JCSE
JOBURG CENTRE FOR SOFTWARE ENGINEERING

Hi-Mat Units

An Innovative TSP Adoption Programme in South Africa

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Overview

- The story so far … TSP in South Africa
- A new idea …

  The “High Maturity Unit” or Hi-Mat Unit
- Implementation Strategy
- Research Programme
- Status report

TSP Adoption in South Africa

- Milestones:
  - 2006: JCSE becomes SEI Partner + Launches “Bringing CMMI to SA” programme
  - 2008: Delegation visits Mexico and USA
  - 2009: TSP-adoption pilot at Nedbank & Dariel
  - 2010: TSP Rollout starts at Nedbank, other pilots “challenged”

TSP Adoption in South Africa

- Why were the TSP Pilots Challenged?
  - The “Hero” in the team
  - Loss of executive sponsorship
  - Trying to “do it on the cheap”

THE CONCEPT

The Hi-Mat Unit

High Maturity Software Development Unit
[Hi-Mat Unit]

A Hi-Mat Unit is set up to be the BEST software development unit in SA and on par with the best in the world.

"Best" is defined in terms of predictability and quality.

There is DATA to prove this!

The Hi-Mat Unit
- structure

Management Team

Role	Number	Experience
Entrepreneur/ Manager	1	Yes
Snr Business Analyst	1	Yes
Jnr Business Analyst	1	No
Process Manager & Coach	1	Yes
Administrator	1	No

Unemployed Graduates = 2

The Hi-Mat Unit
- structure

Development Team #1

Role	Number	Experience
Team Leader	1	Yes
Snr Developers	2	Yes
Developers	6	No
Tester	1	No

Unemployed Graduates = 7

The Hi-Mat Unit
- structure

Development Team #2

Role	Number	Experience
Team Leader	1	Yes
Snr Developers	2	Yes
Developers	6	No
Tester	1	No

Unemployed Graduates = 7

The Hi-Mat Unit
- structure

Maintenance & support

Developers from Team #1 and Team #2 who are not currently busy on projects

The Hi-Mat Unit
- structure

Each Hi-Mat Unit employs 25 people.

- 9 are experienced
- 16 are unemployed graduates

The Hi-Mat Unit
- How will it be BEST in SA

A Hi-Mat Unit will **CONSISTENTLY** deliver software projects:

- Within 10% of scheduled date
  - [Industry benchmark = 27%-112%]
- Within 5% of allocated budget
  - [Industry benchmark = 17% to 85%]
- Having 0.5 defects per 1000 lines of code
  - [Industry benchmark = 1 to 7 defects]

These results will be achieved by using internationally accepted best-practice "process improvement" models called CMMI and TSP.

JCSE has been piloting adoption in SA since 2006

The Hi-Mat Unit
- How will it be BEST in SA

A Hi-Mat Unit will be set up using the "Franchise Model":

- The "Brand" = superior performance
- The "Operations Manual" = laid down processes and methods
- "Training" = each member will be trained in processes, tools and technologies before first project starts
- "Quality Assurance" = units will be appraised and certified by JCSE

The Hi-Mat Unit
- How will it be staffed

- In start-up phase experienced staff will be recruited in the “open market”
- Once Units are established “experienced staff” for new Units will be recruited from existing Units
- Unemployed graduates will be employed on the basis of an aptitude test (“van Zyl and Pritchard” model)
- All employees will undergo extensive training in the “Hi-Mat” way of working

IMPLEMENTATION STRATEGY

The Hi-Mat Unit
- Rollout plan

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
# Hi Mat Units	4	6	10	20	30	70
Experienced	48	42	70	140	210	510
Unemployed Grads	52	108	180	360	540	1240
TOTAL JOBS	100	150	250	500	750	1750
Cumulative		250	500	1000	1750	

The Hi-Mat Unit
- Financial viability

	Year 1	Year 2	Year 3	Year 4	Year 5
# Hi Mat Units	4	6	10	20	30
Salaries	R29.6	R44.4	R74	R148	R222
Income	R40	R60	R100	R200	R300
Surplus	R10.4	R15.6	R26	R52	R78

* **Figures in millions of Rands**

RESEARCH PROGRAMME

Wits University, Johannesburg

Prof Barry Dwolatzky (JCSE)
2 x PhD Students

University of Cape Town

Prof Kosheek Sewchurran (GSB)
Prof Ojealanki Ngwnyama
Prof Irwin Brown
6 x Masters and PhD Students

Status as of August 2013

- Trained and Launched 3 TSP Teams
- Coaching, training and other support from Said Nurhan, Bill Nichols, Alan Willett and Dave Tuma
- Internal Mentor Coach being trained (John Goble)
- One candidate instructor and coach
- 7 Unemployed Graduates trained and deployed
- Baseline measurements started
- Version 1 of “Standard Operations Manual” complete.

THANK YOU!!

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