THAILAND
Performance Index

by Paul Iredale

GPIASIA
Global Process Innovations (GPI) Asia Co. Ltd

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SOFTWARE PARK THAILAND

Agenda

- What is Cost & Value?
- Thailand Performance Index Program
- Input Data
- Overall Result
- Detail Analysis
- Conclusion

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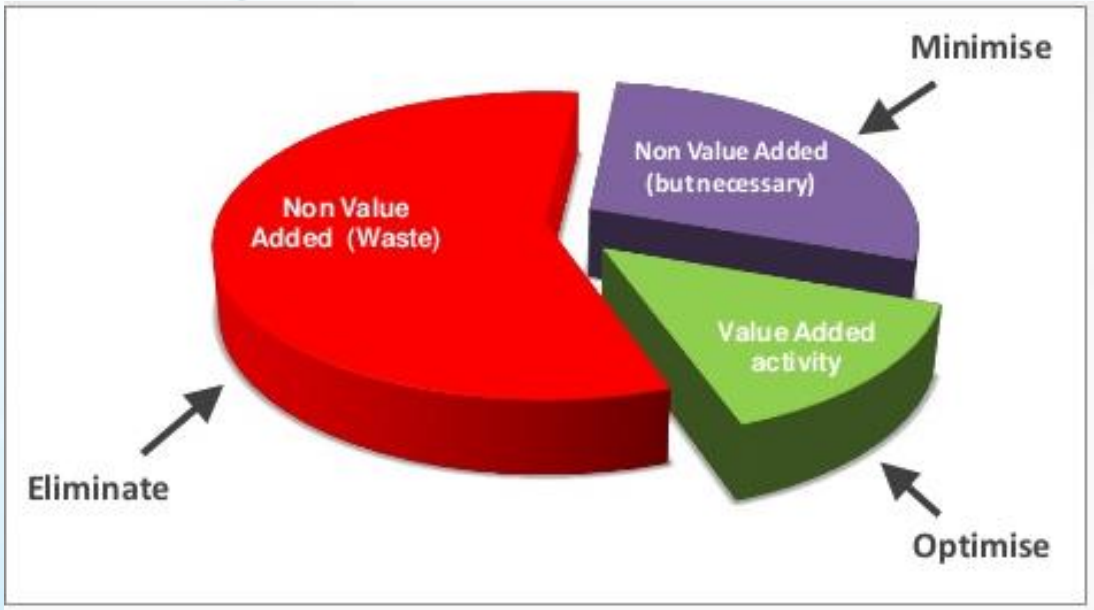
WHAT IS COST & VALUE?

Difficulties in using ROI

How did I overcome them?

- Differing perceptions of ROI
- Buy-In
- Access to Data
- Calculating benefits is tough
- Consistently measuring ROI over time is tough
- Organizations are resistant to measurement

What adds Value & What is Waste?



*Any activity that does not **add value** from the perspective of the customer can be defined as Waste*

Link: http://www.slideshare.net/assocpm/lean-sigma-apm-reading-jan-2013-published

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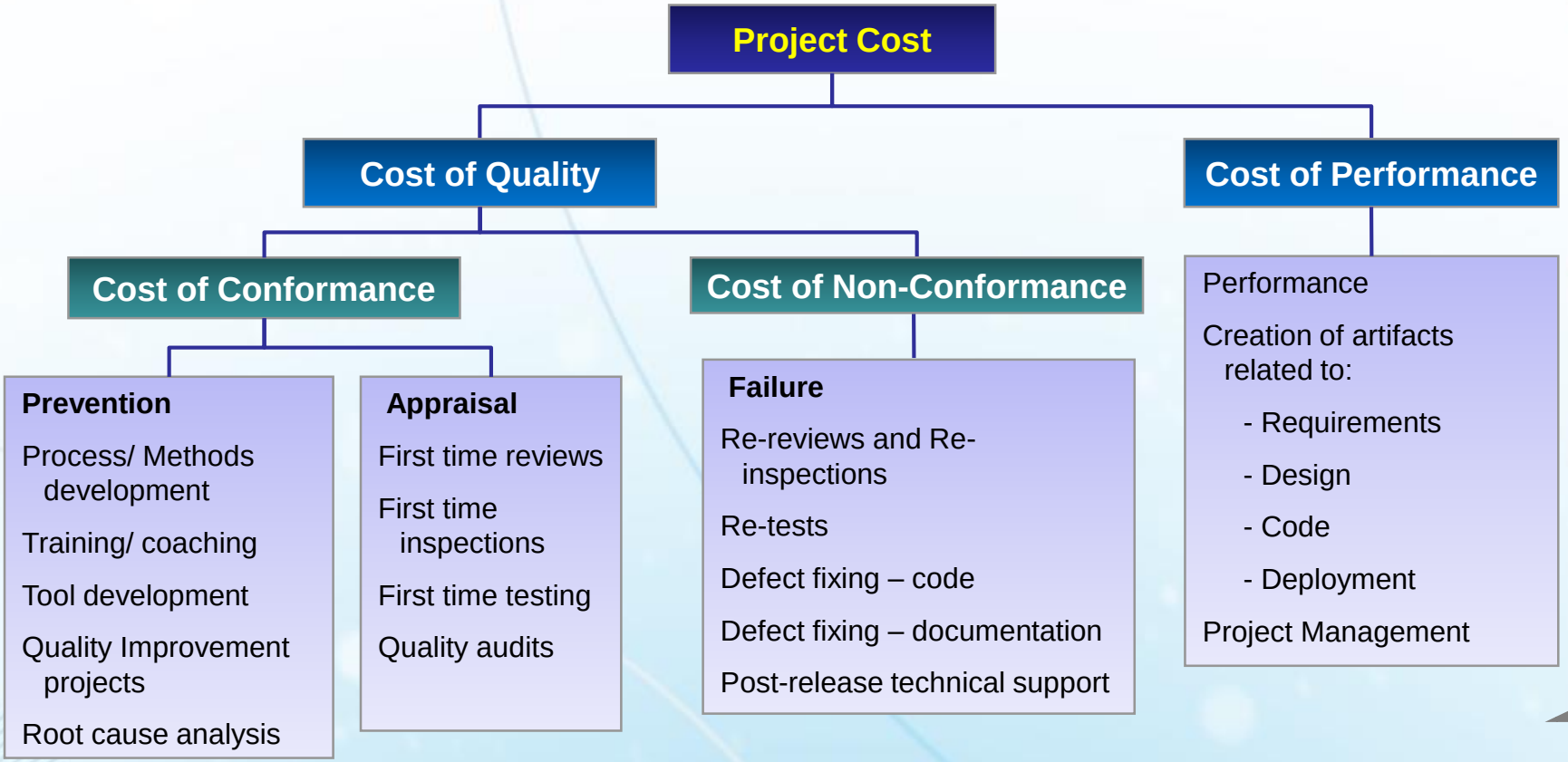
Activities/Tasks drive 'Cost'

- Understand 'your' business
- Breakdown all production activities/tasks (from supplier – input – process – output - customer)
- Categorize activities/tasks (mostly customer point of view)
  - Value added activities
  - Non-value added activities (waste)
  - Business value-added activities or Non-value added (but necessary)
- Main goals are
  - Eliminate non-value added activities (waste)
  - Try to minimize low value adding by Identifying opportunities for improvement

Cost and Value Model



	% Cost of Prevention	% Cost of Appraisal	% Cost of Failure	% Cost of Quality	% Cost of Performance
Organization at CMMI level 1	7%	15%	44%	66%	34%
Organization at CMMI level 2	12%	15%	18%	45%	55%
Organization at CMMI level 3	7%	18%	11%	36%	64%

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THAILAND PERFORMANCE INDEX PROGRAM

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Performance Index Program Introduction

Opening Event	Training	Data Collection & Follow up	Analysis & Report	Closing Event
Activities • Conduct opening event to announce and describe the program • Organizations register to join the program	**Activities** • Training about Concepts of Cost of Performance / Failures	**Activities** • Organizations collect data • Follow up Sessions • Validate data and discuss with data owners	**Activities** • Analyze data and produce analysis report	**Activities** • Announce the result • Congratulate the organizations who join the program • Plan next steps

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Overview of Data

- 47 organizations joined the opening event
- 32 organizations joined the trainings
- 17 IT organizations submitted data

Challenge – Business Driven

- Clear goals/business objectives with management
- Discuss with management for value-added and non-value added tasks(especially, if it is non-value added (but necessary task)
- Try to identify the root cause and solution of ‘cost of failure’ tasks, in order to decrease or eliminate those tasks, it may need management support to increase ‘cost of prevention’ instead

Challenge – Data Accuracy

- Ensure number of working hours is accurate (e.g. 8 hours/day, include working hours over weekend)
- Approver may require to approve all project/organization effort
- Standardize task/activity/WBS
- Prepare ‘general’ task/activity/WBS – for those tasks that not involve with project or organization activities

INPUT DATA

Overview of Data

- 47 organizations joined the opening event
- 32 organizations joined the trainings
- 17 IT organizations submitted data

Data Analysis

- CMMI Certified/Implementing or No
- Type of Work/Product: Software, Services
- Organizational Size: <100, 100 – 199, >=200
- Age of Engineers: Average 20 – 30, 31 – 40
- Engineering Experience: Average <5, 5-10, >10

Most Common Problems

- Too high-level tasks
  - Phase-level task e.g. Requirement phase, Design phase, etc.
  - Tasks that include more than 1 objective e.g. Run test (which also include bug fixing effort). The task effort will be mixed in 2 types: Cost of Quality and Cost of Failure.

In this case, we have to classify the task as ‘Not Sure’ type.

Data Validation

- Review and revise task categories with data owners
- Remove unrelated data (e.g. organization tasks – vacation, sale, training, CMMI project tasks)
- Remove outliers

OVERALL RESULT

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Overall summary

- The data of all 4 cost types is highly varied. The range is very large.
- Regarding Coefficient of Variance, CoP is less varied than others (CoP's CV = 23%).

Summary	Cost of Performance	Cost of Failure	Cost of Quality - Prevention	Cost of Quality - Appraisal
Mean	64.85	10.53	8.79	15.39
Median	63.28	10.92	6.70	15.33
Maximum	93.29	24.85	23.53	31.77
Minimum	39.39	0.97	0.00	2.15
Std. Dev.	15.14	7.03	7.40	9.55
Coefficient of Var.	23%	67%	84%	62%

Overall summary

- Factors we use to categorize the data include
  - Org size (number of staff)

Size	Cost of Performance	Cost of Failure	Cost of Quality - Prevention	Cost of Quality - Appraisal
<= 100 staff	64.91	11.20	9.53	14.21
> 100 staff	64.75	9.64	7.70	16.95

  - Average staff age

Average Staff Age	Cost of Performance	Cost of Failure	Cost of Quality - Prevention	Cost of Quality - Appraisal
20-30 years old	63.40	12.32	9.78	15.88
31-40 years old	65.81	9.54	8.14	15.11

Overall summary

- Average staff experience

Average Experience	Cost of Performance	Cost of Failure	Cost of Quality - Prevention	Cost of Quality - Appraisal
<=10 years	72.07	10.12	5.96	11.63
>10 years	63.04	10.65	9.50	16.41

- CMMI implementation status

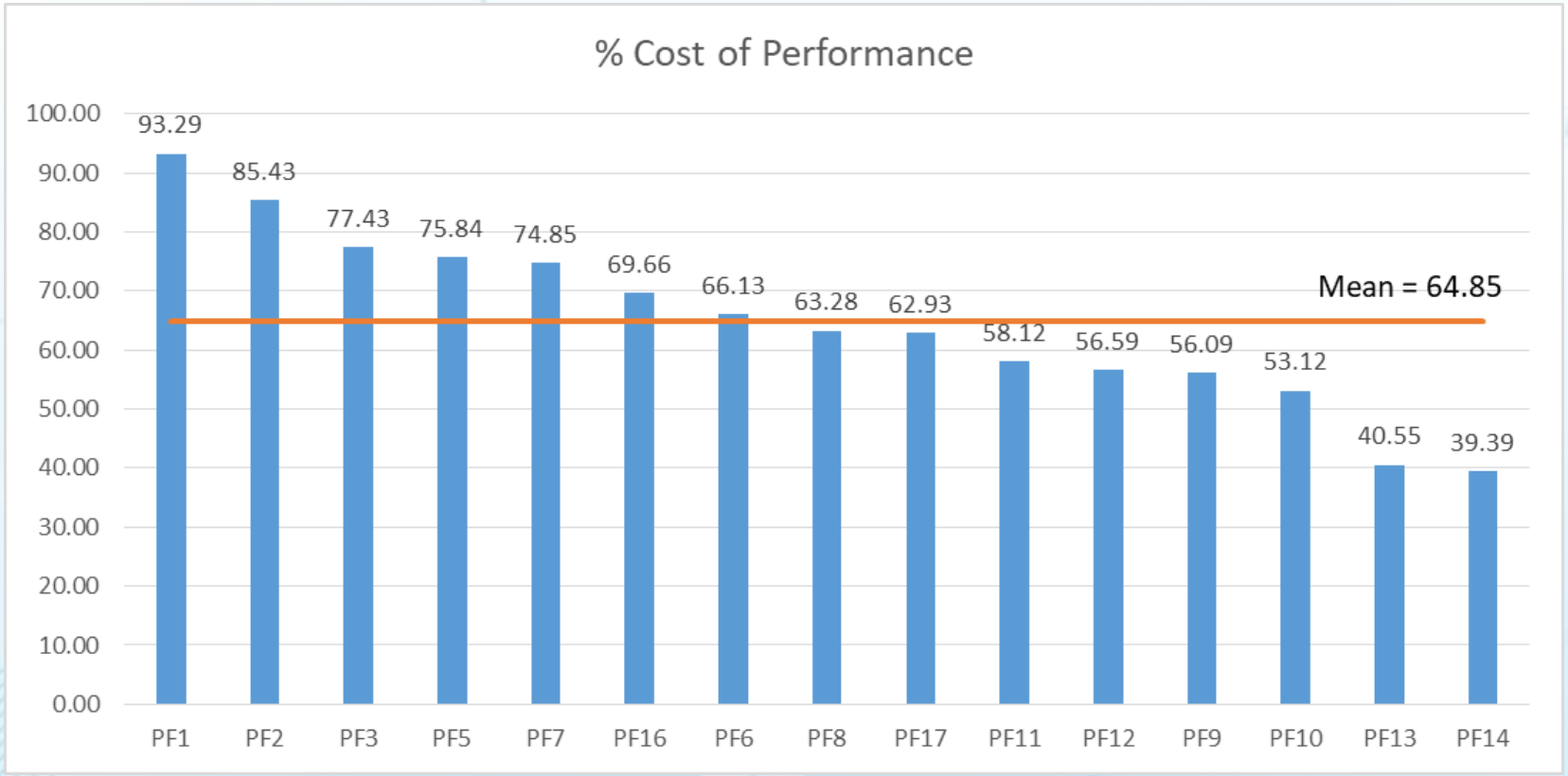
CMMI Impl Status	Cost of Performance	Cost of Failure	Cost of Quality - Prevention	Cost of Quality - Appraisal
No CMMI impl/cert	54.61	16.10	4.19	23.37
Impl or have CMMI cert	66.42	9.61	9.50	14.06

- CMMI certification status

CMMI Cert Status	Cost of Performance	Cost of Failure	Cost of Quality - Prevention	Cost of Quality - Appraisal
No CMMI cert.	67.97	8.59	8.25	14.48
CMMI cert'ed (valid)	58.60	14.02	9.89	17.02

DETAIL ANALYSIS

Cost of Performance



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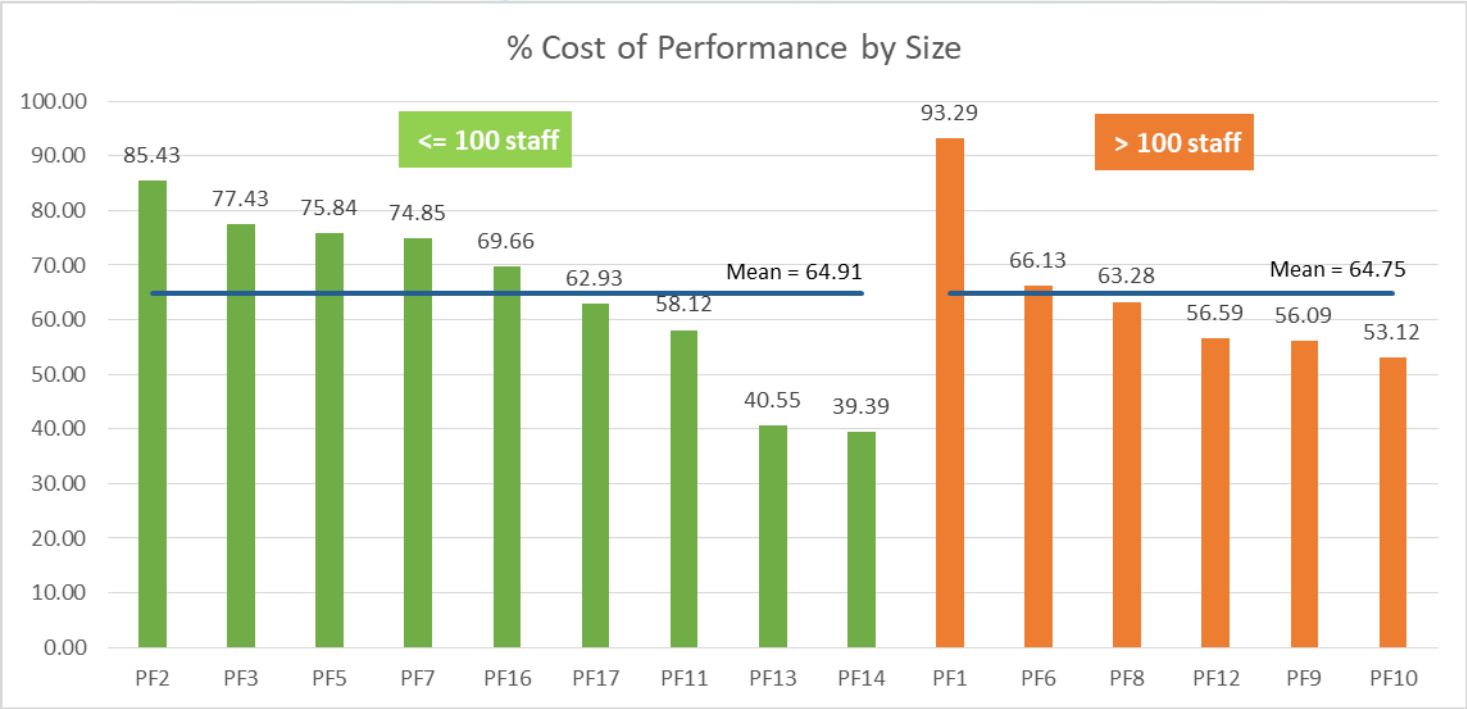
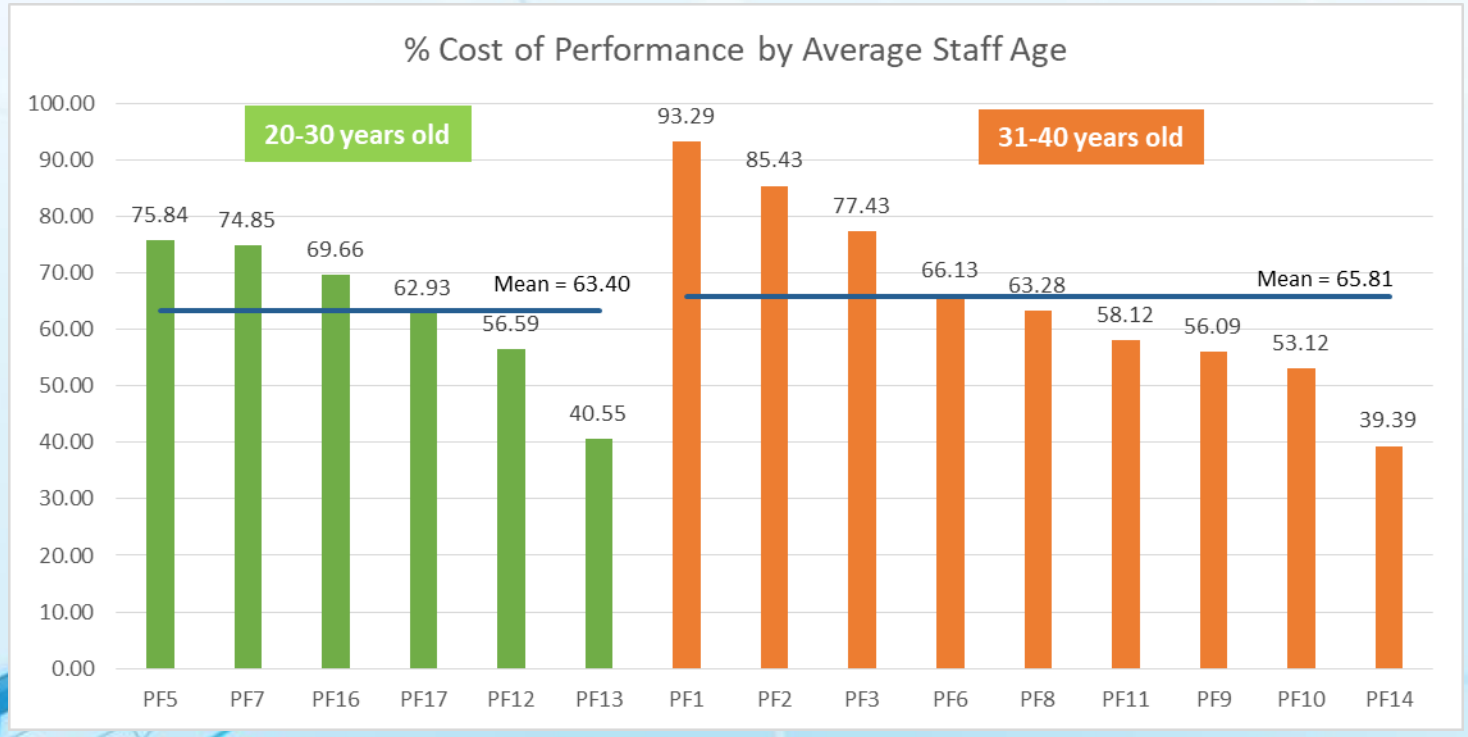
% Cost of Performance by Size

- Cannot statistically conclude that they are different. The data hints at no difference in organizations based on number of staff



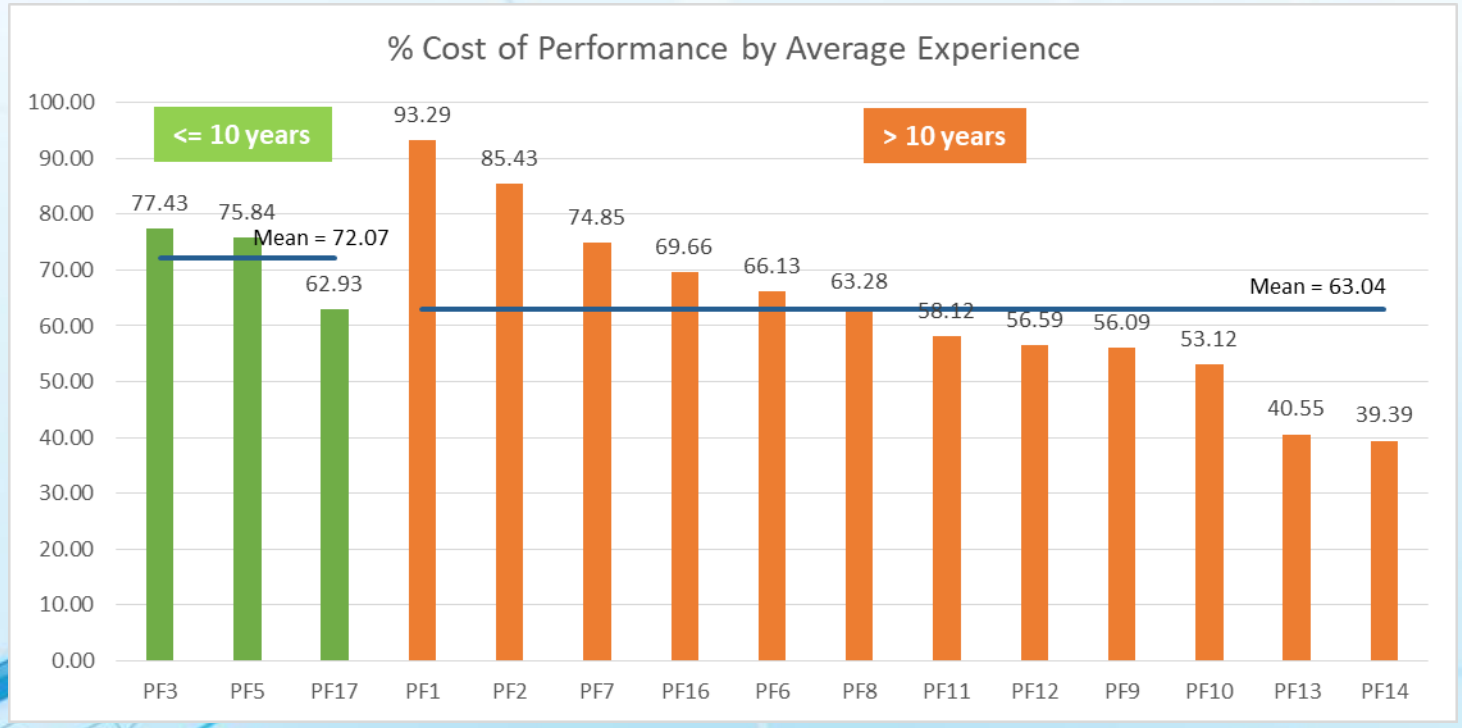
% Cost of Performance by Average Staff Age

- Cannot statistically conclude that they are different. The hint is staff age makes little difference



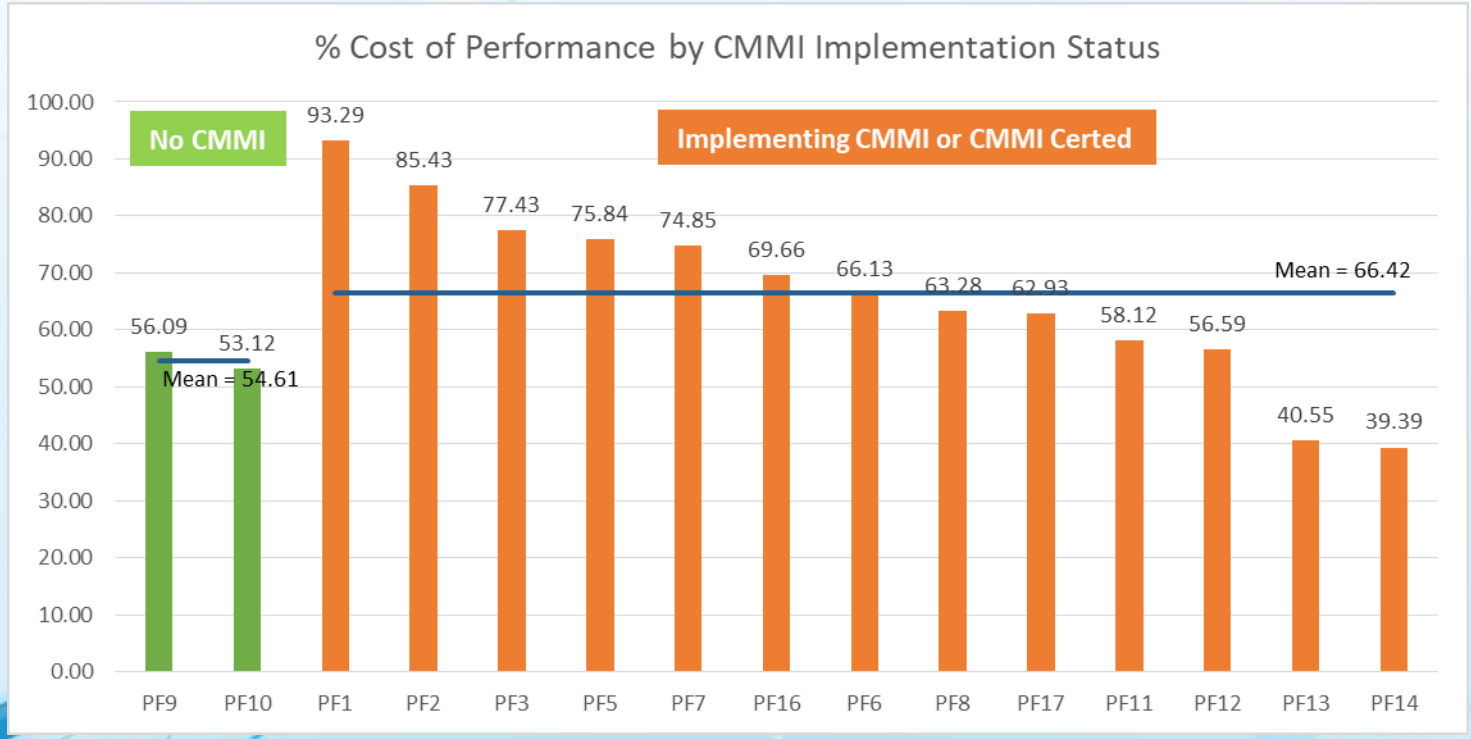
% Cost of Performance by Average Experience

- Cannot statistically conclude that they are different although the means are quite different. The hint is the the higher the average experience the harder it is to drive performance change



% Cost of Performance by CMMI implementation status

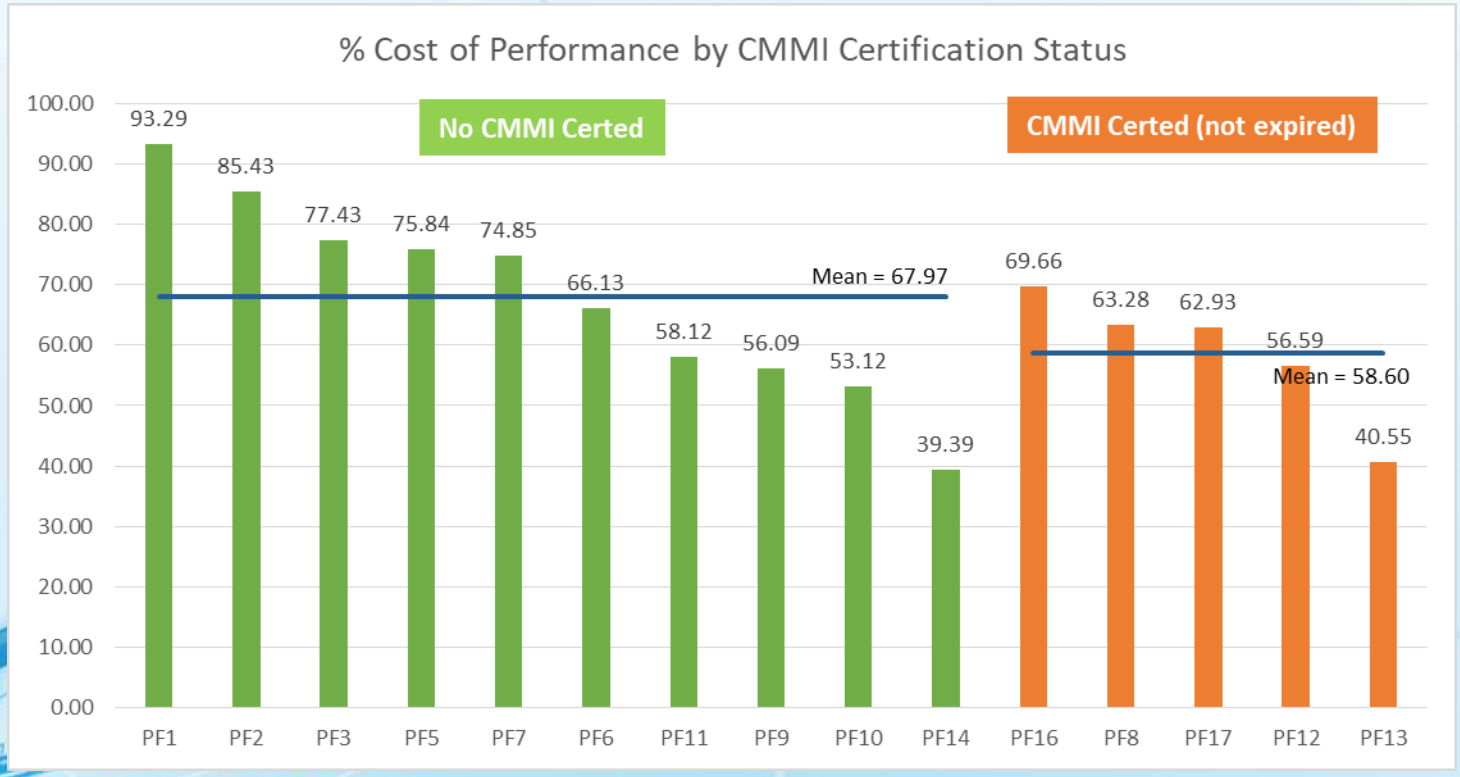
- Statistically it is difficult to conclude that they are different although the means are quite different. The hint is however that CMMI when implemented well can make a difference.



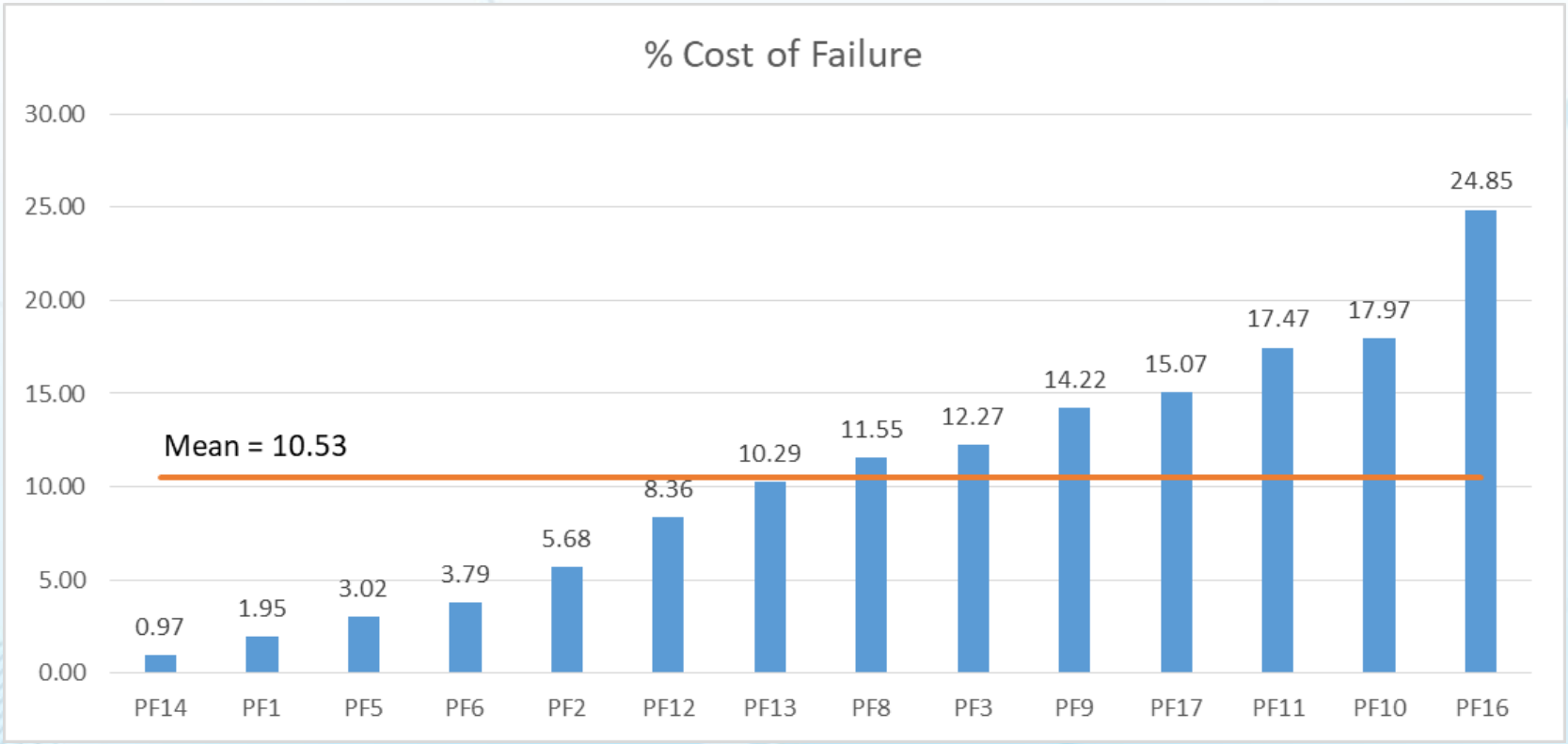
% Cost of Performance by CMMI certification status

- Statistically the conclusion is difficult but the data hints at a fall back of performance once a CMMI Level is achieved.

  *** In group “No CMMI Certed” there are org that are implementing CMMI and plan to certify ***



Cost of Failure



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THAILAND PERFORMANCE BENCHMARK

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Overall summary

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Thailand compared with Other countries

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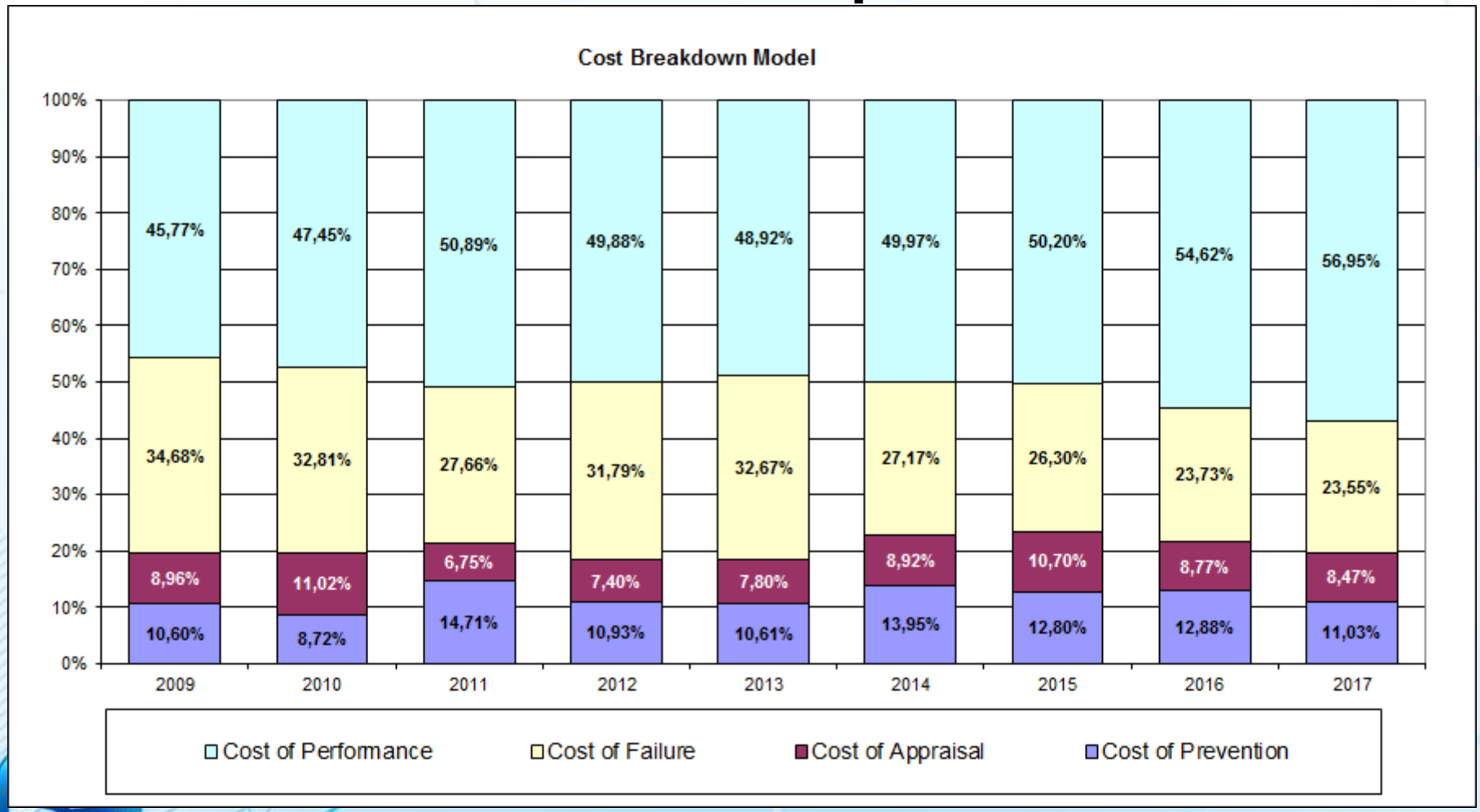
Information provided by World Leading Consultant Company

Thailand compared with Other countries – European Client



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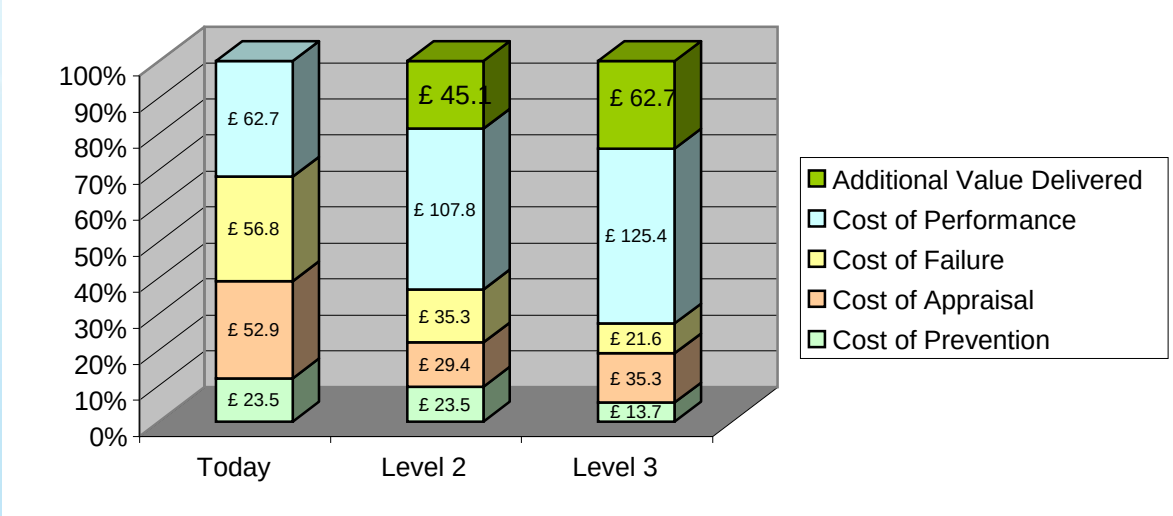
Thailand compared with other countries - UK Client

	IT BUDGET SPEND (Budget elements included)	=	COST OF QUALITY(COQ) (Ensuring Success)			+	COST OF PERFORMANCE (Value Delivered)	Additional Value Delivered
	(M GBP)		Prevention (M GBP)	Appraisal (M GBP)	Failure (M GBP)		(M GBP)	(M GBP)
Today	£ 196	=	£ 23.5	£ 52.9	£ 56.8	+	£ 62.7 - 32%	
Level 2	£ 196	=	£ 23.5	£ 29.4	£ 35.3	+	£ 107.8 - 55%	£ 45.1
Level 3	£ 196	=	£ 13.7	£ 35.3	£ 21.6	+	£ 125.4 - 64%	£ 62.7



CONCLUSION

Overall summary

- After comparing the data in different categories, we cannot statistically conclude that they are different (compare mean between 2 groups) with 95% confidence level.
- This might be because of following reasons
  - The factors we use to categorize the data are not the impacting factors
  - The number of the data is not enough for statistical analysis (>=30 data points)
  - The data is not reliable.

Paul's Conclusions

- CMMI does make a difference
- After CMMI certification organizations don't capitalize on their achievement
- Size, Age don't seem to matter but Experience may make a difference
- Thailand is at least average or just above the rest of the world in Performance
  - A standard approach across the whole of Thailand to Performance measurement

Suggestions for Next Steps

- Encourage more organizations to get involve in the program to get more data points (>= 30 data points)
- Train the organizations how to break down the tasks appropriately
- Explore other factors that might impact the cost e.g. project type (MA, Infra, Product, etc.), the number of headcount in development vs. support.
- Set face-to-face follow up sessions with the organizations to help validate the data.
- Make the Performance Model a deliverable of CMMI funding program
- Link the Performance Model to V2.0 of CMMI in Thailand

Thank you

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