

Earned Value Management: Making it Personal; Making it Work !!!

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Who Am I?

Judy Bamberger has 30+ years' experience developing software, leading teams, teaching, and developing organisation-wide leaders. An independent consultant, she specializes in project management, process definition and improvement, quality techniques (e.g., formal inspections, metrics), team building, facilitation, and managing change.

Ms Bamberger has:

- Performed numerous assessments (SPA, CBA-IPI, ARC Class C / B, ISO9001, custom-tailored) and worked with organisations around the world and at all maturity levels.
- Created a CMM / CMMI gap analysis method that is highly reliable and cost-effective. This enables her clients to review their strengths and weaknesses against the practices of the CMM / CMMI, provides a likely maturity/capability level rating, and summarises opportunities for improvement - at a fraction of the time and cost of an appraisal. The CMMI gap analysis method complies with ARC Class B/C requirements.
- Assisted her clients with improvement plans based on assessment results, which enabled them to meet their strategic business goals and increase their maturity levels.
- Trained and coached internal change agents in: basic quality tools, communication skills, managing change and resistance, effective improvement planning, and transition. This enabled her clients to create lasting, positive changes.

A key author of CMM, Ms Bamberger is one of the original Authorised Lead Assessors.

Ms Bamberger teaches project management and an award-winning course that has the students apply basic quality tools in the contexts of a real team, project, and organization. She provides workshops and on-site mentoring in the CMMI, Personal Software Process, peer reviews, process improvement, and other software engineering, management, and leadership subjects.

Abstract

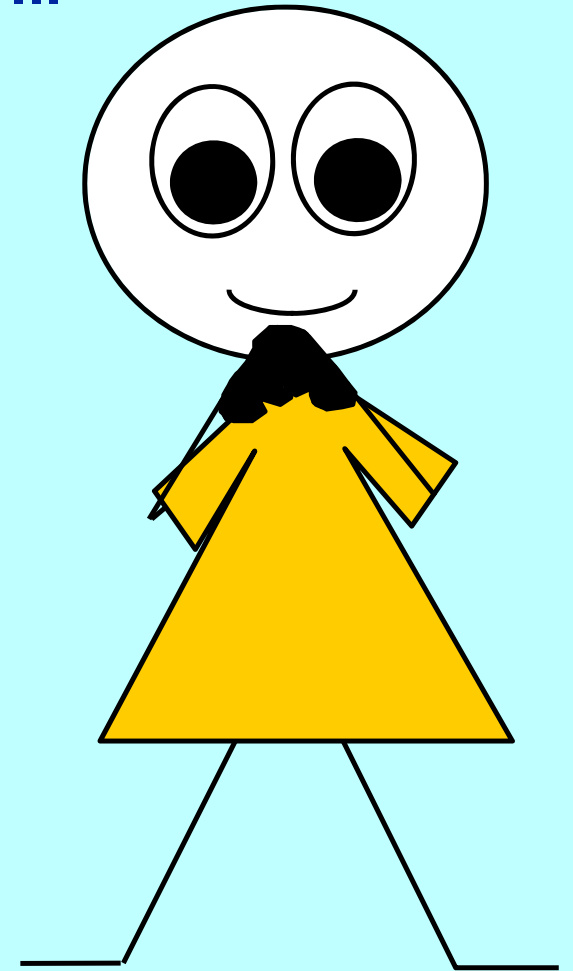
Defence, government, and commercial organisations have used earned value management (EVM) techniques for years - with varying degrees of success. The Australian Ministry of Defence has required its suppliers use EVM for decades, and industry has complied; some organisations use EVM to manage the project (internal-looking) and to coordinate effectively with stakeholders (external-looking); others find little value, bogging down in numbers, reporting, and bureaucracy. This paper presents the work of an organisation with which I have worked: Fujitsu Australia Ltd, in Canberra. They have embraced EVM, enhancing relationships with customers and throughout the entire team.

This presentation contains little "new theory" for those using EVM effectively today. The key value of Fujitsu's work comes in how they have "humanised" EVM - including using practical "plain English" for the EVM code-words - and made it accessible - "personal" - to all stakeholders.

Earned Value Management: Making it Personal; Making it Work !!!

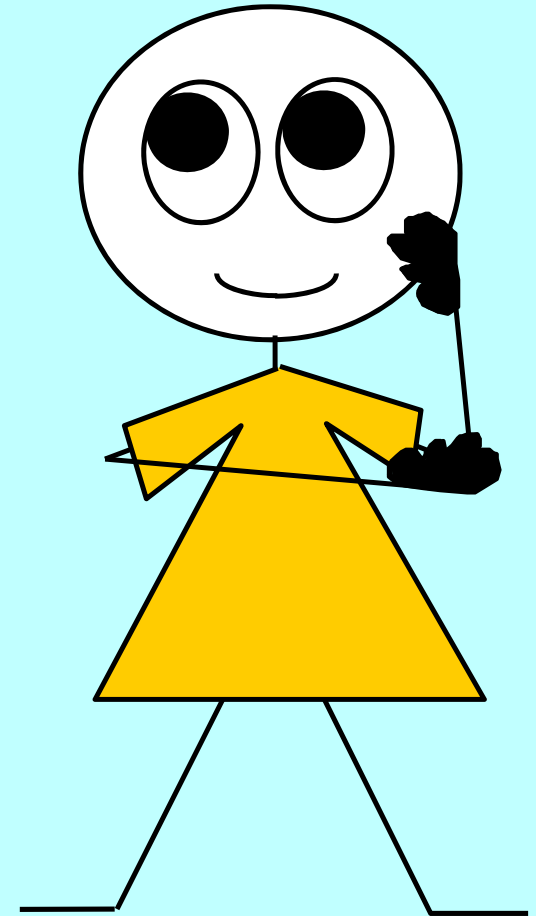
Acknowledgements

- I give thanks to Bram van Oosterhout ...
 - For providing the case study
 - For creating the original presentation
 - For allowing me to improve the original presentation
 - And for being here to improve my life



Objectives

- **At end of this presentation, we will have shared:**
 - **Veeeeeeeeery quickly:**
 - * **Fujitsu's implementation of Earned Value Management (EVM)**
 - **Most of the time:**
 - * **Why Fujitsu is so effective with its EVM implementation**



Fujitsu's Implementation of Earned Value Management (EVM)

Five Principles of Effective Planning, Tracking, and Managing

- (1) Use a standard work breakdown structure (WBS)
- (2) Schedule the tasks
- (3) Establish the tracking baseline
- (4) Establish the activity list within a task
- (5) Verify, track, and manage completion of each activity

Five Principles of Effective Planning, Tracking, and Managing

(1) Use a standard work breakdown structure (WBS)

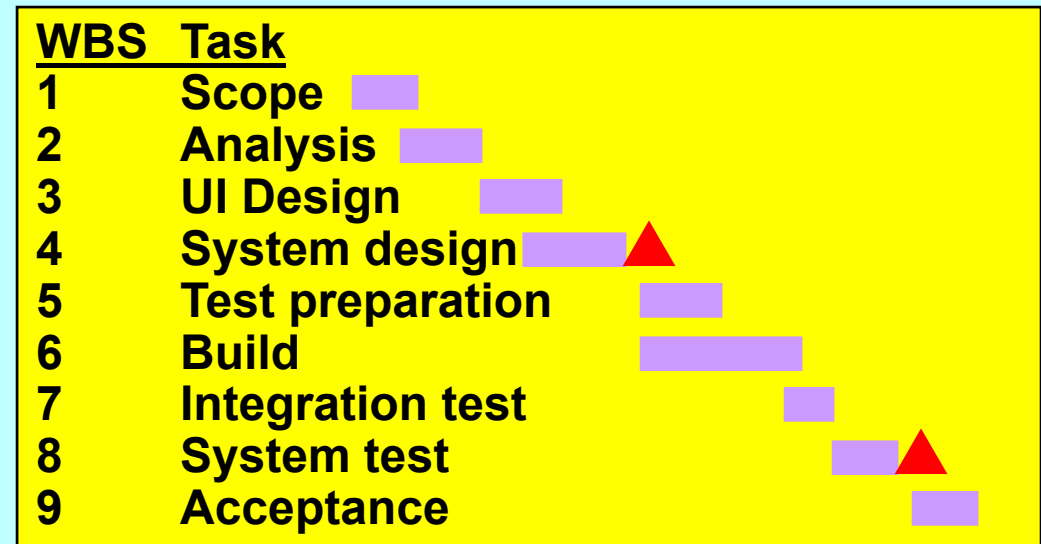
- Leverages historical data across projects
- Tailored to contract specifics and life-cycle approaches
- Ensures traceability through estimates, plans, activities performed, time reporting, outcomes
- Enables consistent reporting and monitoring
- Provides basis for improvements

<u>WBS</u>	<u>Task</u>
1	Scope
2	Analysis
3	UI Design
4	System design
5	Test preparation
6	Build
7	Integration test
8	System test
9	Acceptance

Five Principles of Effective Planning, Tracking, and Managing

(2) Schedule the tasks

- Supports "rolling wave" planning
 - * Small-grained tasks for near-term; large-grained tasks for longer-term
- Analyses the "product" (e.g., function points, complexity)
- Derives estimates from effort and staffing
- Checks against historical data
- Revises when knowledge gained down-stream



Five Principles of Effective Planning, Tracking, and Managing

(3) Establish the tracking baseline

- Reflects cumulative planned effort expended over time (BCWS)
- Is available to all stakeholders
- Serves as the goal to achieve, baseline against which to measure progress

QuickTime™ and a decompressor are needed to see this picture.

Five Principles of Effective Planning, Tracking, and Managing

(4) Establish the activity list within a task

- Defines objective, verifiable exit criteria and measurable interim milestones
- Enables objective, disciplined way to measure progress
- Ensures accurate, timely, and consistent progress reporting

QuickTime™ and a decompressor are needed to see this picture.

Five Principles of Effective Planning, Tracking, and Managing

(5) Verify, track, and manage completion of each activity

- Assigns each activity appropriately
- Follows appropriate processes
- Produces appropriate artefacts
- Verifies quality and "done-ness" per objective exit criteria

QuickTime™ and a decompressor are needed to see this picture.

Example 1: Staff Shortfall First Five Months

QuickTime™ and a
decompressor
are needed to see this picture.

Key EVM values: BCWS, BCWP; BCWS >> BCWP indicates work not accomplished

Example 2: Performance was OK

QuickTime™ and a
decompressor
are needed to see this picture.

Key EVM values: ACWP, BCWP; $BCWP / ACWP \approx 1$ indicates performance as planned

Example 3: Rescheduled and Rebaselined

QuickTime™ and a
decompressor
are needed to see this picture.

Example 4: Build Performance ***NOT* OK!**

QuickTime™ and a
decompressor
are needed to see this picture.

Key EVM values: ACWP, BCWP; $BCWP / ACWP < 1$ indicates insufficient performance

Examples: Summary

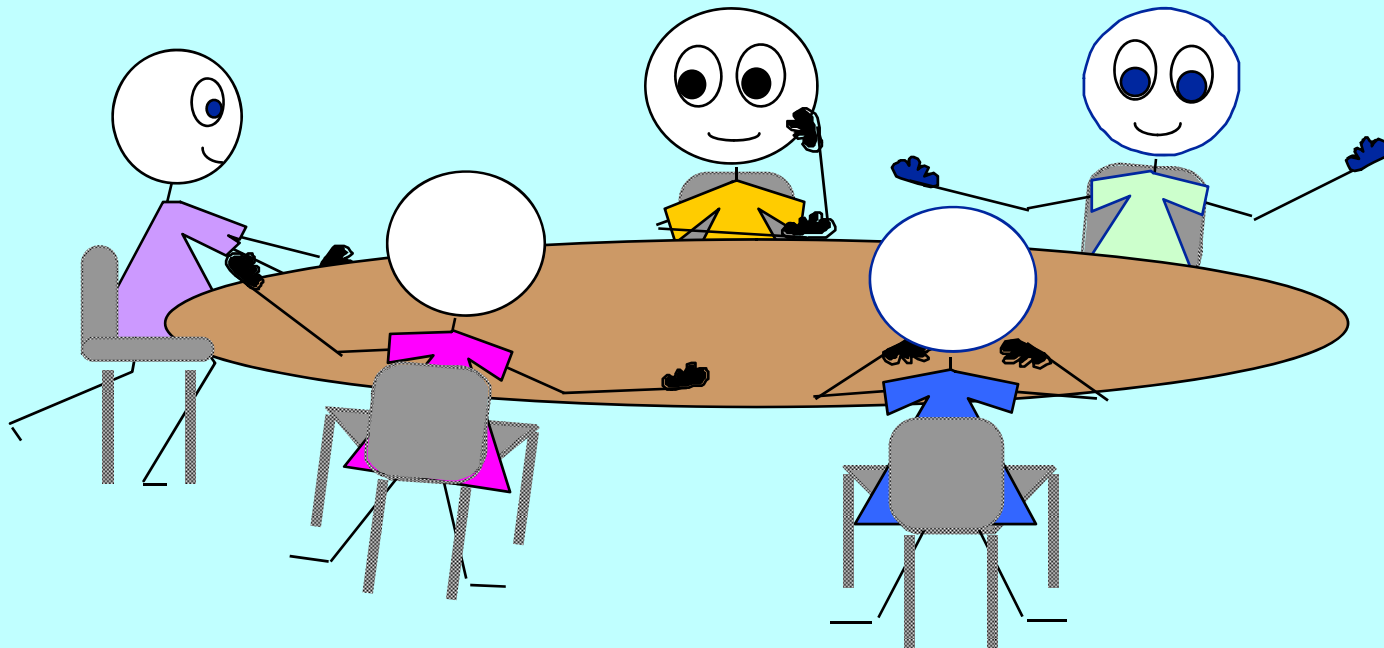
- **Measures provided strong support for intervention**
 - **By customer; by Fujitsu**
 - * **(And the story does have a happy ending 😊😊😊)**
- **Fujitsu used all three key dimensions of EVM data:**
 - **Will future performance remain as planned?**
 - **Will future performance remain as it is now?**
 - **Is intervention required?**

Examples: The Value of EVM (1)

- **Problems emerged**
 - They were not hidden; they could not be hidden
- **Problems emerged early**
 - Still opportunities to take corrective actions
- **Corrective actions based on data**
 - More readily supported by Fujitsu management and customer
- **Same EVM discipline that identified the first problem (staff shortfall) was used to:**
 - Track the effectiveness of corrective action
 - Notice early when the second problem emerged (insufficient performance)

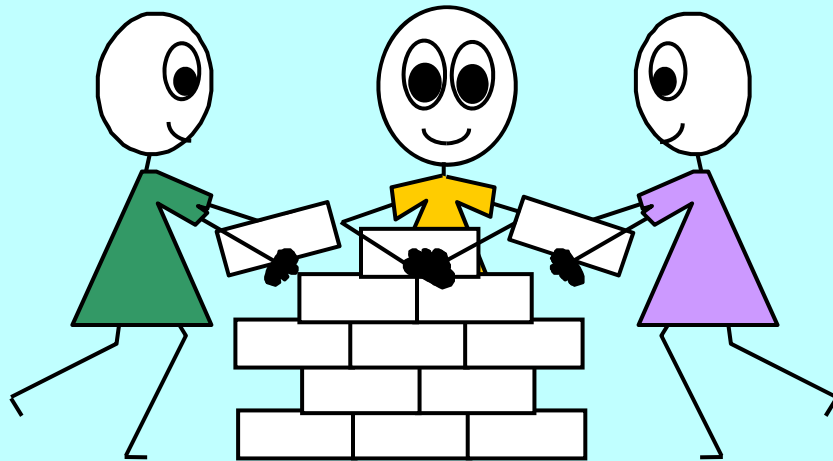
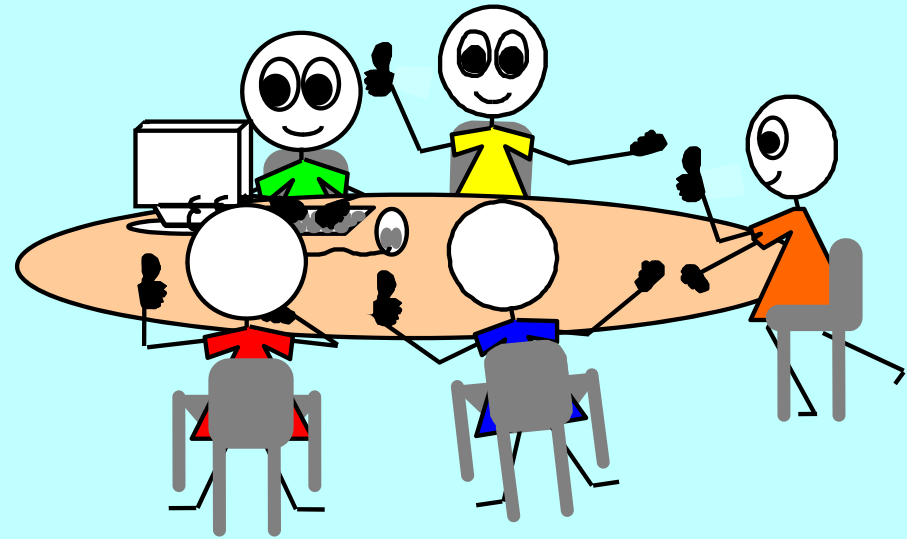
Examples: The Value of EVM (2)

- There was no blame
 - The team continued to behave as a team
 - * With ultimate goal of delivering a product on renegotiated time and schedule



Examples: The Value of EVM (3)

There was ...



... no blame

Why Fujitsu is so Effective with its EVM Implementation

**Hint:
Making it Personal;
Making it Work !!!**

Making it Personal: All Twelve Characteristics

- (1) People are trained in EVM
- (2) EVM is a required part of common practice
- (3) EVM is required by many Fujitsu customers, so EVM became common practice
- (4) EVM is a common language across stakeholders
- (5) Fujitsu has nourished a culture of openness, honesty, and "fearless reporting"
- (6) People use EVM as a signal
- (7) EVM plans, data, and results are published and available to all on the development team; EVM data are summarised for the customer

- (8) Past history / previous data give the team confidence in projections
- (9) Fujitsu has "humanised" the typical EVM jargon
- (10) "Done" is defined objectively - no quibbling - within the team, with the customer
- (11) Each team member shares responsibility for her/his outcomes, and contributes to planning the activities for producing those outcomes
- (12) Use of EVM builds confidence in the inter-team relationships and enhances the team-customer relationship

Making it Personal: All Twelve Characteristics

Some of the More Significant

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- **Achieved (%)**

- **Objective, verifiable exit criteria required to claim it**

* Build	In progress	40%
	Unit test complete, passing	80%
	Integrated, reviewed	100%

- **Achievement**

- **BCWP**

- **Effort**

- **ACWP**

- **Performance**

- **Achievement / Effort**
- **BCWP / ACWP**

(9) Fujitsu has "humanised" the typical EVM jargon:

Observations

- **Uses human, motivational words**
 - **Not cold, hard acronyms**
- **Defines Achieved (%) objectively, verifiably**
 - **Avoids "90% done syndrome"**
 - **Avoids blame, game-playing ... it is or it is not**
- **Defines Performance in plain language**
 - **How much Achievement for how much Effort**
- **Engages the team; speaks their language**
 - **Powerful symbolism**
 - **Words themselves are enablers, goals, objectives**

(9) Fujitsu has "humanised" the typical EVM jargon:

Observations [Bram]

- **" ... the team focuses on Performance; this engages the development team.**

Performance.

It's in their language, their terms.

And each individual sees and knows how her / his achievements contribute to project performance."

(1) People are trained in EVM

- **New hires receive induction training**
 - **Including project management, governance**
 - * **Including EVM: "the way we do business"**
- **Project teams receive "just in time" training**
 - **Working at client sites, with client tools, there are subtle differences across projects**
- **Training increases confidence, competence of all staff**
 - **To record data**
 - **To report data**
 - **To understand results reported back**
 - **To appreciate "what happens" when things do not go according to plan**

(1) People are trained in EVM: Observations

- **Training works on multiple levels**
 - Provides us an opportunity to learn new skills, improve / refresh old ones
 - Breaks down barriers between people, groups
 - Helps build communities
 - Tells us our company cares enough to invest in us

• **"If you think training is expensive, try ignorance."**

[Peter Drucker]

(1) People are trained in EVM: **Observations [Bram]**

- "We trained our own team.

Everybody.

'Here is how we are going to manage ourselves.'

The Project Manager and I provided the training.

Our customer provides the raw tools (TSF, Excel);
we integrated them.

We provide 'briefing notes' - tailored from our QMS -
who does what when, how to get / start a task,
report / record progress, consolidate, analyse,
report ... "

(6) People use EVM as a signal

- **EVM signals a request for help by others**
 - **Those behind can - and do! - ask for help from those ahead**
 - **Those ahead can - and do! - offer help to those behind**
- **Managers use personal EVM data to help, coach, support staff members**
- **Personal EVM data are not used for reward or punishment**
 - **Through training and example, everybody knows this**

(6) People use EVM as a signal: Observations

- **Training, providing a supportive culture, and humanising EVM terminology help create a "safe" environment**
- **When the environment is "safe," it is easier to signal for help ...**
... and accept help when it is offered
- **And there is no blame ...**

(6) People use EVM as a signal: Observations [Bram]

- **"EVM can, should, must be used by each team member, the information owned / produced by each team member.**

This keeps the entire team on the same page.

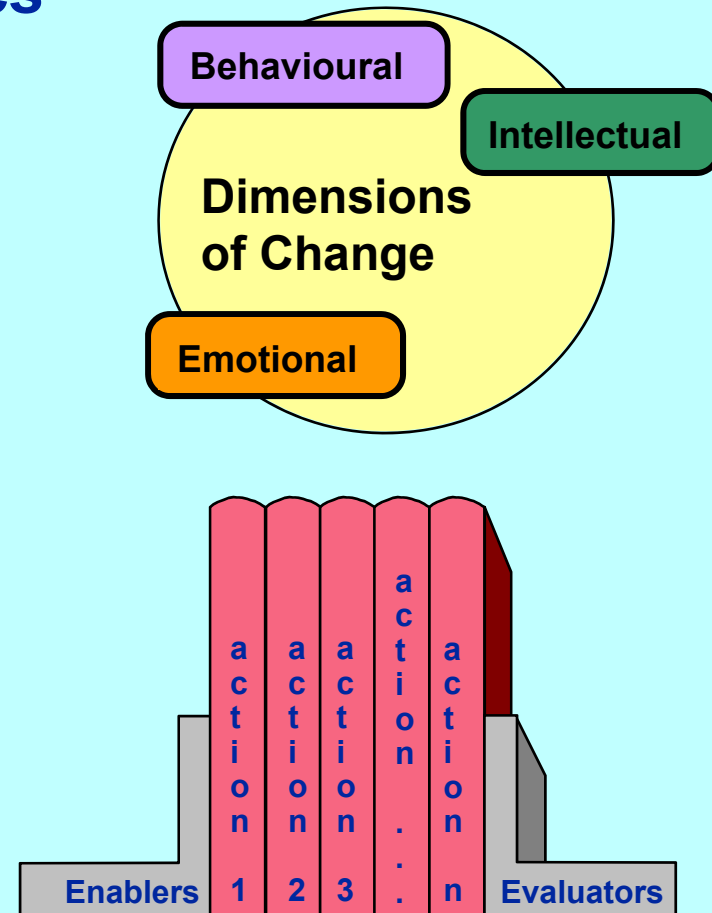
It focuses on objectivity versus blaming.

It allows for pride in achievements.

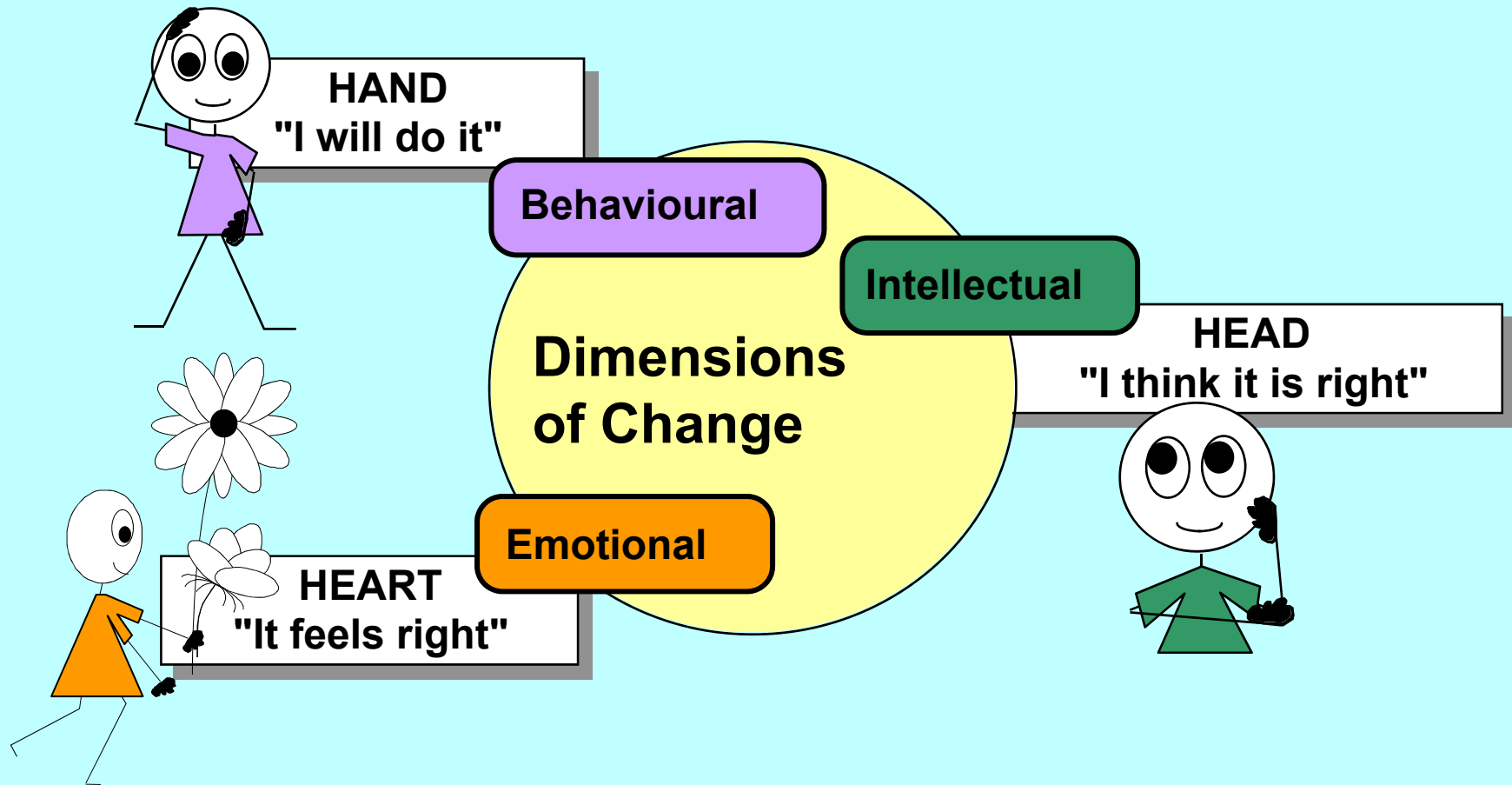
The team knows, expects, is not surprised when management intervenes."

Understanding the Twelve Characteristics

- Examine the twelve characteristics against two models:
 - What happens inside of each individual
 - * Head, Hand, Heart (Behavioural, Intellectual, Emotional)
 - What an organisation does to support each individual
 - * Enabling, Executing, Evaluating



Three Dimensions of Change



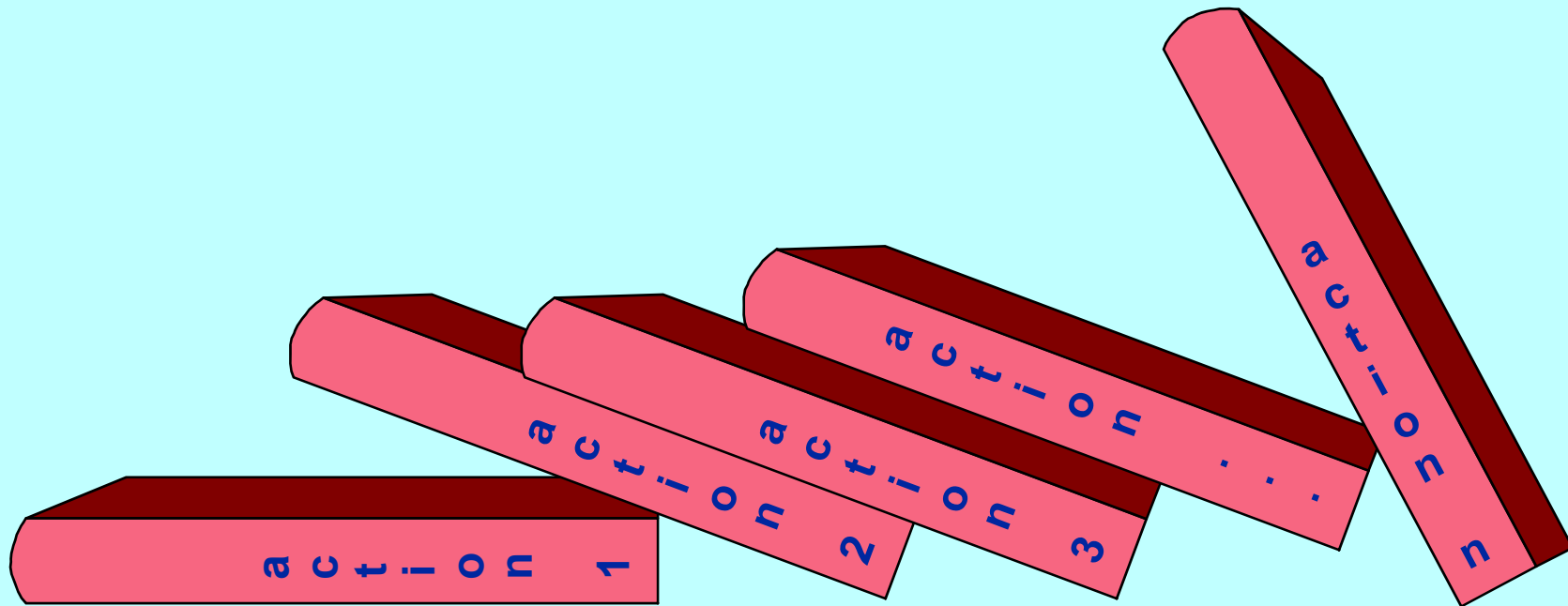
Enabling, Executing, Evaluating (1)

- Leverage the concept of "Enablers" and "Evaluators"
- ☹️ What we hope for ...



Enabling, Executing, Evaluating (2)

- Leverage the concept of "Enablers" and "Evaluators"
- ☹️ What reality (gravity) gives us ...

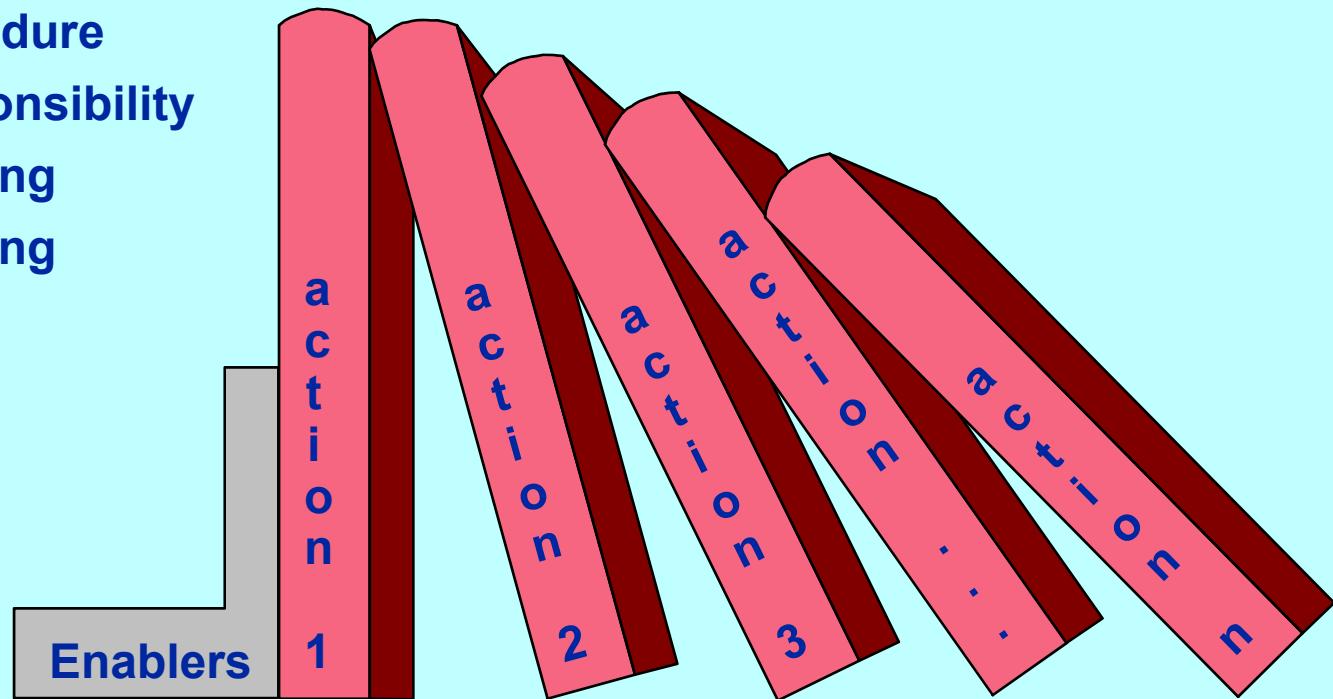


Enabling, Executing, Evaluating (3)

- Leverage the concept of "Enablers" and "Evaluators"

☺ "Enablers" help us "do things right the first time, every time!"

- Policy
- Procedure
- Responsibility
- Funding
- Training
- Tools

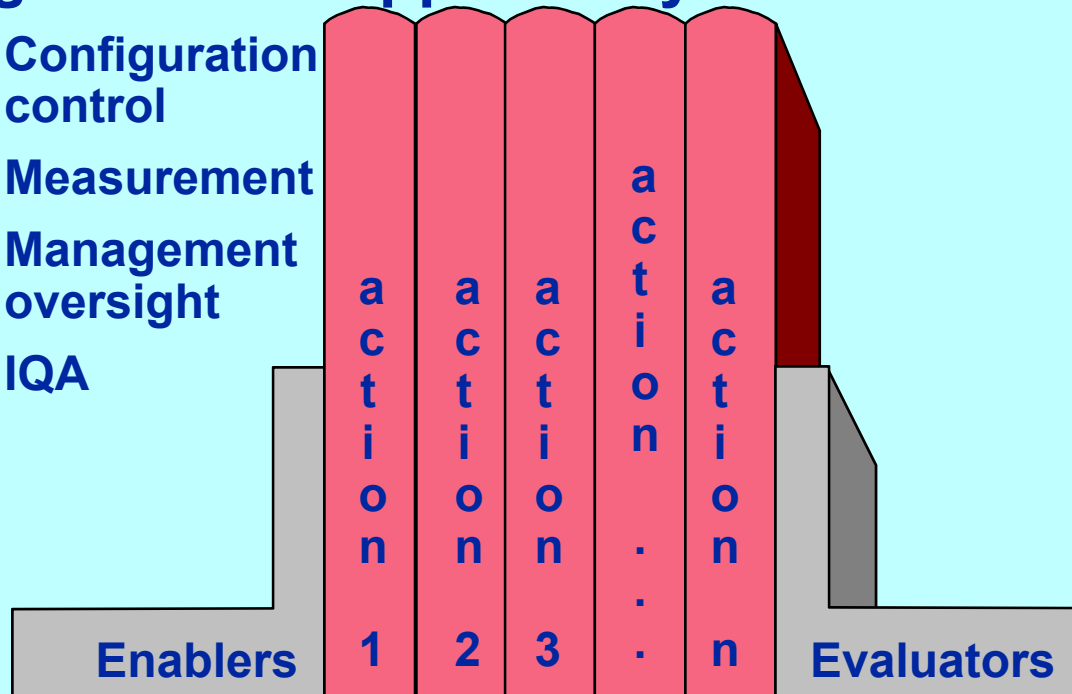


Enabling, Executing, Evaluating (4)

- Leverage the concept of "Enablers" and "Evaluators"
- ☺ "Evaluators" help us ensure "we did things right the first time, every time!" ... getting value ...

... or give us the opportunity to make corrections

- Configuration control
- Measurement
- Management oversight
- IQA



Mapping Fujitsu's EVM Approach (1)

	Hand (Behavioural)	Head (Intellectual)	Heart (Emotional)
Enabling		each individual	
Executing			
Evaluating			

Mapping Fujitsu's EVM Approach (2)

	Hand (Behavioural)	Head (Intellectual)	Heart (Emotional)
Enabling			
Executing			
Evaluating			

organisation overall

Mapping Fujitsu's EVM Approach (3)

	Hand (Behavioural)	Head (Intellectual)	Heart (Emotional)
Enabling	3 (required) 10 (done) 11 (share)	1 (train) 7 (publish) 8 (history) 11 (share)	1 (train) 5 (culture) 9 (humanise)
Executing	11 (share)	11 (share)	11 (share)
Evaluating	2 (practice) 6 (signal) 12 (confidence) 11 (share)	4 (language) 6 (signal) 7 (publish) 8 (history) 12 (confidence) 11 (share)	12 (confidence) 11 (share)

Observations (1)

- Institutionalisation happens when all are covered:
 - Individual: Hand, Head, Heart
 - Organisation: Enabling, Executing, Evaluating
- In our industry, we often forget, under-emphasise the Emotional (Heart) dimension
- Training works on multiple levels
 - Learning skills (Head / Intellectual)
 - Building communities (Heart / Emotional)
- Fujitsu "makes it personal" by enabling the emotions
 - (1) Training
 - (5) Culture
 - (9) Humanising

Observations (2)

- **Making it personal helps create a "safe" environment**
 - **Easier to ask for help: (6) Signal**
- **Previous experience - and success! - tell Fujitsu staff to use EVM ...**
 - ... so do policy and practice**
 - **(3) Required (Enabler)**
 - **(2) Practice (Evaluator)**

Summary (1)

- **EVM provides a clear, effective, and objective understanding of project status toward achieving the desired results**
 - **Supported by a systematic measure of progress**
 - **Gives the customer confidence**
 - **Gives the team reasons to celebrate**
 - **Gives the project manager support to make decisions**
- **Fujitsu staff at all levels use EVM**
 - **The paper provides additional examples**
- **"Making it personal" helps institutionalise EVM ...**

Summary (2)

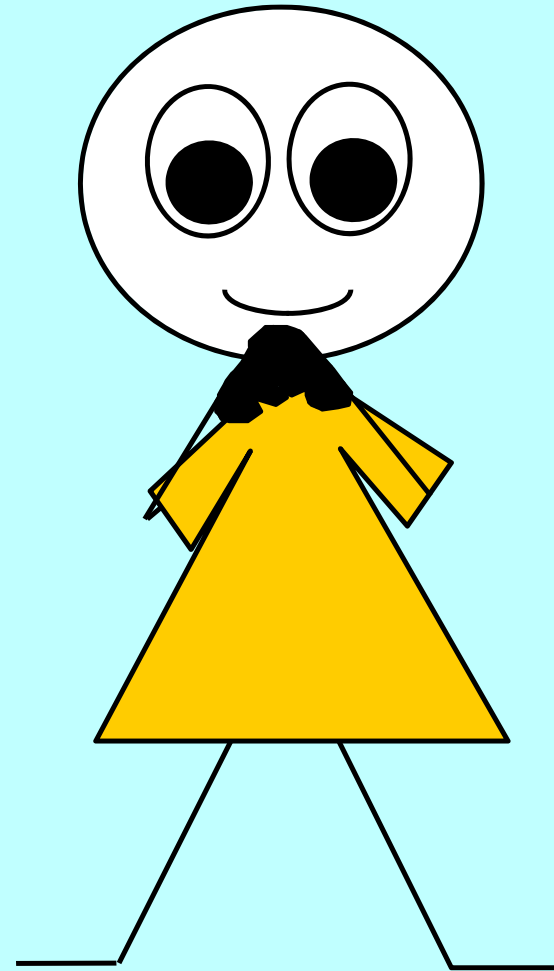
- **"Making it personal" helps institutionalise EVM ...**
 - **Covering all three dimensions for the individual**
 - * **Hand, Head, Heart**
 - **Covering all three "common features" for the organisation**
 - * **Enabling, Executing, Evaluating**
- **Creating a safe environment ...**
 - **Ensuring there is no blame ...**
 - * **Desired behaviours are readily practiced**

Challenges to Us

- Look at behaviours you are trying to institutionalise
 - How do you rate on the individual's dimensions:
 - * Hand, Head, Heart?
 - How well do you cover the organisation's "common features":
 - * Enabling, Executing, Evaluating?
 - What can ... must you do to help your colleagues adopt, institutionalise new behaviours?
- Tell your story here at next year's conference 😊😊😊

Thank You !!!

- Questions ???
- Answers ???



Acronyms

Achievement	Quantity of output delivered = BCWP = EV = Planned effort * Achieved (%)
Achieved (%)	Fraction of task output completed
ACWP	Actual Cost of Work Performed = Effort expended
BCWS	Budgeted Cost of Work Scheduled = Effort planned
BCWP	Budgeted Cost of Work Performed = Achievement
Effort	ACWP
EV	Earned Value (= BCWP)
EVM	Earned Value Management
IQA	Internal Quality Audit
Performance	BCWP / ACWP
QMS	Quality Management System
WBS	Work Breakdown Structure