden Customer Center.

This paper deals with a part of business at Meiden Customer Center.

## 2 Arrangement of the Operation Environment

As business at Meiden Customer Center went on to increasingly complicated multi-tasks, operators began to be required to perform as many as triple roles. Regardless of the complexity, we must



**Fig. 2 Service Network of Meiden Customer Center**

Outline of customer service network is shown with a focus on Meiden Customer Center.

offer the same level of services to the customers despite differences in operator skills.

The requirements for operators are to have a uniformed “servicing quality” and “efficiency” where servicing time and procedures are not wasted. To realize these requirements, the following activities were carried out.

### 2.1 Introduction of Computer Telephony Integration (CTI)

CTI is a technique to integrate telephone functions in a computer system. This technology is widely used in the business of call centers where operators speak with customers by means of telephony. This system is provided with various functions such as telephone exchange, screen popup, and speed recording among others.

The CTI at Meiden Customer Center is linked with the database of fault information management system (MICCS). It is a core system actively utilized in various business processes at the related domestic sectors, such as recording of hazard data from initial acceptance to the completion of a task, establishment of reports, distribution of information, and so on. In addition, the MICCS has a database to deal with basic information and facility data of the customers. Interlinked with the MICCS, the CTI displays the customer’s info on the operator screen when the telephone call has been accepted. The

operator can take exact actions according to the customer’s requirements, browsing the past history of correspondence.

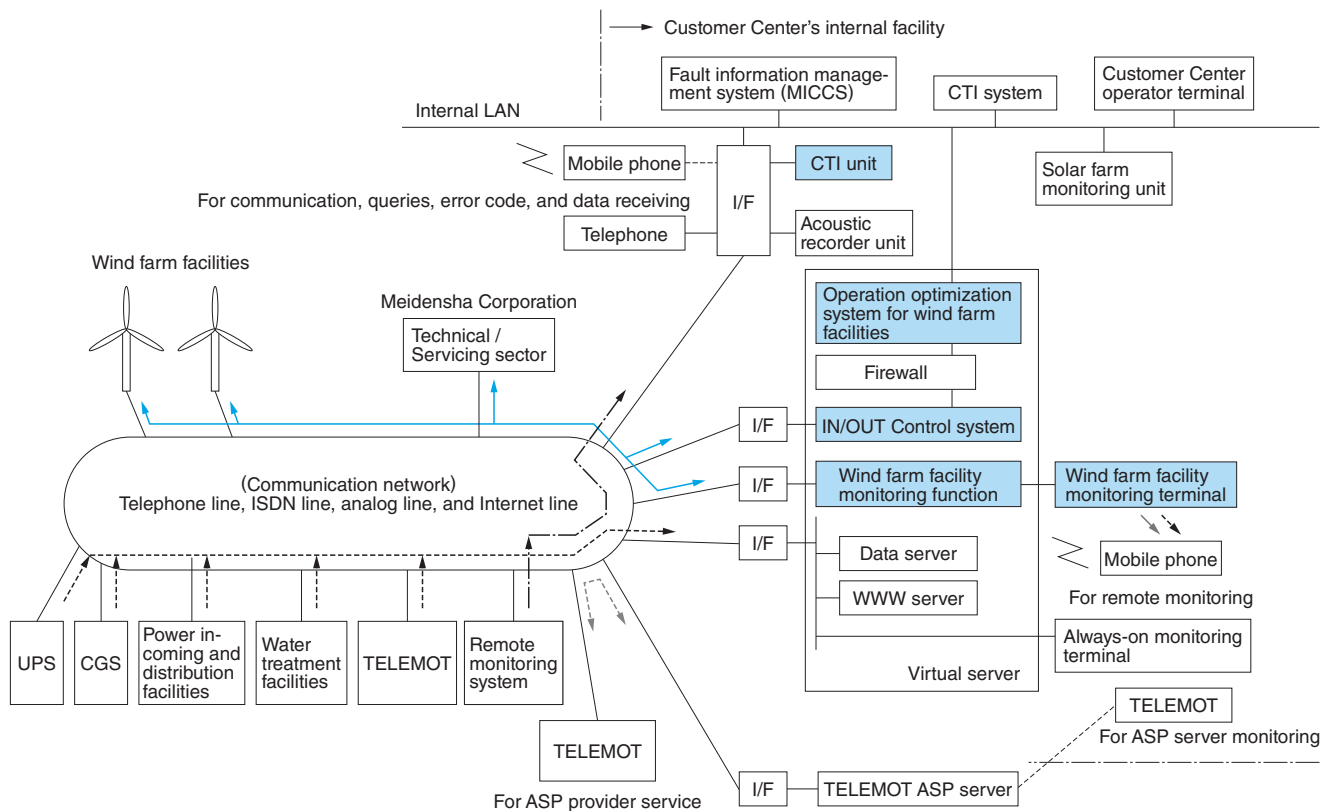
### 2.2 Virtualization of Information Processing Facilities

Virtualization is a technology used for the flexible allocation of resources for composing processors, memories, discs, and such computer systems without depending on any physical configuration. With this technology, only one physical server can be logically split into multiple machines so that each virtual machine can actuate another OS or application.

At Meiden Customer Center, virtualization of a server group was started as an opportunity for taking measures for obsolete facilities, so that the system can take flexible actions in order to cope with a multiplexed business and layout changeover. Through the virtualization of applications needed for business and client machines, operators can accept telephone calls and perform monitoring services for multiple locations from one place and such treatments can be carried out efficiently. Fig. 3 shows the outlined operation system at Meiden Customer Center.

### 2.3 Utilization of Exclusive Tools

(1) During business at Meiden Customer Center, the contents of telephone calls for queries from customers and communication in regard to problems



**Fig. 3 Outline of Meiden Customer Center Operation System**

The outline of Meiden Customer Center operation system is shown.

range widely. In some cases, special actions have to be taken for each respective customer. Operators respond to the customer following predetermined steps. For this purpose, various data in regard to products and communication methods are always saved in the commonly used database. With these provisions, operators can respond to the customer efficiently without being influenced by their experience and skills.

(2) For remote monitoring business, power receiving and distribution facilities, Cogeneration Systems (CGS), Uninterruptible Power Systems (UPS), various plant facilities, etc., are monitored. Since systems can differ according to each respective facility, it is necessary to distinguish multiple systems when grasping the situation of the operation there. Accordingly, we established a dedicated tool with which the operating conditions of each facility can be displayed intensively and set up an environment where operators can perform uniform control of each facility.

Thanks to the adoption of such upgrades, business at Meiden Customer Center has been greatly improved in regard to “servicing quality” and “efficiency” per operator.

### 3 Optimization of Operation Supporting Business for Wind Farm Facilities

We had been an authorized distributor of REpower Systems SE (“Repower” hereafter) which is a German supplier of wind power systems. We distributed the REpower wind turbine products in the past and are still an authorized service provider for the maintenance services of the supplied units. We are also a supplier of its Permanent Magnet Generator (PMG) and converters for the wind farm facilities made by The Japan Steel Works, Ltd. Presently, about 70 wind farm facilities are working and Meiden Customer Center is providing around-the-clock monitoring services for these wind farm facilities in cooperation with our service business units across Japan so that these facilities can maintain stable operation.

#### 3.1 Operation Supporting Business for Wind Farm Facilities

Operation supporting business for wind farm facilities comprises 90% of our operator services. Major aspects of this business entail:

- (1) Remote monitoring
  - (a) Periodic monitoring conducted twice a day
  - (b) Reception of alarms and taking measures for restoration
  - (c) Communication with customers, wind power system suppliers, and our service business units
  - (d) Drafting and submission of service reports
- (2) Operation control
  - (a) Stop/Start operation for wind farm facilities in support of the service work onsite
  - (b) Facility management for the ingress and egress of field service engineers (“IN/OUT control”)
  - (c) Record and control of scheduled maintenance work

### 3.2 Utilization of Operation Supporting Tools for Wind Farm Facilities

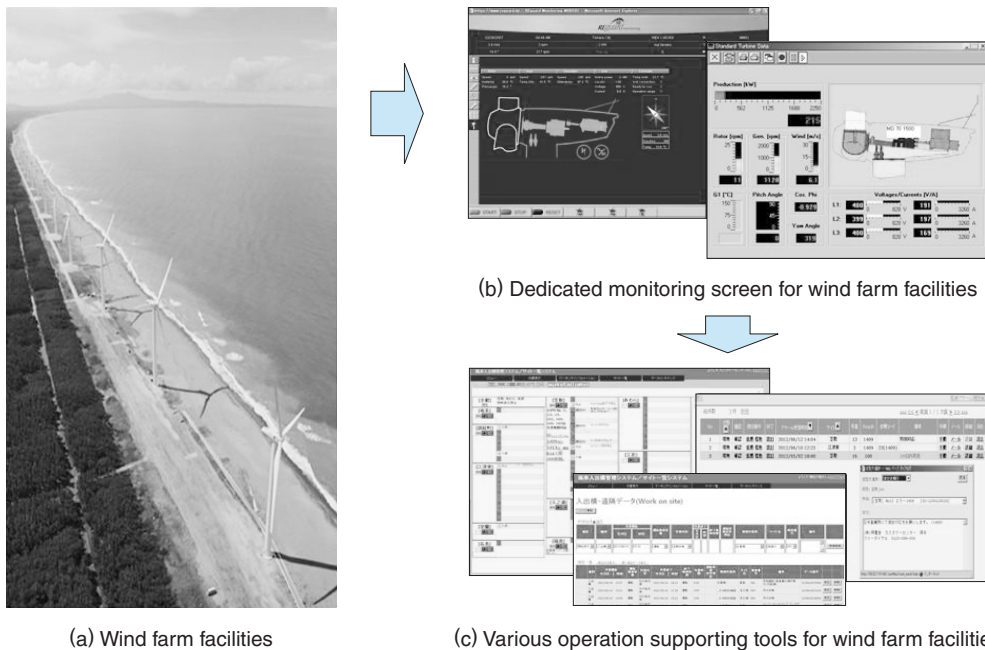
In European countries and China, constant and stable wind blows throughout the year. Compared with these countries, wind farm facilities in Japan are installed in the mountains where the effects of typhoons, lightning strikes, heavy snowfalls, etc., are ever-present. Thus, they are exposed to tough climatic conditions and stable operation is sometimes a challenge to carry out. Therefore, the wind farm facilities of Japan are provided with failsafe functions to protect them from sudden climatic changes. In the case of extremely strong wind, for

example, an alarm may indicate even though there is no problem in the facility and its operation is automatically halted. In such a case, an operator may confirm the conditions for restart. However, the operator may have to treat multiple alarms at the same time in responding to multiple generator sites in the farm. In addition, there is sporadic business communication from field service engineers at each generator site in regard to their IN/OUT control information. As mentioned above, the business of remote monitoring for wind farm facilities is required to take multiple operating actions at the same time. As a result in some cases, operators cannot follow up on their operational steps and may even have an occurrence of human error in the worst case scenario.

Consequently, Meiden Customer Center realized a method of prompt treatments by using the operation supporting tools specified below. **Fig. 4** shows the operation supporting tools for wind farm facilities.

#### (1) Operation optimization system

The operational steps of error code handling for wind farm facilities are “receiving error code notice mail” → “confirmation of error code” → “restart measures taken according to manual” → “mail transmission to related persons” → “recording.” The operation optimization system is a tool where such processes are semi-automated and multiple operators can use this system simultaneously while



**Fig. 4** Operation Supporting Tools for Wind Farm Facilities

Tools used in operation supporting business are shown for wind farm facilities.

watching the Web screen. With this function, more than ten minutes of work time formerly consumed have been reduced to half. The recorded data can be browsed at our related service units so that the data can be used effectively for fault statistics and preventive activities.

#### (2) IN/OUT control system

The common use of monitoring function for IN/OUT situation of field service engineers at the wind farm facilities is an important feature with respect to the prevention of accidents. The IN/OUT control system is a tool to register the IN/OUT status of field service engineers by using their mobile phone's Web functions of mobile phones at the site. The result of registration is automatically reflected in the directory of operating conditions at each site. In addition, scheduled power outage and working schedules can also be registered. Since the information can be used in common, the registered data can be seen also at our related servicing units.

## 4 Activities for ISMS

In order to protect the customers' information from the threat of disasters, accidents, crimes, errors, etc., Meiden Customer Center began to promote the acquisition of ISMS in 2007. In 2008, we successfully received the ISMS Certificate (ISO27001) which calls to observe the policy of keeping confidentiality, integrity, and availability of information.

### 4.1 Confidentiality

Meiden Customer Center is located in the main building of Meiden Numazu Works which is a manufacturing hub of Meiden Group in Japan. The operator room is visible to visitors from a window only during their inspection tour. For entry, only authorized employees with ID cards can enter the room in order to keep confidentiality.

Regarding communication lines for remote monitoring service, the Virtual Private Network (VPN) is used; therefore, only authorized personnel with an access code can gain access to the facilities under Meiden Customer Center.

### 4.2 Free from Illegal Access and Data Alternation

The customer information handling at Meiden Customer Center is controlled in accordance with the ISMS Standard procedures. In this manner, cus-

tomers' information is protected against illegal access and data alternation.

### 4.3 Availability

In order to provide round-the-clock service, Meiden Customer Center has a power backup system by an emergency generator to avoid service interruption. The main building has an anti-seismic structure similar to the level of the data center. In addition, its IT system's has a redundant system using the Redundant Arrays of Inexpensive Disks (RAID) configuration.

### 4.4 Purpose of Information Security

What matters for the IMS is to practice the procedures on a daily basis rather than simply just building such system. At Meiden Customer Center, a fiscal goal is defined every year and ISMS committee meetings, internal audit, and external audit are periodically carried out. Such activities are maintained with the management tool of the "Plan Do Check Act (PDCA)" cycle. Through the above-mentioned ISMS-based activities, we contribute to continuous and stable service operations and the improvement of the corporate value of Meiden Group.

## 5 Postscript

So far, Meiden Customer Center has made every effort to meet the customers' requirements above and beyond conventional call center services. In particular, we consider that we could have contributed to our environmental business through our remote moving operation support for wind farm facilities.

It is expected that in the future, Meiden Customer Center will take on many diversified roles. Possible future challenges are to build a backup center in the event of a large-scale and wide-area natural disaster in Japan which is anticipated to occur in the future, and to build a servicing organization interlinked with Meiden Group at home and abroad. We will aim to make Meiden Customer Center as beneficial and convenient of a servicing organization for our customers.

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