

# A Path Forward for Promoting CCPS Risk Based Process Safety (RBPS) in Japan

**Tomohide Miyata**

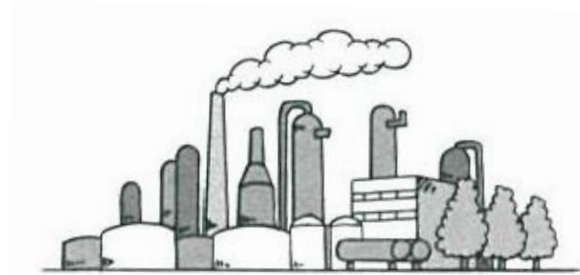
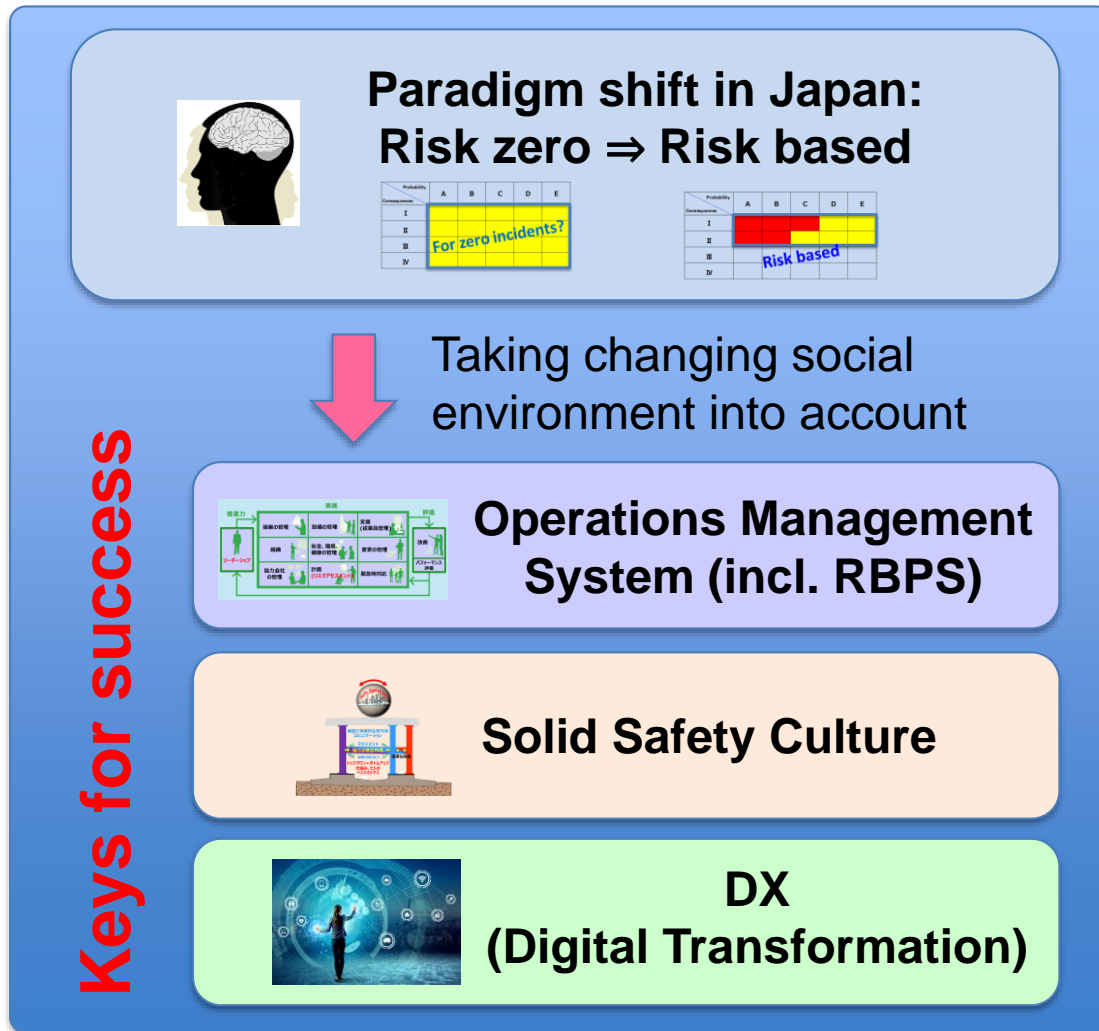
Director, Sr. Vice President  
Managing Executive Officer

JXTG Nippon Oil & Energy Corporation

The 5<sup>th</sup> CCPS Global Summit on Process Safety

October 22, 2019  
Singapore

# Eliminate serious incidents with Risk Based Process Safety



## *JXTG promoting RBPS in Japan*



✓ *Lobbying*

✓ *Consensus being formed*

Today's presentation  
Status & Path Forward for  
Successful Process Safety in Japan

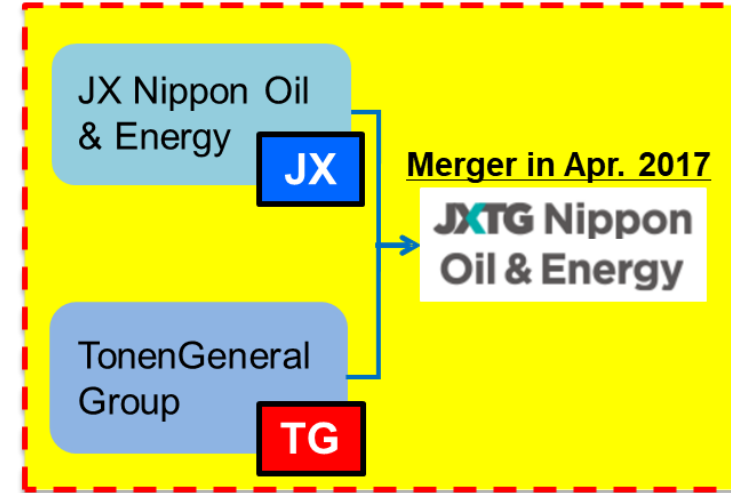
# Contents

- Self introduction
- Petroleum industry in Japan
- Paradigm shift in Japan / Global trend for safety
- Status of process safety in Japan
- Points and future outlook for risk based SH&E in Japan
- Keys for success in achieving sound RBPS
- Endless journey to the goal

# Self introduction & Company overview



- 2017 Managing Director, JXTG Nippon Oil & Energy Corp.
- 2016 Senior Managing Director, TonenGeneral Sekiyu K.K.
- 2013 Managing Director, TonenGeneral Sekiyu K.K.
- 2012 Director and Manager, Kawasaki Refinery  
TonenGeneral Sekiyu K.K.
- 2011 Director and Manager, Wakayama Refinery  
TonenGeneral Sekiyu K.K.
- 2006 Manager, Wakayama Refinery  
TonenGeneral Sekiyu K.K.
- 2002 Manager, Project Service, ExxonMobil's  
Asia Pacific Area Engineering Office  
TonenGeneral Sekiyu K.K.
- 1990 Joined Tonen K.K.



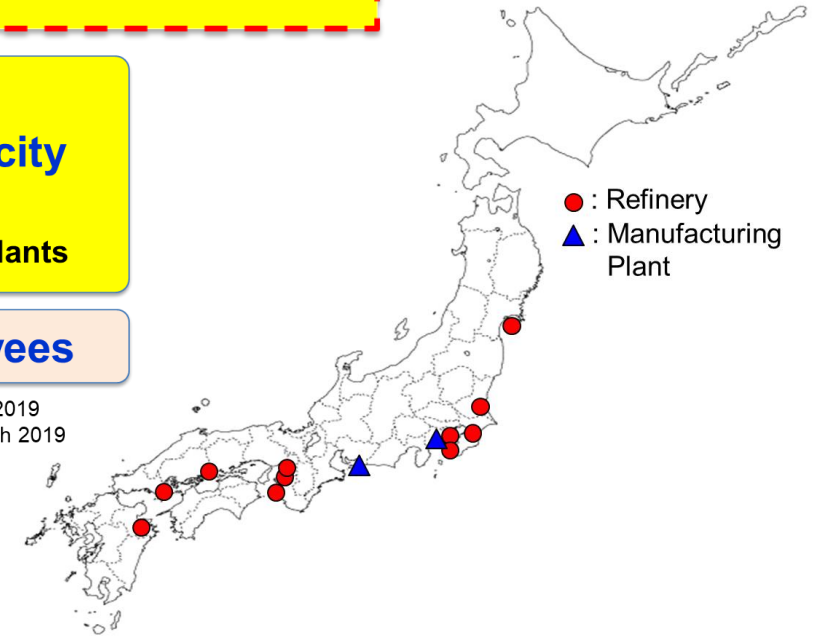
**1,930KBD\***  
**Refining capacity**

**11 Refineries**  
**2 Manufacturing plants**

**9,000\*\* Employees**

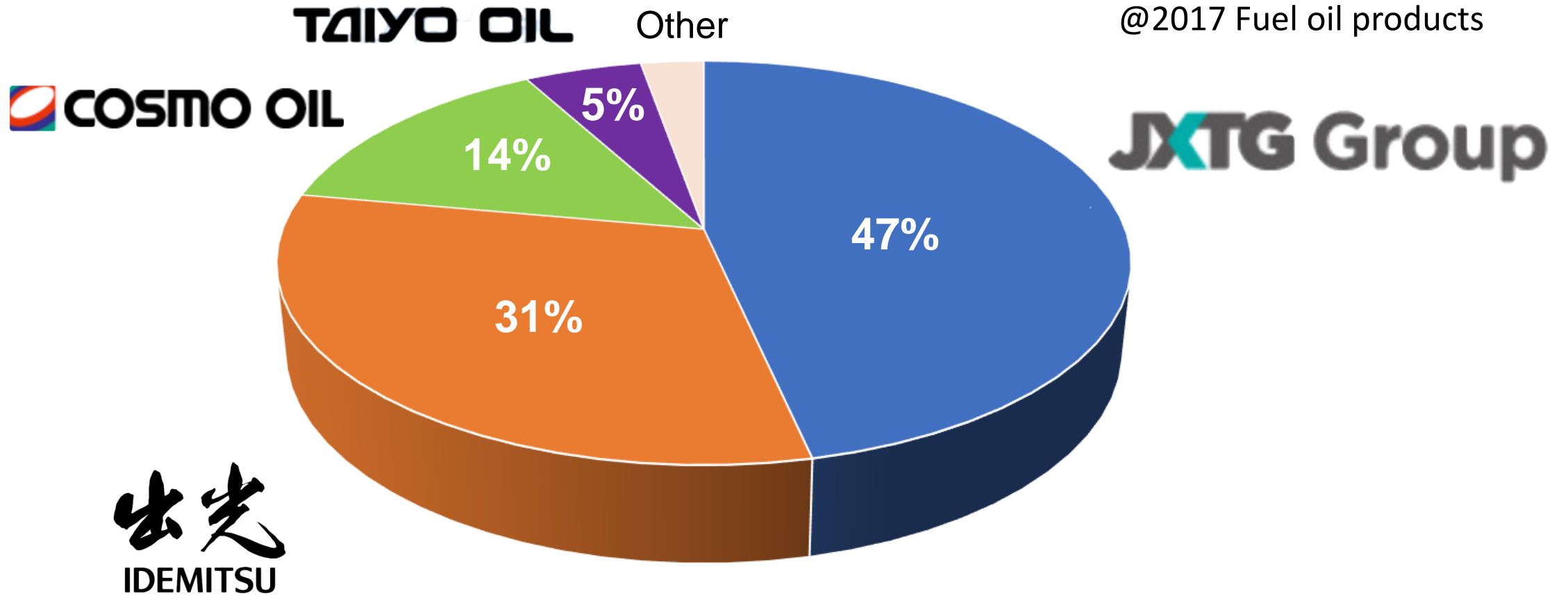
\* Approximate number as of April 2019

\*\* Approximate number as of March 2019



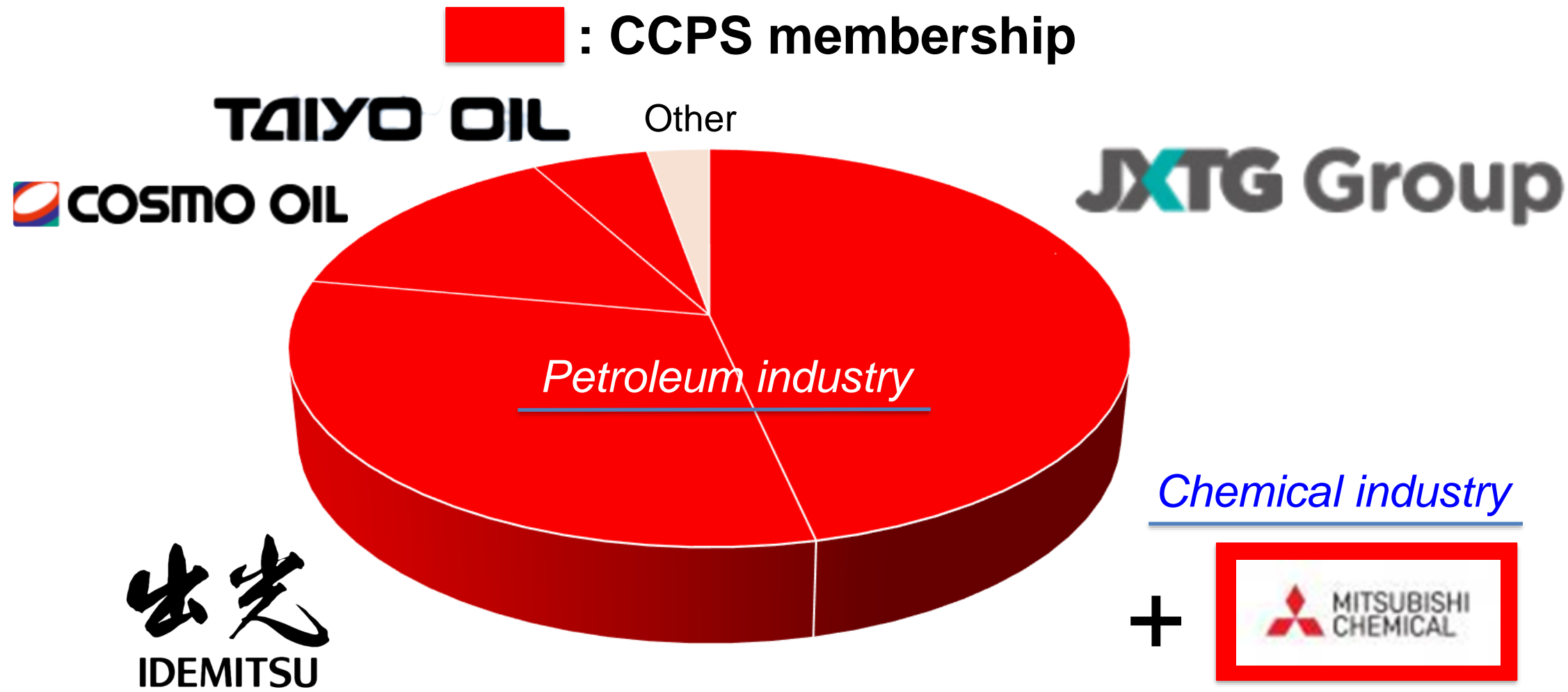
# Market share of domestic sales of petroleum products

@2017 Fuel oil products



- Refining capacity in total in Japan: Approx. 3,500 KBD (As of March 2019)

# Market share of domestic sales of petroleum products



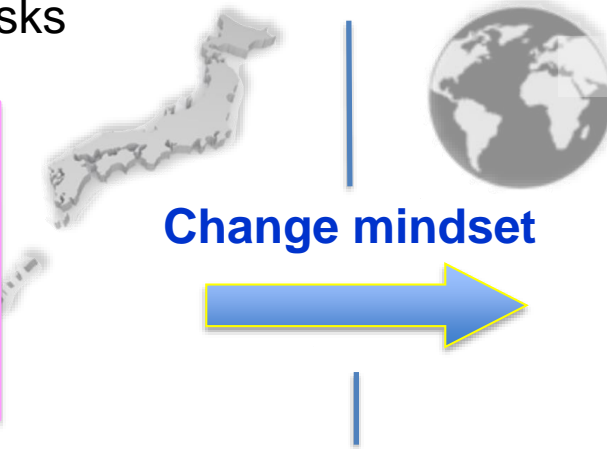
# Paradigm shift for safety in Japan

- My observations -

Input resources to eliminate all risks

Probability \ Consequences	A	B	C	D	E
I	Yellow	Yellow	Yellow	Yellow	Yellow
II	Yellow	Yellow	Yellow	Yellow	Yellow
III	Yellow	Yellow	Yellow	Yellow	Yellow
IV	Yellow	Yellow	Yellow	Yellow	Yellow

For zero incidents?



Input resources effectively to eliminate risks with higher consequences

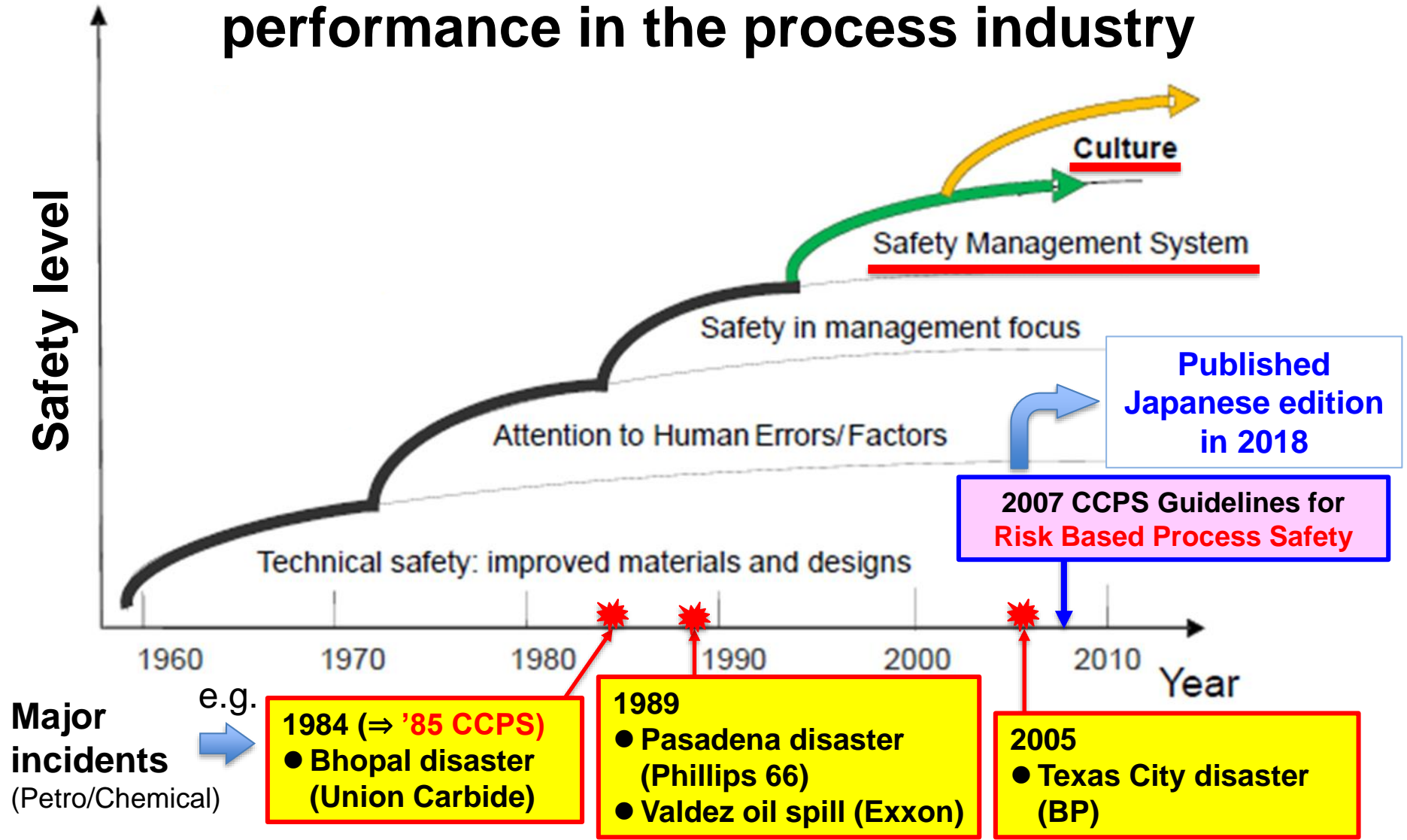
Probability \ Consequences	A	B	C	D	E
I	Red	Red	Red	Yellow	Yellow
II	Red	Red	Yellow	Yellow	Yellow
III	Yellow	Yellow	Yellow	Yellow	Yellow
IV	Yellow	Yellow	Yellow	Yellow	Yellow

RBPS

## Change mindset on process safety

Item	Past & Present	Hereafter
Risk	Should be zero or avoided	Should be identified and managed
Basis for plant safety	Safety regulations <b>Compliance mode</b>	<ul style="list-style-type: none"> <li>Safety regulations</li> <li>Process safety management system based on RBPS</li> </ul> <b>Commitment mode</b>
Depending on	<b>Individuals</b>	<b>Individuals and Systems</b>

# Contributing factors in improving safety performance in the process industry



\* This chart was modified from materials presented by Dr. Hans Pasman (Mary Kay O'Connor Process Safety Center) at WCOGI 2014.



# Status of process safety in Japan

– Major topic (1)

- Participation in global conferences

**September 2017:** The 4<sup>th</sup> CCPS GSPS @Japan  
Keynote speech by **Jun Mutoh, JXTG**  
*Expectation for Process Safety in Japan*  
– *Risk Based Process Safety*



**2017**

**The first year of the process safety (RBPS) era in Japan**

April 2018: The 14<sup>th</sup> CCPS GCPS @Orlando  
Luncheon speech by **Jun Mutoh, JXTG**  
*Beyond Operations Management Systems*  
– *Establishing a Solid Safety Culture*

October 2019: The 5<sup>th</sup> CCPS GSPS @Singapore  
Keynote speech by **Tomohide Miyata, JXTG (Today)**  
*A Path Forward for Promoting CCPS RBPS*

- Increasing company membership in CCPS

Mitsubishi Chemical, Idemitsu, JXTG, COSMO, Taiyo Oil (As of September 2019)

# Status of process safety in Japan

## – Major topic (2)

### National conferences on process safety organized

- Dec. 2018: The 1<sup>st</sup> Process Safety Symposium @Okayama
- Dec. 2019: The 2<sup>nd</sup> Process Safety Symposium @Yokkaichi (*under preparation*)
- July 2019: Safety Engineering Symposium – RBSM @Tokyo  
Keynote speech by **Tomohide Miyata, JXTG**

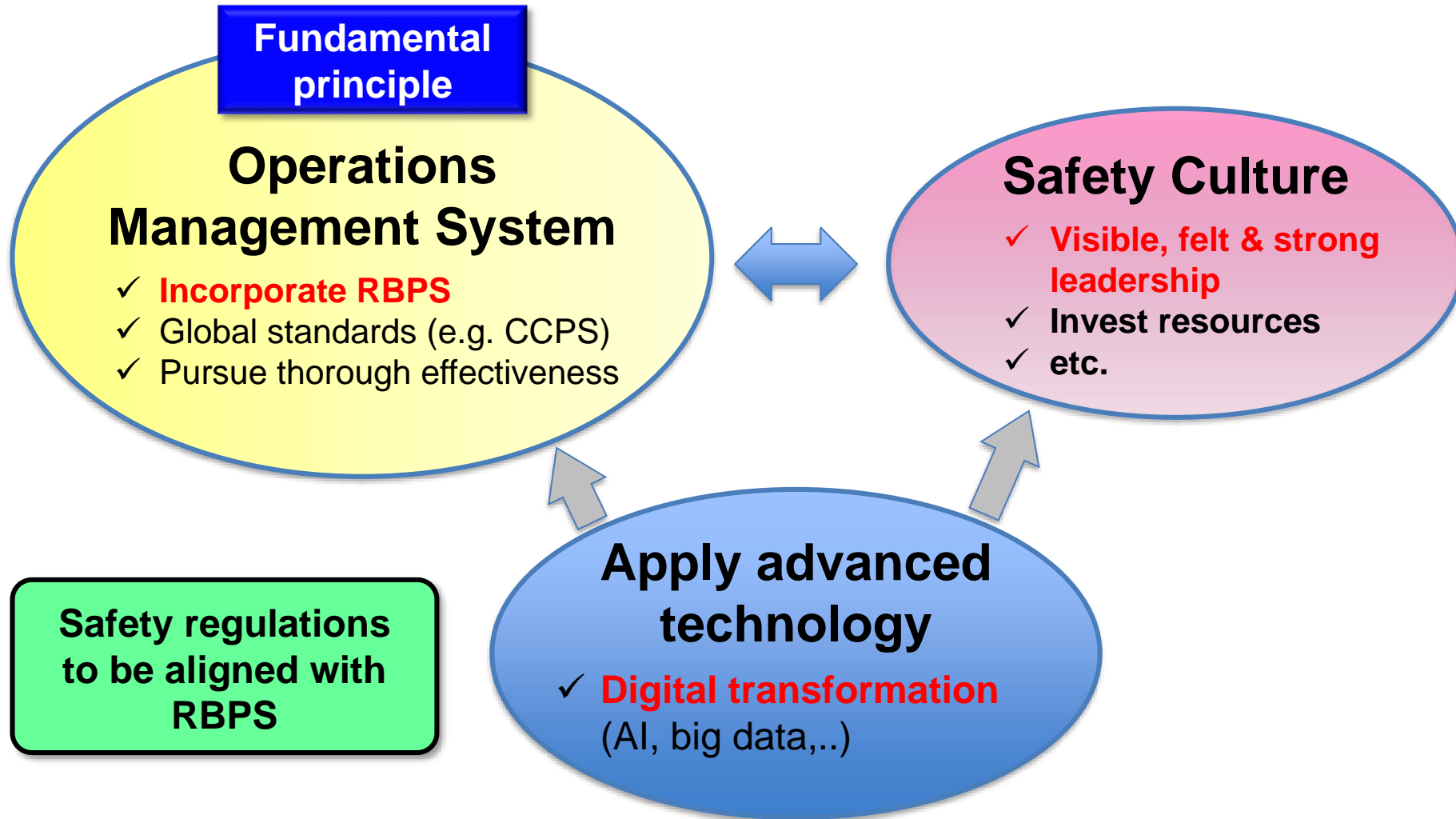
### Consensus / Challenges

- ✓ Accelerate RBPS
- ✓ Foster Senior Process Safety Experts → CCPS member companies and voluntary cooperation by other companies
- ✓ Lobby for alignment of safety regulations with RBPS

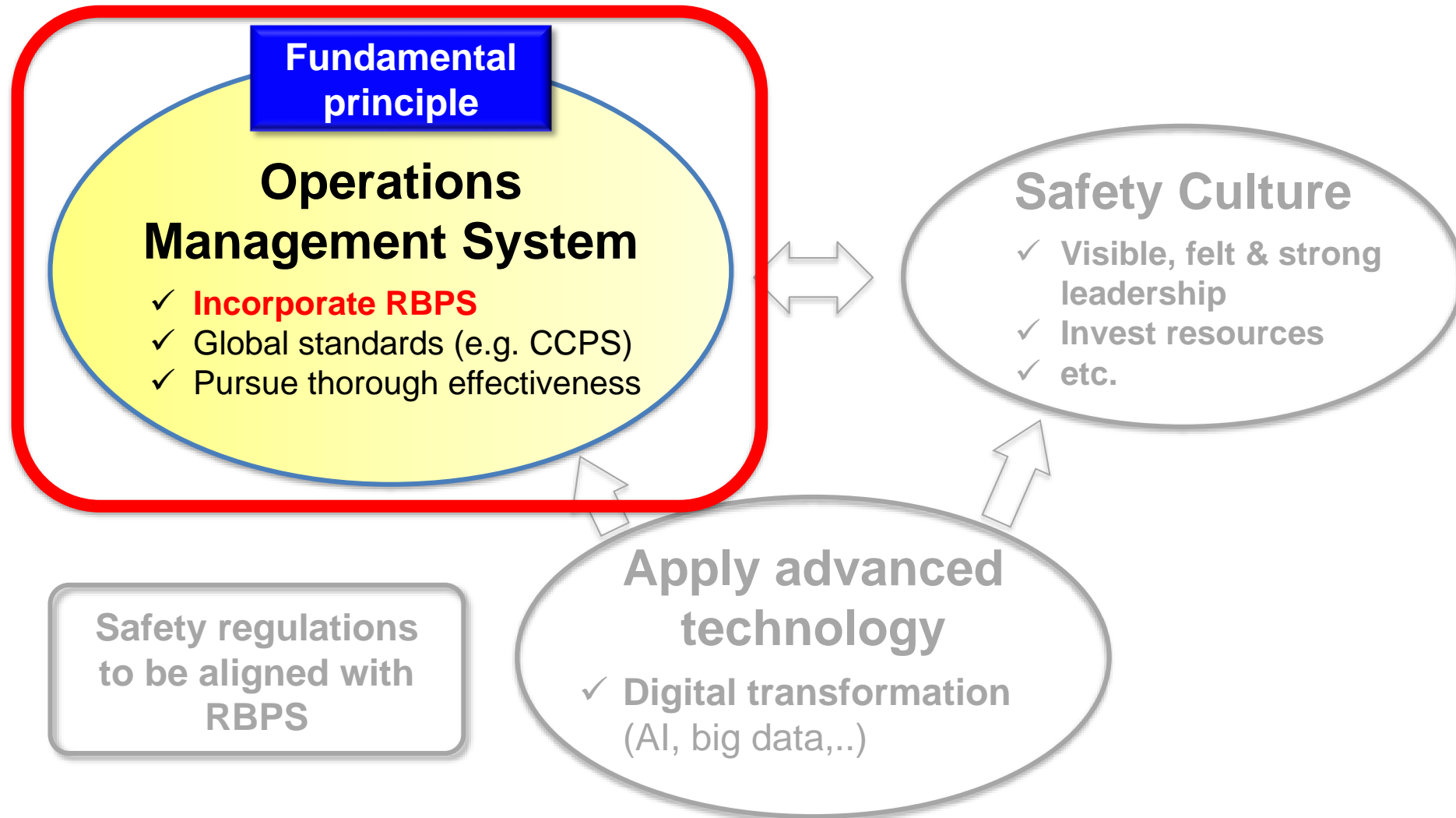
### Government's movement

- April 2017: New “**SUPER**” certification for operations introduced at HPGSL
  - ✓ Key requirements: Introduction of RBPS and advanced technology (Digital)
  - ✓ 5 plants have obtained **SUPER** (As of September 2019)  
**JXTG**; Kawasaki, Sakai, Mizushima, **Mitsubishi Chemical**; Mizushima, **Idemitsu**; Tokuyama

# Points & future outlook for risk based SH&E in Japan



# Points & future outlook for risk based SH&E in Japan

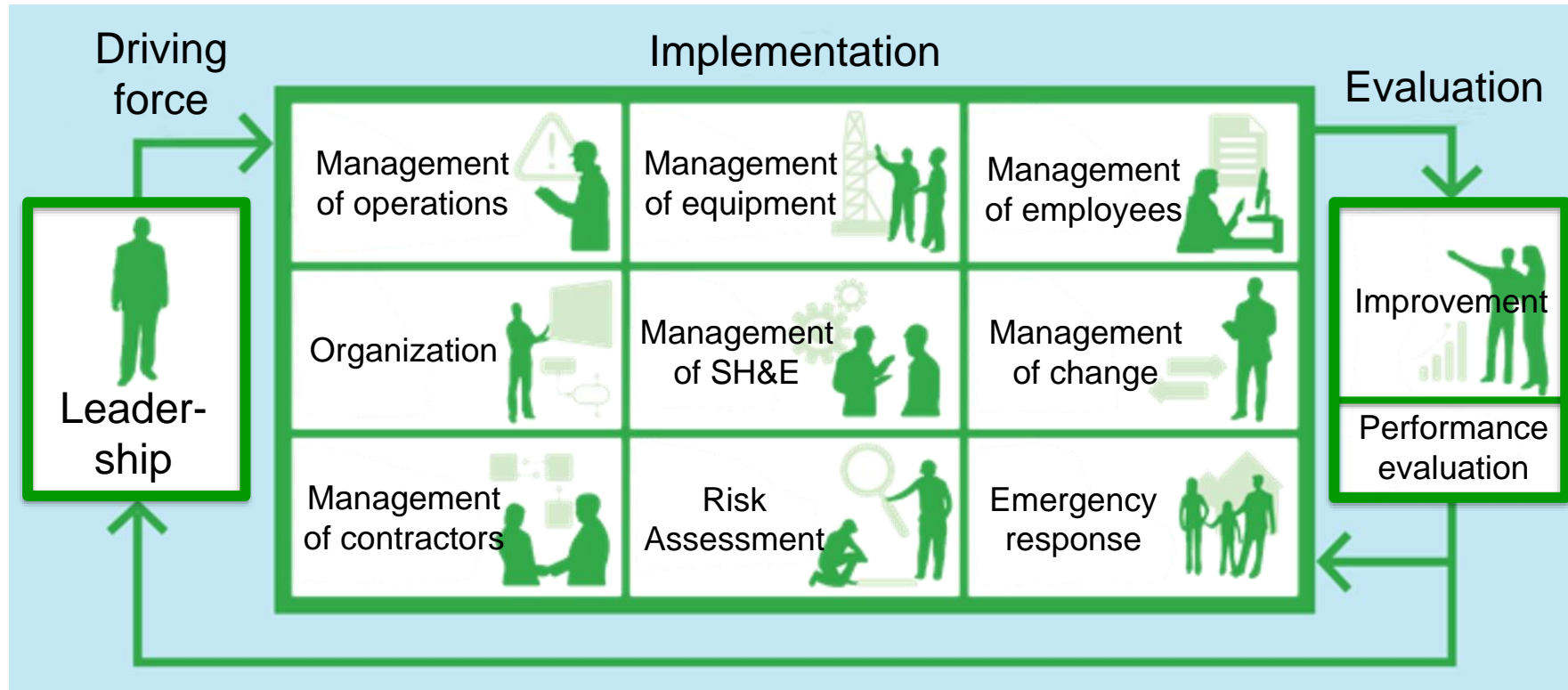


# Deploy operations management system

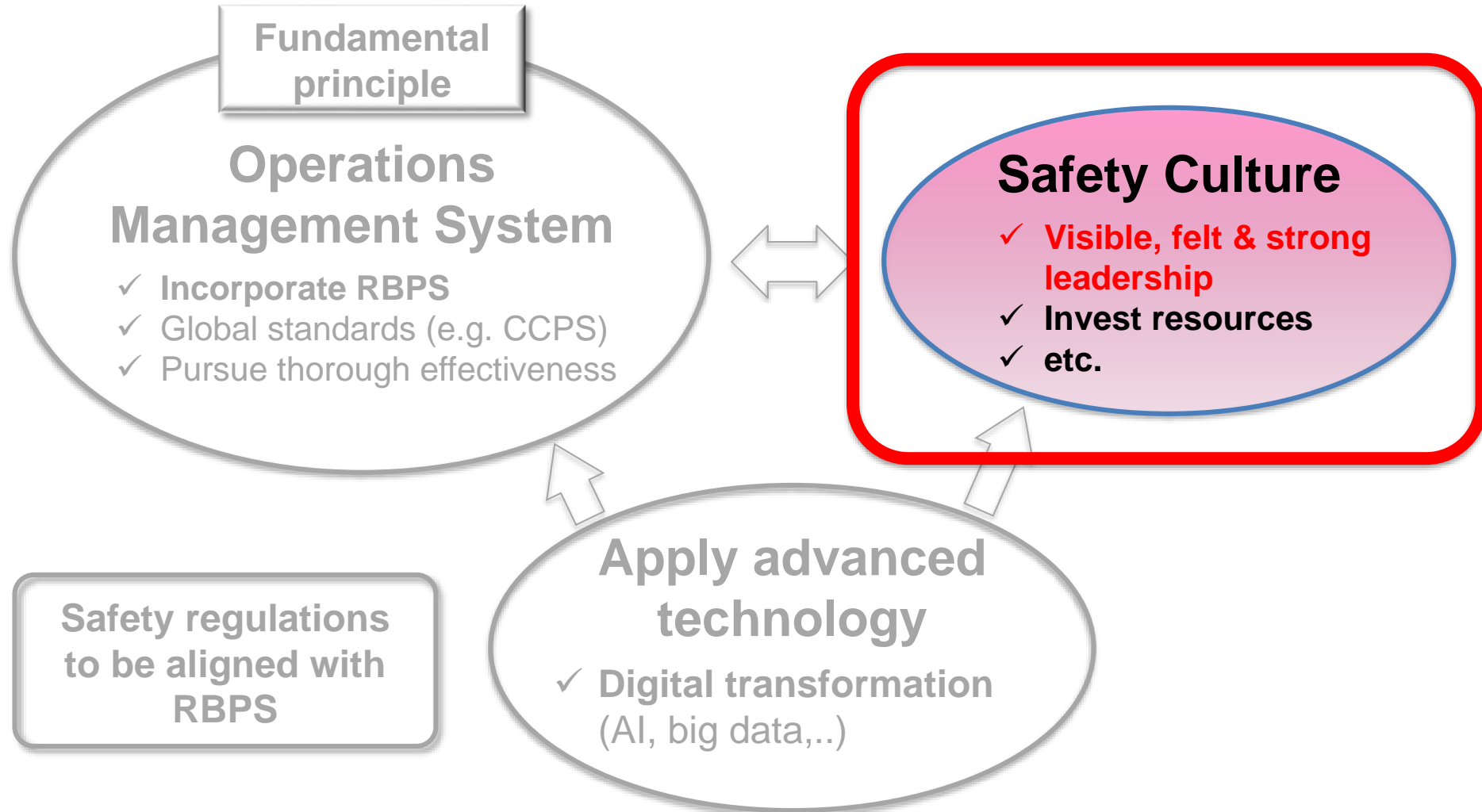
## Points

- Based on global standards & RBPS (e.g. CCPS RBPS)
- Continuous improvement process in place (Audit, KPI, etc.)
- Pursue thorough effectiveness

**JXTG – SOMS<sup>®</sup>** (⇒ CCPS RBPS, 12 elements incl. environment & health)



# Points & future outlook for risk based SH&E in Japan

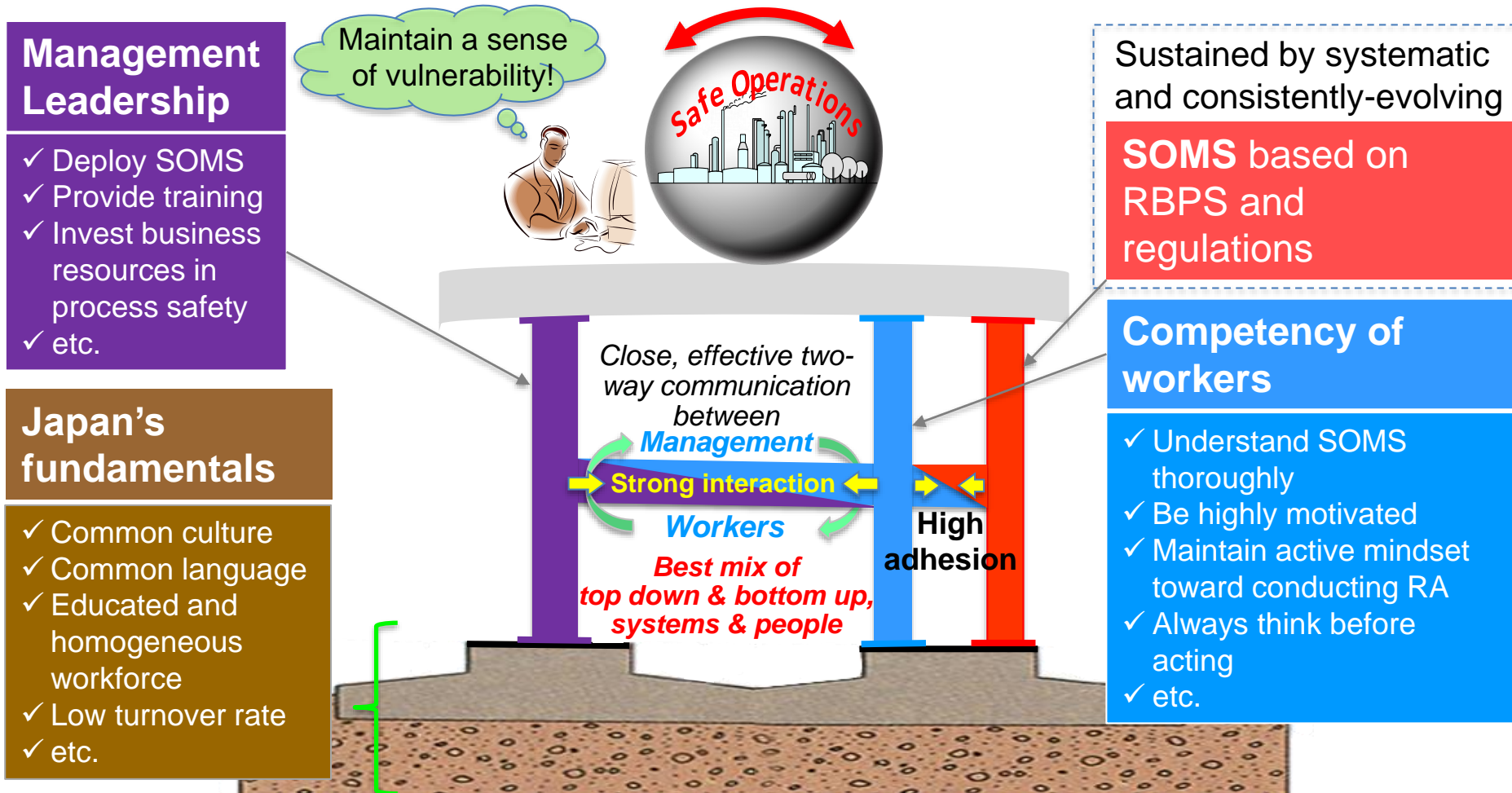


# JXTG's approach to process safety

- Conceptual aspect of safe plant operations -

## Sustainable Safe Operations – Constructing a Solid Safety Culture

Not easy to maintain stability without strenuous effort



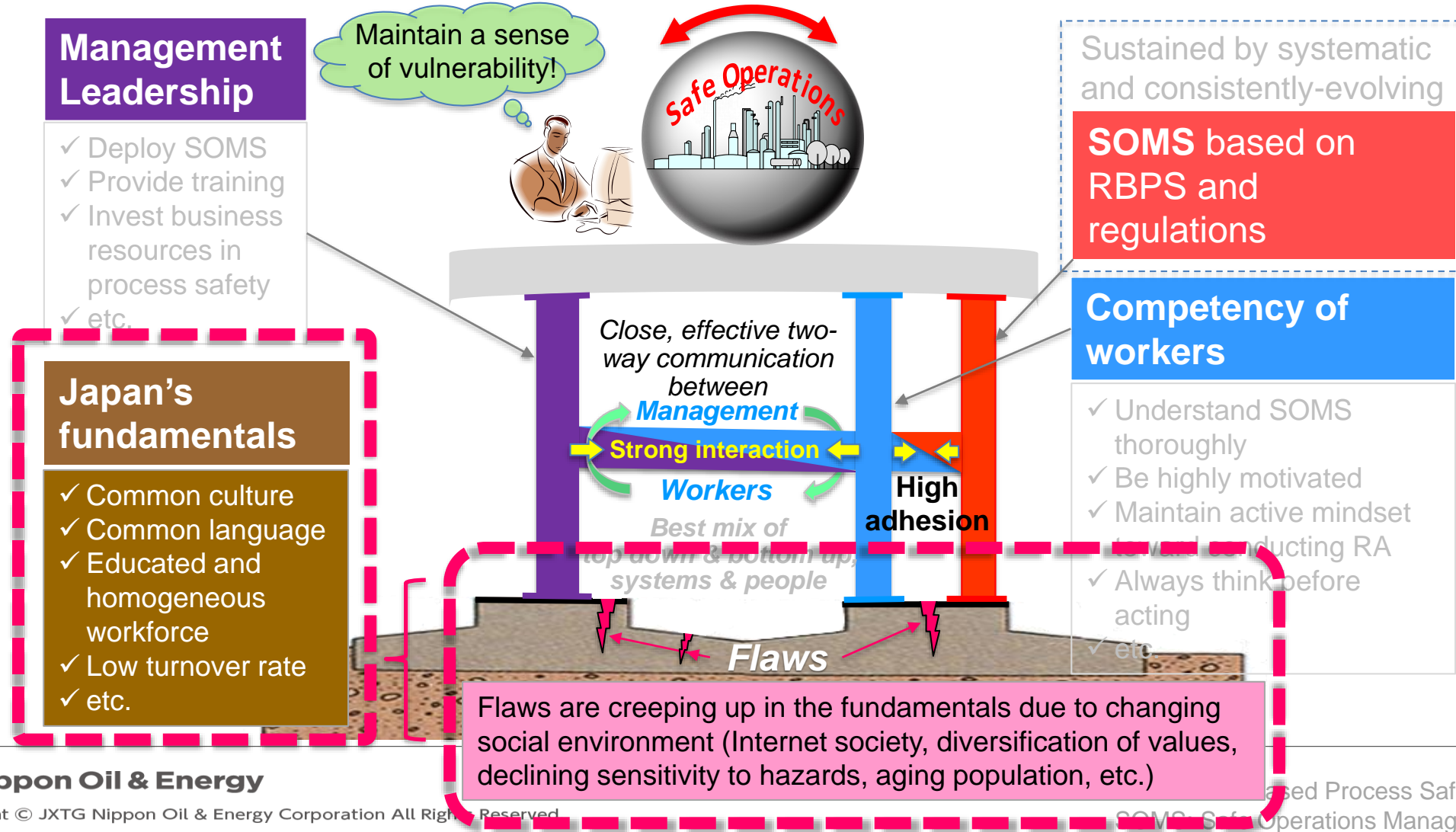


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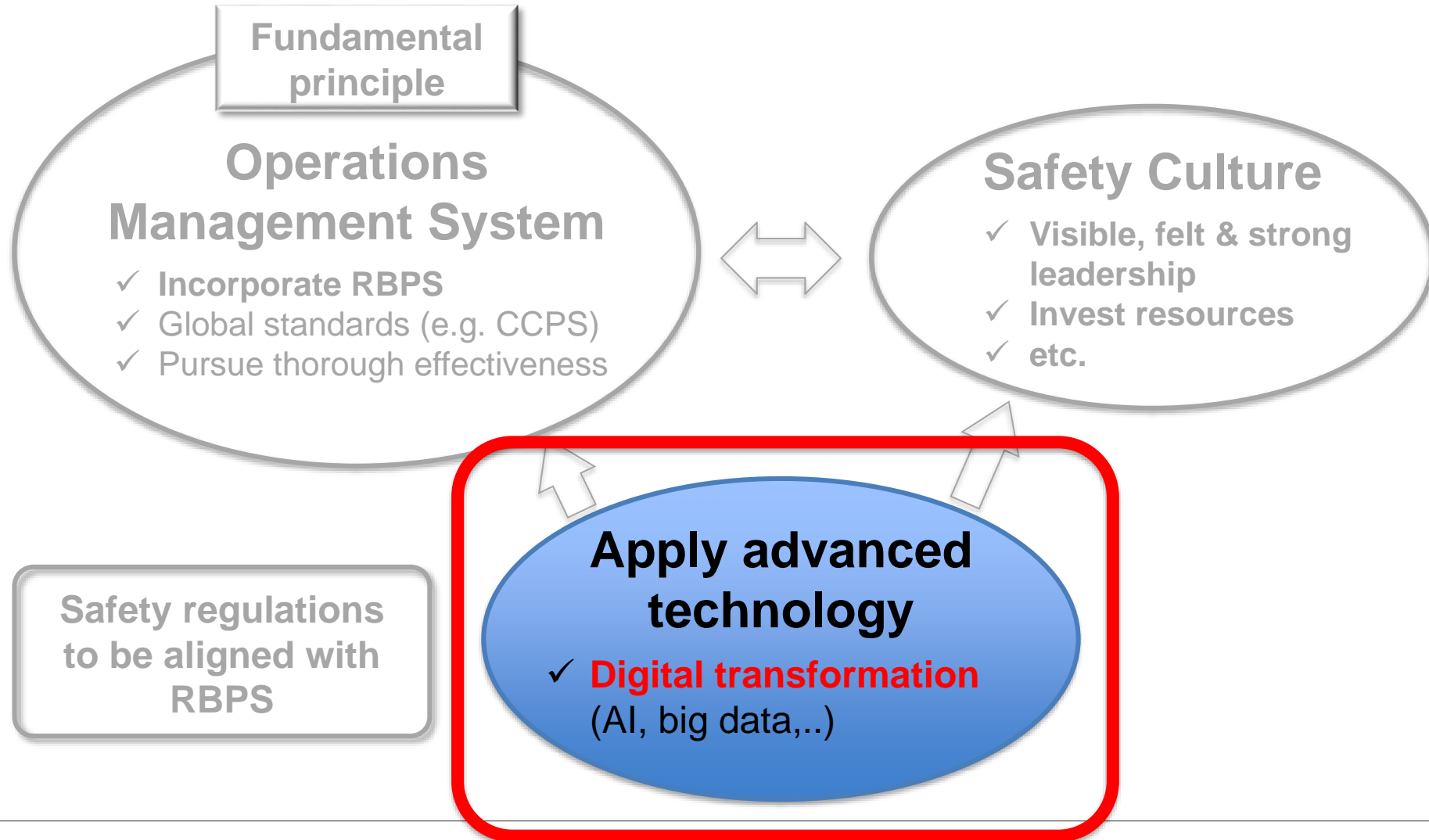
## Sustainable Safe Operations – Constructing a Solid Safety Culture

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# Points & future outlook for risk based SH&E in Japan

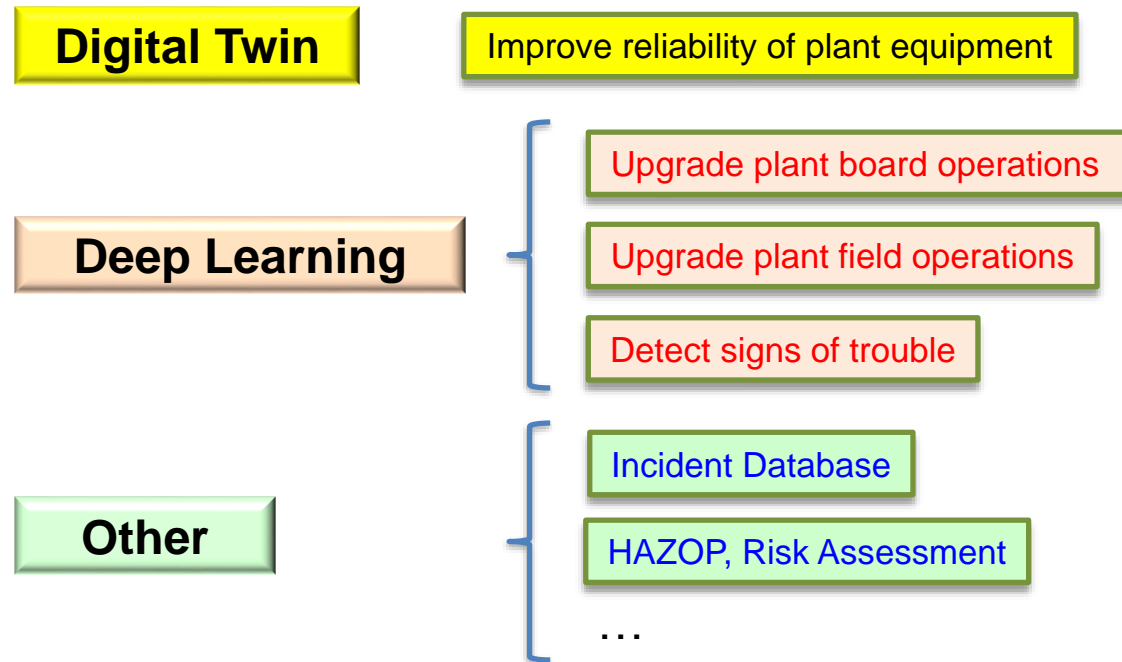


# Apply DX (Digital Transformation)

## ● Points

- ✓ Essential for enhancement of process safety
- ✓ Top down for promoting DX
  - Drastic change of workflow

## ● Expected areas of application



**Design document**

**P&ID**

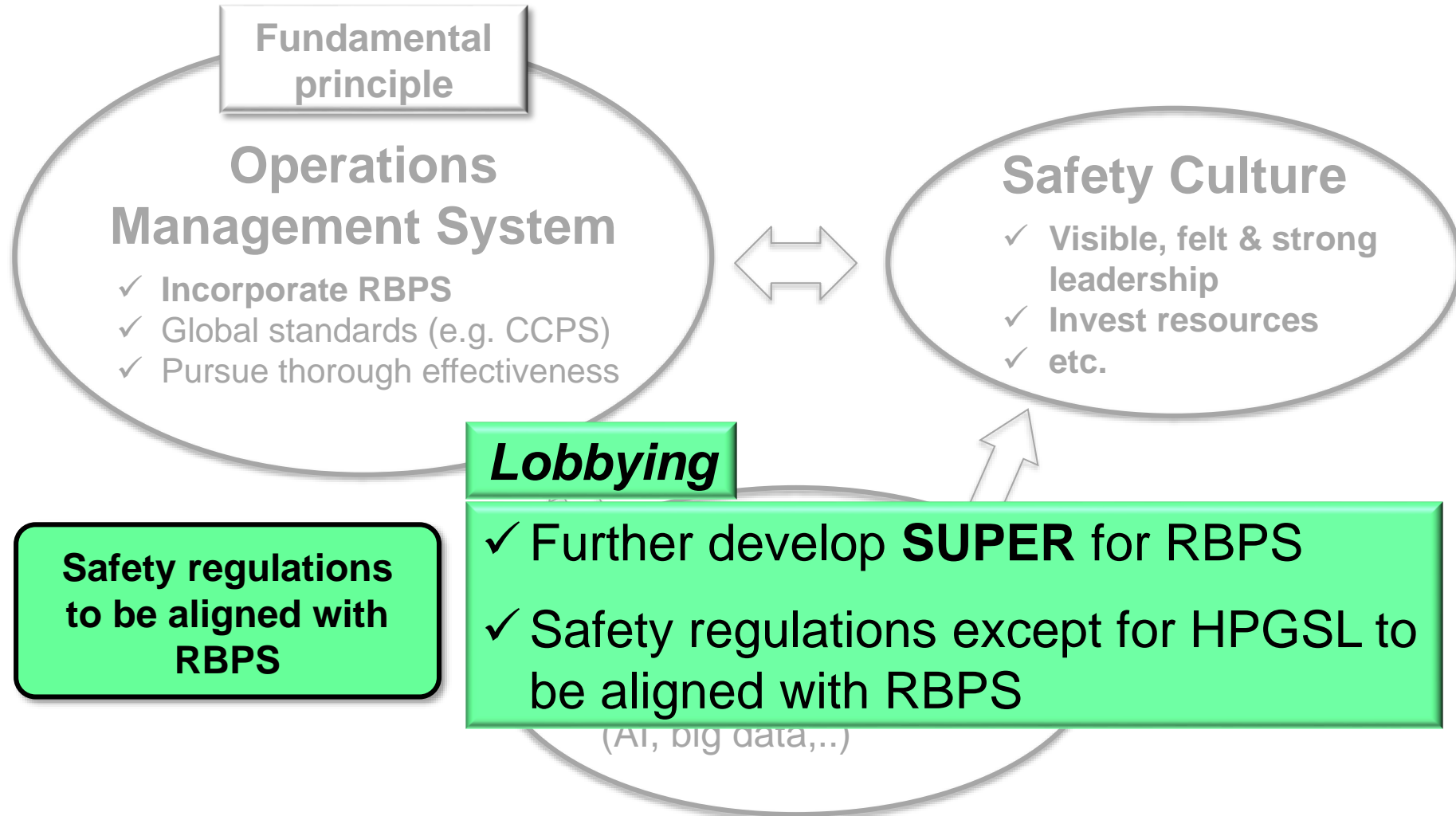
**Inspection data**

No	Tag No	Item	Unit	Spec	Unit	Spec
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2	407-0002	Flow	Pressure	PSI	1000	10
3	407-0003	Flow	Pressure	PSI	1000	10
4	407-0004	Flow	Pressure	PSI	1000	10
5	407-0005	Flow	Pressure	PSI	1000	10
6	407-0006	Flow	Pressure	PSI	1000	10
7	407-0007	Flow	Pressure	PSI	1000	10
8	407-0008	Flow	Pressure	PSI	1000	10

**Equipment strategy**

Probability	A	B	C	D	E
I					
II					
III					
IV					

# Points & future outlook for risk based SH&E in Japan



# Keys for success in achieving sound RBPS

## Senior management (and leaders at all levels) must

- Always demonstrate strong **leadership** on process safety
  - Persuasion, felt leadership, unannounced visits to operation field, etc.
- Take complete responsibility for consequences as the result of risk-based approach / Resolution: Ensure **RA quality**
- Invest appropriate / required business resources into process safety area with no compromise
- Recognize RA is NOT just a means of cost reduction
- Maintain a sense of vulnerability
  - Pursue effectiveness of operations management system (JXTG: SOMS)
- Introduce Digital (DX)

**Walk the talk**

# Endless journey to the goal

While support is provided through operations management systems, it's people who make it work.

**+Digital**



The slightest lapse in attention can cause us to stumble



**Goal**

- Nobody gets hurt
- Eliminate serious process safety incidents

# Thank you for your attention