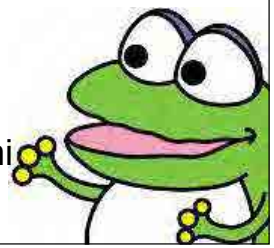
Sustainable Water Service Management

～ Business Plan, CS, PR ～

Yokohama Waterworks, JAPAN
Business Planning div. Akiko Takeuchi



Sustainable Water Service Business

① Expansion of coverage for water supply
②Water supply for 24 hours
③ Lowering of leakage

Leakage Management
Distribution Management
Water Quality Management
Finance, Budget
Business Plan

Effort of Staff

Long term vision
10-year plan
Middle term plan (3-4years)
MANAGEMENT POLICY

CS
PR

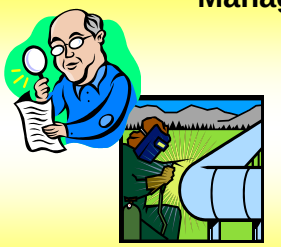
Customer understanding

Water Works Bureau
Customer

Business Plan

Back ground of Business plan

Management environment




Q. At MCWD,
What kind of problem is there?
10-year...3-year...

Long term vision･10-year plan

- Clarification of the future image of the business that surveyed 20 years later.
- It is devesed the 10-year main measure based on the image in the future.

Business Management Plan of Yokohama

･Enforcement planog the cocrete measure that adbocated by long term project
More than 3～5 years

Long term vision
10-year plan
Middle term plan (3-4years)
MANAGEMENT POLICY

･Set a future image and the aim that the company should aim at
･Made a concrete measure clear for aim realization
More than 10 years

･Enforcement plan of the main business in the Middle plan
･Annual budget
Less than one ear

Business Management Plan of Yokohama

Basic idea !

Safe City Water for supporting the Comfortable Life of the Citizens

Goals !

- **Safe and tasty water at the top level**
- **Fresh water always delivered to the faucets**
- **Reliable life-line proved against disasters**
- **Services that satisfies the customers**
- **Energetic corporate atmosphere for creating and challenging**
- **Environment-friendly city water**

Business Management Plan of Yokohama

"Management policy" is also one of the tools that clarify the objectives of your organization and unite the staff's consideration.

THIS IS OUR GOAL!!

The Management Policy

Main Measures to the goals (6)

Core objectives for 2011
- Secured Water
- Reliable Service
- Eco-friendly

Operation policies to the goals (4)

pop!!

Programs/activities to promote CS

CS

Present programs/activities

Training

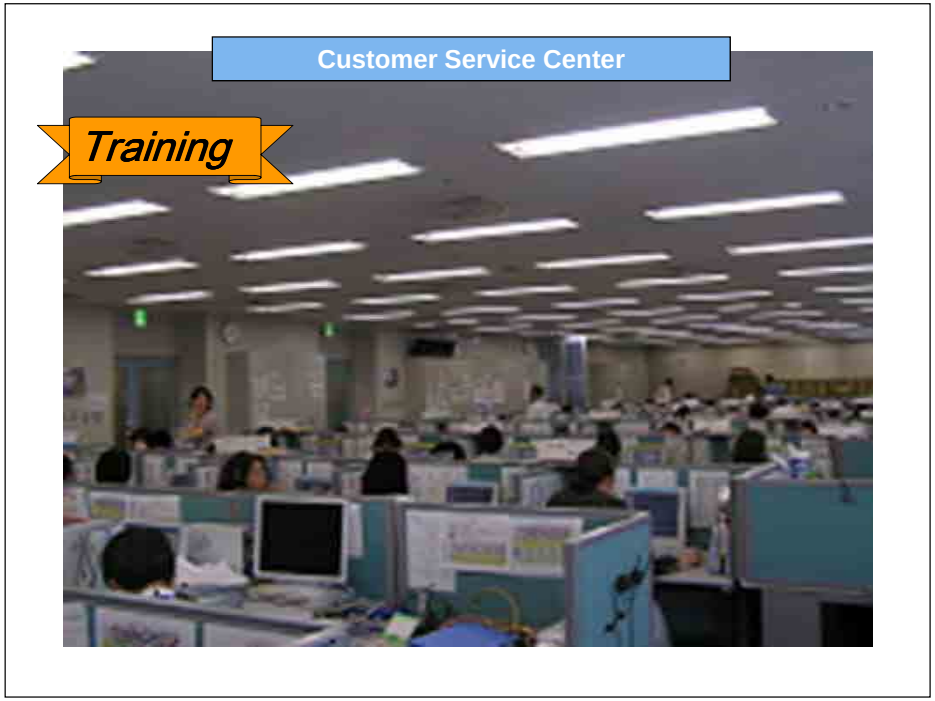
- Hands-on training at CSC
- Study visit to CSC from each division
- Listening to audio data of customers' voices

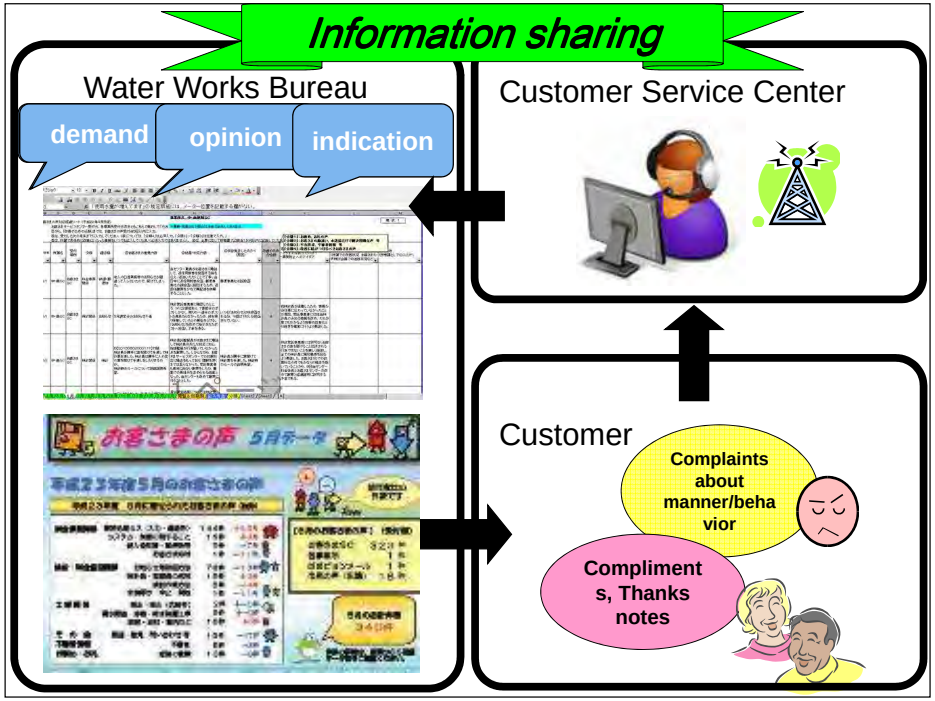
Survey

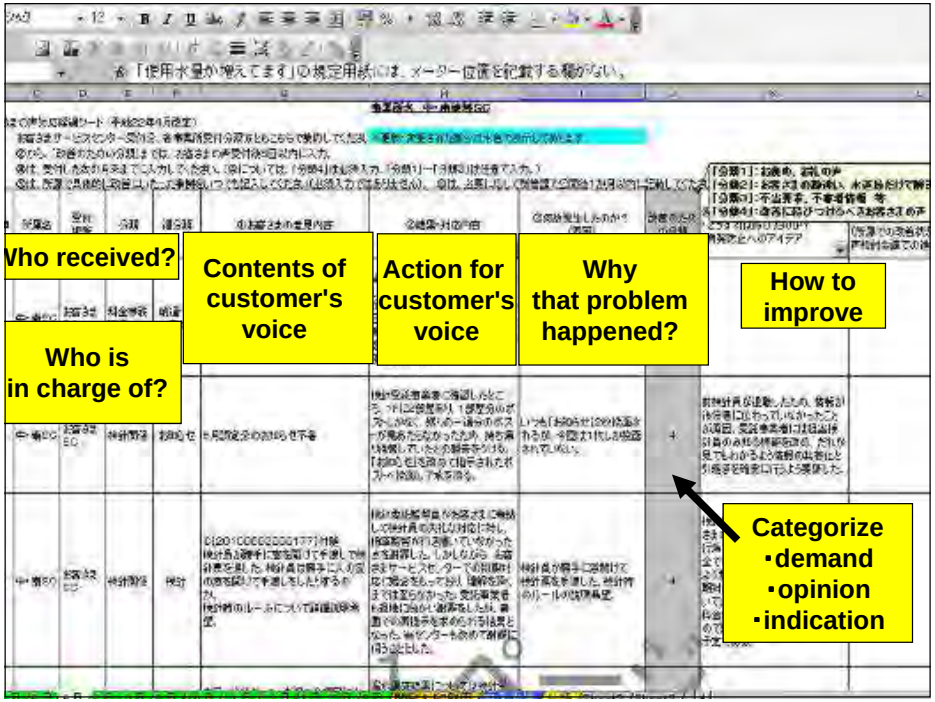
- Surveys of customer service/ satisfaction
- Internet Monitor

Information sharing

- Newsletter for staff "CS Correspondence"
- Update and upgrade of the website







Survey

To exploit "The voice of the customer"

・The voice from a water monitor

Survey

Customer Satisfaction survey

・Manners and explanation of the staff

・Overall service of YWWB

→ Hint to customer service improvement action

Customer Awareness survey

・Safety and the saving water of the city water

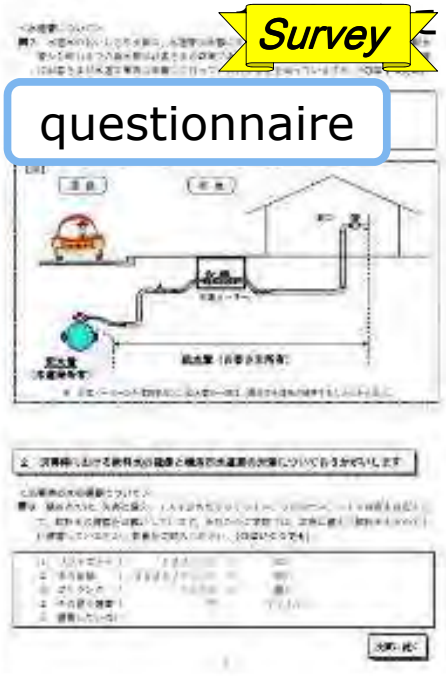
・About the means of payment of the water rate

・About the security of the drinking water at the time of the disaster etc・・・

→ Hint for management plan development

Survey

questionnaire



【Outline】

・Waterworks Q.25
/Sewerage Q.9
-Safety of tap water and saving water
-About customer service
-About public relations of waterworks
etc...

・Customer personal information
-Residence area
-Ages
-Water consumption etc...

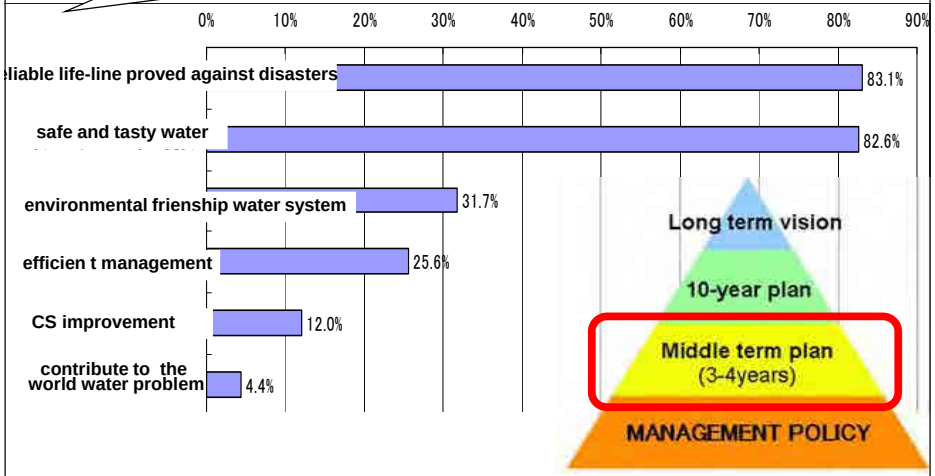
・Customer Satisfaction
・Customer Consciousness

+

・Customer Attribution
・Real water using situation

・The number of the effective collection
1,655 samples(41.4%)

Q. Please show your idea,
which business should YWWB do our best in the future?
(please chose 3 business)



Survey

【 The way of collecting more customer voice 】

- Daily collection of customer needs
- From the customer investigation
- Questionnaire at event

Aim of the customer service improvement

The ratio of cusotomers
who answer "satisfied" and
"slightly satisfied" about correspondence

※from result of CS survey at call center

(Aim)
2025FY : 90%
↑
2020FY : 88.6%

PR Action items in 2012

PR

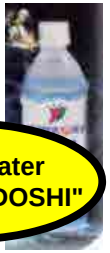
For customer's trust,
and satisfaction improvement

- **Public information about the business condition**
- **Promoting inflection of the tap water**
- **Anti-disaster measures**

+ the other events...

media

Public information magazine ・web



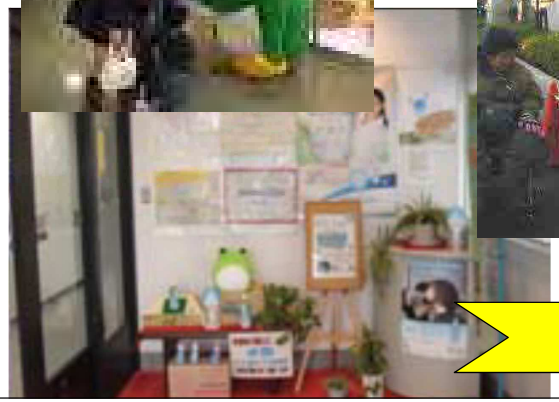
Bottled water "HAMAKKODOSHI"

Customer communication

Various event

Various media

Promotional Activities
By regional Service Center in YOKOHAMA

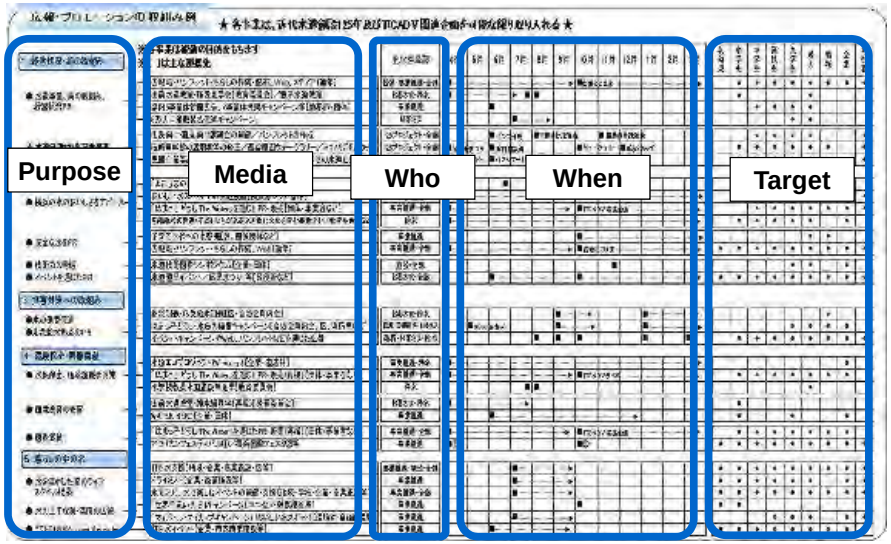


Staff's idea!

PR to citizens
Water Class at elementary schools
(for 9-10 years-old kids)

Staff's idea!

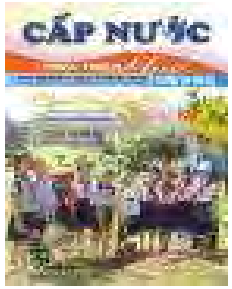
Public information annual schedule in YOKOHAMA



The visit to the plants

Surveying and collecting customers' opinion

Writing water column in provincial newspapers

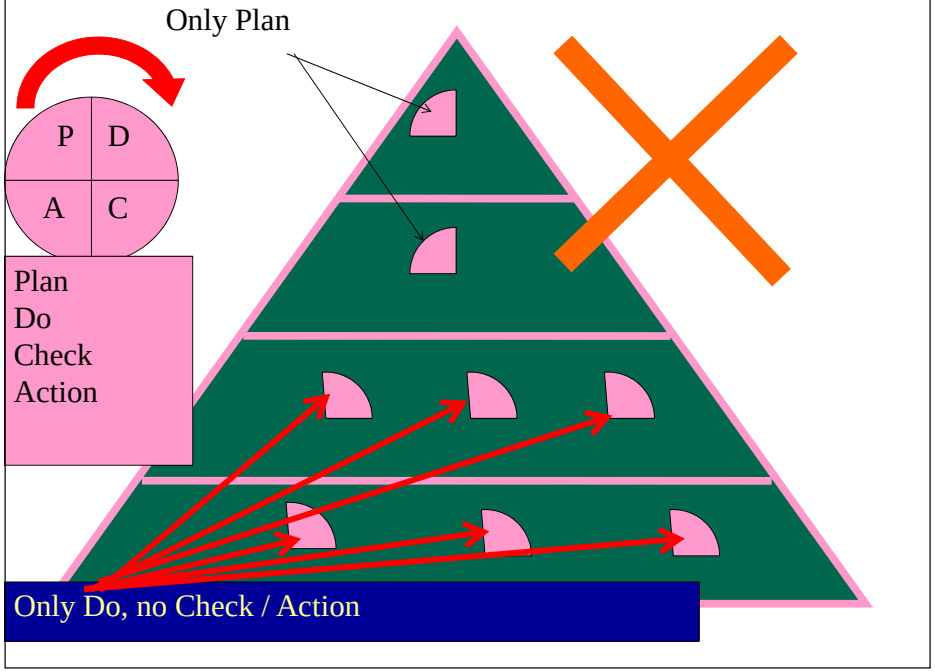


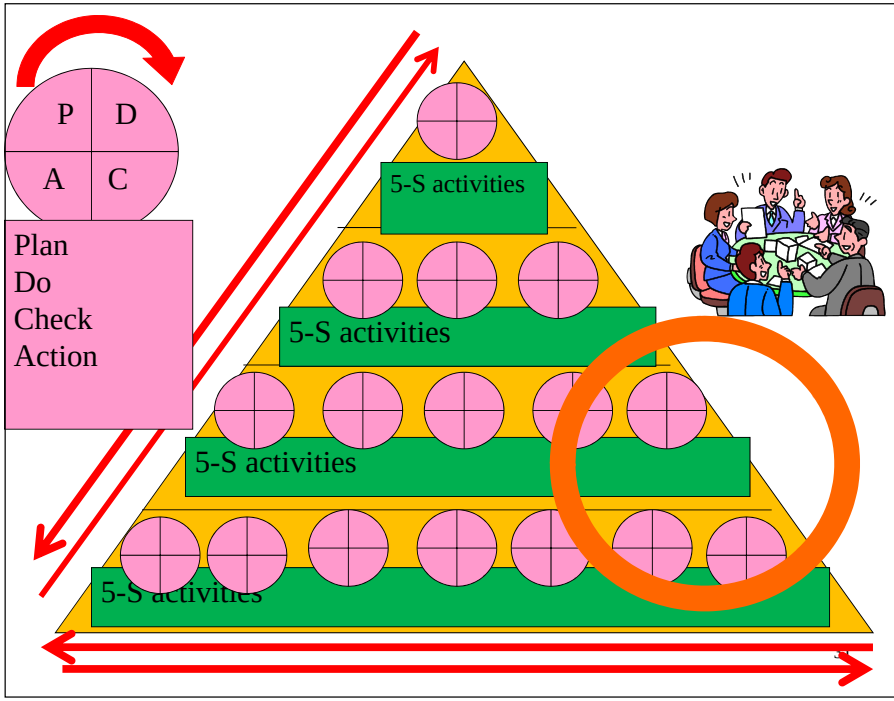
Customer information brochure

Website internet

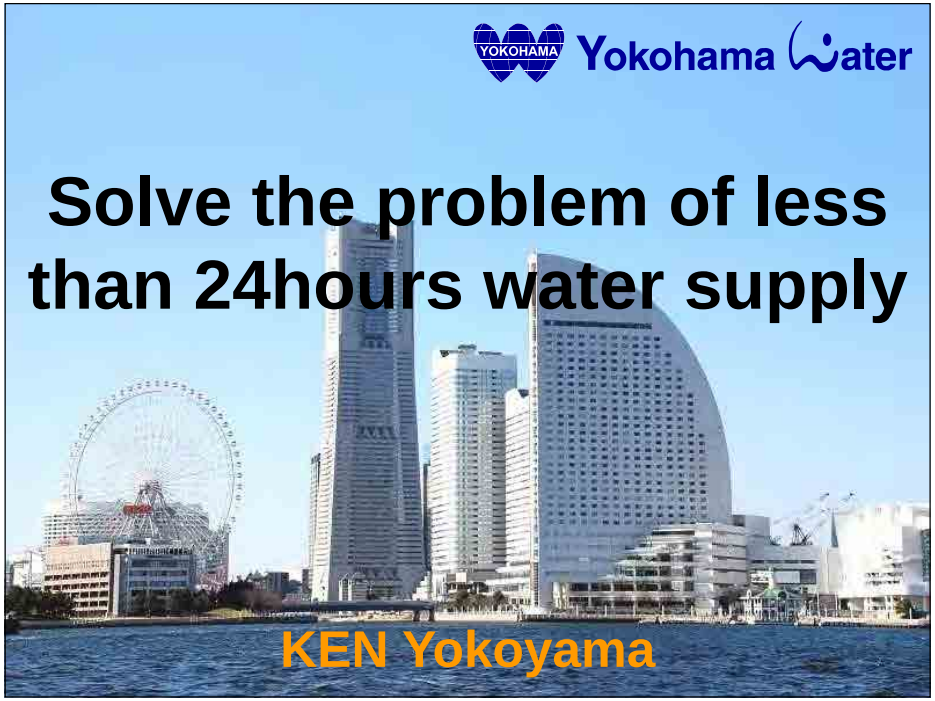
Creating a good relationship with community

29





YWW Improvement activity convention



Find the cause of LT24hrs

2

1) Low water pressure
   → Replacement to High-head pump
2) Small pipe diameter
   → Replacement to large pipeline
3) Much water consumption
   → Partition / Arrangement of supply area
4) Wide supply area
   → Partition / Arrangement of supply area
5) Power failure
   → Gravity water flow via elevated tank
6) Water suspension by construction
   → Backup system, Loop pipe

Yokohama Water

Water Supply Designing

3

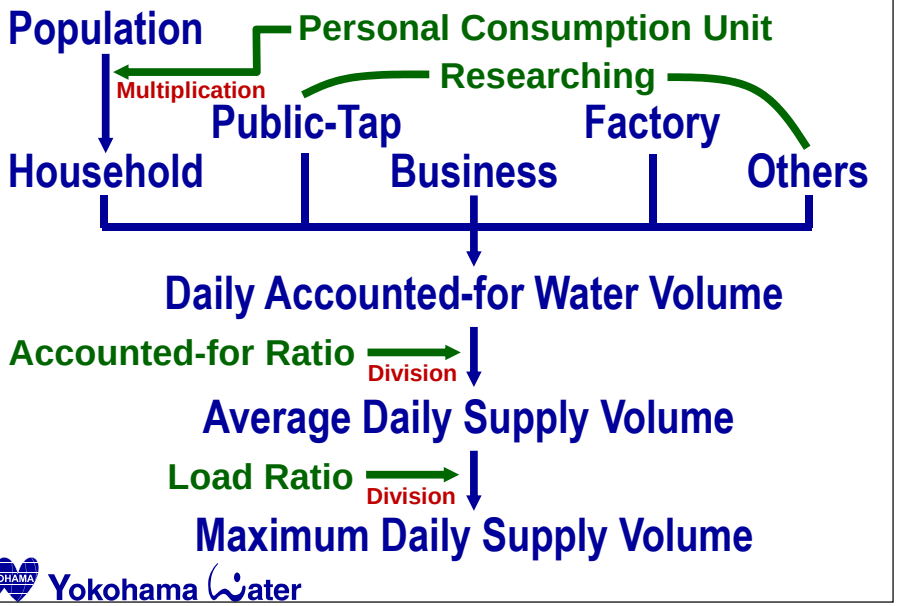
Decision of related matters of supply volume

1. Population in supply area for target year
2. Decision of water consumption per capita
3. Prediction of leakage rate and the others
4. Setting of Load ratio
5. Water transmission capacity from WTP and wells

Yokohama Water

Water Supply Designing

4



Yokohama Water

Replacement to New

5

Replacement to High-head powerful pump

Replacement from small to large pipe

→ Easy solution!!

But high cost, need yearly plan

Yokohama Water

Supply Area Partition

6

Aggregation of some DMA

Reorganization of divided DMA

Backup between DMA and DMA

→ Need Pipeline network calculation

→ More, Need pipeline and other construction

Yokohama Water

Gravity Water Supply

7

Non water suspension → 24hrs

→ Need more well pumping power and/or facility

→ Need additional Pipeline network

→ Tank capacity: how long hours, how volume?

Yokohama Water

1

Introduction of Japanese Performance Indicators (PIs) and YWWB situation

KEN Yokoyama

Contents

2

1. Record, Results, Analysis, Value
2. What is Performance Indicators?
   Familiar Digitizing and Evaluation
3. PIs for Water supply business
   JWWA Q100, ISO24510/12
   Try to absorb some PIs in your city
4. Conclusion

NBA Player of SSD

3

Famous SSD Basketball Player

Manute Bol / NBA: 1985 – 94

624 games	18.7 minutes/g
1,599 points	2.6 points/g
2,647 rebounds	4.2 rebounds/g
2,086 blocks	3.3 blocks/g (2nd)

Luol Deng / NBA: 2004 –

	04-05	05-06	06-07	07-08	08-09	09-10	10-11	Career
Game	61	78	82	63	49	70	82	485
Points	11.7	14.3	18.8	17.0	14.1	17.6	17.4	16.0
Rebounds	5.3	6.6	7.1	6.3	6.0	7.3	5.8	6.4
Assists	2.2	1.9	2.5	2.5	1.9	2.0	2.8	2.3
Field goal %	43.4	46.3	51.7	47.9	44.8	46.6	46.0	47.1

PI in your life

4

Do you use PI in your life?

Engel's coefficient

$$= \frac{\text{Food expenses (JPY)}}{\text{Consumer spending (JPY)}} \text{ X } 100\ (\%)$$

= 23.2% in 2008 (Japanese Average)

BMI: Body Mass Index (for adult)

$$= \frac{\text{Weight (kg)}}{\text{Height (m) X Height (m)}}$$

= 18.5 – 25.0 (Standard range)

What is PI?

5

What is PI (Performance Indicator)?

- PI is some of the assessment criteria to water supply service consumers.
- PI should be used to assess the performance of the service against the objectives set in accordance with consumers' needs and expectations.

Japanese PI; JWWA Q100

6

Service Assessment

A drinking water supply service is required to satisfy consumer needs. But, we cannot be easily described.

⇩

It is crucial to assess drinking water supply service from various points of view and quantitatively.

Japanese 137 PIs

7

Concept of PIs

PIs are used to measures from quantity the results of performance of water utility achieve the objectives and to improve the quantity of water supply service.

JWWA standardization was on 2005.

Japanese 137 PIs

8

Each PI should ...

be clearly defined in accordance with objectives;

be with a concise meaning and univocal;

be assessed from variables that can be easily measurable at a reasonable cost;

allow for clear comparison with targeted objectives and simplify an otherwise complex analysis;

be auditable, simple and easy to understand;

be avoid any personal or subjective appraisal.

Japanese 137 PIs

9

Relation between purposes and PI

1. Reliability - Water resource, Water quality management	22
2. Stability - Preparation for future, Risk management	33
3. Sustainability - Business Reinforcement, Improvement of service	49
4. Environment - Prevention of global warming	7
5. Management - Appropriate Operation and Maintenance	24
6. International Cooperation	2

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PIs for Water Business

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1001	1002	1003	1004	1005	1101	1102	1103	1104	1105
1106	1107	1108	1109	1110	1111	1112	1113	1114	1115
1116	1117	2001	2002	2003	2004	2005	2006	2007	2008
2101	2102	2103	2104	2105	2106	2107	2201	2202	2203
2204	2205	2206	2207	2208	2209	2210	2211	2212	2203
2214	2215	2216	2217	2218	3001	3002	3003	3004	3005
3006	3007	3008	3009	3010	3011	3012	3013	3014	3015
3016	3017	3018	3019	3020	3021	3022	3023	3024	3025
3026	3027	3101	3102	3103	3104	3105	3106	3107	3108
3109	3110	3111	3112	3201	3202	3203	3204	3205	3206
3207	3208	3209	3210	4001	4002	4003	4004	4005	4006
4101	5001	5002	5003	5004	5005	5006	5007	5008	5009
5101	5102	5103	5104	5105	5106	5107	5108	5109	5110
5111	5112	5113	5114	5115	6001	6101			

1. Reliability
2. Stability
3. Sustainability
4. Environment
5. Management
6. Int'l Coop

Yokohama Waterworks Bureau

PIs for Water Business

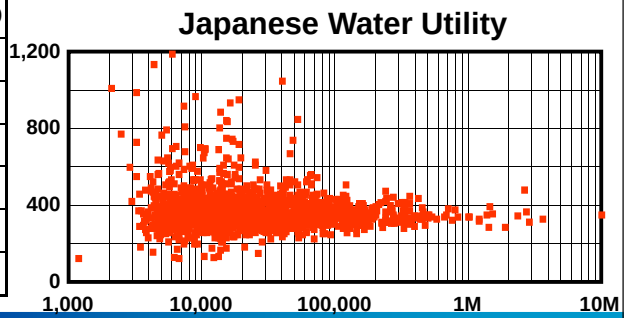
11

Stable supply of water at anytime

2002 Transmission input per population supplied (L/person/day)

$$PI = \frac{\text{Average daily transmission input} \times 1{,}000\ (L)}{\text{Service population (person)}}$$

	YWWB	MCWD
2004	341	
2005	339	
2006	333	
2007	329	
2008	326	
2009	323	



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PIs for Water Business

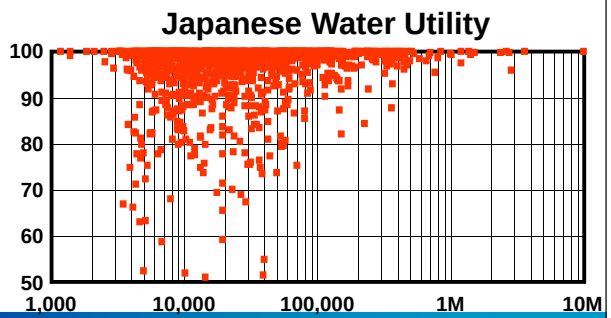
12

Stable supply of water at anytime

2006 Population served by water supply (%)

$$PI = \frac{\text{Service population (person)}}{\text{Service area population (person)}} \times 100$$

	YWWB	MCWD
2004	100	
2005	100	
2006	100	
2007	100	
2008	100	
2009	100	



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PIs for Water Business

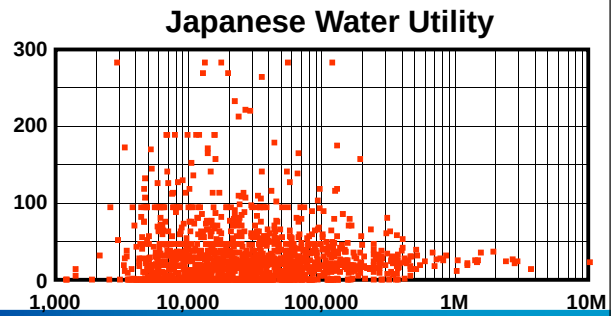
13

Stable supply of water at anytime

2211 Chemicals stock (day)

$$PI = \frac{\text{Average chemical stock (ton or kL)}}{\text{Daily consumption (ton or kL / day)}}$$

	YWWB	MCWD
2004	16.4	
2005	14.4	
2006	14.4	
2007	14.1	
2008	19.8	
2009	27.6	



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PIs for Water Business

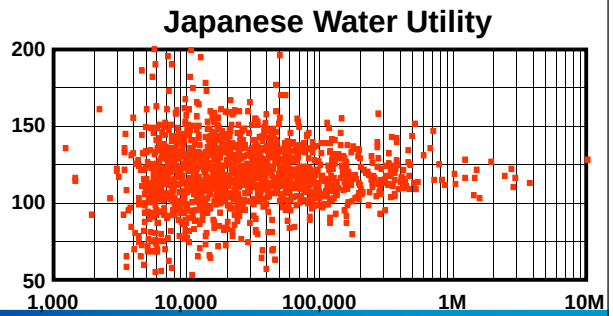
14

Sustainable and stable supply

3001 Operating ratio (%)

$$PI = \frac{\text{Operating income (JPY)}}{\text{Operating expenses (JPY)}} \times 100$$

	YWWB	MCWD
2004	113.7	
2005	112.9	
2006	114.0	
2007	112.4	
2008	112.4	
2009	110.5	



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PIs for Water Business

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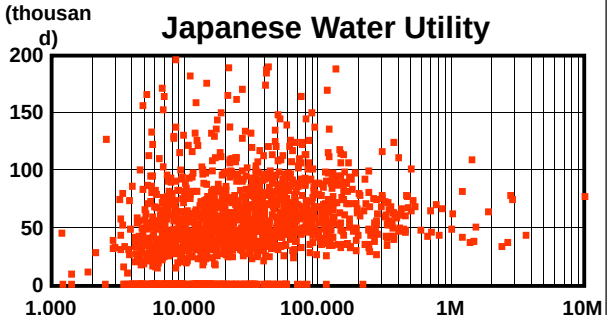
Sustainable and stable supply

3007 Revenue on water sales per personnel (1,000yen/person)

$$PI = \frac{\text{Water supply revenue / 1,000 (yen)}}{\text{Staff members (person)}}$$

	YWWB	MCWD
2004	36,782	
2005	38,389	
2006	40,048	
2007	42,702	
2008	45,498	
2009	46,693	



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PIs for Water Business

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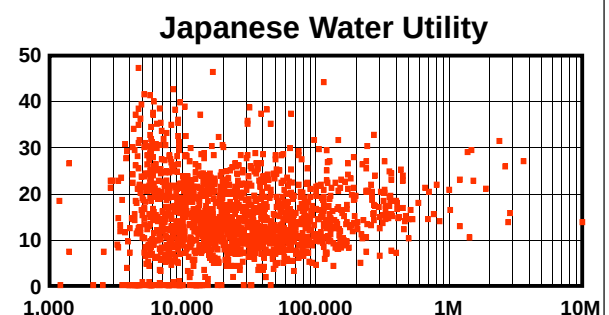
Sustainable and stable supply

3008 Ratio of personnel salary costs for revenue on water sales (%)

$$PI = \frac{\text{Labor cost (yen)}}{\text{Water supply revenue (yen)}} \times 100$$

	YWWB	MCWD
2004	29.3	
2005	29.2	
2006	27.3	
2007	26.1	
2008	24.9	
2009	24.3	



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PIs for Water Business

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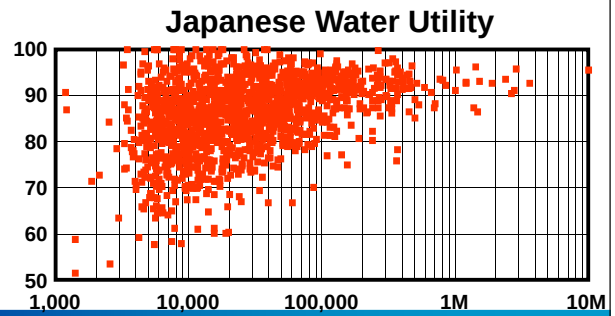
Stable supply of water at anytime

3018 Revenue water ratio (%)

$$PI = \frac{\text{Revenue water volume } (m^3)}{\text{Supply volume } (m^3)} \times 100$$

	YWWB	MCWD
2004	92.1	
2005	91.1	
2006	92.0	
2007	92.6	
2008	92.0	
2009	91.5	



Yokohama Waterworks Bureau

PIs for Water Business

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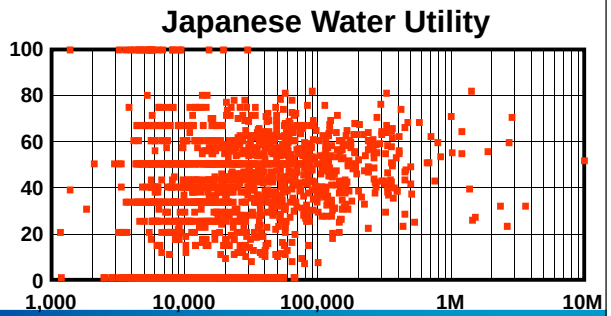
Stable supply of water at anytime

3105 Technical employees ratio (%)

$$PI = \frac{\text{Number of engineers (person)}}{\text{Total number of staff (person)}} \times 100$$

	YWWB	MCWD
2004	25.6	
2005	26.5	
2006	27.2	
2007	32.1	
2008	33.4	
2009	35.5	



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PIs for Water Business

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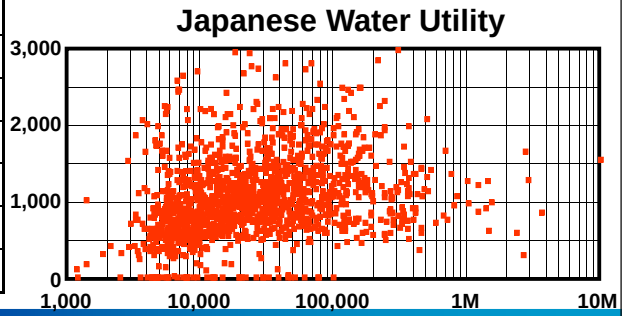
Stable supply of water at anytime

3110 Number of meters per employee (No./person)

$$PI = \frac{\text{Number of water meters (No.)}}{\text{Total number of staff (person)}}$$

	YWWB	MCWD
2004	719	
2005	759	
2006	812	
2007	844	
2008	910	
2009	976	



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PIs for Water Business

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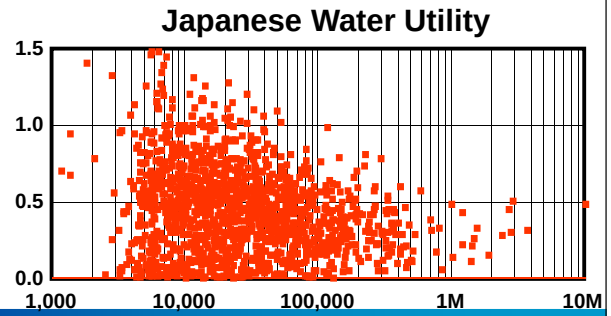
Environmental protection

4001 Electric power consumption per 1m³ transmission input (kWh/m³)

$$PI = \frac{\text{Total power consumption (kWh)}}{\text{Annual transmission input } (m^3)}$$

	YWWB	MCWD
2004	0.35	
2005	0.34	
2006	0.33	
2007	0.32	
2008	0.32	
2009	0.31	



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PIs for Water Business

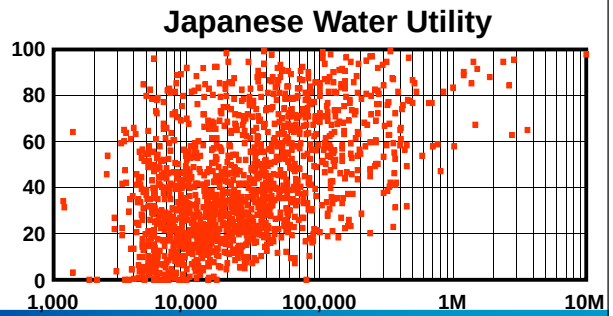
21

Appropriate O&M of supply systems

5102 Ratio of ductile iron and steel pipe (%)

$$PI = \frac{\text{Length of DIP and SP (km)}}{\text{Total pipeline length (km)}} \times 100$$

	YWWB	MCWD
2004	79.3	
2005	80.1	
2006	80.9	
2007	81.5	
2008	82.4	
2009	82.6	



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PIs for Water Business

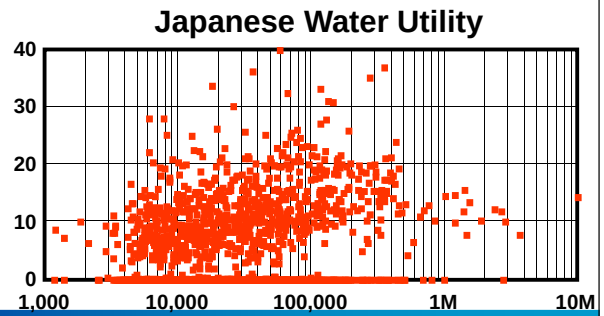
22

Stable supply of water at anytime

5112 Valve density (No./km)

$$PI = \frac{\text{Number of valves (No.)}}{\text{Total pipeline length (km)}}$$

	YWWB	MCWD
2004	7.6	
2005	7.7	
2006	7.7	
2007	7.8	
2008	7.9	
2009	7.9	



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PIs for Water Business

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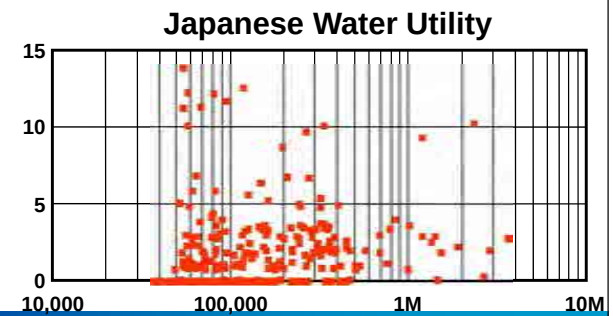
Improvement of CS of user needs

3201 Ratio of water service information to public

$$PI = \frac{\text{Number of to public information (No.)}}{\text{Number of service connections (No.)}}$$

	YWWB	MCWD
2004	3.8	
2005	3.8	
2006	2.8	
2007	2.7	
2008	2.7	
2009	2.7	



Yokohama Waterworks Bureau

PIs for Water Business

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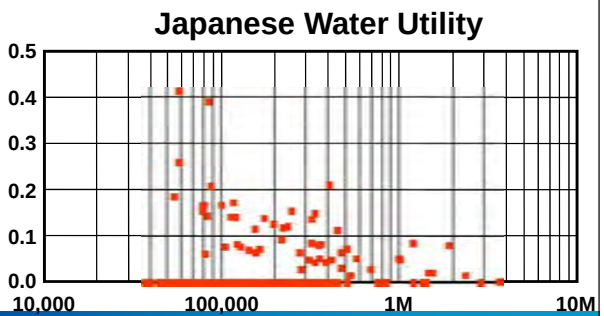
Improvement of CS of user needs

3202 Number of monitors

$$PI = \frac{\text{Number of monitors (person)}}{\text{Service population (person)}} \times 1{,}000$$

	YWWB	MCWD
2004	0.014	
2005	0.014	
2006	0.014	
2007	0.029	
2008	0.026	
2009	0.000	



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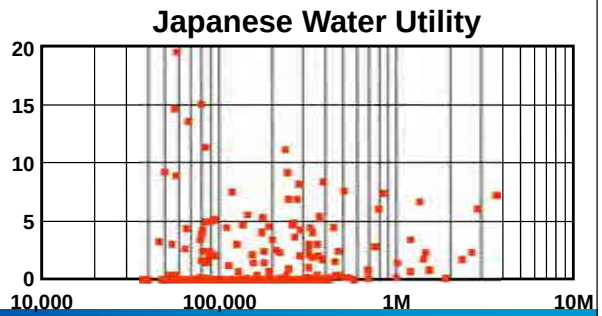
Improvement of CS of user needs

3203 Information gathering by questionnaire

$$PI = \frac{\text{Number of answers (person)}}{\text{Service population (person)}} \times 1{,}000$$

	YWWB	MCWD
2004	5.60	
2005	5.60	
2006	5.87	
2007	4.49	
2008	3.75	
2009	7.13	



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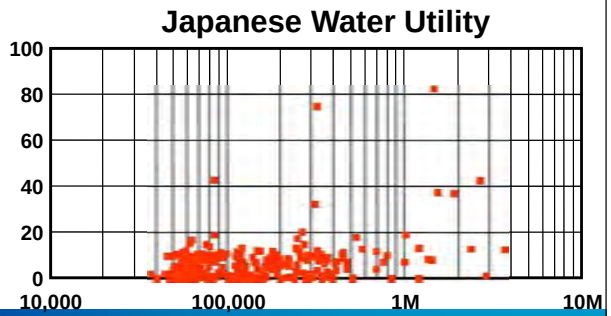
Improvement of CS of user needs

3204 Visitors to water supply facilities

$$PI = \frac{\text{Number of visitors (person)}}{\text{Service population (person)}} \times 1{,}000$$

	YWWB	MCWD
2004	6.8	
2005	6.8	
2006	6.2	
2007	11.7	
2008	12.4	
2009	12.4	



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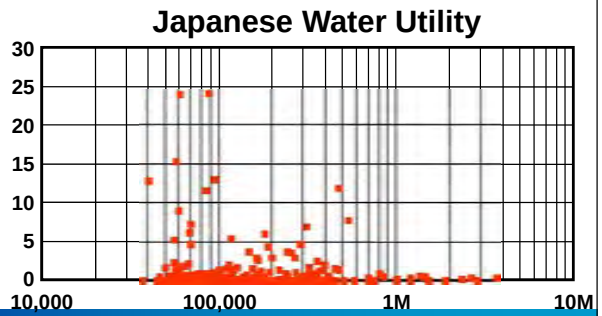
Improvement of CS of user needs

3205 Water supply service complaints

$$PI = \frac{\text{No. of complaints of services}}{\text{No. of service connections}} \times 1{,}000$$

	YWWB	MCWD
2004	0.35	
2005	0.35	
2006	0.57	
2007	0.35	
2008	0.35	
2009	0.44	



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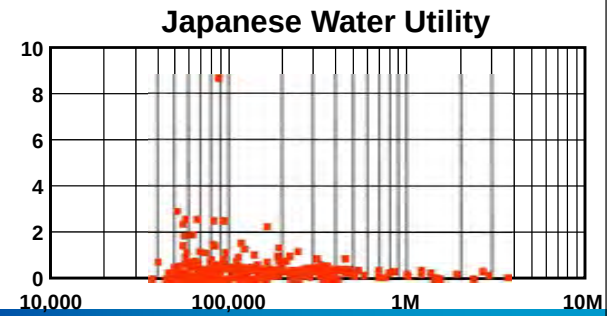
Improvement of CS of user needs

3206 Complaints for water quality

$$PI = \frac{\text{No. of complaints about quality}}{\text{No. of service connections}} \times 1{,}000$$

	YWWB	MCWD
2004	0.02	
2005	0.02	
2006	0.03	
2007	0.03	
2008	0.03	
2009	0.01	



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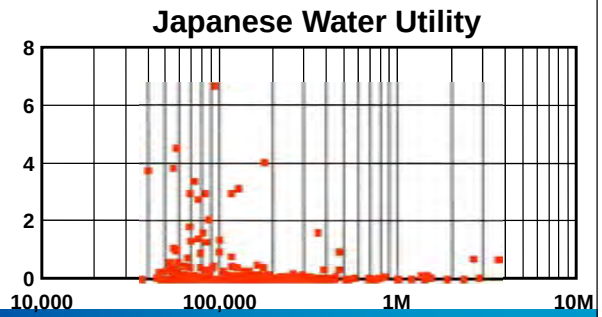
Improvement of CS of user needs

3207 Billing complaints for water supply

$$PI = \frac{\text{No. of complaints about tariff}}{\text{No. of service connections}} \times 1{,}000$$

	YWWB	MCWD
2004	0.467	
2005	0.457	
2006	0.298	
2007	0.398	
2008	0.396	
2009	0.236	



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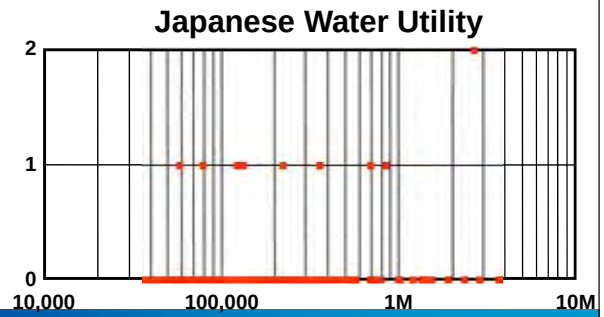
Improvement of CS of user needs

3208 Number of audit request

PI = Number of audit requests per year

	YWWB	MCWD
2004	0	
2005	0	
2006	0	
2007	0	
2008	0	
2009	0	



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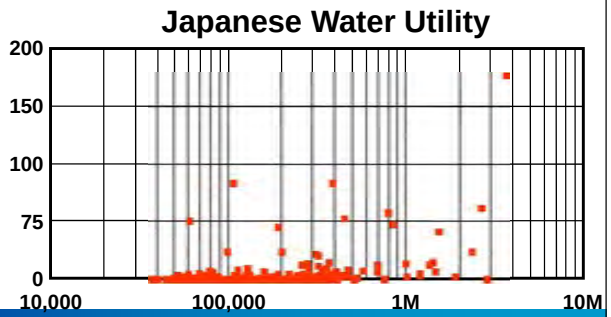
Improvement of CS of user needs

3209 Number of requests for information disclosure

PI = Number of information disclosure requests per year

	YWWB	MCWD
2004	40	
2005	36	
2006	43	
2007	95	
2008	295	
2009	176	



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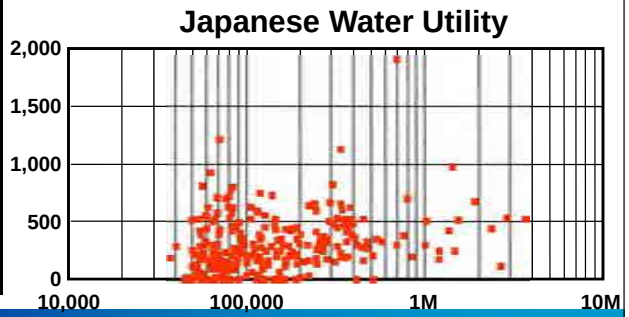
Improvement of CS of user needs

3210 Number of reception per employee

$$PI = \frac{\text{Number of applications (No.)}}{\text{Total number of staff (person)}}$$

	YWWB	MCWD
2004	398	
2005	396	
2006	352	
2007	425	
2008	472	
2009	505	



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PIs for Water Business

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ISO24510: International Standard

Adopted by IWA (2003, 2006)
ANFOR (FRA, 2000)
JWWA (JPN, 2005)
AWWA (USA, 2005)

P45: Annex B / 36 sample PIs

- I_{QS12}: Continuity of supply (%)
- I_{QS23}: New connection efficiency (day)
- I_{QS28}: Water pressure complaints (%)
- I_{QS30}: Water quality complaints (%)

PIs for Water Business

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ISO24510: International Standard

P45: Annex B / 36 sample PIs

- B.3.9.2: Distance from water point to household (m)
- B.4.2: Billing complaints and queries (no./cust./year)
- B.4.5: Distance from payment point to household (m)
- B.5.2: Response to written complaints (%)
- B.5.3: Telephone contacts answered on time (%)
- B.5.4: User visits to water utility assisted on time (%)
- B.5.6: Complaints and requests resolved on time (%)
- B.5.8: Coverage of service information (%)

Contact

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