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Kazuma Endo
Director
Commerce and Industry Promotion Division
Industrial Promotion Department
Tsubame City



Tsubame City is leveraging Fujitsu's IoT expertise to boost the productivity of local industry.

At a glance

Country: Japan

Industry: Manufacturing

Website: www.city.tsubame.niigata.jp

Challenge

Tsubame City is a centre of Monozukuri, the craft of making things. It wanted to leverage IoT to maintain the competitiveness and productivity of its companies when work is divided among multiple SMEs and difficulties exist for large scale investment.

Solution

Fujitsu's IoT solution visualized the manufacturing process and made information available in real time in the cloud, making it possible to share information on what was being done and where across multiple companies.

Benefits

- Strong results verified in validation experiments conducted for IoT which may commence at low budgets
- Improved efficiency achieved for work by adding IoT to the conventional work flow
- Automatic readings by sensors reduced time required for making entries by about 80 per cent.

Customer

Tsubame City, Niigata Prefecture, has long been known for its Monozukuri (craft of making things), with a long heritage of metal production. In particular, its production of metallic tableware, such as forks and spoons, comprises about 90 percent of Japan's domestic market share and its metal products are used in an array of products that range from daily household items to industrial machinery.

Products and Services

■ Fujitsu IoT Solutions

Adapting to Industry 4.0

Tsubame City's metal products enjoy global acclaim. The Mayor of Tsubame City, Tsutomu Suzuki, attributes this global success to the strong ties between different companies. He comments: "There are about 2,000 manufacturers in Tsubame City, and we have a structure in place where a single product is manufactured through divided work that's handled by several companies. Because of this, the entire city is linked like a single factory, and each company leverages its strength while dispersing the risks."

While a manufacturing structure composed of divided labor has its strengths, it also presents challenges. Mayor Suzuki says; "These years are called Industry 4.0 and the introduction of IoT and AI is spreading throughout the world, including the front lines of Monozukuri. While large amounts of funds are needed for facility investment, most of the manufacturers in Tsubame City are small-scale businesses. It isn't easy for them to make major investments. And amid these conditions, the challenge is how they will be able to maintain their high level of competitiveness."

Tsubame City asked several companies for solutions that leveraged IoT. Of these companies Fujitsu offered a proposal that best matched the local industry in Tsubame City. "We had ties to Fujitsu, having had its cooperation in an ideathon / hackathon initiative in the past," said Kazuma Endo of the Commerce and Industry Promotion Division, Industrial Promotion Department, Tsubame City. Fujitsu's proposal was accepted, taking the form of a three-week IoT validation experiment.

Improving manufacturing efficiency through smarter collaboration

Fujitsu's solution was to make the manufacturing process visual through leveraging IoT to improve efficiency through greater collaboration. The system completed was a combination of IoT and analog. It stores paper slips where work instructions are written in a clear file built into the IC tags, which are then placed in a document mailbox equipped with a sensor, automatically recognizing the movement of documents and allowing the information to be accumulated in the cloud, making it possible to share information on PC screens about the manufacturing process in real time what is being done where and when.

Minoru Ikeda senior managing director at Ikeda says that making the manufacturing process visual has significantly improved work efficiency. "All you need to do is look at a PC screen and you can see the manufacturing process at each company, and we've eliminated the efforts required for checking the progress status or making phone calls, so now we're able to create schedules effectively. As a result, we've been able to reduce the time required for overall procedures."

Mr. Bamba in the manufacturing division of Ikeda, had been chiefly responsible for entries in forms, and commented. "All information on what to make, how many to make, and how to make them had previously been entered manually. After the introduction of the new system, all we have to do now is to enter the basic information at the beginning, and from there on, simply place forms in the mailbox for automatic readings. The work that used to take four to six hours on average has been reduced to one to two hours, and I think we're seeing a decrease in errors due to manual work."

Leveraging digital technology to develop local industry

Mr. Endo would like to involve more of the younger generation. "I was happy to see many young employees at Ikeda working hard on this particular project. It was a positive initiative of bringing in a new wind and leveraging new technology to deal with issues like an aging and decreasing population."

Mayor Suzuki was also enthusiastic about the potential for local industries. "I again realized that IoT and AI can be used for all types of situations like in improving productivity and quality control. And I'm thinking about leveraging these for passing down the techniques possessed by craftsmen in the future. While it may be difficult to digitalize the senses of human hands, I'd like very much to take on this challenge to pass on the technology of Tsubame City to the younger generation. Our city and our industries will continue to work together as one as we aim to create things that can only be made by Tsubame and are of great quality because they're from Tsubame."

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Contact a representative at: AskFujitsu@uk.fujitsu.com