

Mitsubishi Compressor After-sales Portal



1
General instruction of
After-sales Portal

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Security

1. General instruction of After-sales Portal

After-sales Portal (AP):

- 1 Communication platform between Customer and MCO
- 2 Knowledge database for such as documents, technical bulletin, Recommendations, etc.
- 3 Helps to save time by easy-access to informations.
- 4 Offers services for turnaround with time flame.
- 5 Available 24/7.



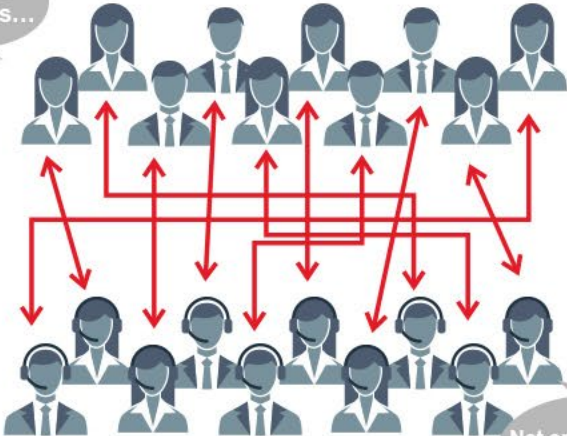
1. General instruction of After-sales Portal



Case01

Communication between Customer and MCO

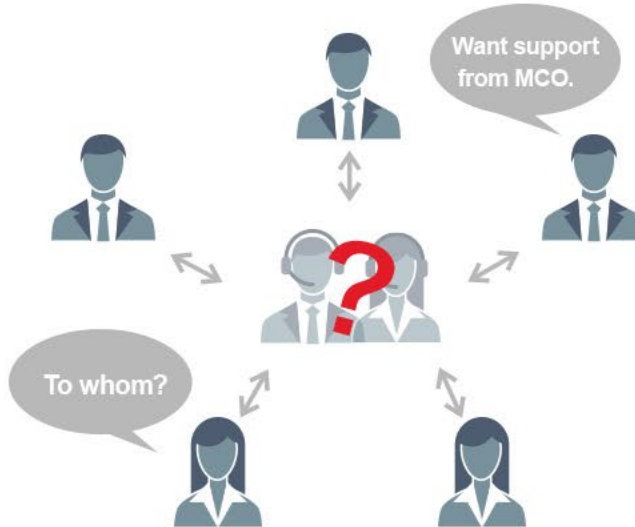
Several players...



Not organized communication...

Case02

Whom to contact?



Case03

Document share



1. General instruction of After-sales Portal



Customer



MCO AFTER-SALES PORTAL

Case01

Information and logs you need are stored in AP, and effective communication could be through AP.

Case02

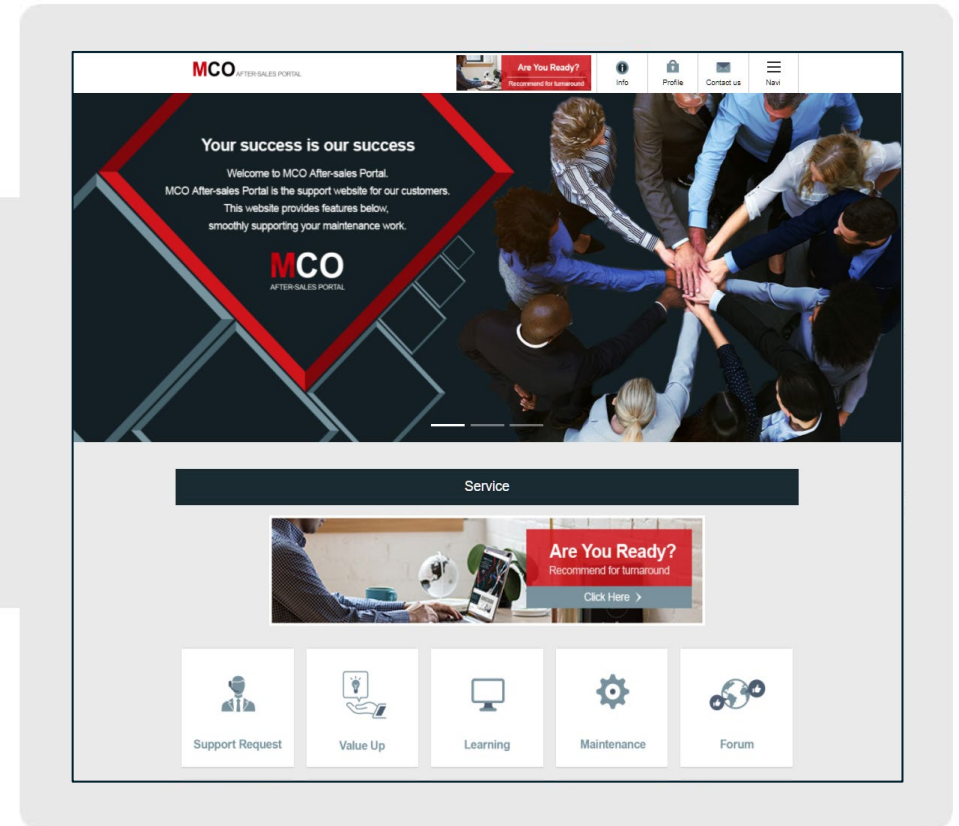
Once users post request, MCO's manager distributes to appropriate person in MCO.

Case03

Once AP has document, users can access and refer to the document anytime.



MCO Support

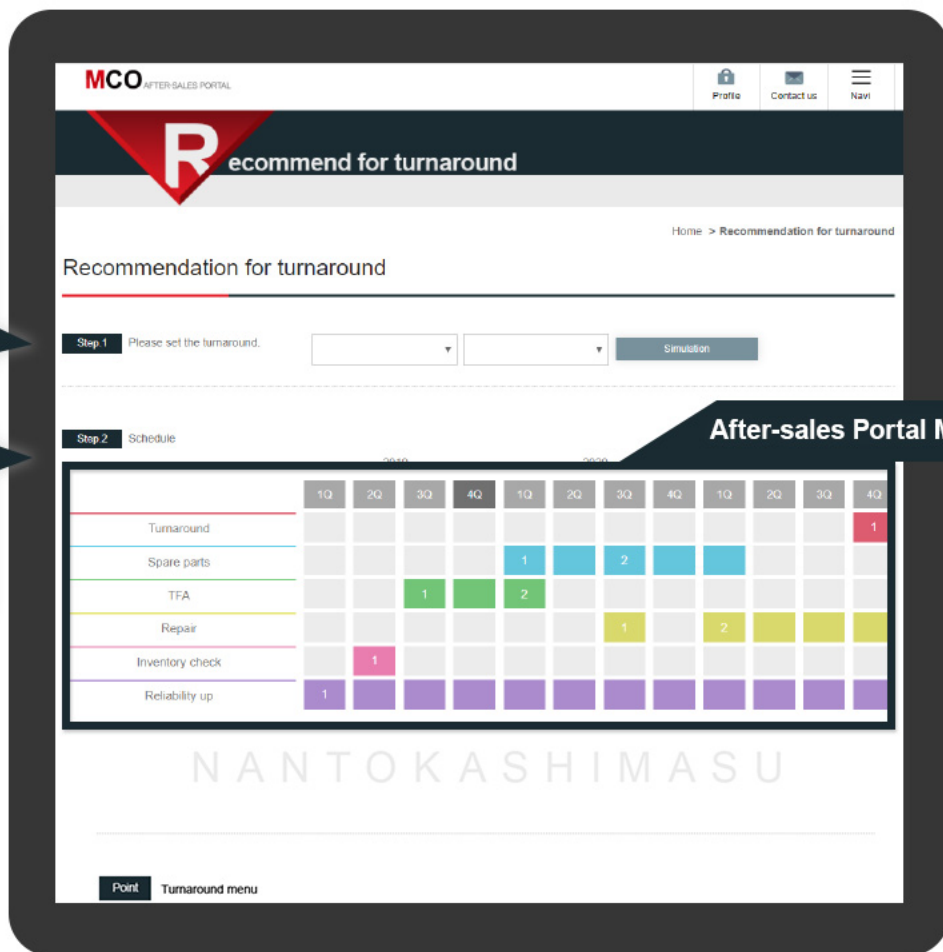


1. General instruction of After-sales Portal

Notify services offered with schedule up to next planned turnaround. Once starting date input, the scheduler shows work schedule up to the turnaround with specific timing. Also, instruct to content in After-sales Portal of each service.

Starting date of planned turnaround

Work schedule up to the turnaround with specific timing.



- Turnaround
 Starting date of planned turnaround

- Spare parts
 Go to inventory check result and recommendation after the previous turnaround.

- TFA
 TFA availability and record of field service in the past.

- Repair
 Information of maintenance shops in the world.

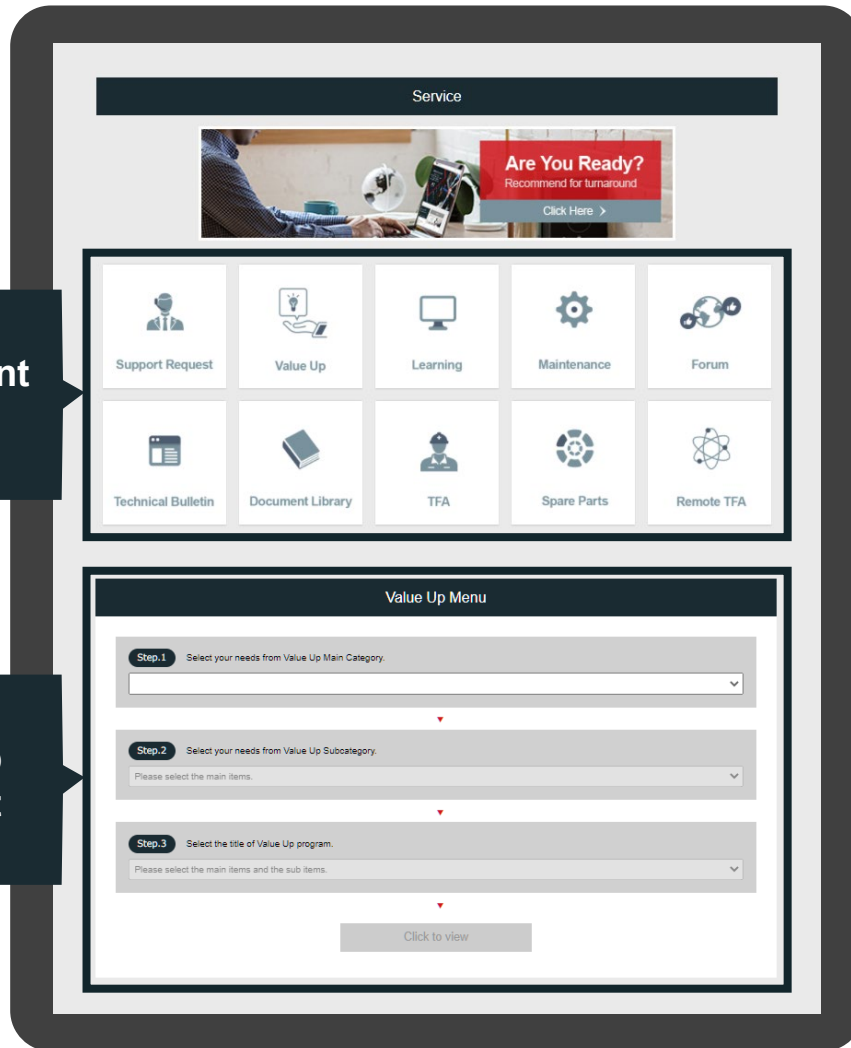
- Inventory check
 Request for inventory check.

- Value up
 Offer for Value up menu.

1. General instruction of After-sales Portal

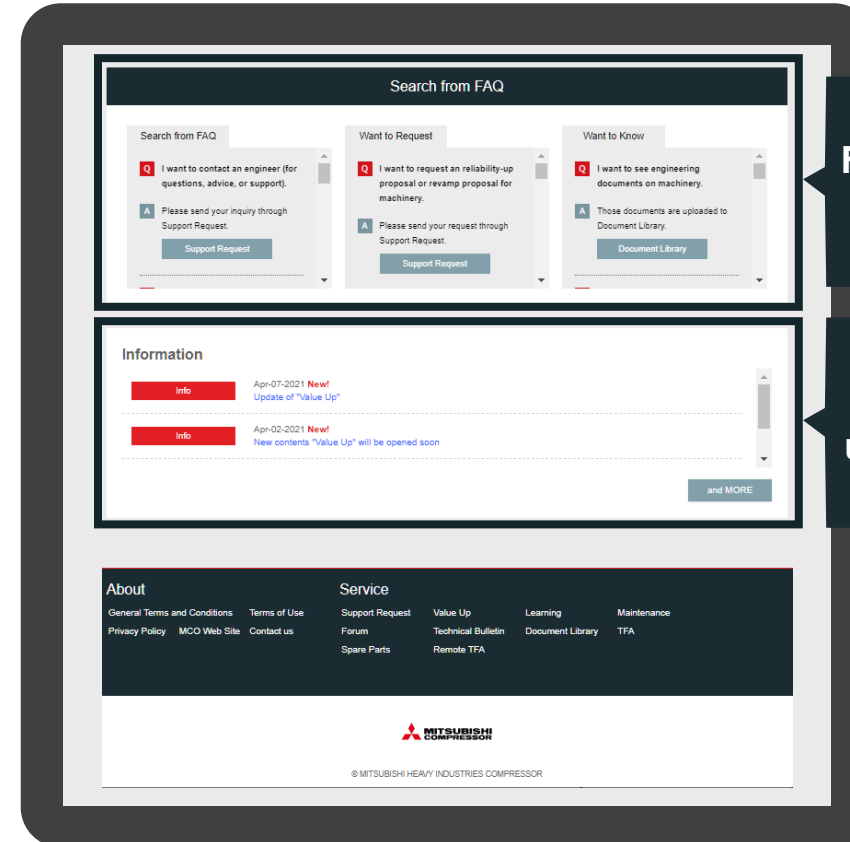
Well designed top page provides users easy-access to content the user wants to reach.

Access to content you want



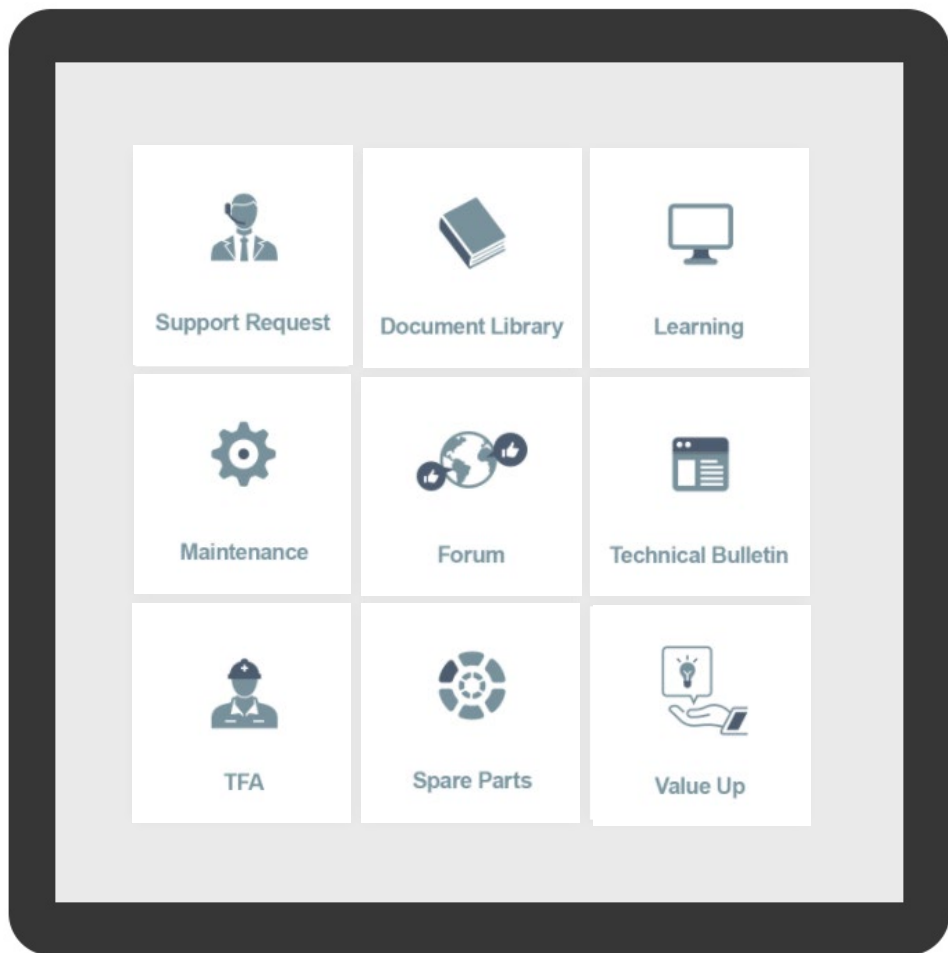
Select Value up menu you want

Find out FAQ which you want to know



Information about update of contents

1. General instruction of After-sales Portal



Support request

Communication tool for inquiry. All the communication preserved and can be referred to.



Document library

Library of technical document and service report for each plant/Train/Machine



Learning

Training program by E-learning and introduction of practical training program in MCO



Shop maintenance

Overview MCO's world wide network for maintenance and detailed capability of each station.



Forum

Talk/Discuss/Q&A at community board for not specific Plant/Train/Machine



Technical bulletin

This can help the customer to prevent future troubles by precaution in Technical Bulletin.



TFA

See availability of TFAs, booking status and past history of TFA service



Spare parts

Request for quotation thru AP, status check of parts ordered and history of order



Value Up

MCO provide various technical proposals to improve customer's plant and also request for quotation thru AP.

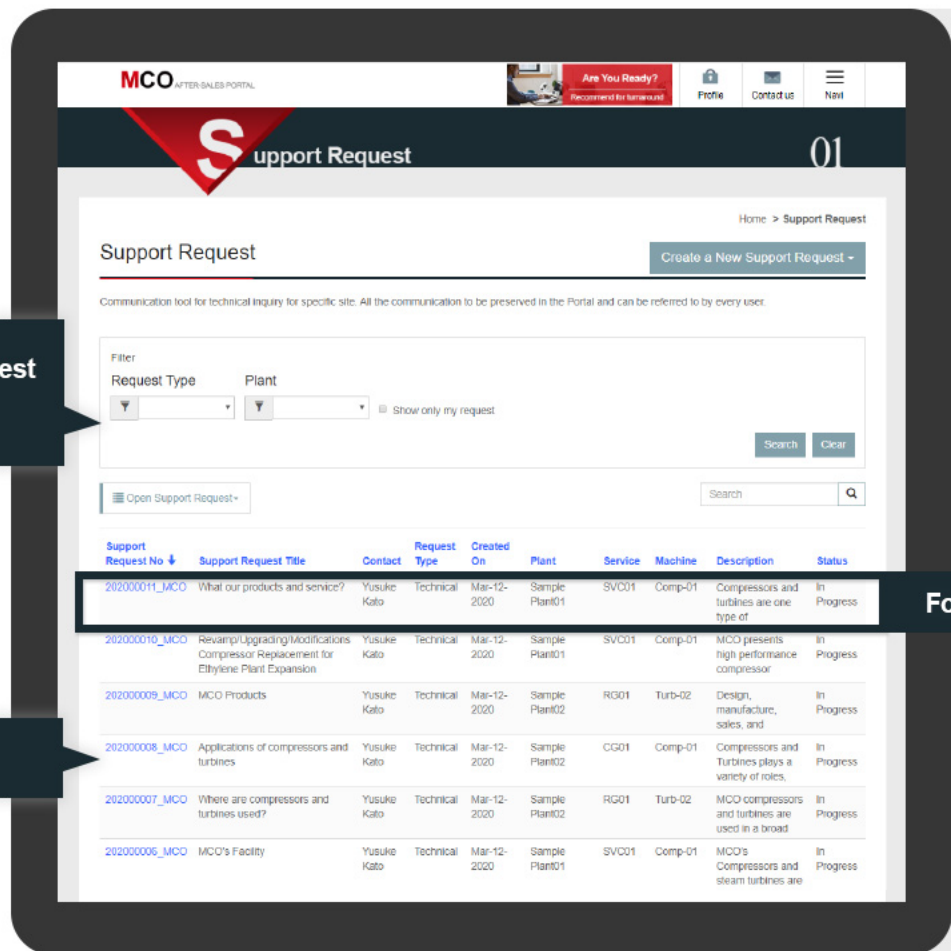
2. Contents (Support request)



Communication tool for inquiry. All the communication preserved and can be referred to.

Filtering by Request type and plant

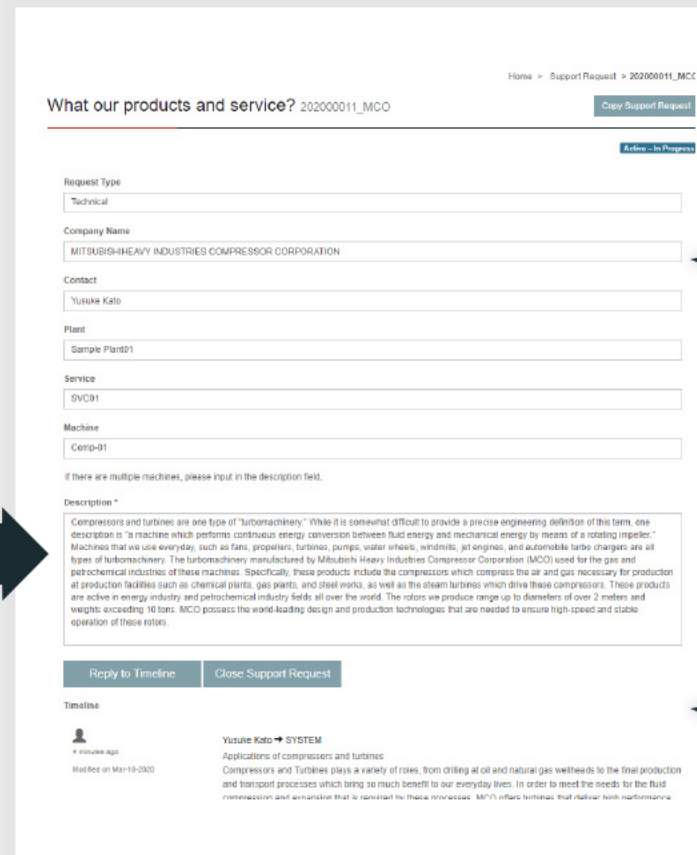
Past logs



The screenshot shows the 'Support Request' page in the MCO After Sales Portal. It features a navigation bar with 'Home > Support Request' and a 'Create a New Support Request' button. Below the navigation is a filter section with dropdown menus for 'Request Type' and 'Plant', and a 'Show only my request' checkbox. A search bar is also present. The main content is a table of support requests with columns for Request No., Title, Contact, Request Type, Created On, Plant, Service, Machine, Description, and Status.

Support Request No.	Support Request Title	Contact	Request Type	Created On	Plant	Service	Machine	Description	Status
20200011_MCO	What our products and service?	Yusuke Kato	Technical	Mar-12-2020	Sample Plant01	SVC01	Comp-01	Compressors and turbines are one type of	In Progress
20200010_MCO	Revamp/Upgrading/Modifications Compressor Replacement for Ethylene Plant Expansion	Yusuke Kato	Technical	Mar-12-2020	Sample Plant01	SVC01	Comp-01	MCO presents high performance compressor	In Progress
20200009_MCO	MCO Products	Yusuke Kato	Technical	Mar-12-2020	Sample Plant02	RG01	Turb-02	Design, manufacture, sales, and	In Progress
20200008_MCO	Applications of compressors and turbines	Yusuke Kato	Technical	Mar-12-2020	Sample Plant02	CG01	Comp-01	Compressors and Turbines plays a variety of roles.	In Progress
20200007_MCO	Where are compressors and turbines used?	Yusuke Kato	Technical	Mar-12-2020	Sample Plant02	RG01	Turb-02	MCO compressors and turbines are used in a broad	In Progress
20200006_MCO	MCO's Facility	Yusuke Kato	Technical	Mar-12-2020	Sample Plant01	SVC01	Comp-01	MCO's Compressors and steam turbines are	In Progress

For detail



The screenshot shows the detailed view of a support request titled 'What our products and service? 20200011_MCO'. It includes a 'Copy Support Request' button and a 'Reply to Progress' button. The form contains fields for Request Type (Technical), Company Name (MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION), Contact (Yusuke Kato), Plant (Sample Plant01), Service (SVC01), and Machine (Comp-01). A description field contains text about turbomachinery. At the bottom, there are buttons for 'Reply to Timeline' and 'Close Support Request', and a 'Timeline' section showing a message from Yusuke Kato to the SYSTEM.

Detail

Chat/Communication between user and MCO engineer

2. Contents (Support request)



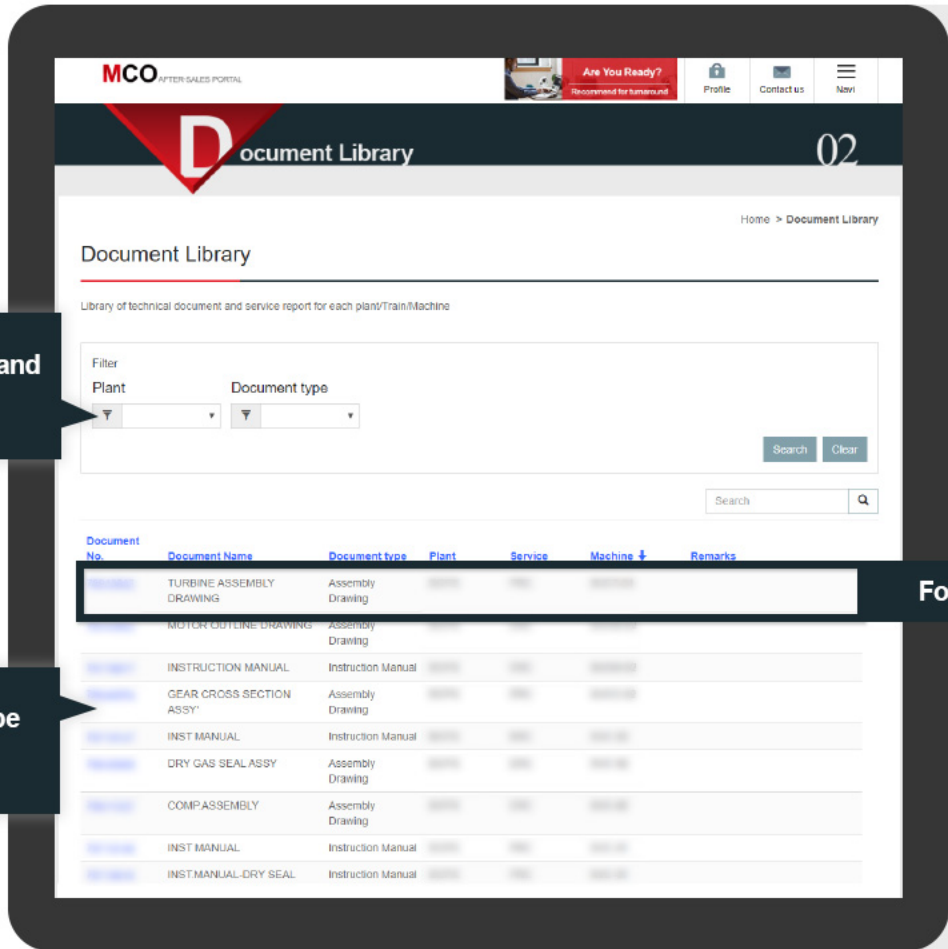
Work flow of Support request



2. Contents (Document library)



Library of technical document and service report for each plant/Train/Machine



MCO AFTER SALES PORTAL

Are You Ready?
Recommend for human aid

Profile Contact us Nav

Document Library

02

Home > Document Library

Document Library

Library of technical document and service report for each plant/Train/Machine

Filter

Plant Document type

Search Clear

Search

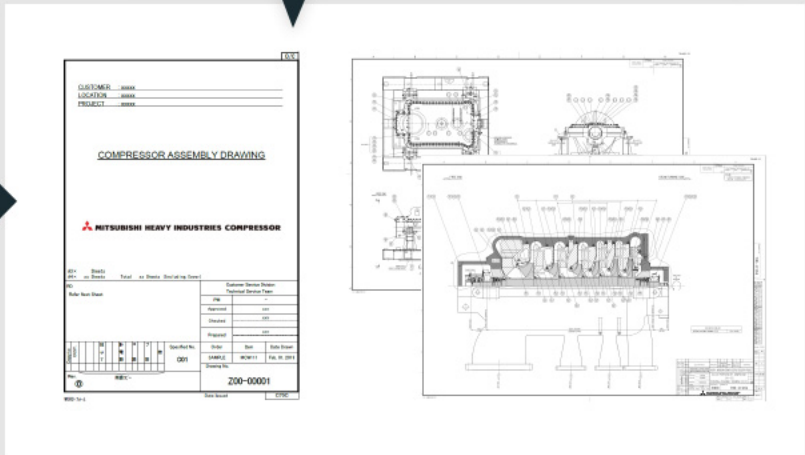
Document No.	Document Name	Document type	Plant	Service	Machine	Remarks
000001	TURBINE ASSEMBLY DRAWING	Assembly Drawing	0000	00	000000	
000002	MOTOR OUTLINE DRAWING	Assembly Drawing	0000	00	000000	
000003	INSTRUCTION MANUAL	Instruction Manual	0000	00	000000	
000004	GEAR CROSS SECTION ASSY	Assembly Drawing	0000	00	000000	
000005	INST MANUAL	Instruction Manual	0000	00	000000	
000006	DRY GAS SEAL ASSY	Assembly Drawing	0000	00	000000	
000007	COMPASSEMBLY	Assembly Drawing	0000	00	000000	
000008	INST MANUAL	Instruction Manual	0000	00	000000	
000009	INST MANUAL-DRY SEAL	Instruction Manual	0000	00	000000	

Filtering by Plant and Document type

Documents can be downloaded.

For detail

- ### Document type
- Assembly drawing
 - Manual
 - Service report
 - Data sheet
 - Performance curve
 - Recommendation
 - Technical proposal and so on ...



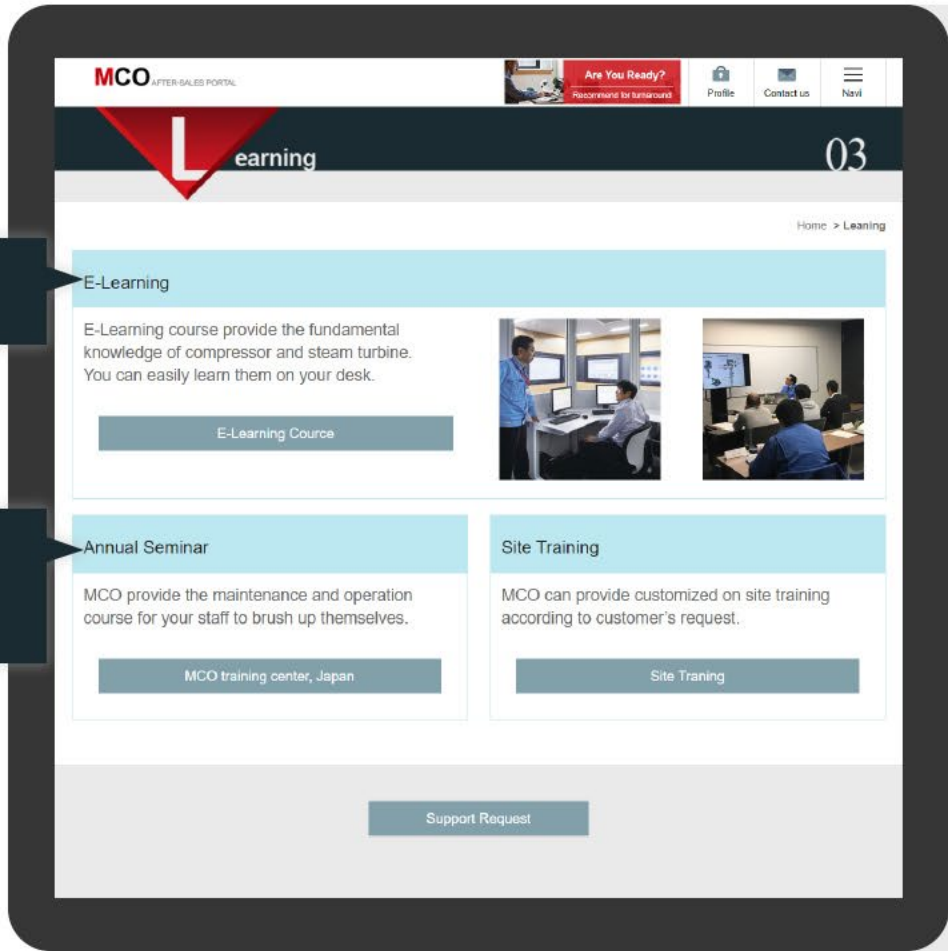
2. Contents (E-Learning)



Training program by E-learning and introduction of practical training program in MCO

E-learning menu

Introduction of training service

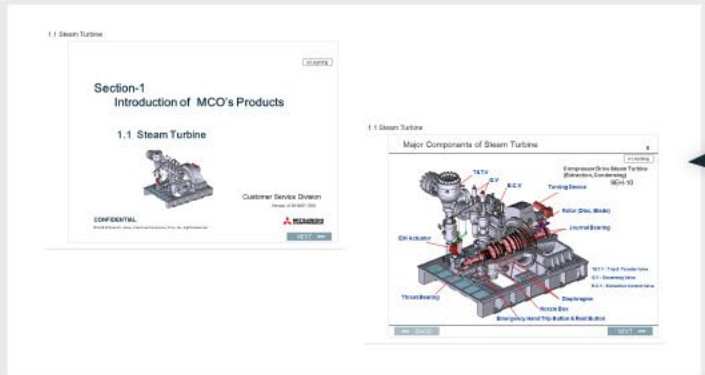


The screenshot shows the MCO After-Sales Portal's E-learning section. It features a navigation bar with 'MCO AFTER-SALES PORTAL', 'Are You Ready? Recommended for background', 'Profile', 'Contact us', and 'Nav'. The main heading is 'Learning 03'. Below this, there are three main menu items: 'E-Learning', 'Annual Seminar', and 'Site Training'. The 'E-Learning' section includes a description: 'E-Learning course provide the fundamental knowledge of compressor and steam turbine. You can easily learn them on your desk.' and a button for 'E-Learning Course'. The 'Annual Seminar' section describes maintenance and operation courses and includes a button for 'MCO training center, Japan'. The 'Site Training' section describes customized on-site training and includes a button for 'Site Training'. A 'Support Request' button is located at the bottom.

E-Learning Course

E-Learning Name	Category	Term	Price
1. Introduction of MCO's Products	Free		
2. Main Components	Free		
3. General for Maintenance & Guide Line	Free		
4. Diagnostic Inspection for Life Assessment of Steam Turbine	Free		
5. Basic	Pay	One Month	US\$400
6. Disassembly / Assembly & Inspection	Pay	One Month	US\$1,800
7. Trouble Shooting	Pay	One Month	US\$400
8. Maintenance Course	Pay	One Month	US\$400

Free or charged



The screenshots show two pages of e-learning content. The first page is titled 'Section-1 Introduction of MCO's Products' and includes a sub-section '1.1 Steam Turbine'. The second page is titled 'Major Components of Steam Turbine' and features a detailed 3D cutaway diagram of a steam turbine with various parts labeled, such as the High Pressure Turbine, Intermediate Pressure Turbine, Low Pressure Turbine, and various bearings and shafts.

E-learning screen

2. Contents (Shop maintenance)

Oversee MCO's world wide network for maintenance and detailed capability of each station.

The screenshot shows the MCO Maintenance website interface. At the top, there's a navigation bar with 'MCO AFTER SALES PORTAL', 'Are You Ready? Prepared for tomorrow?', and user options like 'Profile', 'Contact us', and 'Name'. Below this is a 'Maintenance' header with a large 'M' logo and the number '04'. The main content area is titled 'Shop Maintenance' and includes a 'Support Request' button and a 'Shop capability list' button. A text block states: 'MCO has been developing "Customer Support stations" around the world to provide maintenance service of local repair and refurbishment with the nearest partner to the customer site.' Below this is a world map with red pins indicating shop locations. At the bottom, a table lists two shops:

Name	Formal Name	Address	Country
01. MCO	Mitsubishi Heavy Industries Compressor Corporation	4-6-22, Kan-en-ehin-machi, Nishi-ku, Hiroshima, 733-8553 Japan	Japan
02. MCO-I	Mitsubishi Heavy Industries Compressor International Corporation	14888 Kirby Drive, Houston, TX 77047	U.S.A.

Maintenance shops in map

Table of maintenance shops

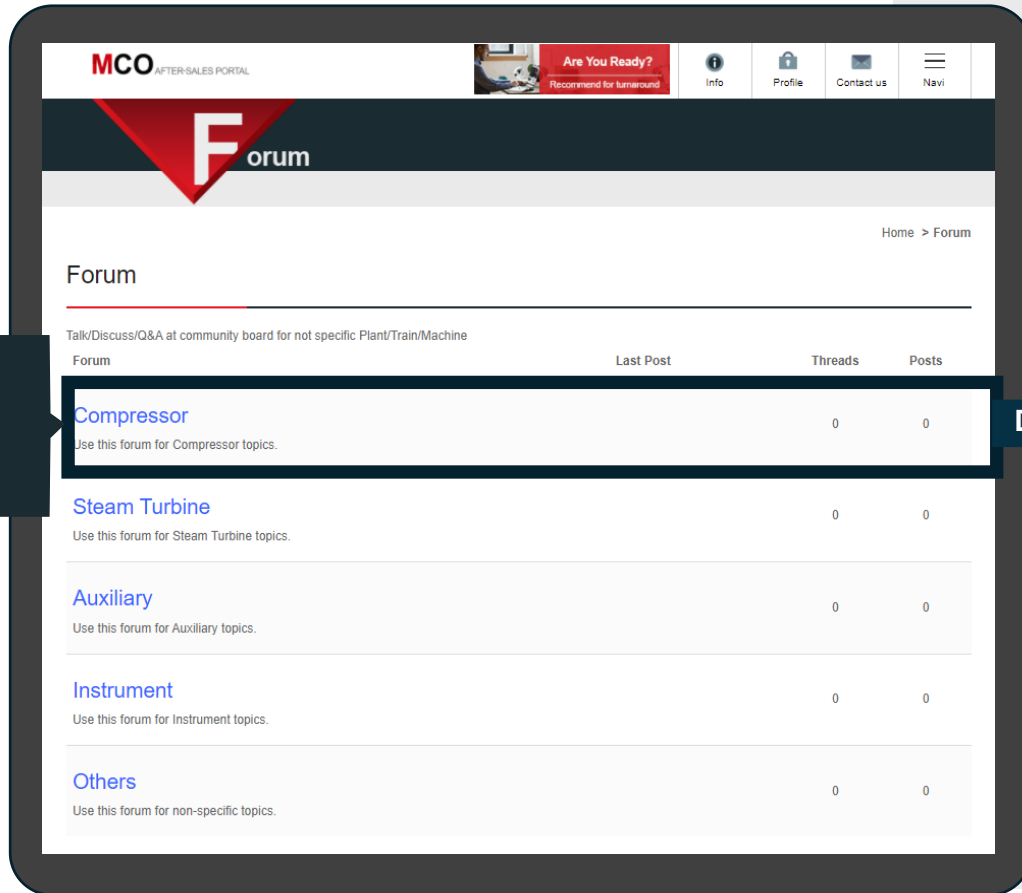
Detailed capability list

	Japan	US	Brazil	Saudi Arabia
	Mitsubishi Compressor MCOJ	Mitsubishi Compressor International MCO-I	Mitsubishi Compressor Brazil MCO-B	MCO Saudi Arabia MCO-SA
House Refurbishment (General) Visual inspection NIB (PI,MI) Dimension check of major part Mechanical runout check Total runout check Low speed dynamic balance check	A	A	A	A
Oil Inspection of rotor groove	A	A with MCO Inspectors	A with MCO Inspectors	A with MCO Inspectors
Weld replacement Trazon coating	A	A with MCO Technicians	A with MCO Technicians	A with MCO Technicians
Journal & Thrust Collar Repair WDT coating	A	WDP : Outsource Welding Repair : In house	WDP : Outsource Welding Repair : In house	A Outsource
Welding repair on coupling portion	A	A	CA	(Under study)
High Speed Balance	A	A	A	Outsource X
Overhaul of TTU/SU/ECU	A	A	A	CA with MCO TEA
Replace of TINSUM-CY sub-axle	A	A	A	with MCO TEA A with MCO TEA
Repair of welded shafts	A	A	CA	CA
House Refurbishment (General) Visual inspection NIB (PI,MI) Dimension check of major part Mechanical runout check Total runout check Low speed dynamic balance check	A	A	A	A
Impeller/Shaft Replacement	A	A	A	with MCO TEA A with MCO TEA
Anti Fraying Coating (Nickel/Alum Coating)	A	Outsource	A	Outsource X
Journal & Thrust Collar Repair WDT coating	A	WDP : Outsource Welding Repair : In house	WDP : Outsource Welding Repair : In house	A Outsource
Welding repair on coupling portion	A	A	CA	(Under study)
High Speed Balance	A	A	A	Outsource X
(Swirl Overhaul) Inspection	A	A	A	CA with MCO TEA

2. Contents (Forum)



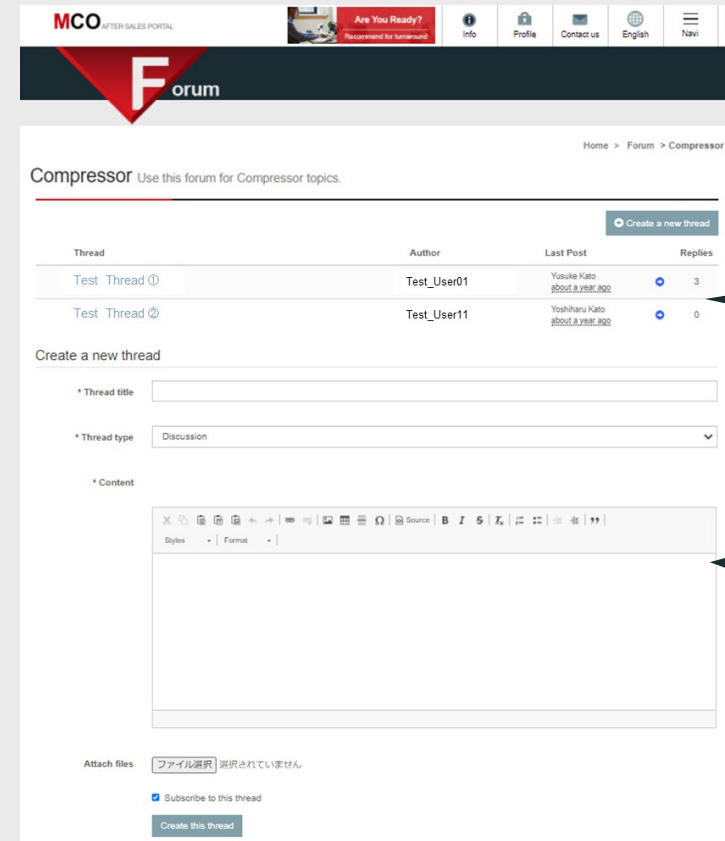
Talk/Discuss/Q&A at community board for not specific Plant/Train/Machine



The screenshot shows the MCO After-Sales Portal Forum page. The navigation bar includes 'MCO AFTER-SALES PORTAL', a 'Are You Ready?' banner, and user options like 'Info', 'Profile', 'Contact us', and 'Navi'. The main heading is 'Forum'. Below it, a breadcrumb trail reads 'Home > Forum'. The page title is 'Forum' with a subtitle 'Talk/Discuss/Q&A at community board for not specific Plant/Train/Machine'. A table lists forum categories with columns for 'Last Post', 'Threads', and 'Posts'.

Forum	Last Post	Threads	Posts
Compressor Use this forum for Compressor topics.		0	0
Steam Turbine Use this forum for Steam Turbine topics.		0	0
Auxiliary Use this forum for Auxiliary topics.		0	0
Instrument Use this forum for Instrument topics.		0	0
Others Use this forum for non-specific topics.		0	0

Select category of community board



The screenshot shows the 'Compressor' forum category page. The breadcrumb trail is 'Home > Forum > Compressor'. The page title is 'Compressor' with a subtitle 'Use this forum for Compressor topics.' A 'Create a new thread' button is visible. A table lists threads with columns for 'Thread', 'Author', 'Last Post', and 'Replies'.

Thread	Author	Last Post	Replies
Test Thread	Test_User01	Yusuke Kato about a year ago	3
Test Thread	Test_User11	Yoshiharu Kato about a year ago	0

Below the table is a 'Create a new thread' form with fields for 'Thread title', 'Thread type' (set to 'Discussion'), and 'Content'. There is also an 'Attach files' section and a 'Subscribe to this thread' checkbox.

List of each thread

Talk/Discuss/Q&A between users and MCO

2. Contents (Technical bulletin)

This content is a library for technical information like;
 1) Technical bulletin, 2) Standard documents, and 3) Symposium paper
 These kinds of documents bring users knowledge of preventive maintenance and efficient operation of machines.

Filtering by Category, Component, Phenomenon and Cause

Technical bulletins

TB No.	Title	Category	Component	Phenomenon	Cause	Document Type	Remarks
SP0036	Impeller Stall Induced By Reverse Propagation Of Non-Uniform Flow Generated At Return Channel	Compressor	Others (Comp)	Others (Comp)	Others	Symposium Paper	Turbomachinery and Pump Symposia, 2016
SP0044	Impeller Stall Induced by Reverse Propagation of Non-Uniform Flow	Compressor	Rotor (Comp)	Others (Comp)	Others	Symposium Paper	Asia Turbomachinery & Pump Symposia, 2018
TB0002	IGV AIR CYLINDER FAILURE	Instrument	Anti-surge system	IGV failure	Operating condition	Technical Bulletin	
SP0021	Higher Reliability Of Oil Operated Bolt Tensioner For Larger-Sized Steam Turbine Casings With Higher Inlet	Steam turbine	Casing (ST)	Others (ST)	Others	Symposium Paper	Turbomachinery and Pump Symposia, 2011
SP0001	High Speed And Large Capacity Compressor-Driving Turbines For Chemical Plants	Steam turbine	Rotor (ST)	Others (ST)	Others	Symposium Paper	Turbomachinery and Pump Symposia, 1978
TB0015	GOVERNING VALVE SPEED CONTROL MALFUNCTION	Steam turbine	Governing valve	Others (ST)	Installation	Technical Bulletin	

CATEGORY	COMPONENT	PROBLEM OBSERVED	ROOT CAUSE
Compressor	Seal	Others (Comp)	Corrosion

SITUATION
 The impeller and inter-stage labyrinth seal were corroded.

COUNTERMEASURE
 - Installed separator.
 - Replaced labyrinth seal.

OEM RECOMMENDATION
 Aluminum material is susceptible to corrosion in cases, PEEK material can be used.

Sample of Technical bulletin

CATEGORY	COMPONENT	PROBLEM OBSERVED	ROOT CAUSE
Steam turbine	Rotor (ST)	Others (ST)	Corrosion

SITUATION
 LP stage disc of turbine failed due to SCC with damage an internal parts.

COUNTERMEASURE
 Perform periodical inspection of rotor by PAUT (Phased Array Ultrasonic Test).

OEM RECOMMENDATION
 Perform PAUT to LP stage of condensing steam turbine rotor before cumulative operation of the rotor reaches to 10 years due to achieve the easily monitoring of damage occurrence/growth.

2. Contents (TFA)



See availability of TFAs, booking status and past history of TFA service

Request for TFA service

TFA service history

Congestion view for TFA service

Detail of TFA personnel

Plant	Year	StartDate	EndDate	Day	Scope	Service Report
	2017	May-01-2017	Oct-30-2018	540		Service Report
	2001	Sep-10-2001	Oct-02-2001	22		Service Report
	2011	Sep-06-2011	Oct-27-2011	52		Service Report
	2018	Aug-15-2018	Oct-14-2018	59		Service Report

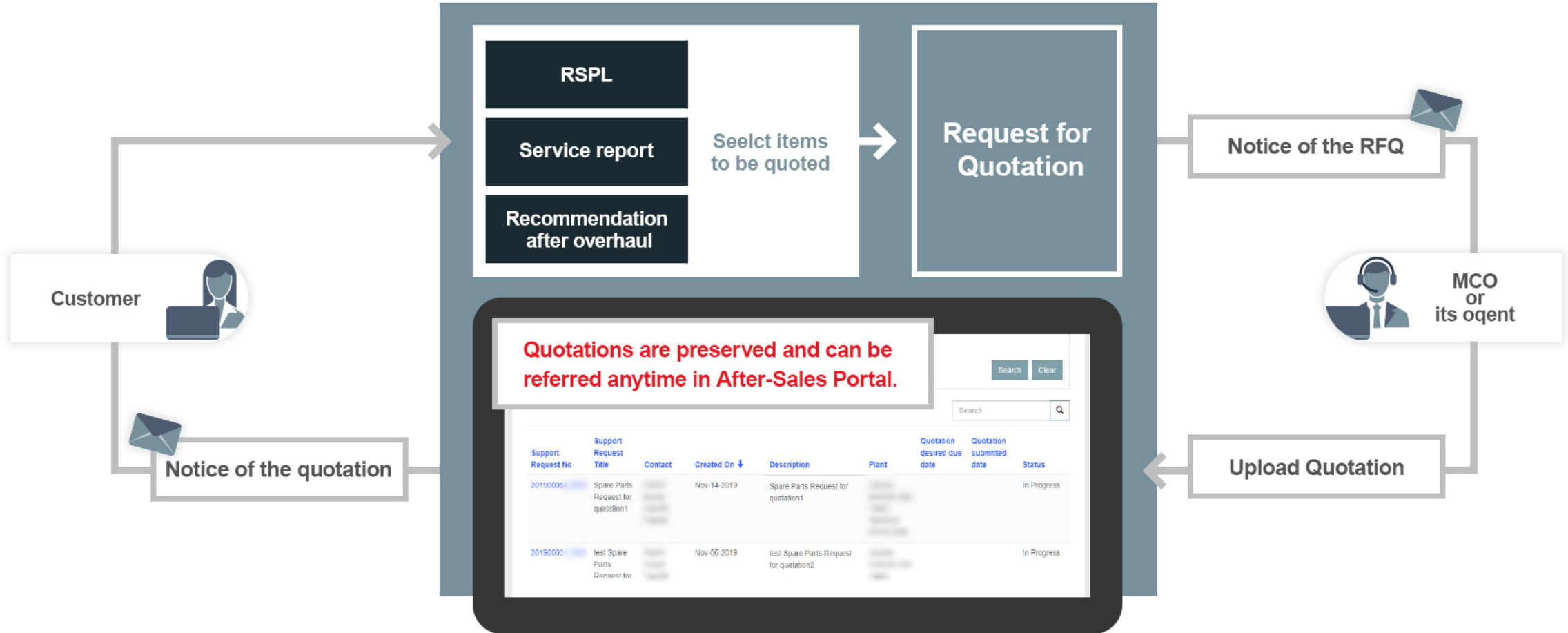
StartDate	EndDate	Day	TFA Name	TFA Status	Work	Scope
May-22-2017	Jun-22-2017	32		Completed		
Jul-27-2017	Oct-20-2017	85		Completed		
Mar-29-2018	Jun-08-2018	81		Completed		
Jan-18-2018	Jan-23-2018	6		Completed		
Jan-26-2018	Aug-22-2018	58		Completed		

2. Contents (Spare parts)



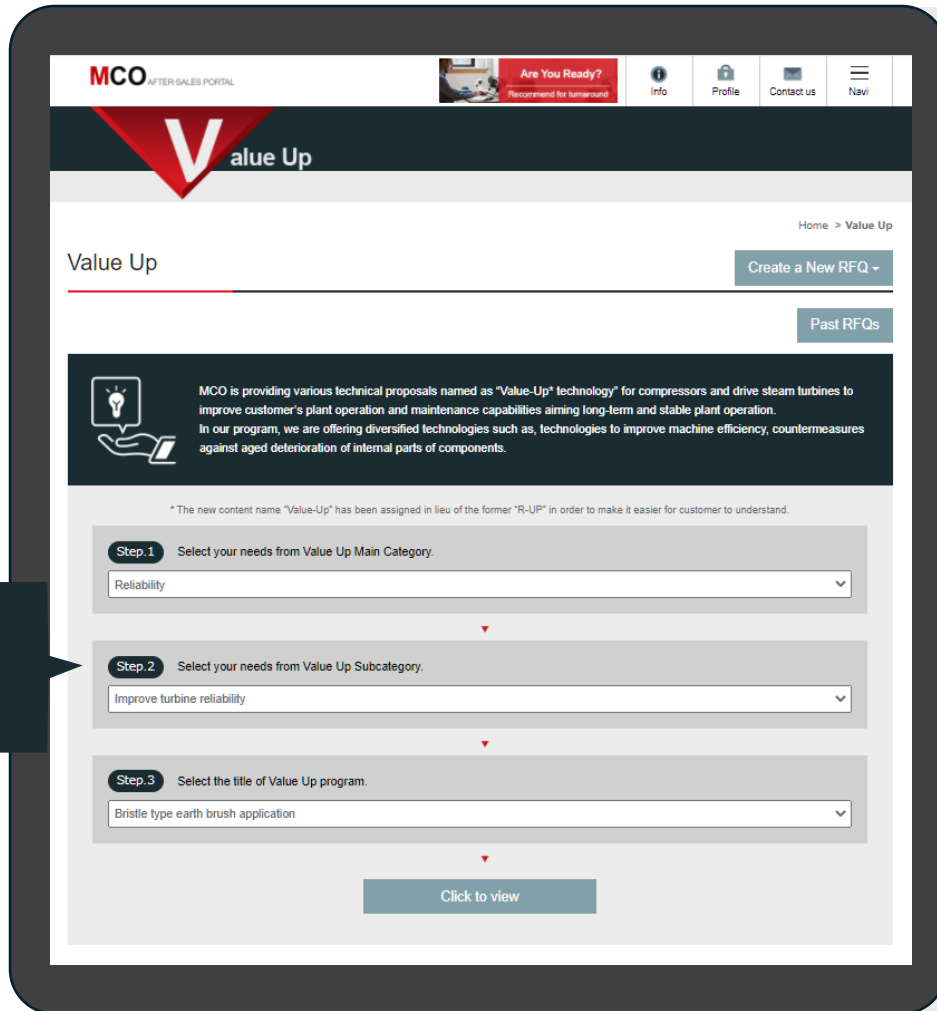
Request for quotation of spares can be made through After-sales Portal.

Quotation from Mitsubishi uploaded in After-sales Portal. User can refer to past quotation.

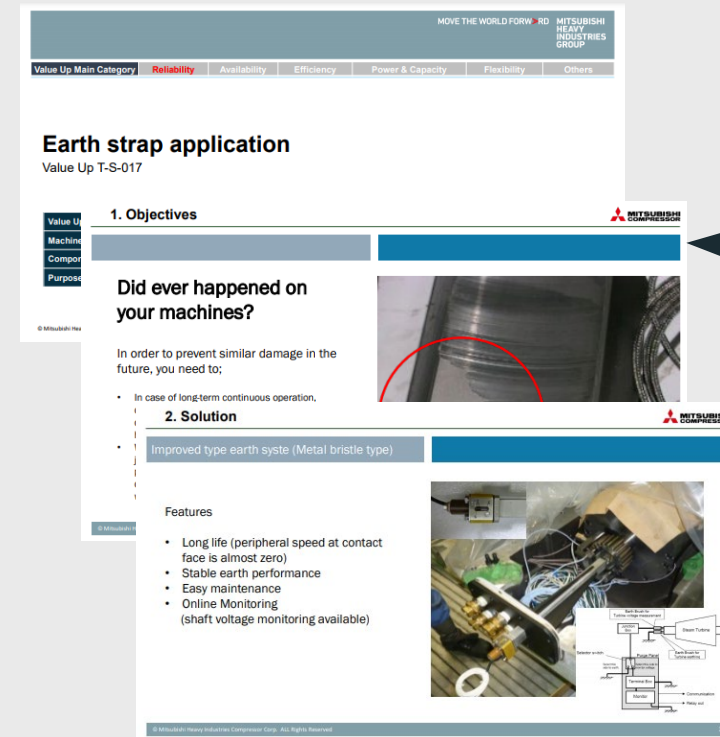




MCO provide various technical proposals to improve customer's plant and also request for quotation through After-sales Portal.



Filtering by Main Category, Sub-category and Value up menu

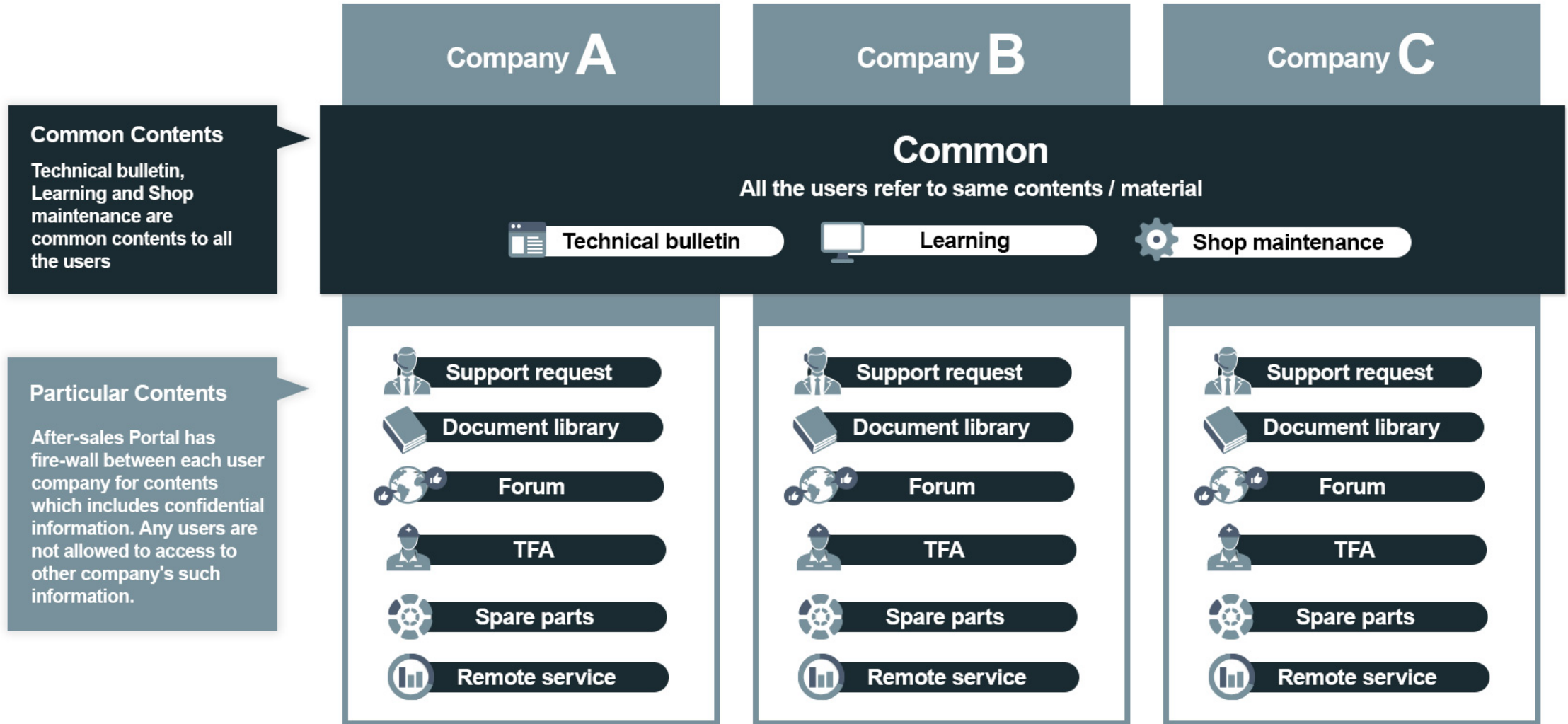


Sample of Value Up menu

3. Security



Sufficient security for confidential information by categorizing Common Contents and Particular Contents.



Thank you very much for your attention.

Thank you very much for your attention.

If you need clarification or are interested in the After-sales Portal,
please contact to MCO Team.

If you want to use MCO After-sales Portal or get a user ID, feel free to contact us!

Contact us



MOVE THE WORLD FORWARD

mitsubishi
heavy
industries
group