

Panasonic Toughpad Case Study

Logistics

| Client | TAKEEI CORPORATION
 | Business | Industrial waste treatment business
 | Product | Toughpad FZ-B2

TAKEEI CORPORATION has introduced the Toughpad FZ-B2, which can individually manage the data of waste collection containers and which can perform data entry into electronic manifest systems, bringing innovation to industrial waste collection and transportation processes.

TAKEEI CORPORATION (TAKEEI), a flagship company of the TAKEEI Group, is striving to fulfill the aim of contributing to the development of a sustainable society. The company is engaged in providing “one-stop” industrial waste treatment solutions in the construction sector, ranging from waste collection and transportation to intermediary processing, recycling, and final disposal. Construction demand, especially in Tokyo and surrounding prefectures, which are Japan’s leading business areas, is projected to grow. Taking into account such a situation, TAKEEI has introduced Toughpad FZ-B2, a rugged 7-inch tablet, with the aim of further promoting business efficiency. The tablets are handed out to all of the company’s garbage truck drivers, who are in charge of collecting industrial waste. They make the most of FZ-B2 as a terminal to comprehensively support their operations.



Corporate Planning
Division, Corporate
Planning Main Office
Information System Group
Division Chief
Yuuya Oota



Logistics Management
Division, Sales Main
Office
Management Group
Group Leader
Norito Takano



Logistics Management
Division, Sales Main
Office
Management Group
Division Chief
Tadao Koma



(Above image) After entering data into an electronic manifest system with FZ-B2, the staff is asking a client to check the entry content. The tablet's high-resolution LCD is easy to read, even in daylight.

(Left image) FZ-B2 can be installed by the driver's seat and used as a car navigation system.

The tablet is well received among drivers because it is more convenient to operate than general dedicated car navigation systems.

(Right image) Start screen of TAKEEI's original app
Its buttons are so large that even elderly drivers are able to intuitively operate the app.

Background to introduction

To keep up with increasing demand in the construction industry toward 2020,

TAKEEI has constructed a new system that improves business efficiency.

The company has introduced FZ-B2 as an operational terminal that its garbage truck drivers can carry with them.

Looking toward 2020, when the Tokyo Olympic and Paralympic Games will be held, the construction industry is becoming more and more revitalized, and the needs for industrial waste treatment are also growing accordingly. Seeking to seize such a golden opportunity, TAKEEI has faced the task of improving its business efficiency. To address this task, the company has focused more attention on the management of industrial

Why Toughpad FZ-B2 was chosen

Point 1

Dust-, vibration- and water-resistant design, which enables the tablet to withstand the harsh conditions of waste treatment sites

Point 2

A wide variety of options available, including a car mount holder that can be installed in a car and that can provide charging functions

Point 3

Commercial availability for a longer period and with long-term warranty service, which support the management of the tablet for long-term usage



The car mount holder is used to install FZ-B2 by the driver's seat. In-car electric sockets can also be used as the power supply to recharge it.

Mr. Takano said, "It is impossible to maintain a space large enough to store all of our staff's FZ-B2 devices in our office. A great thing about FZ-B2 is that it can be recharged even in a truck."

waste collection containers.

The company has installed waste collection containers at construction sites in accordance with the request of clients. These clients are requested to dispose of the waste generated by their construction sites into such containers and to contact TAKEEI when the containers are full. Then, the company dispatches garbage trucks to the sites for waste collection.

Mr. Takano said, "There are some cases where the utilization rates of the waste collection containers decrease when clients do not request us to pick up waste for a long period. If this occurs during a busy period, it may cause a shortage of available containers and make it difficult for us to keep up with increasing demand. Such a potential problem, which significantly influences our company's sales, drove us to meet the need of more accurately managing the state of the containers."

"We had managed the data of the locations and the number of target containers at the collection sites via our company's database, but could not identify what the individual identification number of each one of those containers was. As it was high time for us to make a reassessment of the then-existing container management systems in terms of their usable life, we decided to construct a new management system in which tablet devices are utilized," Mr. Takano also explained.

At around the same time, TAKEEI elaborated on a plan aimed at the simplification of the process of data entry into an electronic manifest system, as required by the Waste Management and Public Cleansing Law. Previously, the company's garbage truck drivers used mobile phones to enter data into an electronic manifest system. Some drivers complained that the display of mobile phones were too small to perform such task, and others argued that the operation of entering such data via mobile phones was difficult. Given such feedback from drivers, TAKEEI felt that it needed to adopt

tablet devices, in order to further facilitate data entry work.

Mr. Oota told us that his company regarded "ruggedness" as the most important element when choosing a tablet device. This was because the company's truck drivers were expected to always carry a tablet with them in order to both manage the state of containers and to enter data into an electronic manifest system.

He said, "We sought a tablet device with the ability of withstanding exposure to rain and dust, because it would be used at open-air waste collection sites. We eventually decided to introduce Toughpad FZ-B2, although we had compared it with others devices made by four companies. As we also planned to use such a tablet as a car navigation system installed in a truck, we took into consideration whether the device could withstand vibration and whether its display was easy to see when it was installed in a truck. In addition, we had to take due account of how to secure the operation power source of such a device in an outdoor environment because our collection workers often would use the device during the course of their outdoor work activities."

Among the many available tablet devices, Toughpad FZ-B2 is the only device that can be securely installed by the driver's seat and that supports an optional car mount holder that is rechargeable. Those elements were also a decisive factor in the selection of FZ-B2. As FZ-B2 comes standard with a long-term warranty and as the same model type is commercially available over a longer period of time, it is possible to hand out the same model to all of the company's staff. Furthermore, FZ-B2 is more convenient to manage when the company purchases more of the same type of model or has the device repaired. As the above features meet TAKEEI's requirements, the company eventually decided to introduce Toughpad FZ-B2.

Introduction benefits

The accuracy of managing the data of collection containers has been improved, and this has significantly influenced the company's earnings. An improvement in the efficiency of all operation processes, including the allocation of garbage trucks and data entry into electronic manifest systems, has been achieved.

Since April 2016, TAKEEI has handed out FZ-B2 tablets to all of its truck drivers in charge of industrial waste collection and transportation. These drivers have utilized them to carry out the individual manage-

ment of the data of each waste collection container, resulting in an improvement in the accuracy, as expected. They also use FZ-B2 tablets to enter data into electronic manifest systems, and they use FZ-B2 as a car navigation system, thus applying these tablets much more extensively. The introduction of FZ-B2 thus has contributed to the reduction of the workload of those drivers.

Drivers have made the most of FZ-B2, such as for sending and receiving in-house email messages and for taking photographs. This has saved drivers a lot of time and effort regarding the allocation of trucks before they leave for collection sites. FZ-B2 has also enabled drivers to improve efficiency in making their reports during the course of waste collection operations. In addition, the company's office workers have also made use of the tablets to reduce workloads. Thus, the introduction of FZ-B2 has led to the improvement of the efficiency of all work processes at TAKEEI.

A concrete explanation about actual cases of the application of FZ-B2 in each operation process at TAKEEI is given as follows.

Regarding the management of the data of waste collection containers, "In-metal Tags" made by HANEDA ZENITH Co., Ltd., which are solid stainless-steel IC tags that can withstand long-term outdoor use, are attached to each container. Dedicated readers can be used to read the data of the In-metal Tags, which is brought into sync with FZ-B2 via Bluetooth to reflect the information of the containers in the database via the "Container Management System" developed by TAKEEI.

This has made it possible to easily implement the management of the individual identification numbers of each container, which had been one of the challenging issues that TAKEEI had to address. Before the introduction of FZ-B2, it was difficult to follow up on how long each container had been installed at each location. Since the introduction of FZ-B2, however, the tablet can be used to more precisely manage the data of each container. TAKEEI intends to manage the state of each container according to its plan via the use of FZ-B2, contacting its clients before the beginning of busy periods.

Mr. Oota said, "The GPS built into FZ-B2 can be used to track down the locations where waste collection containers are installed. This has allowed us to obtain a rough estimate of the area where each container is installed within the target collection site as well."

"The waste collection sites that we are in charge of include a lot of large ones. The location of installed containers may be relocated to other sites. It is possible for us to further improve the efficiency of container

collection operations as long as we can manage the data of the area where each container is currently installed within a collection site," he said.

Regarding data entry into electronic manifest systems, the large display of FZ-B2 is well received among the company's garbage truck drivers because the high-brightness display is much easier to read when they operate the tablet. The device has also met with a favorable reception by clients at collection sites because its display is easy to read when they check the input data.

Most mobile phones that TAKEEI had used before introducing FZ-B2 often broke down when they were exposed to moisture, rain, and dust. This does not apply to FZ-B2. As it is designed to work even in the rain, the introduction of the tablet is highly expected to prevent the collection operation of the company's field workers from getting behind schedule due to rain. Moreover, the number of labor-hours needed to manage their FZ-B2 devices is less than that of such mobile phones.

Mr. Koma said, "Compared to dedicated car navigation systems, it is more convenient to use FZ-B2 as a car navigation system by linking the tablet with email apps. Our truck drivers make it a rule to check the 'truck allocation information' emails containing the data of the waste collection destination that they take charge of on that day before leaving for the destination. Since the introduction of FZ-B2, the drivers have tapped on the address information provided in email messages on the FZ-B2 screen to run a navigation app that supports the automated search of the destinations' address. Before the introduction of FZ-B2, our drivers had to set a destination via a car navigation system based on the destination's address information on the screen of mobile phones each time they moved from destination to destination. There has been no need to do this since they started to use FZ-B2. Furthermore, the tablet has enabled them to prevent any mistake in input regarding destination address information. These advantages are highly appreciated by our drivers."

Taking into account regulations on large-sized vehicles, TAKEEI made a trial of several car-navigation apps before concluding the introduction of the app it currently uses. A major feature of FZ-B2 is that it can run the very versatile Android operating system. The app can take full advantage of the above feature and supports destination route searching.

Mr. Koma said, "The FZ-B2 display is large enough to read email messages, and it is possible to check PDF files on the tablet. These points also have contributed to a reduction of the burden on our truck drivers."



FZ-B2 enables users to easily check email messages and enter data into a daily report and into electronic manifest systems, while the user sits in the driver's seat in a parked truck. Some field workers operate the tablet with their gloves on.

He said, "For some clients, we need to exchange the map data of their collection sites with them via fax. After the completion of waste collection operations at a site, our drivers used to take the trouble to return to the office to obtain the map data that we received from clients via fax before leaving for the clients' site. If our drivers carry FZ-B2 with them, however, we only have to send an email message to their tablet in order to exchange the map data. This has contributed to an alleviation of the burden on both our drivers and office workers."

TAKEEI currently uses FZ-B2 in ways other than how it initially envisioned: It has used the combination of an MDM (Mobile Device Management) tool and the camera function built into the tablet in order to enable screen sharing. Before the company's workers start the collection of waste or after they complete the collection, they use the FZ-B2 camera function to take photographs of the conditions of the collection sites. The photo data file can be attached to an email message on the spot.

Mr. Takano said, "In the selection of the MDM tool to be introduced, we attached greater importance to its capabilities to support the remote control of FZ-B2 and screen sharing. We thus have decided to introduce the service tool, 'MobiControl,' supplied by Soliton Systems K.K. The service's screen-sharing function is very useful both in ordinary times and in emergency situations, including traffic accidents."

He said, "When our driver was involved in a rear-end collision accident some days ago, he ran the camera built into his FZ-B2 for screen sharing. This enabled us to monitor the condition of the accident scene in real time on our PCs at the office. As we grasped what was going on at the scene with

extraordinary speed, we successfully responded to it quickly. In case our drivers have difficulty operating their FZ-B2 because they are badly upset, we can use 'MobiControl' to remotely start the camera function of their device from the office. The tool is thus useful as a kind of insurance policy against future emergency situations."

Mr. Oota told us about another way to utilize the MDM tool.

He said, "We are currently preparing video operation manuals designed for drivers who have never used a tablet device or smartphone before. Even if our drivers forget or are unsure of how to operate their FZ-B2 devices, we can take advantage of the MDM tool's screen sharing to remotely support them. Specifically, the sharing function enables us to remotely monitor the screen of FZ-B2 that those drivers are operating, to give instructions to them while watching the monitor of our PCs at the office, and to remotely control their FZ-B2 from the office. The reason why we have successfully introduced 'MobiControl,' which has had a lot of success in the international market, is because FZ-B2 is a global top-level tablet that supports various apps."



The In-metal Tags are attached to each one of the containers. Dedicated readers can be used to read the individual identification data of each container from the tags. The container data can be brought into sync with FZ-B2 through Bluetooth so as to easily reflect the data in the company's database.



Here, FZ-B2 is being used to take photographs of the conditions of the collection site before starting the collection of waste and after completing collection. Before the introduction of the tablet, the company's garbage truck drivers often needed to carry both a digital camera and a mobile phone with them as needed in order to take photos when they visited a collection site. The introduction of FZ-B2 has enabled them to eliminate such need.

Future outlook of using Toughpad FZ-B2

TAKEEI will strive to foster a significant reduction in the usage of in-house paper documents and the ordering quantity of office equipment in order to further improve business efficiency by linking FZ-B2 with its corporate mission-critical systems.

Since the introduction of FZ-B2, TAKEEI has been accelerating its efforts toward the advancement of the computerization of its operations. According to Mr. Takano, the company will start to use a cloud computing system to manage the map data of waste collection sites over the Internet in the next fiscal year. He said, "Under our current system, documents including the maps of collection sites are stored in paper form at the office."



An MDM tool can be used to remotely share screens with each tablet device and to remotely control each tablet device. This is of great utility when instructions on how to operate FZ-B2 are given to the company drivers that might be unfamiliar with tablet devices.

So far, our truck drivers make it a rule to visit the office to pick up the maps every time there is a change to them. Going forward, we are going to establish a cloud computing environment that enables us to manage all the data of such maps via a cloud server and to see the data on the FZ-B2 screen."

TAKEEI will convert the paper forms of its job cards and slips into electronic format, and will link FZ-B2 with its corporate mission-critical systems to improve the efficiency of various internal operations, such as work shift management and office equipment ordering. Mr. Takano said, "Among our operations other than those mentioned above, there are still some operations left to which we can apply the FZ-B2 functions in order to further improve operational efficiency. Since we have extra resources left over because we have successfully improved the efficiency of our office work, we will focus such energy on the support of the operations of our garbage truck drivers." Some of the company's staff that are on permanent duty at waste treatment plants and collection sites are also hoping to use FZ-B2 and other TOUGHBOOK models. In response to such a request, TAKEEI will explore the possibility of expanding the introduction of those devices to other operations across the company.



Product: Toughpad FZ-B2
Purpose: System for managing the state of waste collection containers

Benefit 1

Increased accuracy of the data management of garbage collection containers so as to optimize the utilization rates of the containers

Benefit 2

Improvement of the efficiency of making a report to reduce the workload of the company's garbage truck drivers

Benefit 3

Enhanced worker mobility so as to respond to increasing demand

* Information in the article is current as of the date the interview was conducted (February 2017).

For inquiries, please contact: