

Productivity Improvement Forum 2019

Certification Working Group: Certification Progress and Roadmap

Presented by:

Mr Wayne Yap

ASPRI

(Certification WG Co-Leader)

and

Mr Pramesh Krishnankutty

SCIC

Jointly Organised by



Background

- Transformation of the **Phase-1 Strawman in to a Certification Framework**
- Advantages of the Productivity Certification Framework
- Sharing the Outcome of Trial Certification 2.0
- Path forward

Certification: Aim & Objectives

The Certification program aims to help companies to;

- ❑ **Calibrate their level of productivity against an international yardstick,**
- ❑ Facilitate identification of enhancement opportunities
- ❑ Drive improvement in a sustainable manner to support business growth and profitability in the
PCM industry.

Productivity improvement is urgently needed in Singapore because the **PCM sector productivity index is approximately 1.7 times (2016)** compared to the **PCM industry in the US Gulf Coast (Index 1.0)**.

Certification Journey

1. Developing the framework

2. Trial, Refine & Endorse

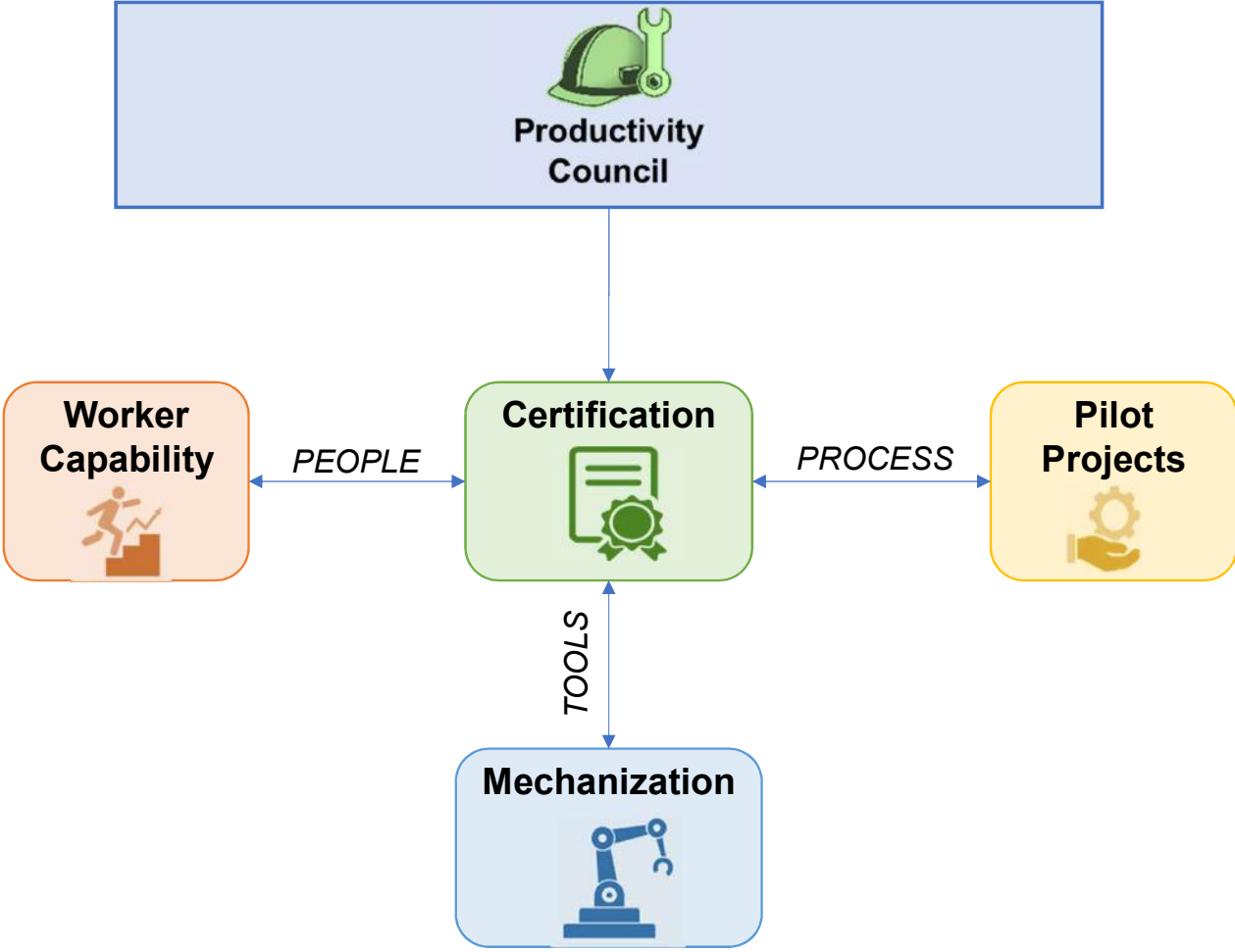
3. Adoption & Sustenance

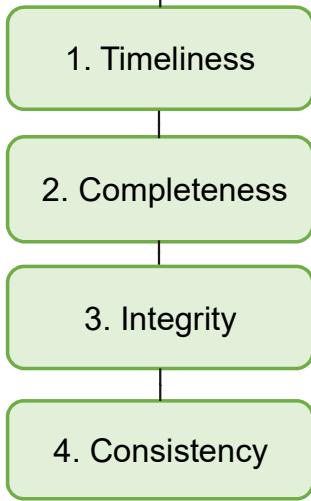
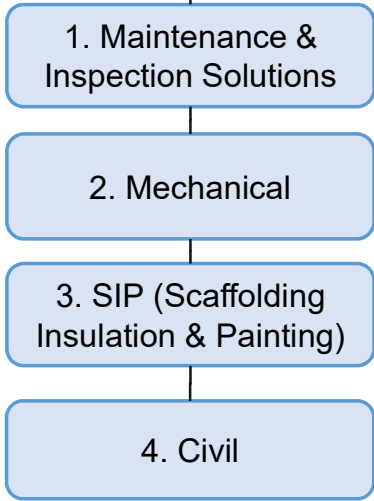
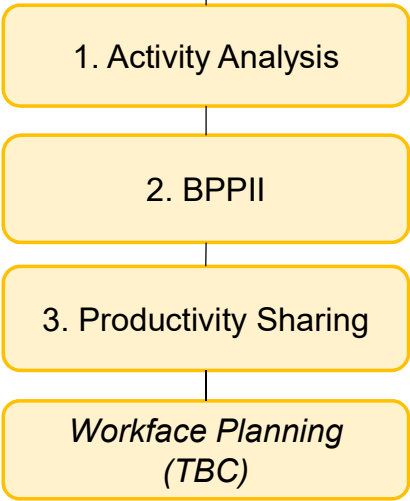
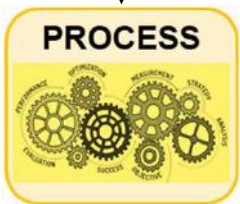
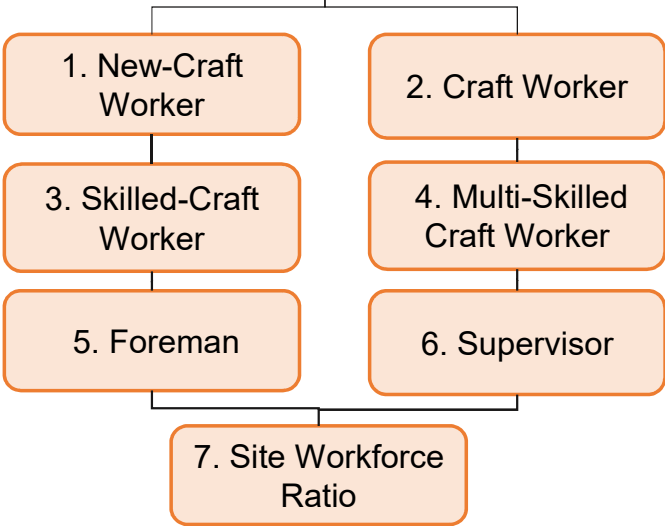
- Pilot Projects WG**
 - Introduced processes for productivity measurement
- Mechanization WG**
 - Developed Metrics for mechanized tool adoption
- Workers Capability WG**
 - Aligned industry skills competencies for workers and field supervisors
- Certification WG**
 - Developed a certification Framework with measurable metrics

- Trial Certification 2.0**
 - Six contractors in the PC
 - Conducted review meetings to fill in the gaps
 - Established Productivity Indices & Measurements for Singapore PCM Sector
- Refine framework**
 - Integrate WFP (Workface Planning) with CPS (Craft Productivity Standards)
 - Address gaps identified in trial.

- Conduct 3 set of Pilot Certification Exercise over the period of one year**
- Maximize industry adoption via Sustained outreach & communications**
- Industry endorsement**
 - Plant Owners -SCIC
 - Contractors –ASPRI
 - Government
- Ascertain the competitive edge for certified members.**

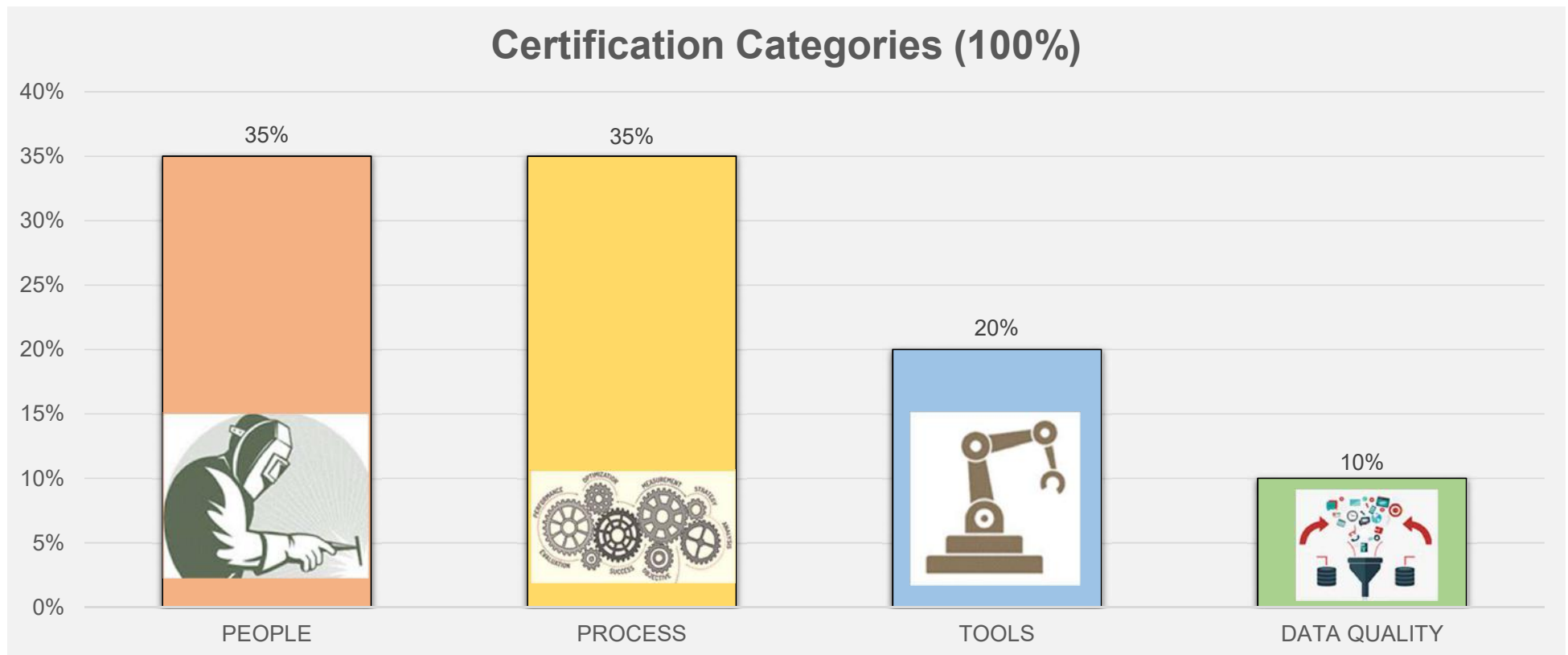
Positive Collaboration within Workgroups





Overall Measurement Metrics Model

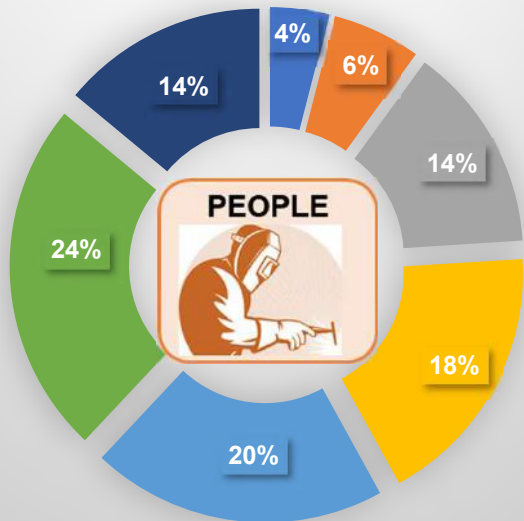
People + Process + Tools + Data Quality = Certification Index



KEY CERTIFICATION CATEGORIES

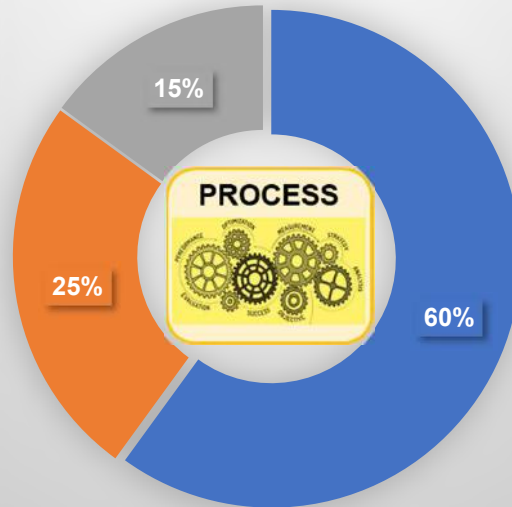
PEOPLE + PROCESS + TOOLS + DATA QUALITY

1. PEOPLE: 100% (35%)



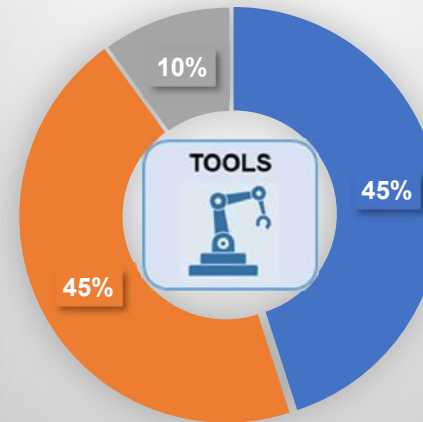
- New Craft Workers
- Craft Workers
- Skilled Craft Workers
- Multi-skilled Workers
- Foreman
- Supervisor
- Workforce Ratio

2. PROCESS: 100% (35%)



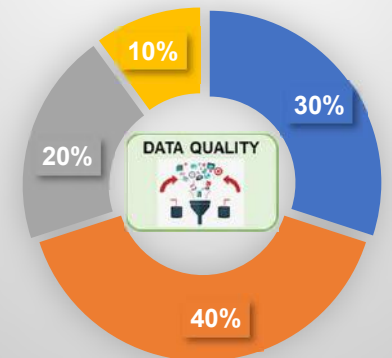
- Activity Analysis
- BPPII
- Productivity Sharing

3. TOOLS: 100% (20%)



- Capability
- Field Deployment
- Tool Adoption

4. Data Quality: 100% (10%)

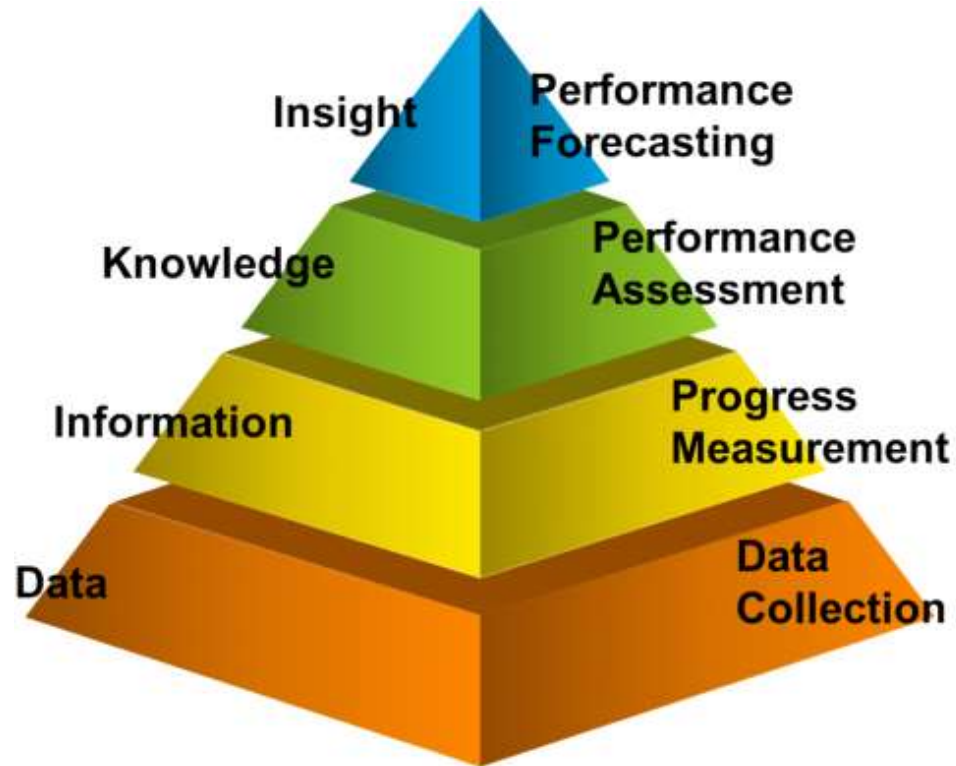


- Timeliness
- Completeness
- Integrity
- consistency

Advantages of the Productivity Certification Framework

Diagnostic Metrics

Diagnostic metrics help the contractors to identify performance issues and improvement opportunities to inform continuous productivity improvement and achieve better margin, revenue and profitability.



WHERE SHOULD WE BE?

WHY ARE WE HERE?

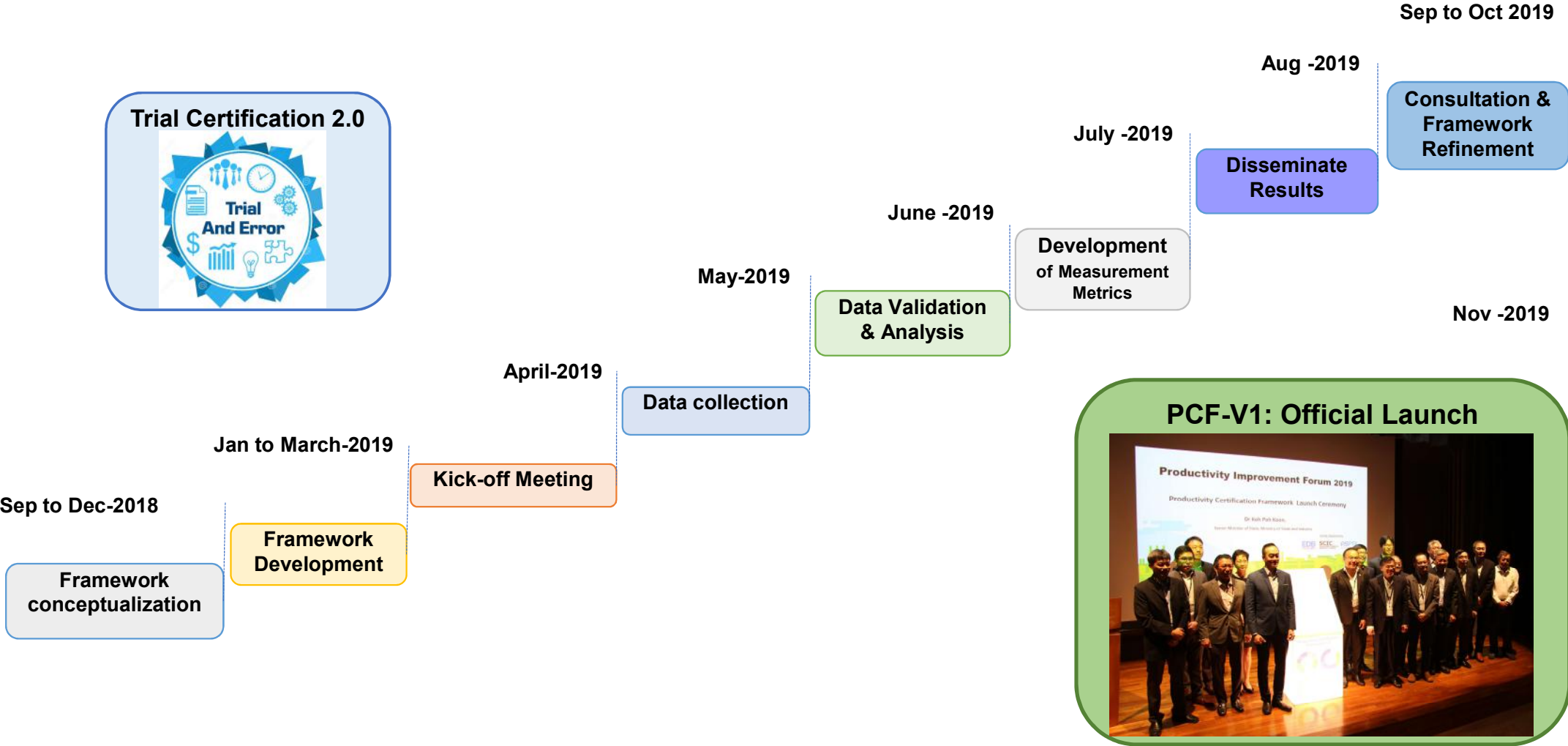
WHERE ARE WE?

Framework Development Process and Trial 2.0 Results



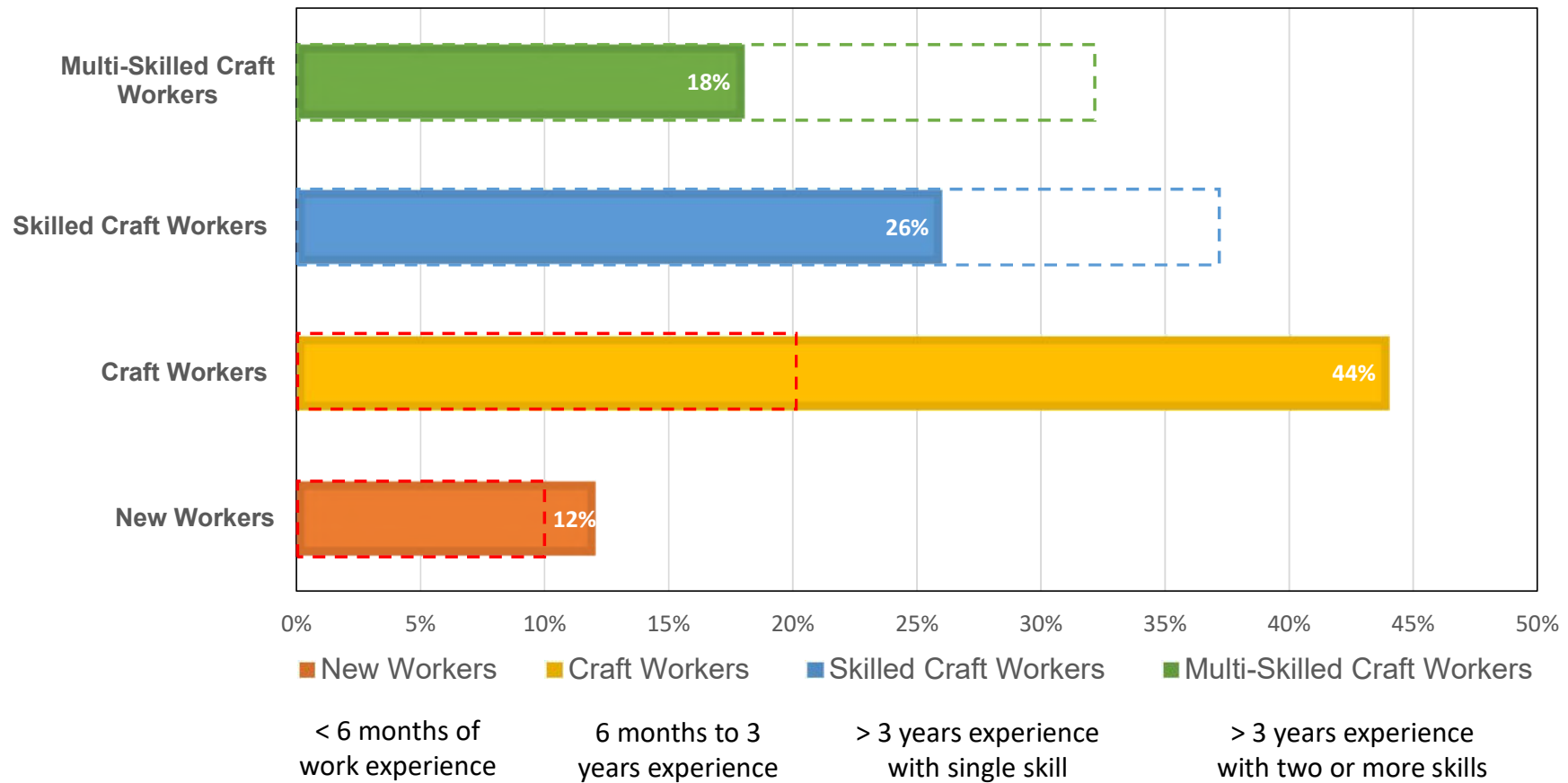
- Results and Baseline Data Analysis
- Industry Average

Trail Certification 2.0: Timeline



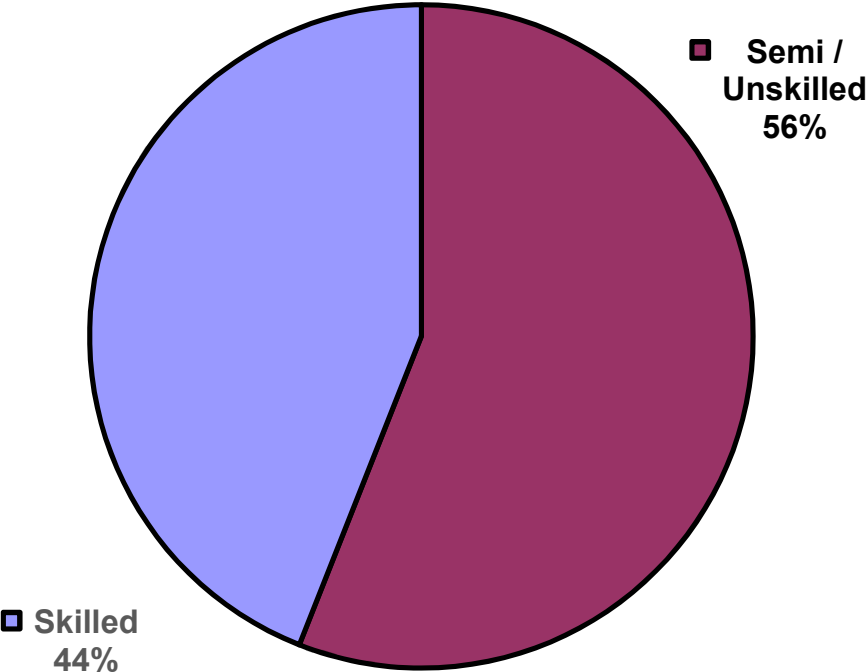
Trial 2.0 Results: PEOPLE

TOTAL SINGAPORE SITE LABOR WORKFORCE (100%)

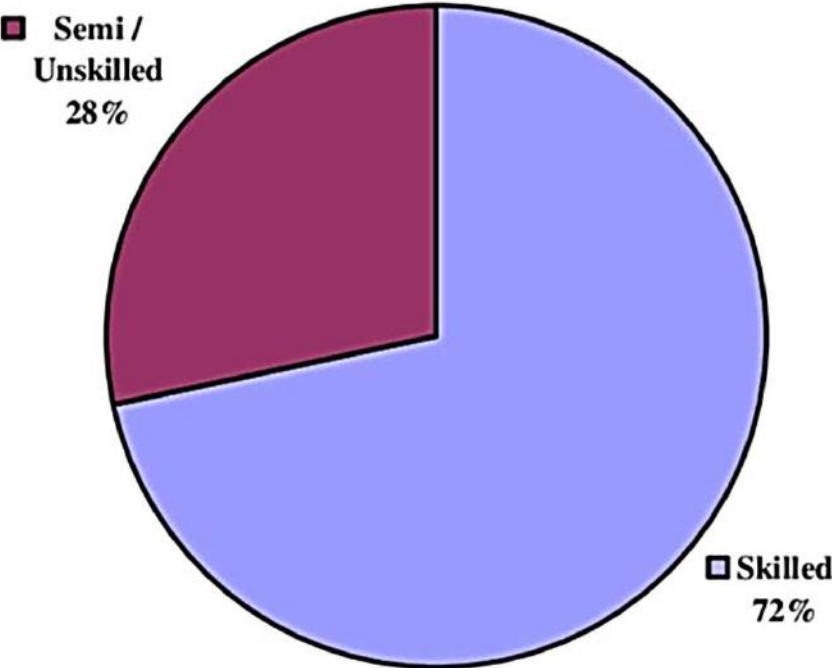


Background: Skilled and Multi-Skilled Craft Workers

Skilled vs Semi/Unskilled Workers - Singapore Site labor Workforce Data



Skilled vs Semi / Unskilled Workers (Direct Work) - Richardson's Chemical Plant Data



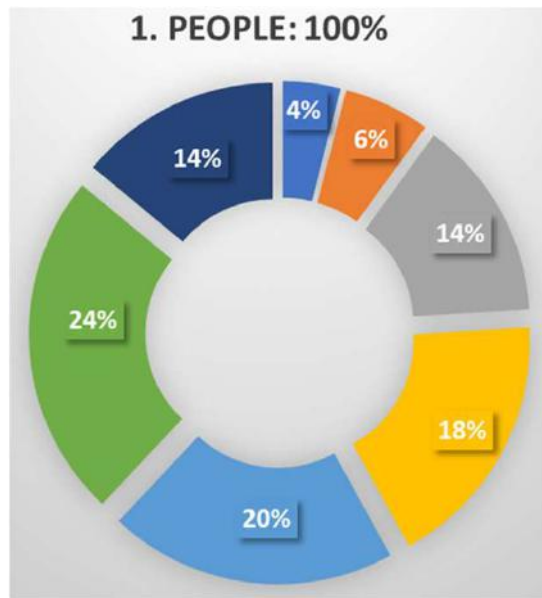
REALITY Vs. EXPECTATION/ ASPIRATION/ TARGET

Trial 2.0 Results: PEOPLE

RATING	New Workers (NW)	Craft Workers (CW)	Skilled Craft Workers (SCW)	Multi-Skilled Craft Workers (MSCW)
<i>Weights</i>	<i>(NW: 4%)</i>	<i>(CW: 6%)</i>	<i>(SCW: 14%)</i>	<i>(MSCW: 18%)</i>
PLATINUM	4% to 6%	20% to 25%	36% to 38%	36% to 40%
GOLD	6% to 8%	25% to 30%	32% to 36%	28% to 36%
SILVER	8% to 10%	30% to 38%	30% to 32%	22% to 28%
BRONZE	10% to 15%	38% to 44%	25% to 30%	18% to 22%
MERIT	15% to 17%	44% to 48%	20% to 25%	18% to 12%

Trial 2.0 Results: PEOPLE

(Workforce ratio)



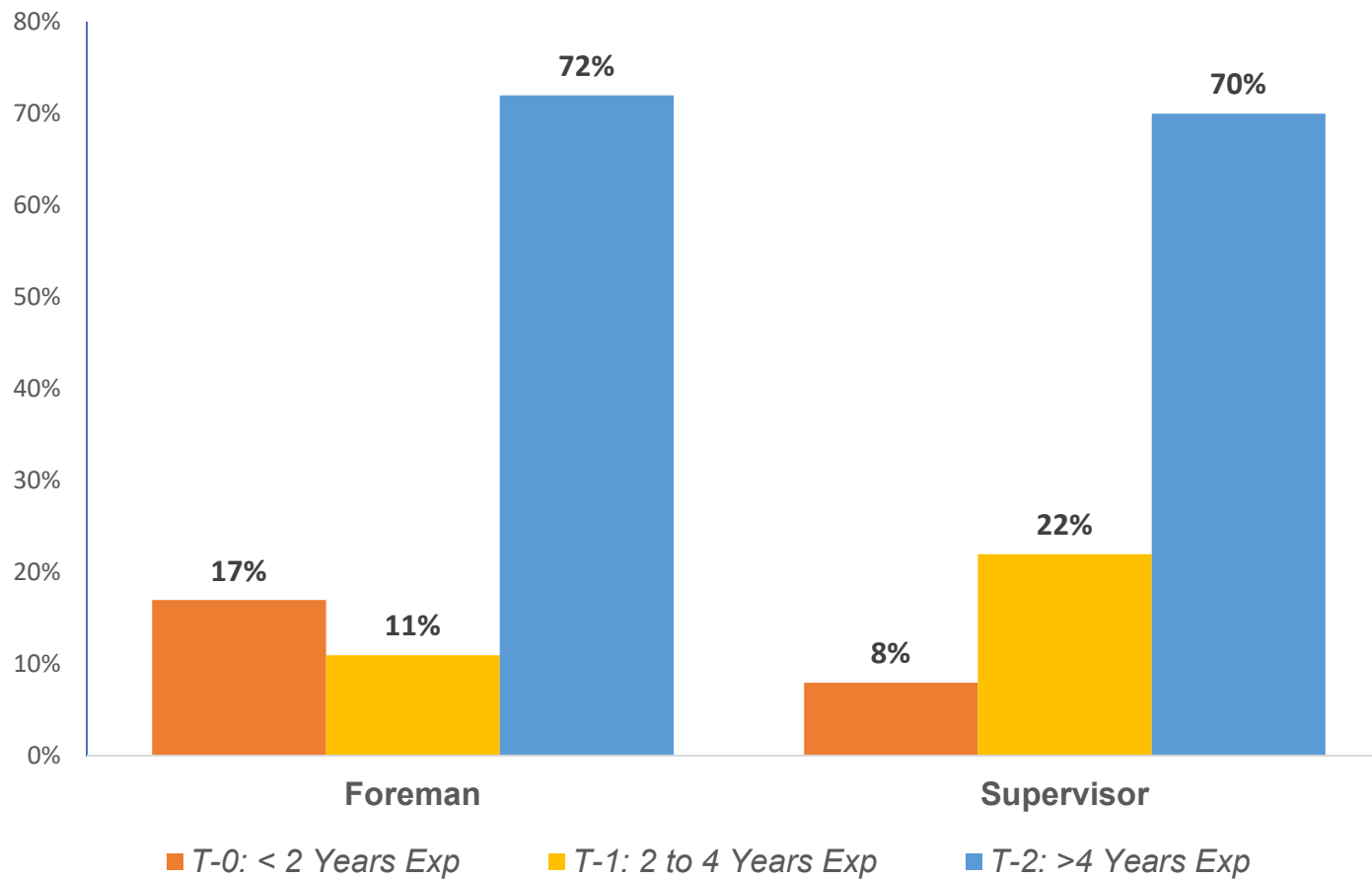
RATING	WORKFORCE RATIO (14%)	
	Supervisor: Foreman	Foreman: Workers
PLATINUM	1:3 and below	1:4 and below
GOLD	1:4 to 1:5	1:5 to 1:8
SILVER	1:6 to 1:8	1:9 to 1:12
BRONZE	1:9 to 1:11	1:13 to 1:15
MERIT	1:12 and above	1:16 and above

Hypothesis based on the IPA study and CII study:

- *The worker to supervisor ratio appears to be larger in Singapore compared to the western world*
- *The expectation is that there would be more supervisors to guide and motivate crews, thus reducing unproductive time*

Trial 2.0 Results: PEOPLE

(Supervisor and Foreman)



Scoring Metrics: PROCESS

Activity Analysis (60%)

RATING	Activity Analysis rating (20% + 30% + 10% = 60%)				
	Quartiles (20%)			Implementation of AA on Site (30%)	Training (10%) (Number of Trainees)
		Construction	Maintenance/STO		
PLATINUM	1 st Q	50% and above	42% and above	80% and above	15 and above
GOLD	2 nd Q	38% to 50%	32% to 42%	70% to 80%	10 to 14
SILVER	3 rd Q	27% to 38%	20% to 32%	70% to 60%	7 to 9
BRONZE	4 th Q	23% to 27%	20% to 18%	60% to 50%	4 to 6
MERIT	5 th Q	23 and below	18 and below	below 50%	3 and below

Scoring Metrics: PROCESS

BPPII (25%)

RATING	BPPII rating (10% + 10% + 5% = 25%)			
	Quartiles (10%)		Implementation of BPPII on Site (10%)	Training (5%)
PLATINUM	1 st Q	77% and above	Adoption and Implementation of 4 or more Level 3/4 Practices/tools /technologies . Additionally identify 2 practices for future implementation.	10 and above
GOLD	2 nd Q	68% to 77%	Adoption and Implementation of 3 or more Level 3/4 Practices/tools /technologies . Additionally identify 1 practice for future implementation.	7 and above
SILVER	3 rd Q	60% to 68%	Adoption and Implementation of 2 or more Level 3/4 Practices/tools /technologies . Additionally identify 1 practice for future implementation.	5 and above
BRONZE	4 th Q	56% to 60%	Adoption and Implementation of 1 or more Level 3/4 Practices/tools /technologies .	3 and above
MERIT	5 th Q	55% and below	To identify 1 practice for future implementation.	2 and below

Scoring Metrics: PROCESS

Productivity Sharing (15%)

RATING	Productivity Sharing rating (15%)	
PLATINUM	<ul style="list-style-type: none"> Sharing of Productivity Improvement Practices Implemented at the company level and site level at the PIF (Productivity Improvement Forum) and ASPRI Forum. Contribution of at least 2 articles (according to the required format) to the PC for possible publication. 	12% to 15%
GOLD	<ul style="list-style-type: none"> Sharing of Productivity Improvement Practices Implemented at the company level and site level at the PIF (Productivity Improvement Forum) and ASPRI Forum. Contribution of at least 1 articles (according to the required format) to the PC for possible publication. 	10% to 12%
SILVER	<ul style="list-style-type: none"> Sharing of Productivity Improvement Practices Implemented at the company level and site level at the PIF (Productivity Improvement Forum). Contribution of at least 1 article (according to the required format) to the PC for possible publication. 	8% to 10%
BRONZE	<ul style="list-style-type: none"> Sharing of Productivity Improvement Practices Implemented at the company level and site level at the PIF (Productivity Improvement Forum). 	6% To 8%
MERIT	<ul style="list-style-type: none"> Participation in the PIF 	5% and below

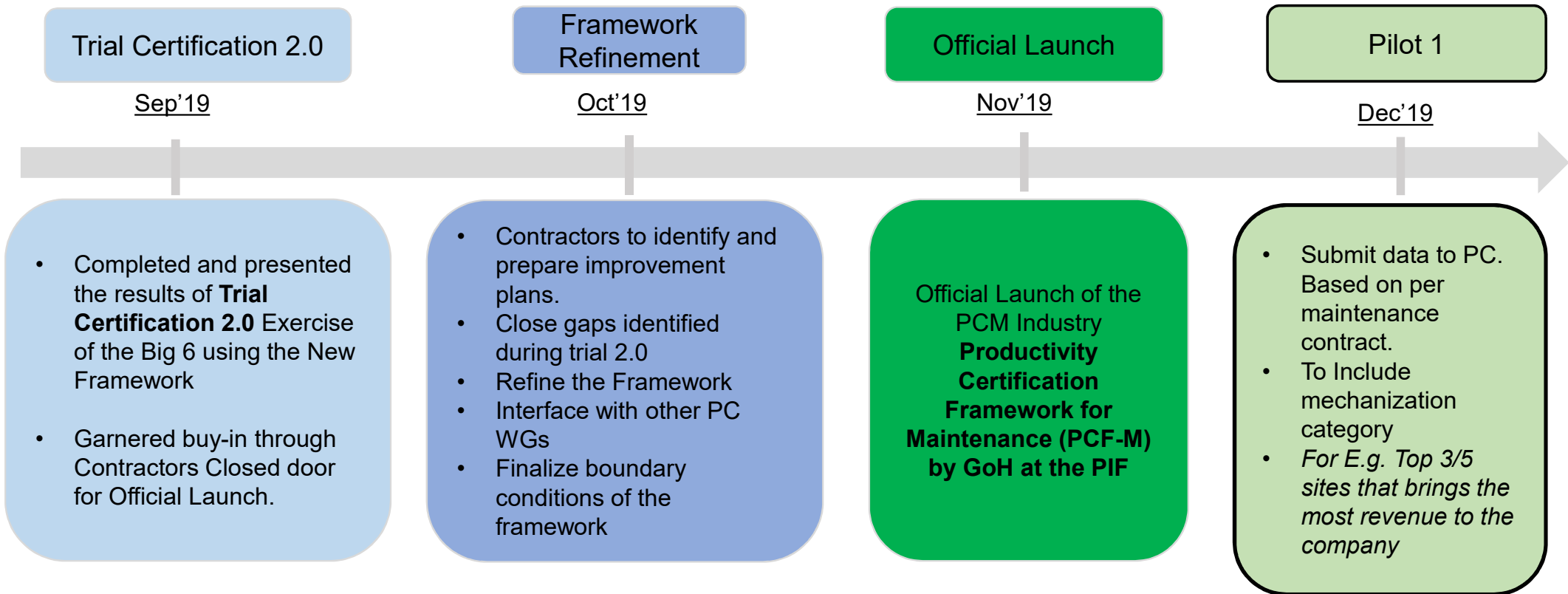
Trial 2.0 Results: Industry Average

PEOPLE + PROCESS + TOOLS + DATA QUALITY = CERTIFICATION INDEX

SCORE	RATING	Index Range	Quintiles
0.90 to 1.00	PLATINUM	95% to 100%	1 st Q: BEST in Class
1.00 to 1.20	GOLD	86% to 94%	2 nd Q: Excellent-Performer
1.20 to 1.50	SILVER	66% to 85%	3 rd Q: GOOD-Performer
1.50 to 1.70	BRONZE	50% to 65%	4 th Q: FAIR-Performer
1.70 to 2.00	MERIT	34% to 49%	5 th Q: Entry-Level

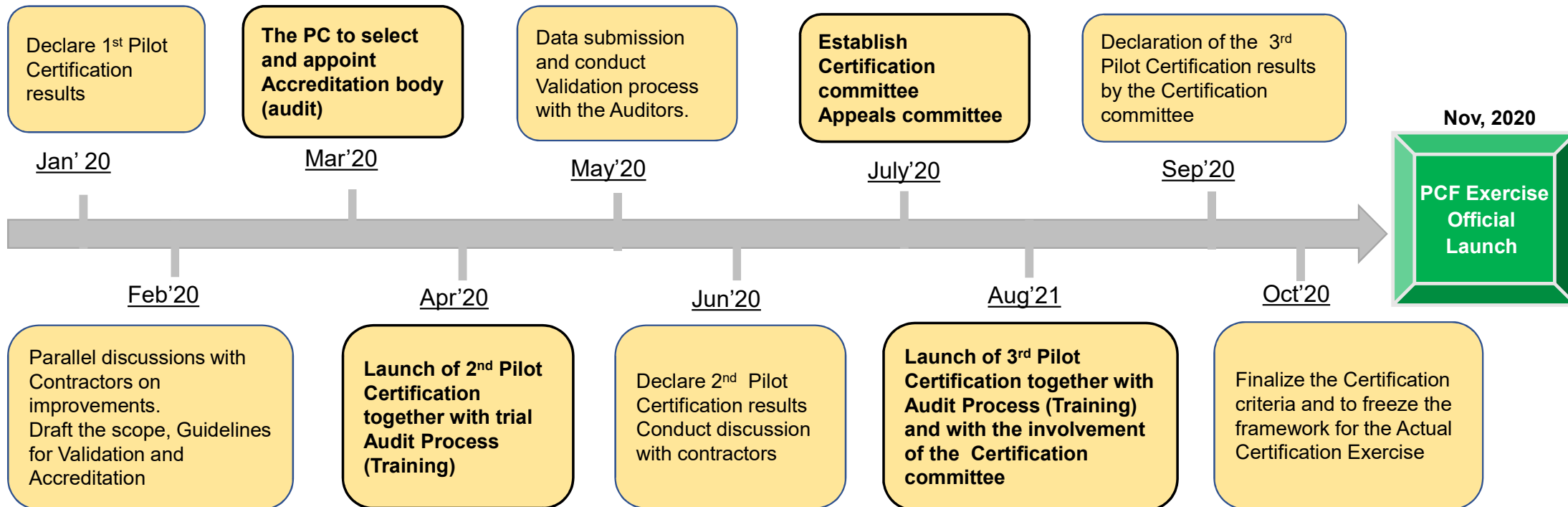
The Scores from each category (**PEOPLE + PROCESS + TOOLS + DATA QUALITY**) shall be normalised and the overall percentage shall be derived to calculate the Certification Index of each company.

Near Term



Long Term

(January 2020 to November 2020)



Path Forward

- The Productivity Certification Framework (PCF) is proposed as a way forward to **increase productivity and produce measurable benefits for 'raise-the-bar' improvements.**
- Implement **PCF to drive a positive culture of change** through transparent, data-driven continuous improvement model.
- Test the Mechanisation category in the 1st Pilot Certification Exercise.
- Effectively utilise the next one year to refine the Productivity Certification Framework.

Launch of the Productivity Certification Framework (PCF) during the Productivity Improvement Forum – 13 Nov 2019

GOH: Dr Koh Poh Koon, Senior Minister of State for Trade and Industry

Aim to lift productivity with new certification framework



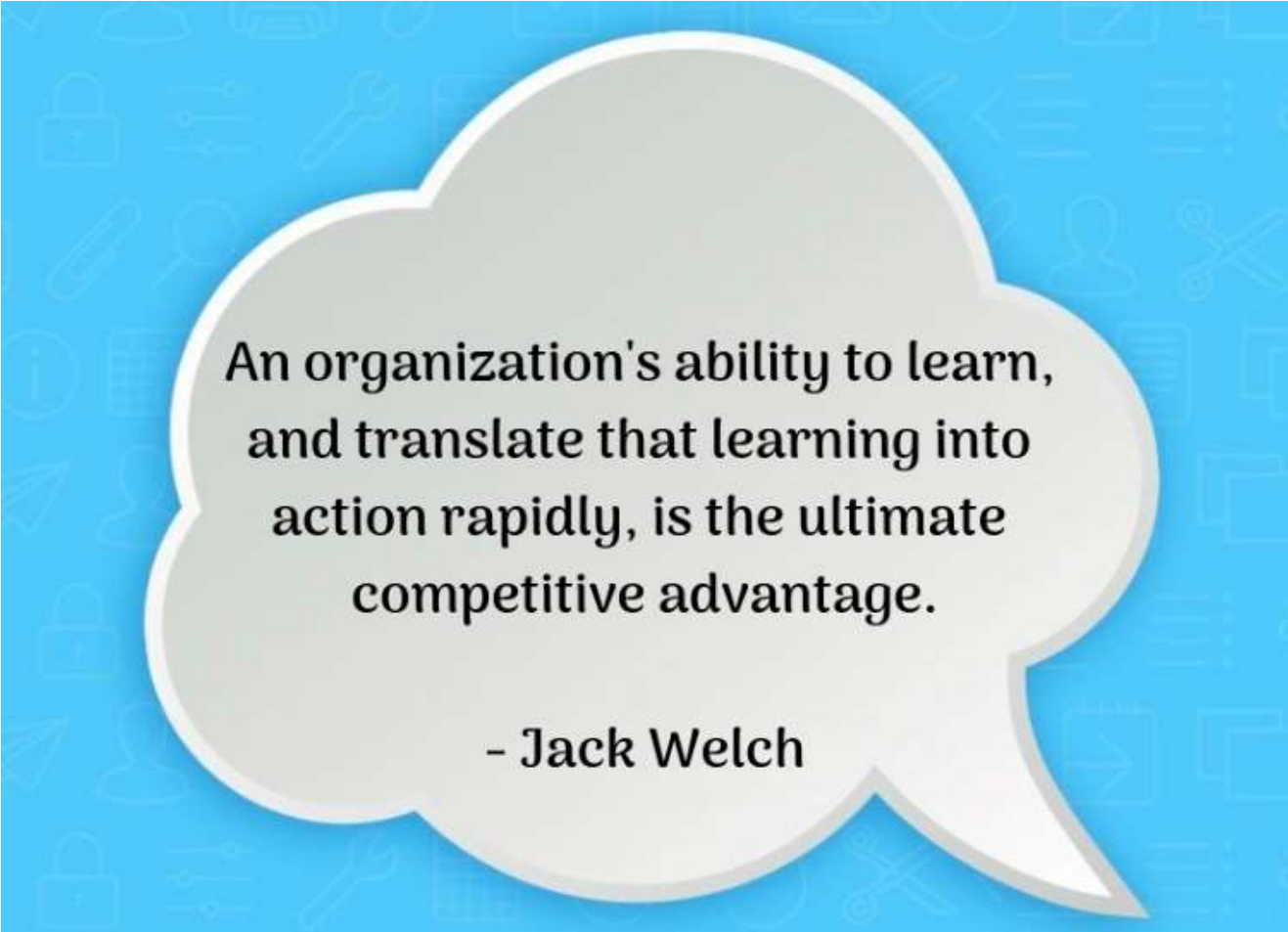
Senior Minister of State for Trade and Industry Koh Poh Koon fixing a piece of a puzzle comprising four areas that firms will be evaluated on, at the launch of the certification framework yesterday. With him at the Trade Association Hub in Jurong East were

ST VIDEOS

- Hong Kong transport system crippled as protesters fight pitched battles
- US Supreme Court will not shield gun maker from Sandy Hook lawsuit
- First day of Trump impeachment hearings focuses on Ukraine pressure campaign
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Media coverage on PCF launch and the Productivity Improvement Forum

<https://www.straitstimes.com/business/economy/aim-to-lift-productivity-with-new-certification-framework>



An organization's ability to learn,
and translate that learning into
action rapidly, is the ultimate
competitive advantage.

- Jack Welch

THANK YOU!

*Productivity Council (PC)
Singapore*