

Leadership
required to create the
Vision, Structure and Capability
to support the pathway to
Operator Excellence

Questions to be Addressed

1. What is the role of Operator Excellence in minimising Operational Risk?
2. What analogy can we use to promote Operator Excellence?
3. How do the best sites develop their operators to embrace Standard Work and participate and contribute to Formal Continuous Improvement?
4. Why have an Improvement Vision, Operator Excellence Vision and Operations Vision when we have a company vision?

1. What is the role of Operator Excellence in minimising Operational Risk?

*Our plants are becoming more complex and
the consequences of unexpected failure are
becoming much greater*

*There is now a greater imperative to
minimise Operational Risk*

*Operators and Maintainers are at the
Frontline when it comes to minimising
Operational Risk*

Some Recent Operational Disasters

2010 BP Oil Rig Disaster in Gulf of Mexico

2010 Pike River Coal Mine explosion in NZ

2003 Sugar Aust Glebe Terminal Dust Explosion

2002 Tip Top Bakery fire in Fairfield Sydney

Tip Top Bakery fire in Fairfield Sydney: 2 June 2002



Floor Area: approximately 10,000 m²

Tip Top Bakery fire in Fairfield Sydney: 2 June 2002

Fire Cause and Origin

‘...the cause of the fire was the failure of the three brackets supporting a gas-fired heater that was positioned on top of the muffin-proving oven.’

Business interruption

Adjustment of bakery schedules

Relocation of staff

Tip Top Bakery fire in Fairfield Sydney: 2 June 2002

Financial Impact

Building: approx \$20 Million

Total Loss: in excess of \$100 Million

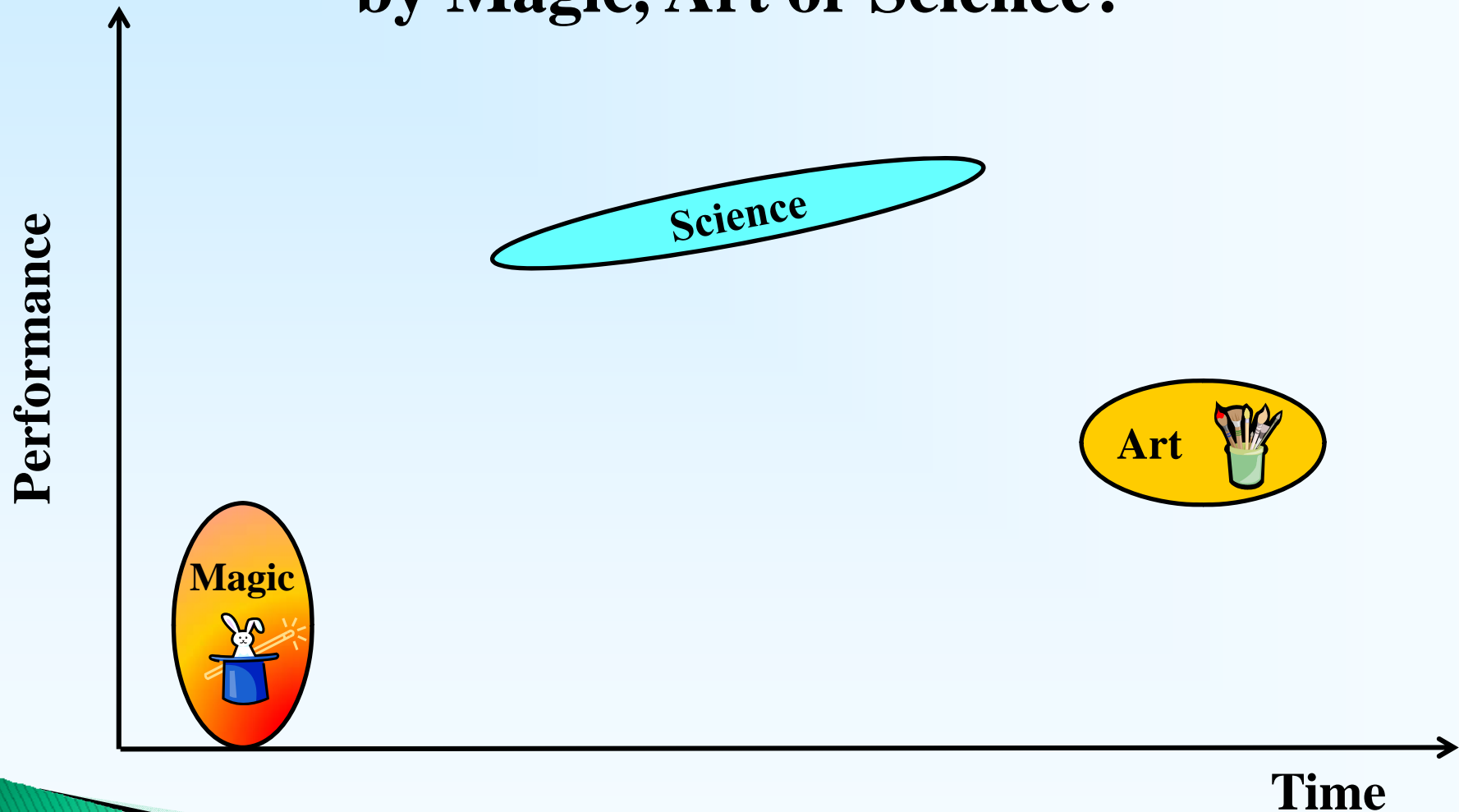
What is our learning?

Compliance Vs Care

2. What analogy can we use to promote Operator Excellence?

How do we Operate our Plant?

by Magic, Art or Science?



How do we Operate our Plant?

Magic:



- Train our Operators on how all the buttons & knobs work using Standard Operating Procedures and Checklists
- Provide examples (standards) of expected performance
- Performance is often average and quite variable

How do we Operate our Plant?

Art:

- Years of experience (provided we don't move them all over the place)
- Develop the understanding of relationships between problem and required action
- Performance improves with less variability.



How do we Operate our Plant?



Science

Science:

Through regular weekly improvement activities

- Learn how to care for their equipment
- Learn how it functions (as opposed to just operate)
- Learn how to diagnose problems at the earliest possible time

How do we Operate our Plant?



Science

Science:

Through Frontline Problem Solving

- Develop a greater understanding of the process
- Identify problems at the earliest possible time when they are easy to fix
- Performance continuously improves with little variation

How should we Operate our Plant?

Learning

Operators don't want to be Scientists:

“I would have gone to school longer if I wanted to be a scientist”

Hence we need a better analogy that defines what Operator Excellence is

How should we Operate our Plant?

The best analogy so far is a Formula 1 driver:



- Understand the functioning of their equipment (as well as being excellent operators)
- Diagnose problems on the run
- Rely on a highly skilled and motivated support crew to create a winning team

Tandung Mayang Open Cut Coal Mine

Start: May 2006
Level 1: Sept 2008
Level 2: August 2009
Level 3: June 2010

75 Production Area Based Teams
25 Maintenance Area Based Teams

459 Production
216 Maintenance
209 Other
884 Total



PT Kitadin
A BANPU GROUP COMPANY

Tandung Mayang Open Cut Coal Mine

Some of the results reported during the Level 3 verification audit in June 2010 included:



243 Cross-functional Teams completed

984 Open Point Lessons created

25 % Increase in Large Excavator Output

38 % Increase in Small Excavator Output

15% Reduction in Fuel Consumption

Resulting in over \$6.5m in Cost Reduction

Defining Operator Excellence



- Base Skills:** able to competently operate all equipment within team's responsibility
- Team Skills:** able to be an integral player in team achieving synergy
- Mastery Skills:** able to diagnose safety, quality and equipment problems at the source

What does this mean?



Operators with excellent Equipment and
Process Knowledge

A workplace that has best practice Standards
and effective Visual Controls

What does this mean?



A Workplace that monitors its performance and reacts rapidly to any shortfall in expectation by having:

Goal Aligned Performance Measures

Information Centres

Daily Review Meetings

Frontline Problem Solving

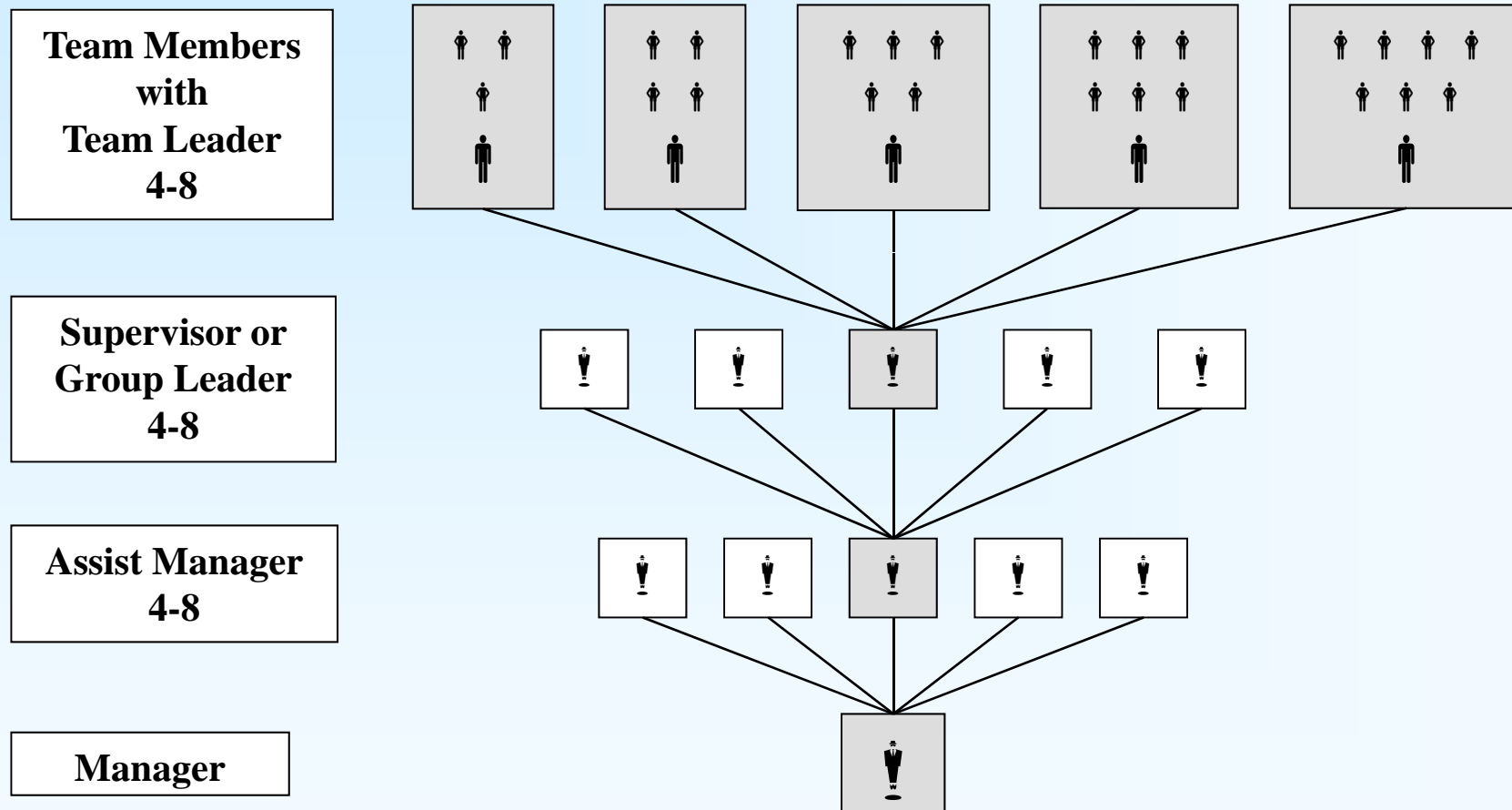
Rapid Sharing of Learning

3. How do the best sites develop their operators to embrace Standard Work and participate and contribute to Formal Continuous Improvement?



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Creating the Structure to Promote the development of our People



Adapted from: The Toyota Way by Jeffrey K Liker

Fig 16-2. Typical Toyota Organisation – assembly operation at Georgetown USA

Creating the Structure to Promote the development of our People

- Production and Maintenance Rosters are aligned
- Maintenance, Quality and Mentoring Support must *be direct, and there must be an unambiguous yes-or-no way to send requests and receive responses **

***Rule 2.** Decoding the DNA of the Toyota Production System

Steven Spear and H. Kent Bowen

HARVARD BUSINESS REVIEW Sep-Oct 99

Some Rosters we have seen!

Production Crew (28 day roster x 8 hrs):

D, D, D, D, D, D, D, **R, R**, N, N, N, N, A, A, A, **R, R, R, R**, N, N, N, A, A, A, A, **R**
 D, D, N, N, **R, R, R, R**, D, D, N, N, **R, R, R, R**, D, D, N, N, **R, R, R, R**, D, D, N, N

Production Supervisors (4 on 4 off x 12 hrs):

Caution

Not about Revolution

It is about Rapid Evolution



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How do we develop these skills?



Education - understanding why and how;

Demonstration - being able to copy;

Practice - experience through doing; and

Reflection - locking in the learning.

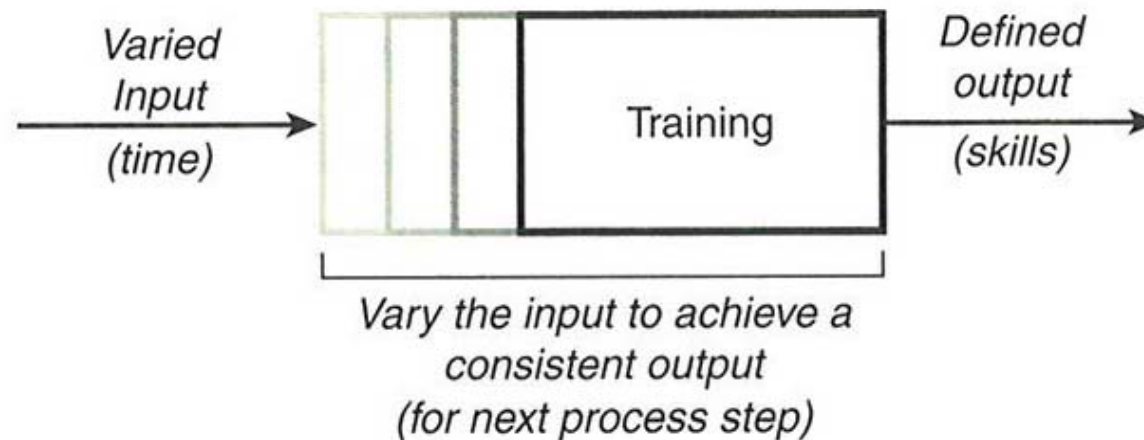
Learning a New Skill:

Is it better to have a 2-3 day intensive lesson on how to play a musical instrument

or

have a half-hour lesson each week over several years with regular practice and encouragement in order to become competent in playing the musical instrument?

Base Skills



Focus on Variable Inputs (eg time of training) to achieve required work standard (required Base Skill) rather than the traditional approach of fixed input (set time for training) with wide range (variable) outputs / skills.

Team Skills



Develop Team Leaders

then

Develop Team Members

Mastery Skills



Area Based Team Improvement

*Half-hour Lesson each week
with time to practice*

Work Area Management & Operator Equipment Management

Frontline Problem Solving



The Four Capabilities

1. Set expectations and see problems as they occur
2. Swarm, contain and solve problems as they occur
3. Spread new knowledge
4. Lead by developing capabilities 1, 2, 3

Chasing the Rabbit / The High-Velocity Edge
Steven J Spear 2009

Capture and Spread Knowledge



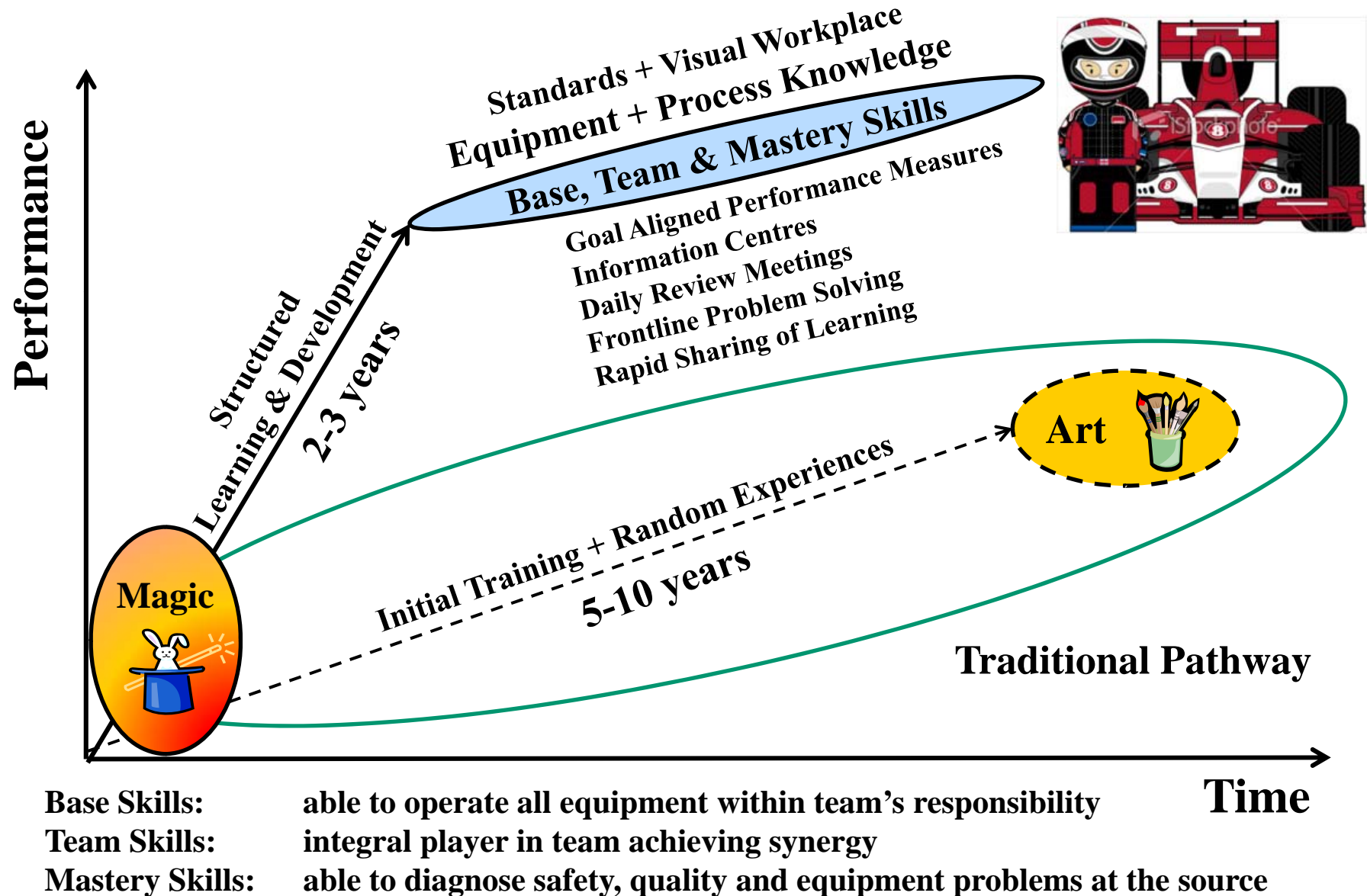
Tacit Knowledge

A3 Summary Sheet

Equipment Structured Database

TPM³ Pathway to Operator Excellence

Half-hour lesson each week with encouragement and time for practice



4. Why have an Improvement Vision, Operator Excellence Vision, and Operations Vision when we have a Company Vision?

The Power of Vision

Vision:

What do we want to achieve, and by when?

Recognising:

the most successful have the longest time perspective

The Power of Vision

Joel A Barker

Vision without Action is merely a dream

Action without Vision just passes the time

Vision with Action can change the world

The Power of Vision

**Apart from having your Company Vision,
there is a need for:**

Improvement Vision

Operator Excellence Vision

Operations Vision

Banpu received TPM³ Excellence Award Level 1 & 2 in September 2005, at Melbourne, Australia

Mr. Idthipon, Lampang (LP2) mine head and Lampang team, represented the company in receiving the TPM³ Excellence Award Level 1 and 2 at Melbourne.

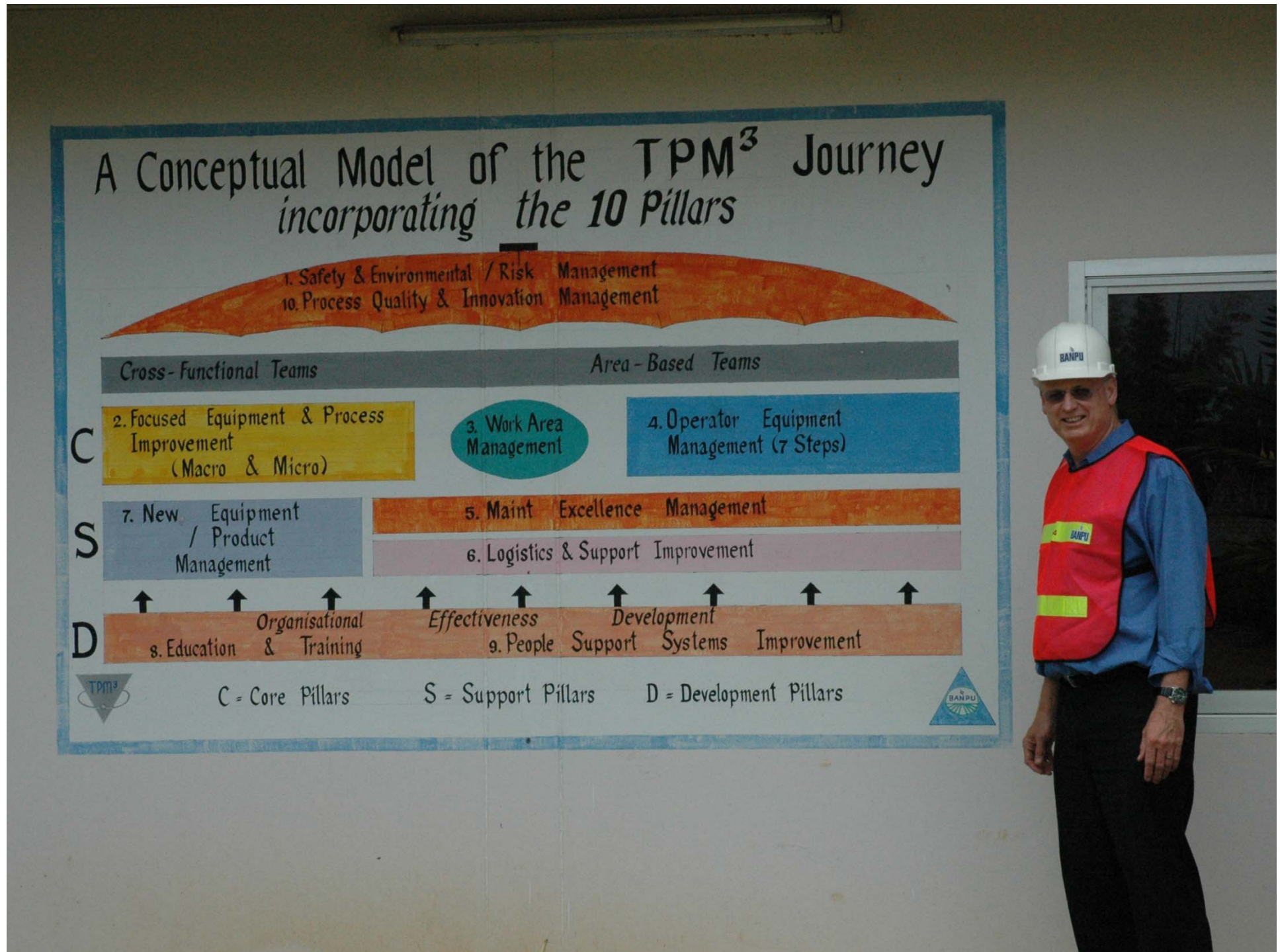






Banpu Lampang Open Cut Coal Mine - Thailand





What's needed to be World Class?

Achieve the full potential of your improvement (TPM³) Journey

Gold Medal to strive for (Improvement Vision)

- **Internationally recognised**
- **Externally awarded**
- **Clearly defined milestones**

Great Coach with Proven Training Plan

- **5 year outlook**
- **Progressively engages all**
- **Quarterly reviewed and adjusted**

Discipline to follow the Training Plan

- **Team supported with lots of fun**
- **Weekly reflection and review**
- **12 week cycle based, with good recognition**

Great Leaders have Passion to develop all their people



Chanin VongKusolkrit

Banpu's Chief Executive Officer / Director / Head of Risk Management Committee visiting Tandung Mayang site



Thank you Questions?