01
Steel Business

Global leadership in IT, creating customer-focused value, and responding quickly to changes through continuous reform and strategic IT

Hironori Fukushima Senior Vice President

As a number of cutting-edge ICT solutions incorporated AI technology are commercialized these days, JFE Steel hopes to make business reforms by utilizing those solutions proactively. However, without being influenced by any uncertain or exaggerated information, our systems division needs to ascertain with certainty those solutions, particularly from the aspect of information security. Our mission is to achieve our sixth medium-term business plan by addressing issues with decisions and actions based on constantly ensuring that our systems are consistent with our customers' needs as well as our corporate management needs. This will result in the promotion of JFE Steel's DX (digital transformation).

JFE Steel's IT Vision and Three Strategic Themes

JFE Steel's Vision

Be a global steel supplier that always creates new value and grows with customers

Provide restructuring support for better business management

Address the needs of management and business divisions

JFE Steel's IT Vision

Global leadership in IT, creating customer-focused value, and responding quickly to changes through continuous reforms and strategic IT

Achievements

Synergistic effects

1 Execute IT structural reforms

Upgrade systems at steelworks

Realize a flexible, change-tolerant IT structure

2 Raise our level of IT use

Promote business reforms and the latest advancements in IT

Improve dramatically in speed of business operations

3 Reinforce our IT risk management

Enhance security and standardized controls

Enhance the security environment for IT

IT Innovation Leading Department

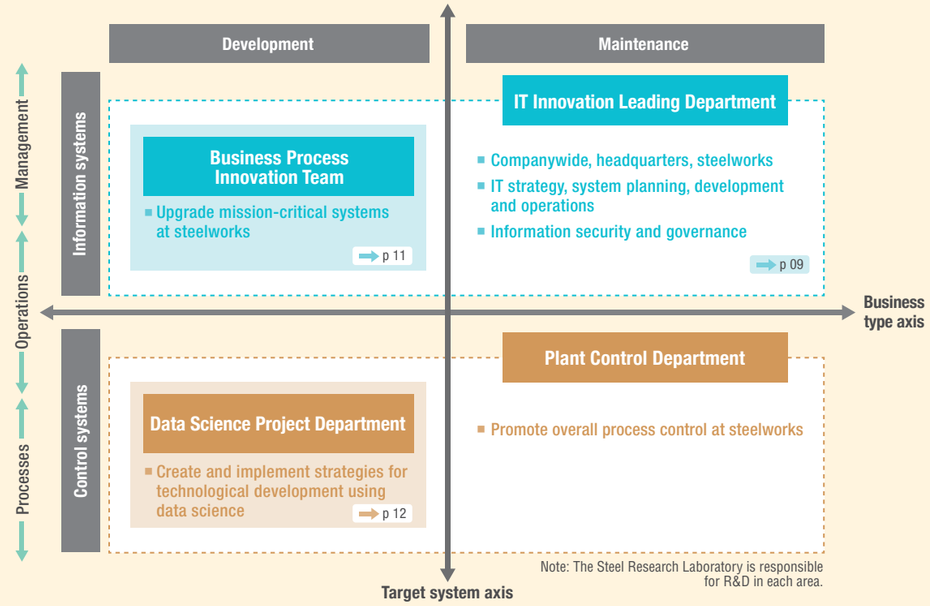
To address key business issues and also structural issues related to our business operations, our department works with other business divisions to facilitate the use of the latest ICT and to implement business reforms. This is competitive IT. We are also working to establish a secure IT environment in terms of infrastructure as well as application systems and then enhance this environment even further. This is defensive IT.

Business Process Innovation Team

Upgrading legacy systems is a management issue that we are making every effort to address. We are using the latest ICT and promoting data science and other forms of sophistication of data use to steadily reform our operations and build flexible systems that can adapt to operational changes. This is a huge project, the likes of which have not been seen before.

Akira Nitta
Vice President

System Division Structure

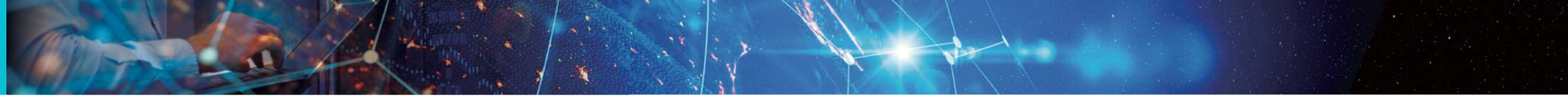


Note: The Steel Research Laboratory is responsible for R&D in each area.

Data Science Project Department

We take a companywide perspective in efforts to systematically and efficiently apply IoT technologies, AI, and data science mainly for equipment, processes, and operations. We have begun by strengthening our data-collection platform for all kinds of processes, and are working to raise quality assurance and quality control levels through data usage consistent across multiple processes, while also using data seamlessly throughout the company to boost operating efficiency and cut costs.

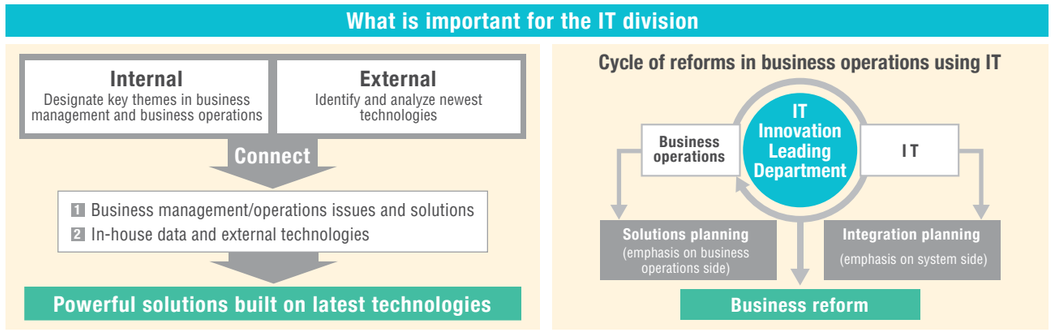
Akira Kazama Vice President



IT Innovation Leading Department

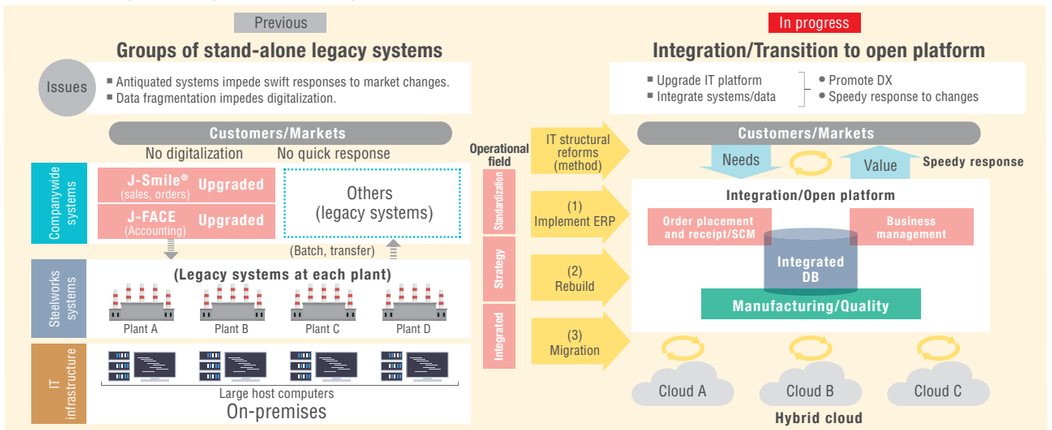
The IT Innovation Leading Department's mission is to encourage reforms in business operations using the latest technologies, see that changes are implemented and then track the results in terms of IT optimization, particularly for infrastructure and security. What is important for us right now as an IT division is to work as a team, with each business division designating key themes in management and business operations. Together, we implement solutions that tie in the latest research in ICT and possible applications. Significant projects require coordination with the basic IT strategies of our IT Steering Committee and have the management team sign off on the plan before solutions are implemented.

We encourage reforms in business operations using IT, see that changes are implemented and then track the results in terms of IT optimization. (IT Innovation Leading Department's mission)



JFE Steel's Companywide (Corporate) IT Strategy

We are upgrading legacy systems and promoting DX (digital transformation), while also building and transforming our IT platform into one that can respond swiftly to external changes.



Promoting DX by reforming IT structure that can respond flexibly to external changes!

JFE Voice!

I have been involved in IT infrastructure planning and management and recently been working on reforming head office systems such as the J-Smile® system for sales and orders. We are migrating to open platforms while maintaining to the greatest extent possible the quality of systems that operated on host computers. At the same time, we are working to link peripheral systems, increase operational efficiency and implement measures to recover from disasters. As our work has a broad scope, there are many challenging aspects. Therefore, we cooperate with team members in a variety of positions inside and outside the company, to accelerate our response to external changes and promote DX.

Kenichi Kobayashi, IT Innovation Leading Department

Innovating and standardizing operations by upgrading groupwide accounting system

By introducing the world's latest ERP, upgrading mission-critical systems and pursuing business reform

81 companies including JFE Holdings and JFE Steel are standardizing accounting operations

Recognizing the need to review its IT backbone to support business development in Japan and overseas, comply with International Financial Reporting Standards (IFRS) and make operations smoother and more efficient, the JFE Group upgraded the mission-critical J-FACE system in February 2018. Under a strict policy of building new operations and systems that make maximum use of products' special features, the system was introduced at JFE Steel and JFE Holdings over nine months, and we were able to complete the rollout at 79 group companies in the short time of 11 months. The groupwide accounting system reduced the number of servers used by 75% and achieved a reduction in running costs. This project was highly recognized outside the company as well, receiving awards at the SAP Innovation Awards 2018 and the Japan Institute of Information Technology's Special IT Award (System Integration Prize).

Project issues

(1) Requirement to comply with IFRS
(2) Support period nearing end (remaining time: server–1.5 years; ERP–2 years)
(3) Complicated system with many add-ons (more than 120 peripheral systems)
(4) Transfer to include group companies (81 companies)

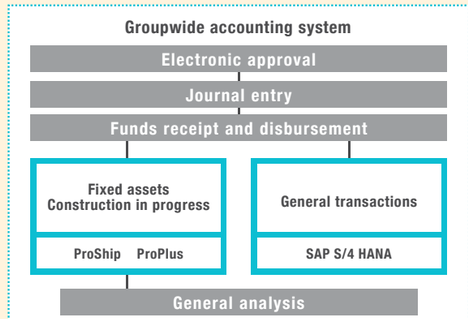
Project concept

Swift construction of a simple accounting system to be used as the de facto product at many major companies in Japan and overseas to support global management

Project results

Quality	Zero major setbacks!
Costs	Within initial budget!
Delivery	As initially planned! JFE Steel: 9 months/Group: 11 months

Structure after system upgrade



Results of system upgrade

1 Development costs	vs. development from scratch	-63%
2 Development time	vs. development from scratch	-66%
3 Number of servers	vs. previous	-75%
4 Running costs	vs. previous	-17%
5 Number of ledgers	vs. previous	-55%

Zero problems in fiscal 2018 year-end settlements

Operations that previously differed at each plant or group company were standardized, making handovers smoother when staff are transferred.

External recognitions/External cases

2018 IT award	IT Award "System Integration Prize"
SAP Innovation Awards 2018	Awarded "Regional Choice" as example of best innovation leadership in Asia-Pacific region
Article in Gartner report	Reported as successful example in "Postmodern ERP Project: Tips for Successful Project Completion"
Discussions on project with outside companies	Many companies including major electric power, insurance and electronic controls companies held meetings to discuss the project.

Project team worked as one to upgrade the mission-critical accounting system in a short time!

JFE Voice!

More than 10 years have passed since the introduction of the J-FACE, groupwide accounting system, and this was a major change of the mission-critical accounting system that users had become very familiar with. We were, therefore, faced with the issues of sufficiently explaining the purpose and reasons for the upgrade and training users in the use of the new system, within a short period of time, and almost everyone involved in the project participated in these activities. Going forward, we hope that J-FACE will be helpful in increasing convenience for users and innovating operations.

Minako Nakai, Accounting Department

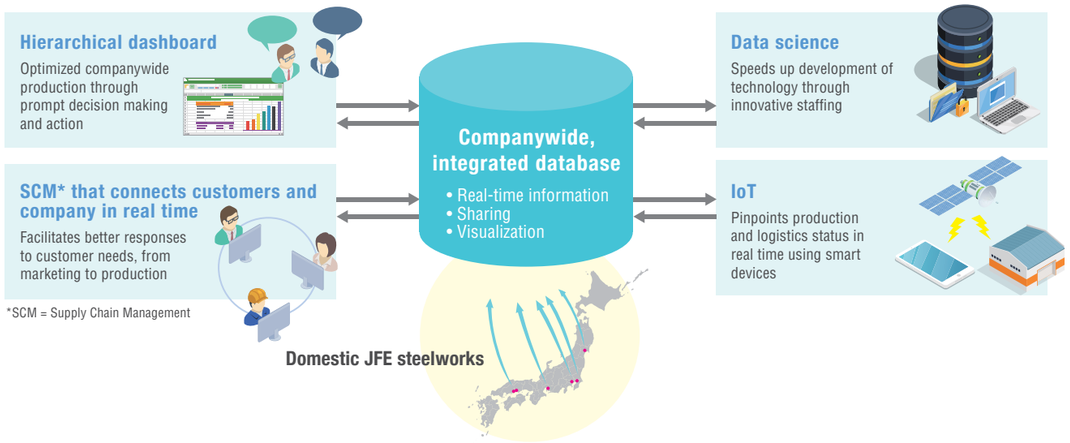
Business Process Innovation Team

Reform mission-critical systems at steelworks using the latest ICT
Create new value through reforms in business operations

We are reforming mission-critical systems at steelworks under the following policy: (1) Rebuilt a system platform using the latest ICT; (2) Redefine operational processes to pass on manufacturing expertise and introduce standardized operations; and (3) Create an integrated database with a standardized data structure.

Through this system upgrade, we aim to create an operating platform that shares and uses all companies' data with all employees, and to transform work styles to create new value.

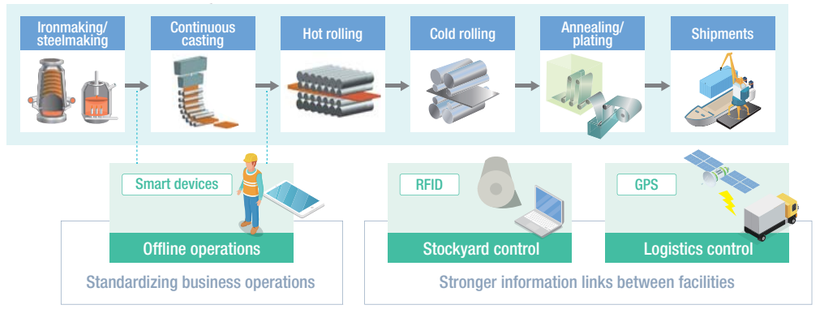
New work styles realized through system upgrades



Enhanced production control

JFE Steel fell behind in its systemization of offline operations but has been working to reverse the situation and realize standardization, and also link the movement of objects and equipment at manufacturing sites in real time using advanced IoT options.

The companywide integrated database pulls together all this information for the formulation of ideal overall production targets and the realization of integrated production control beyond the domestic network of steelworks.



Contributing to the construction of a system platform for the future

JFE Voice!

Since joining the company, we have been responsible for manufacturing thick steel plates. Now, we are working on the project to reform the mission-critical system for thick steel plates, with responsibility for designing the screens for operation-use terminals and supporting the development of related functions. Along with reforming a system that is easier to understand and easier to use, we are contributing to the construction of a system platform that can enhance operations and make them more efficient in the future.

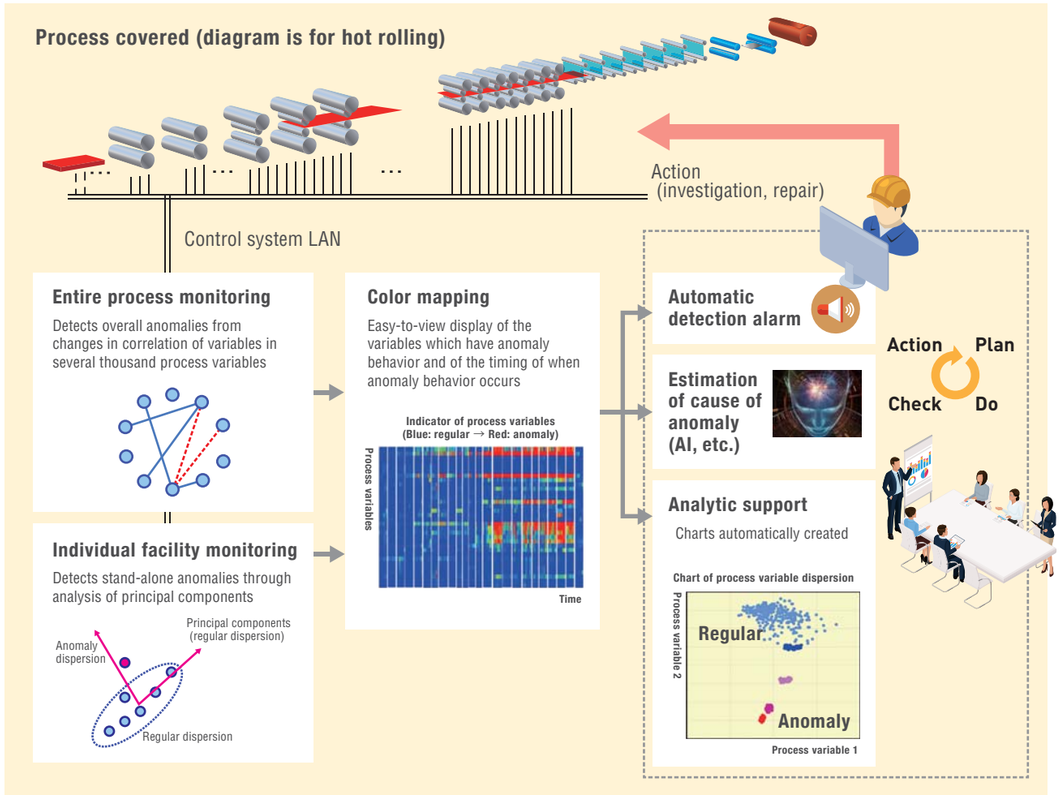
Kenta Taguchi, Tatsuo Inomata, Daisuke Enoki, Business Process Innovation Team

Data Science Project Department

Using data science to detect even small, difficult-to-identify anomalies
Achieving stable operations in steelworks processes!

It is important to maintain sound and stable operations in all steel manufacturing processes, which encompass many upstream and downstream processes. We have developed a framework to warn maintenance operators to detect even small, unanticipated, difficult-to-identify anomalies by using advanced statistical analysis, and are working to introduce this in all processes.

Automated monitoring for anomalies in both the level of the entire process and individual facilities in manufacturing processes



DS technology deepening technologies used at worksites

JFE Voice!

I am currently developing technologies to diagnose equipment anomalies using big data analysis technologies.

As we implement the concept of preventive maintenance, we are developing proprietary systems that automatically detect anomalies and announce methods for addressing and possible causes of the anomaly, to accelerate the on-site response.

Tatsuhiro Sue, Hot Rolling Technology Section, Hot Rolling Department, West Japan Works (Kurashiki)