

24th EuroSPI & EuroAsiaSPI Conference
WS 4 Good and Bad Practices in Improvement

8. September 2017, Technical University of Ostrava, Ostrava, Czech Republic



Formulation of process improvement knowledge

~ 7 components of a good PI story ~

So NORIMATSU, Kiyoshi ENDO, Makoto USUGI, Aiichiro NIWA,
Eiwa KATAYAMA, Tomohiro HASHIMOTO, Koichi TANGE

Japan Software Process Improvement Consortium (JASPIC)

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Is this paper whole? or holed?



About Japan Software Process Improvement Consortium

- Objectives for Japan SPI Consortium

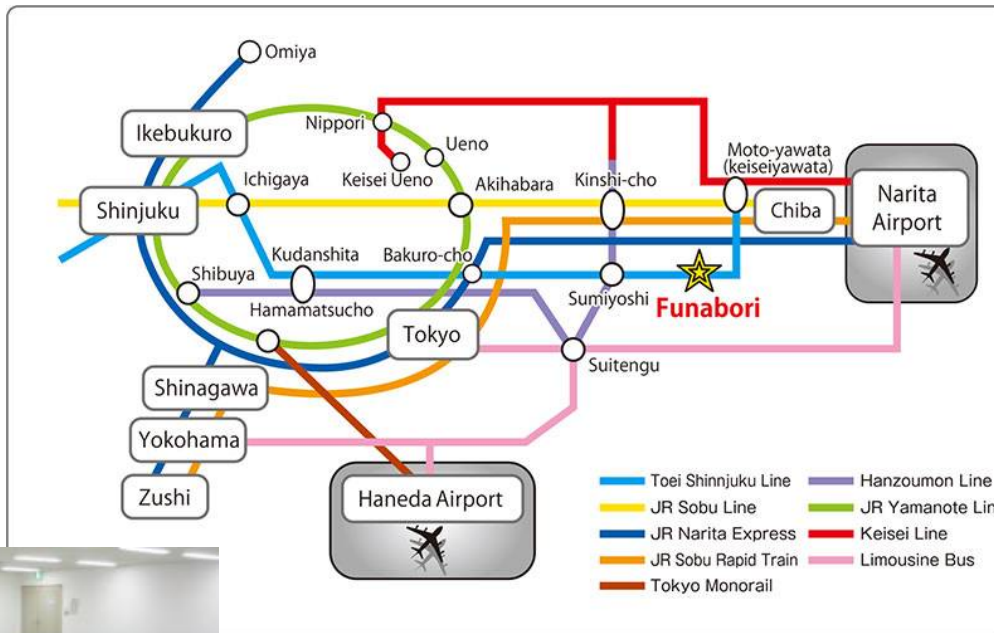
Japan SPI Consortium (JASPIC), a non-profit organization established for collecting and disseminating “good practices” in Software Process Improvement efforts, have been organizing SPI conferences in Japan since 2003. Industrial experiences are presented along with keynote presentations, workshops, and tutorials. These presentations are publicly available for future usage.

- Objectives for our special interest group

To further develop systematic knowledge base of Process Improvement, the authors have formed a special interest group within JASPIC. We have analyzed the presentations of SPI conferences in Japan to extract various forms of knowledge (e.g. keywords, concepts, principles, and good practices) so that it will support producing more successful stories in the community.

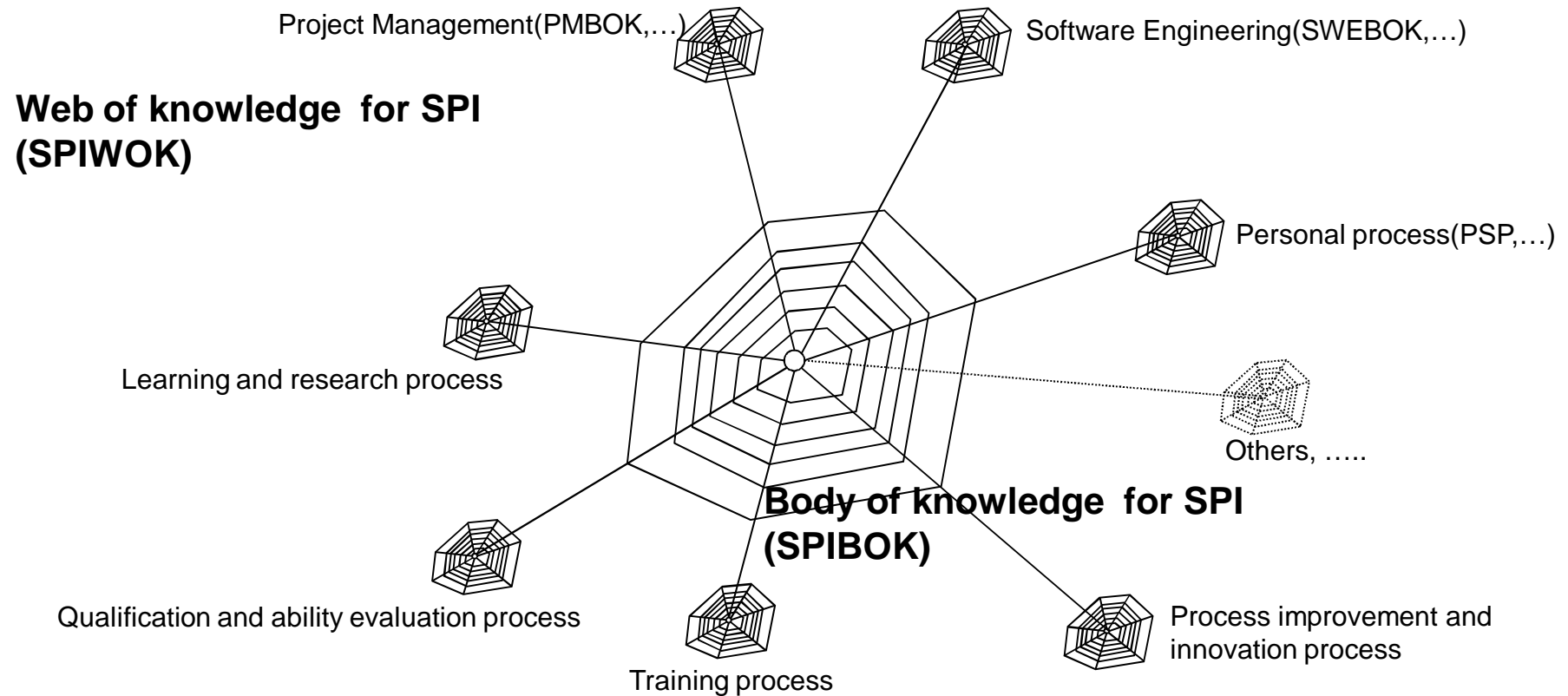
SPI-Japan 2017 Conference

- Date: October 11-13th, 2017
- Place: Tower hall Funabori (Edogawa-ward, Tokyo)
- Access:



Introduction of our research group

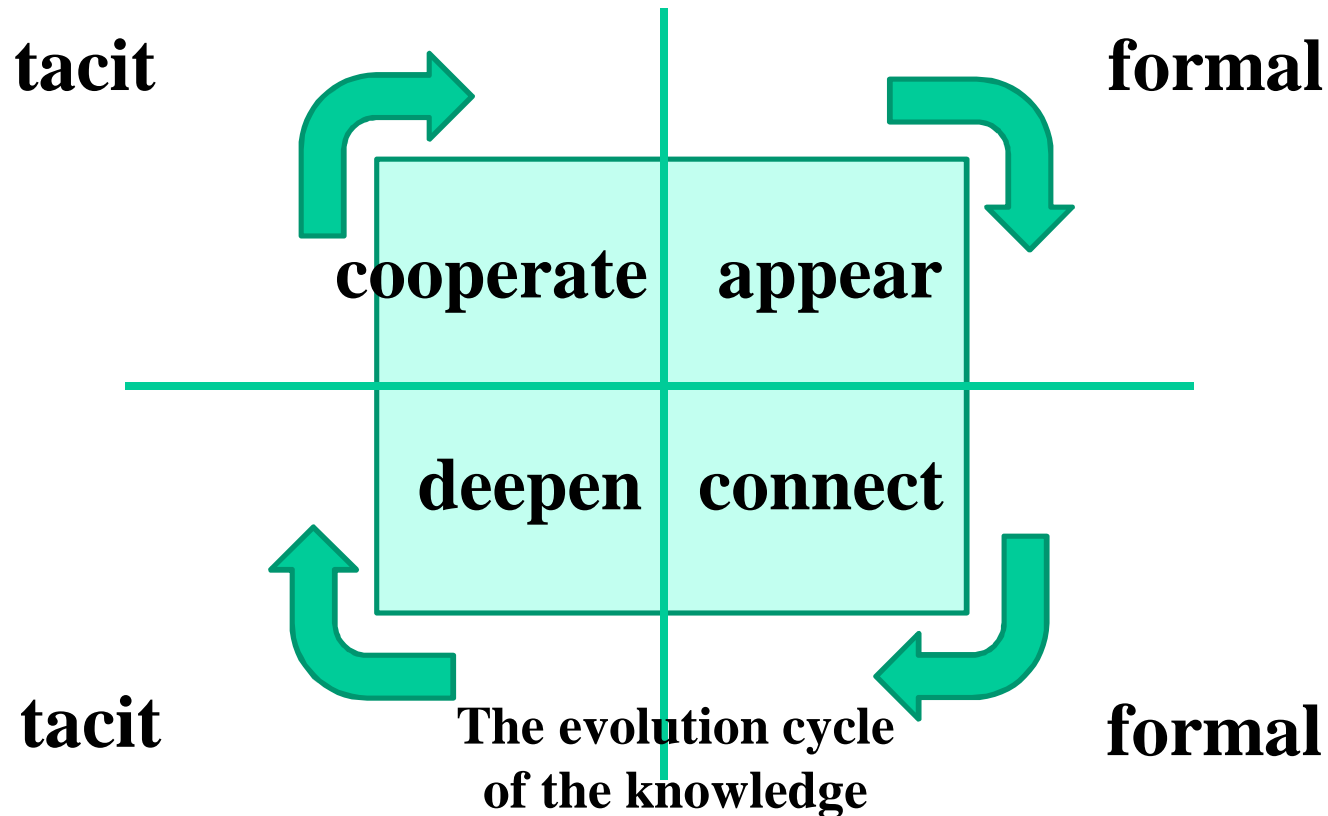
Body of knowledge and Web of knowledge



Purpose of our research group

About “formulation of knowledge”

Source: SECI-Model by NONAKA
 "Management of knowledge creation"
 Ikujiro Nonaka, Nihon Keizai Shimbun,
 Inc./1990)

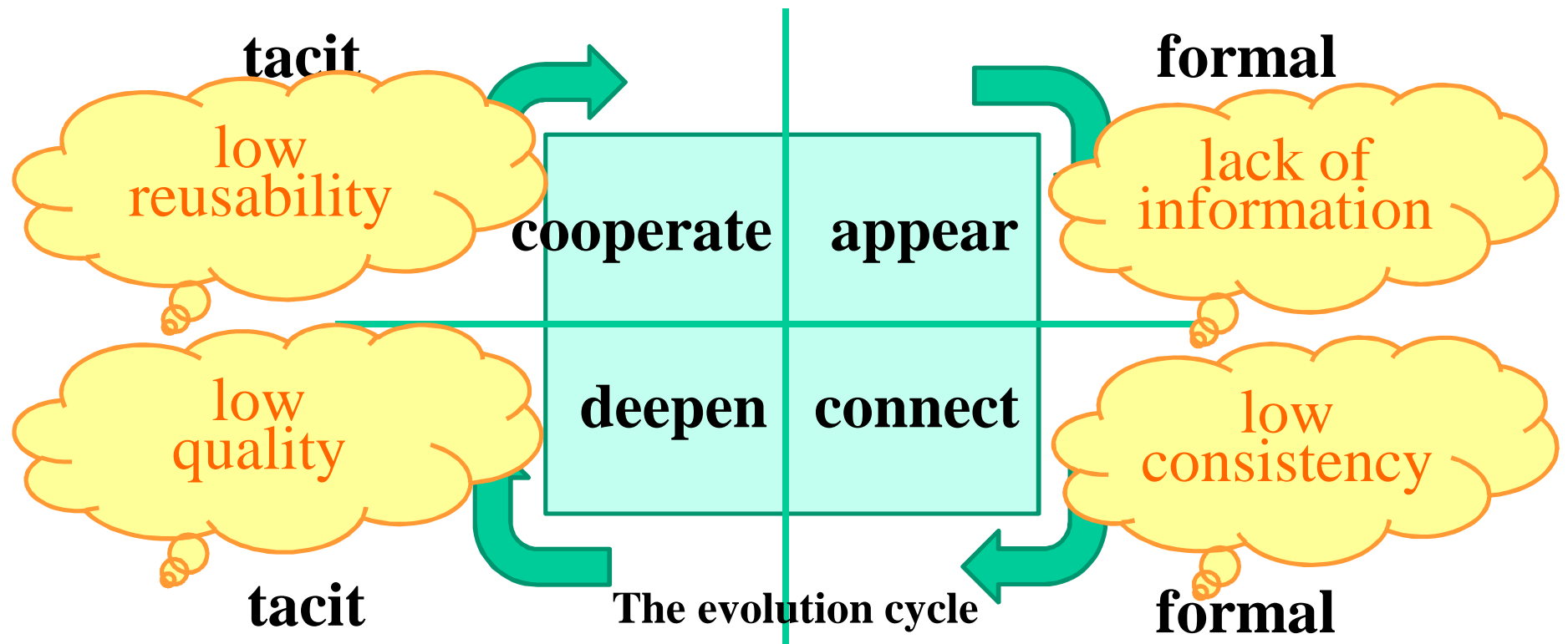


Problems, challenges

of our research group

About the "Evolution of knowledge"

Source: SECI-Model by NONAKA
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 Ikujiro Nonaka, Nihon Keizai Shimbun,
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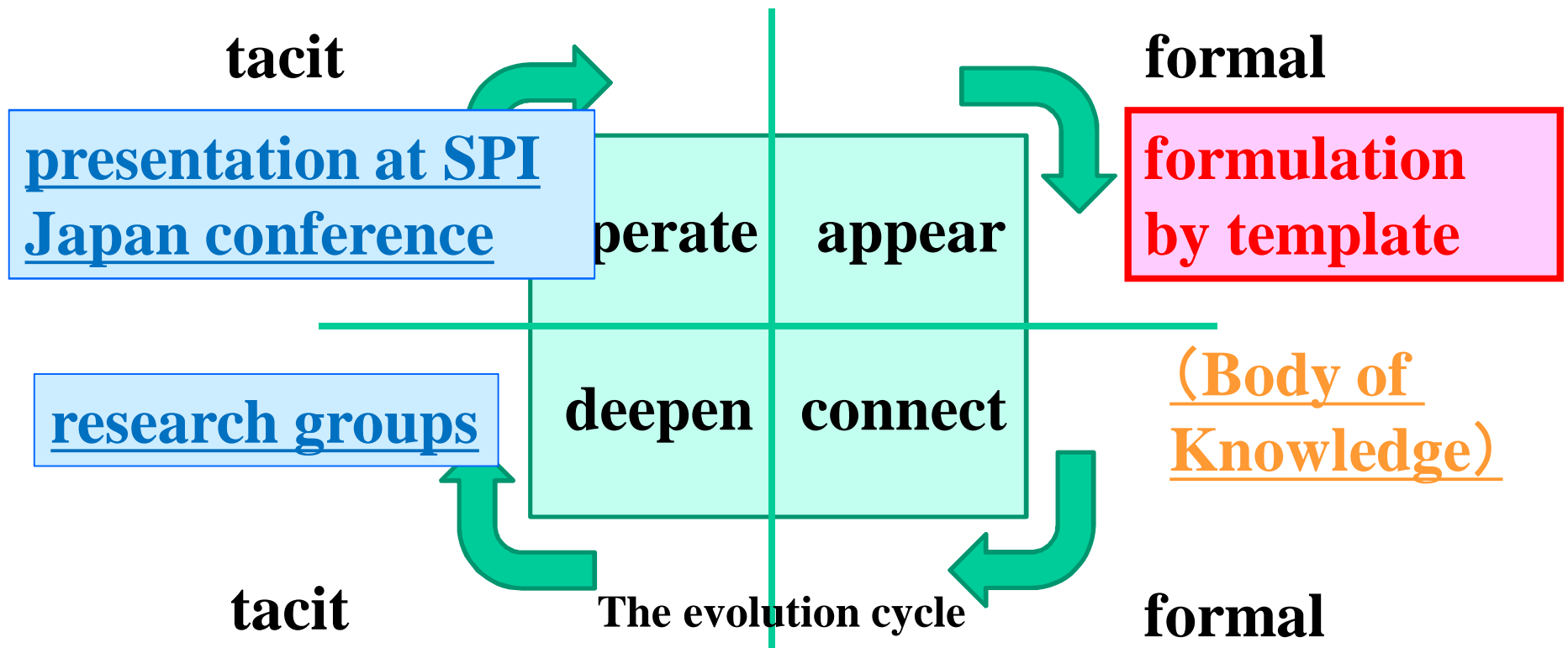
The evolution cycle
 of the knowledge
 Japan Software Process Improvement
 Consortium (JASPIC)



of our research group

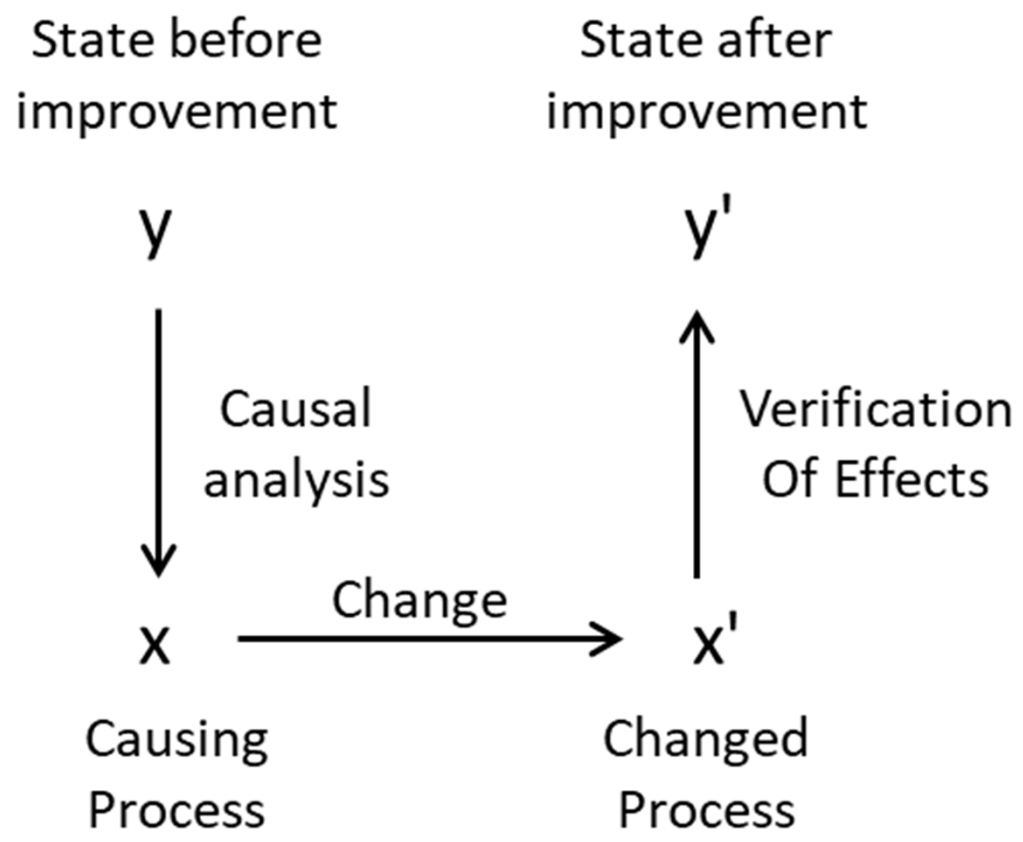
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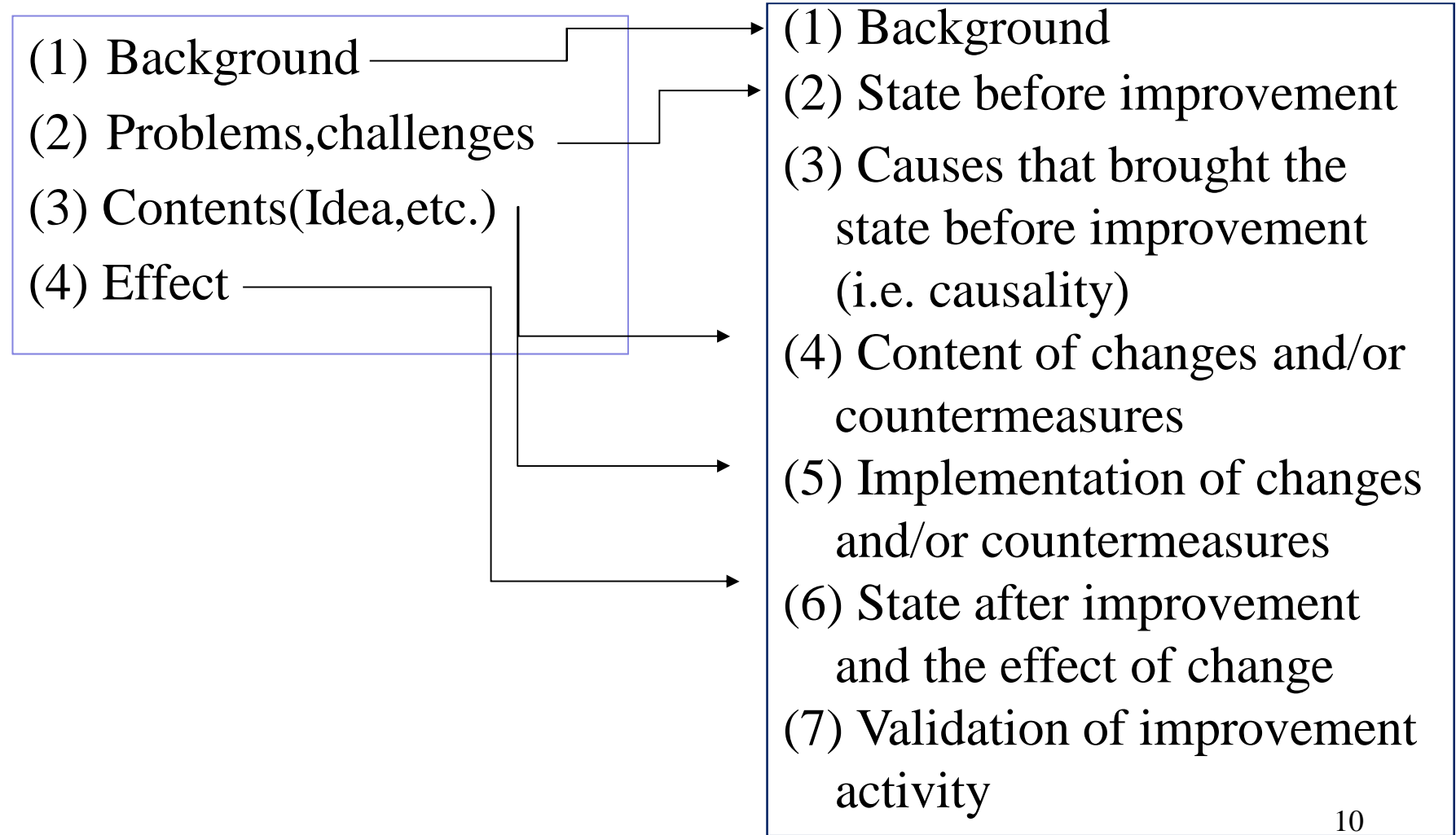
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Basic structure of the process improvement activity



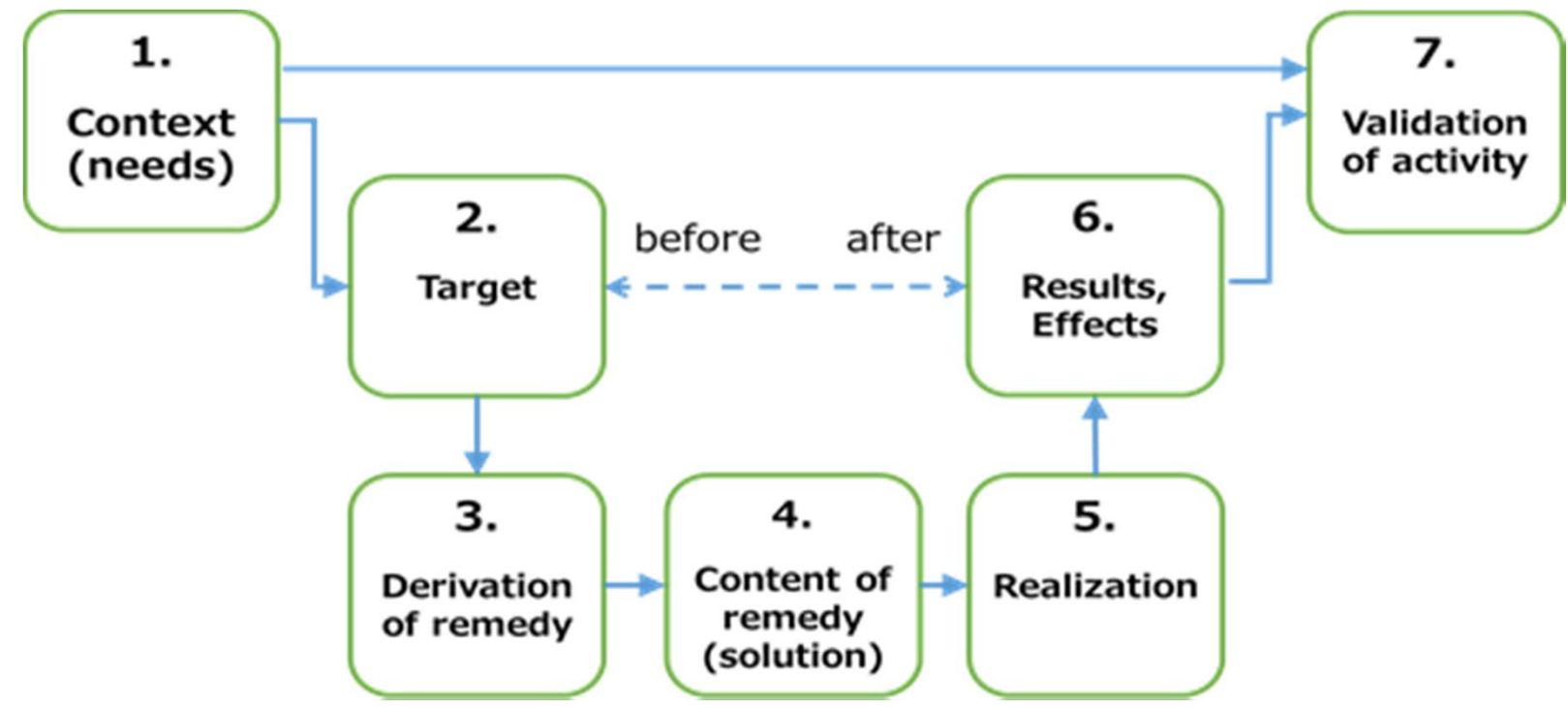
Improvement of the template

(old) Template for Conference Presentation (new)



Improvement of the template

Relationships among components of the new template



The new template



(1) Background

- * Motive for the activity described in this presentation, original purpose and premise, etc..

(2) State before improvement

- * Selected situation, problems and symptoms considered as improvement target.
- * And, the rationale of selection.

(3) Causes that brought the state before improvement (i.e. causality)

- * Phenomenon and/or cause that created a state before improvement (e.g. some processes). There can be more than one phenomena or cause.
- * And, the method that revealed/selected/identified these phenomena and causes.

(4) Content of changes and/or countermeasures

- * Change includes situations such as "Something is changed", "Something is abolished", and "A new thing is added".
- * And, the rationale of selection.

(5) Implementation of changes and/or countermeasures

- * Activities performed to achieve the change or to implement the countermeasure.
- * And, any devised efforts, or issues that were encountered.

(6) State after improvement and the effect of change

- * Changes that occurred after (5) "implementation of changes and/or countermeasures".
- * Changes of situation specified in (2) "state before improvement", i.e. effect of change.
- * And, verification of changes being not accidental. (if possible)

(7) Validation of improvement activity

- * Validity of the improvements, cost-effectiveness, remaining issues, secondary effect, after analyzing overall improvement activity.

Degree of coverage :

evaluated items (Red : 7 points are perfect.)



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Degree of completeness : evaluated items (Blue : 13 points are perfect.)



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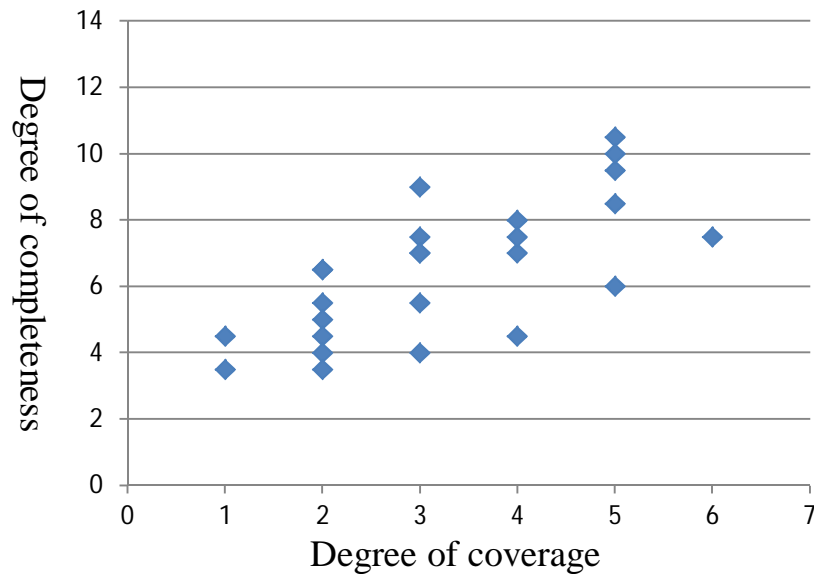
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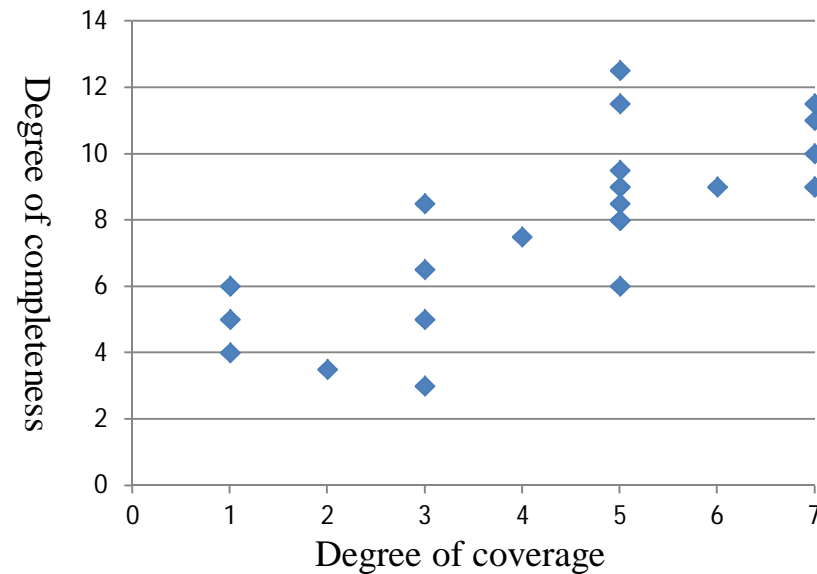
Evaluation result of the coverage

Evaluation result of the coverage (FY2011)



Before improvement

Evaluation result of the coverage (FY2013)

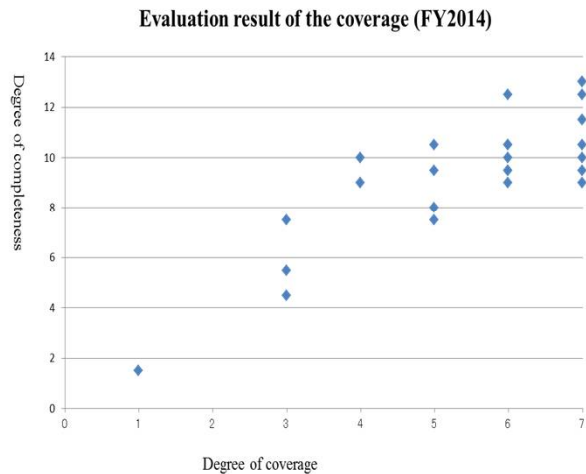


After improvement(1st year)

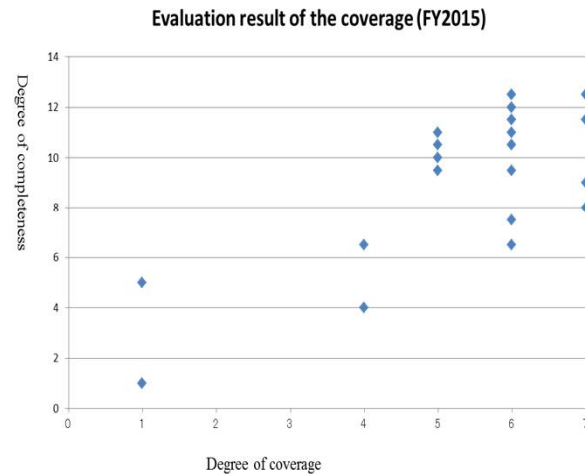
Description statistics value of the coverage

	FY2011	FY2013
Degree of coverage		
Mean and the 95% confidence interval	3.24(46%) 2.67-3.81	4.32(62%) 3.55-5.09
Standard deviation	1.39	1.86
Degree of completeness		
Mean and the 95% confidence interval	6.50(50%) 5.65-7.34	7.80(60%) 6.76-8.84
Standard deviation	2.05	2.51

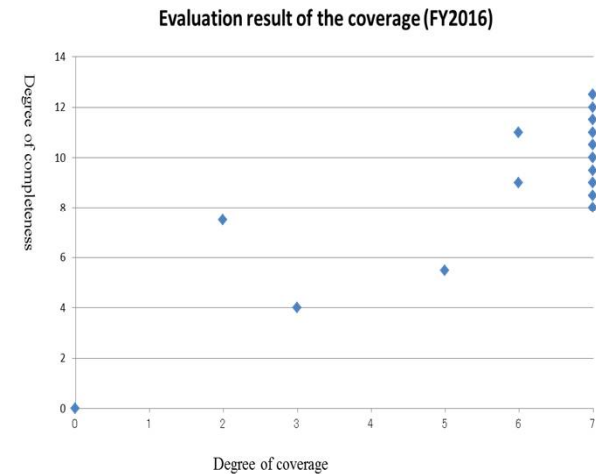
Evaluation result of the coverage



After improvement(2nd year)



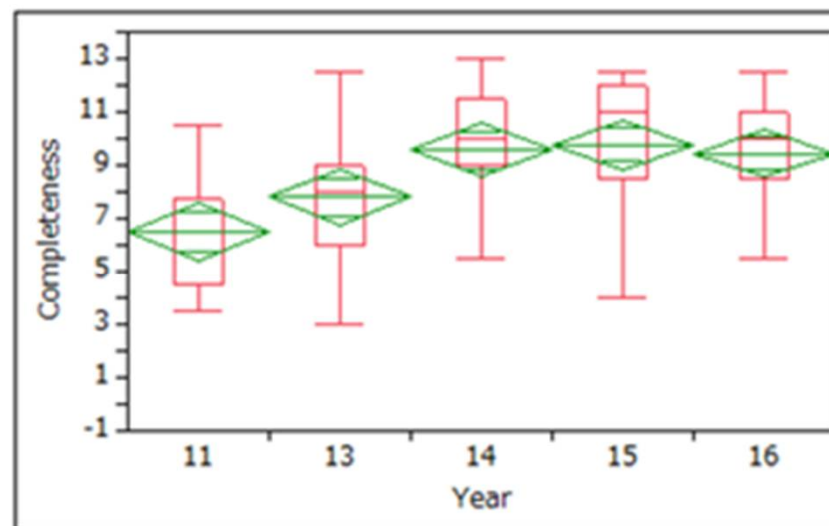
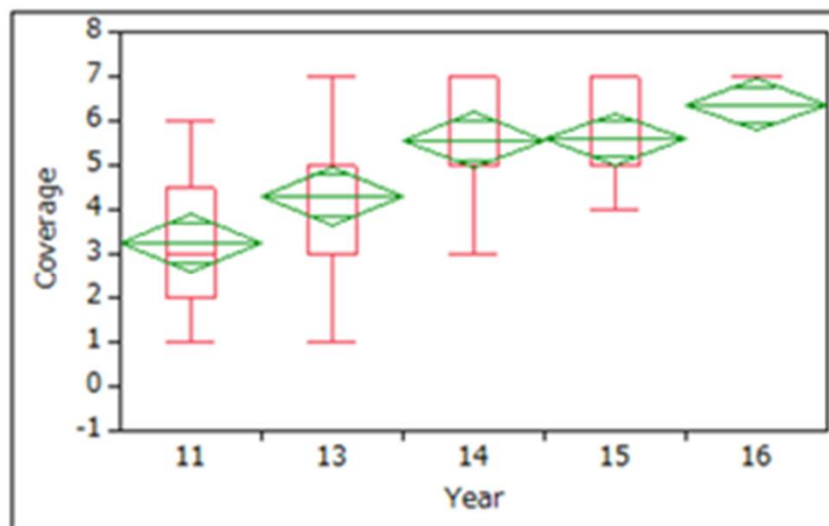
After (3rd year)



After (4th year)

Outcome until now

Annual trend of scores from 2011 to 2016



Comparison of scores for frequently missing items

Frequently Missing Item	2011 Score	2016 Score	Ratio (2016/2011)
causal analysis of issues	0.54	0.94	(1.7)
verification of results	0.06	0.30	(5.0)
validation of improvement activity	0.12	0.91	(7.6)

Comparison of scores for “successful stories”

	2011 Score	2016 Score	Ratio (2016/2011)
Score for verification	0.64 /2.0	1.61 /2.0	(2.5)
Score for validation	0.04 /3.0	1.00 /3.0	(25)
Total (verification + validation)	0.68 /5.0	2.61 /5.0	(3.8)

Conclusion

- In order to collect “good process improvement stories” in the SPI conference in Japan, we formalized the structure of process improvement knowledge and standardized it as a template to be used in the conference proposal.
- As a result, the amount of information included in these PI stories increased steadily over the last four years.
- The quality of knowledge also improved as we saw significant growth in the scores of “successful stories”.

Next target

- Establishing
 - Process Improvement Body of Knowledge
 - (Draft) Ontology of Concepts used in Process Improvement
 - Process Improvement Web of Knowledge
 - (Prototype of) Knowledge Base

- Using PI Story template
 - for PI project management

Summary



かけた論文は、かけてない



2 sentences have the same pronunciation
in Japanese.

欠けた論文は、書けてない

Holed paper is not whole (completely written).

書けた論文は、欠けてない

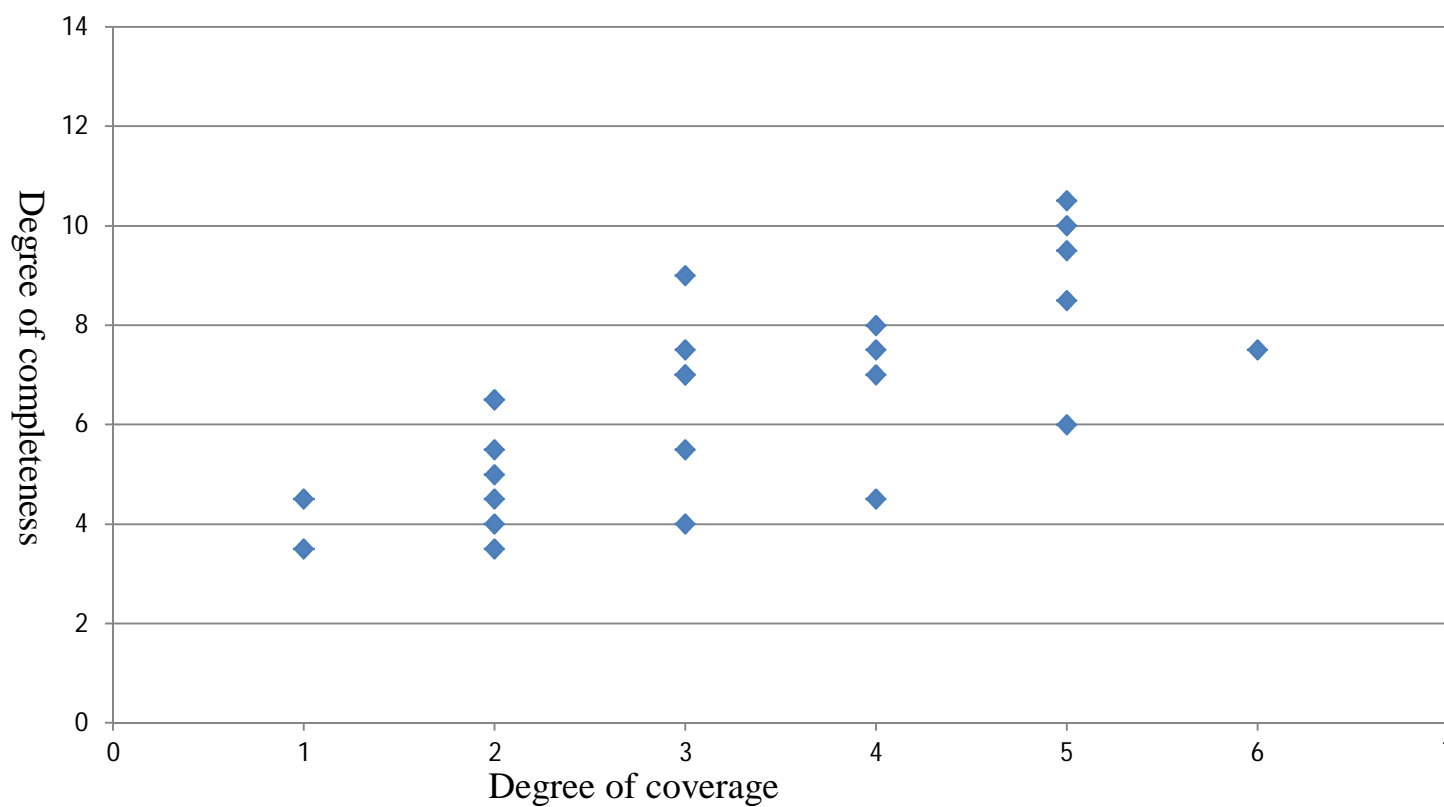
Whole (completely written) paper is not holed.



Backup slides

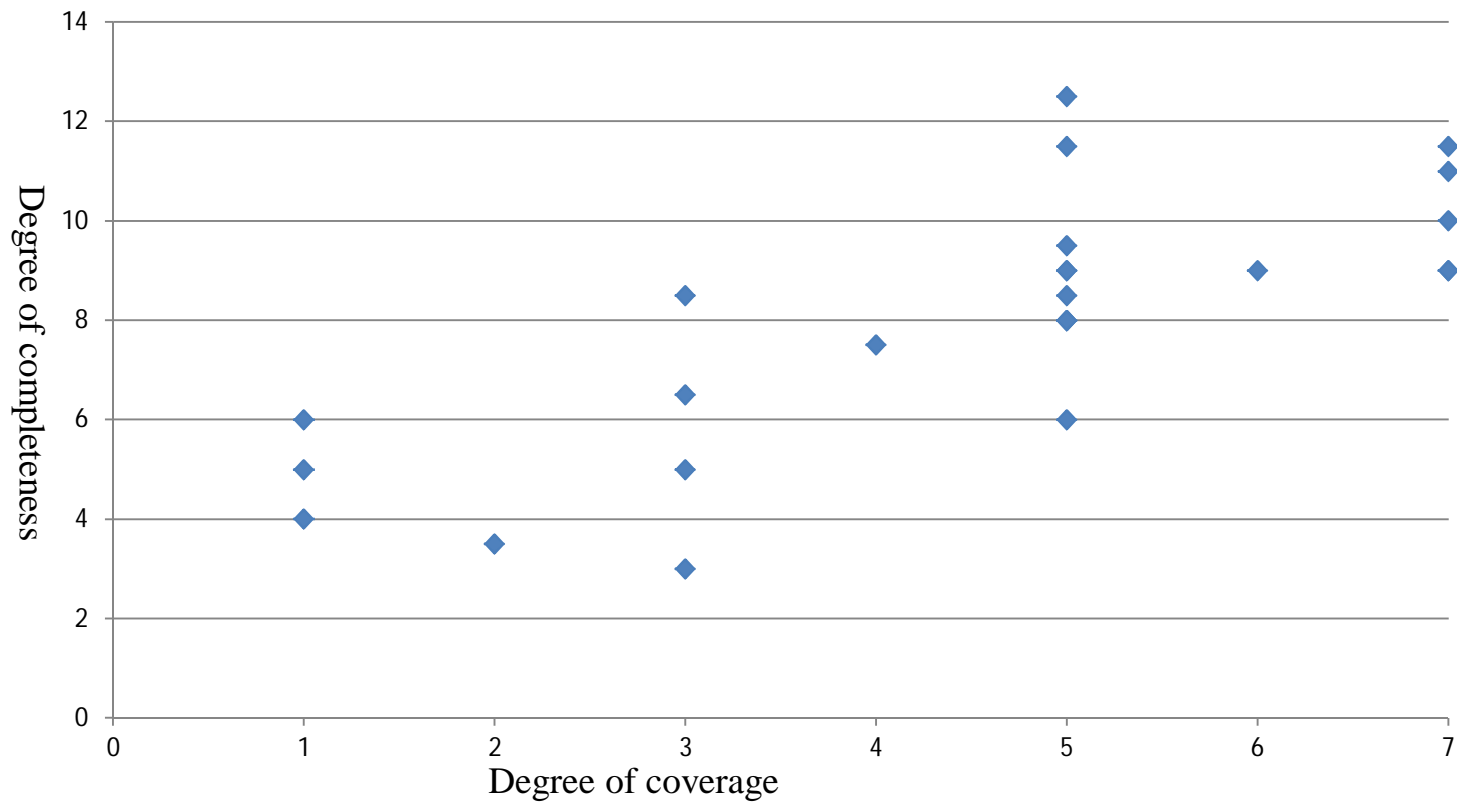
Outcome until now

Evaluation result of the coverage (FY2011)



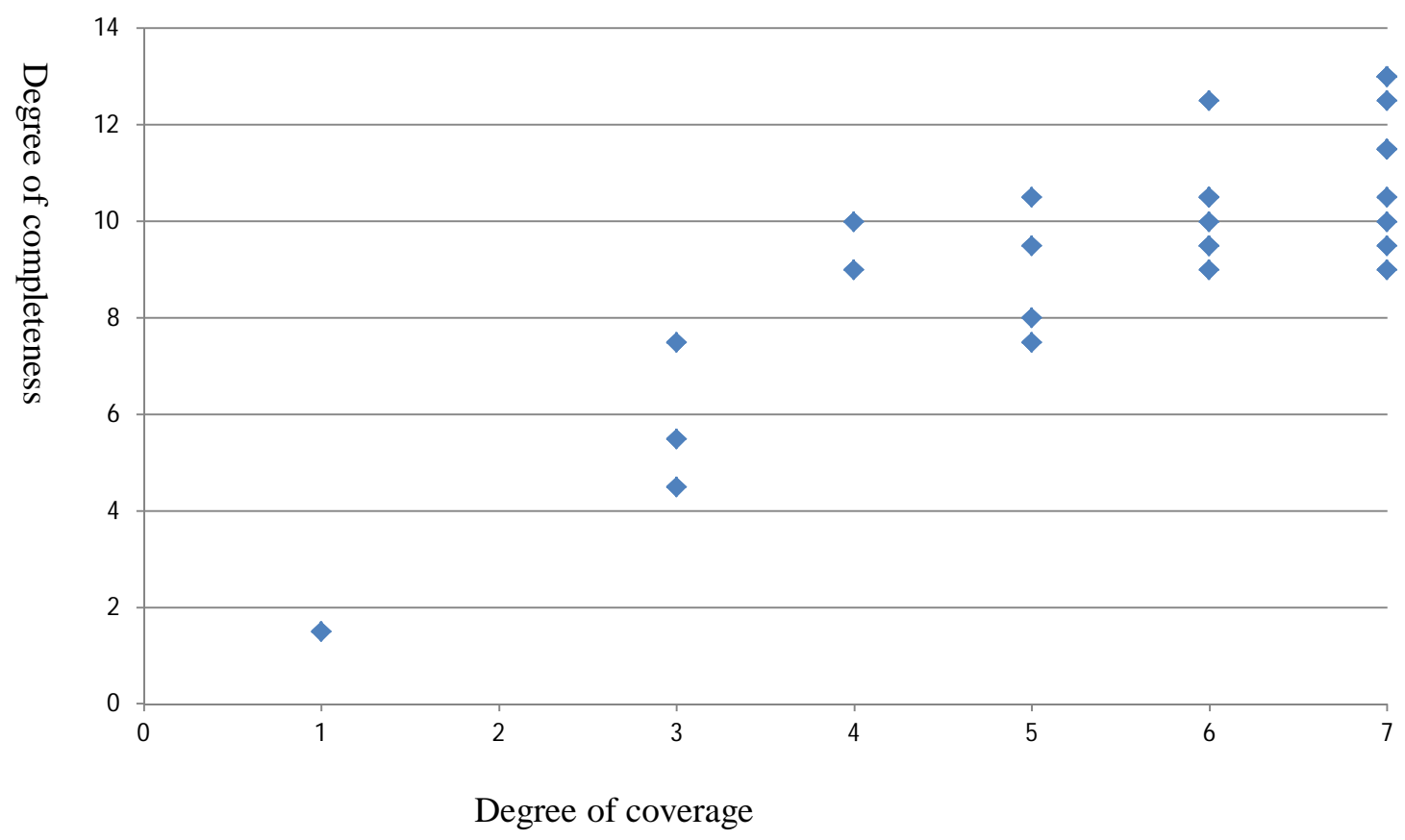
Outcome until now

Evaluation result of the coverage (FY2013)



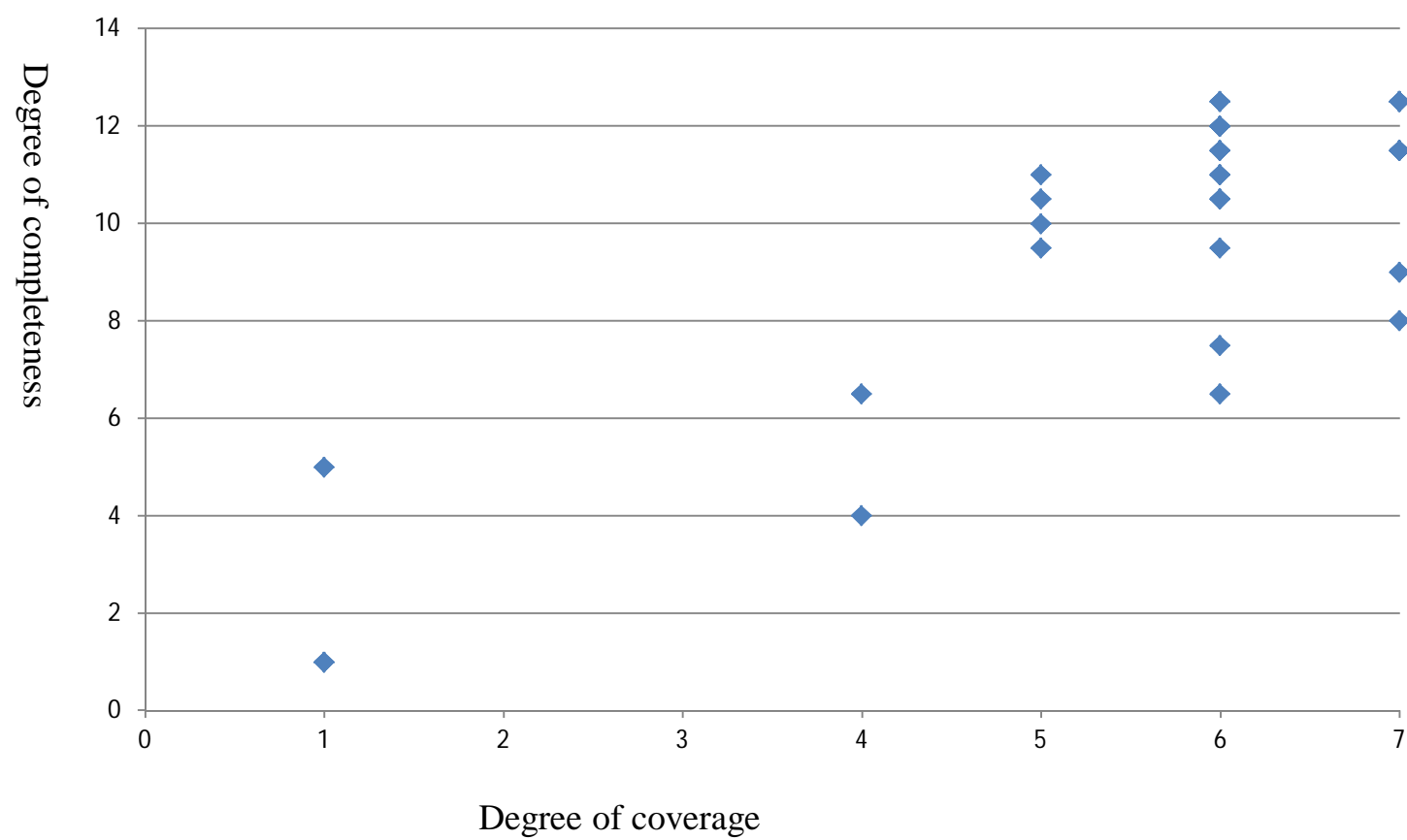
Outcome until now

Evaluation result of the coverage (FY2014)



Outcome until now

Evaluation result of the coverage (FY2015)



Outcome until now

Evaluation result of the coverage (FY2016)

