


```
585  proc means data=XSOX  noprint;
586       var rowSum;
587    output out=trace  sum(rowSum)=Trace;
588  run;

NOTE: There were 12 observations read from the data set WORK.XSOX.
NOTE: The data set WORK.TRACE has 1 observations and 3 variables.
NOTE: PROCEDURE MEANS used (Total process time):
      real time               0.01 seconds
      cpu time                0.00 seconds


589
590  data _null_;
591          set trace;
592          put trace 8.6;
593  run;

4.077865
NOTE: There were 1 observations read from the data set WORK.TRACE.
NOTE: DATA statement used (Total process time):
      real time               0.00 seconds
      cpu time                0.00 seconds
```

Fostering an environment of NPP

China PHARMSUG

James Gallagher, Nancy Ni

September 2015

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Content

- Background – Problem Statement
- Training Methodology
- Embedding strategy
- Outcomes

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Background – Problem Statement

Background – Problem statement



- **Problem** :
  - Increasing number of SAS jobs :
    - ~ 17,500 SAS jobs submitted per month in 2013,
    - ~ 15 SAS jobs per user per day.
  - Some performance issues with reporting environment:
    - Slowness of the system, SAS jobs taking long time to execute.
- **Solutions** :
  - Hardware => Performance upgrade : upcoming new servers.
  - Software => improve code efficiency.

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Background – Problem Statement Cont'd

Spirit



« Ask not what the Reporting System *can do for you, ask what you can do for the Reporting System .»*

John F. Kennedy, 1961

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Background – Problem Statement

Background – Problem statement

- **Solutions** :
  - Hardware => Performance upgrade : upcoming new s
  - Software => improve code efficiency.



Indirect benefit: Further ignite **programming passion**

Not just efficiency!!



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Training Methodology – M1

Objectives of Module 1:

By the end of this module you should be able to:

- Understand the importance of NPP in Novartis environment
- Have increased awareness on the factors that contribute to NPP
- Learn through others what 'excellence looks like' for each factor
- Learn through others on programming approaches based on different scenarios (e.g. How important is efficiency in the context of HAQ v CSR)
- Help the NPP Focus Group by providing ideas, content and examples that will form part of working practice (your contribution is highly valued)

Duration: 4 hours

Type: Interactive Workshop (class size of 12)

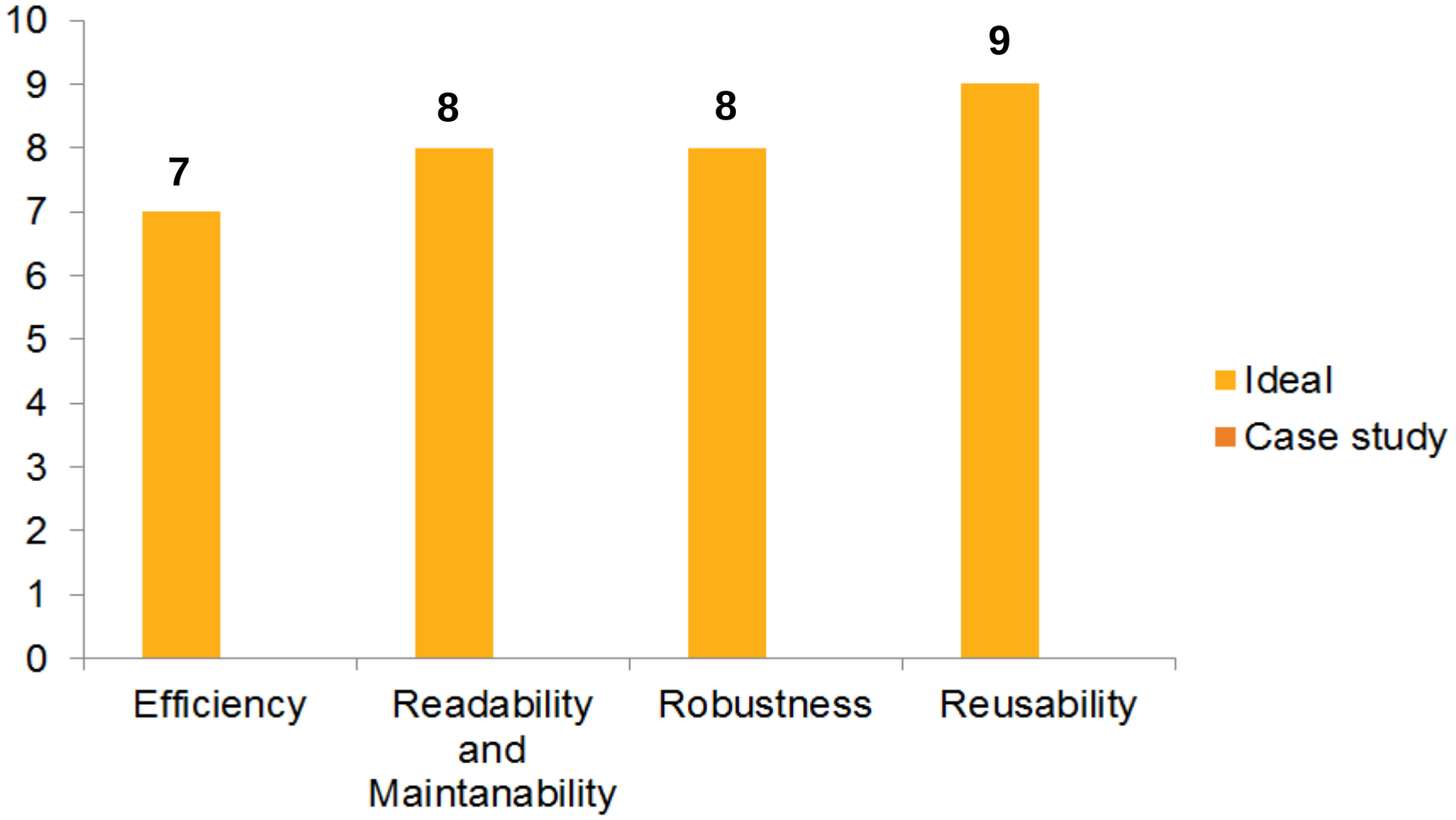
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Training Methodology – M1 Cont'd

Topic	Duration (mins)	Purpose
Welcome	10	- Ice-breaker
Trade-off Concepts	10	- Introduce concept of trade-off - Introduce the pareto principle (80:20 rule)
Software Development Factors (SDFs)	75	- Introduce the SDFs - Brainstorm on what excellence looks like
Real-life case studies	125	- Teams to rank the importance of SDFs for a given case - Teams then to review the code and rank the score for each SDF - Make suggestion to improve the program - Report back to group
Next Steps	10	- Team to complete Action Log - Introduce concept of Module 2

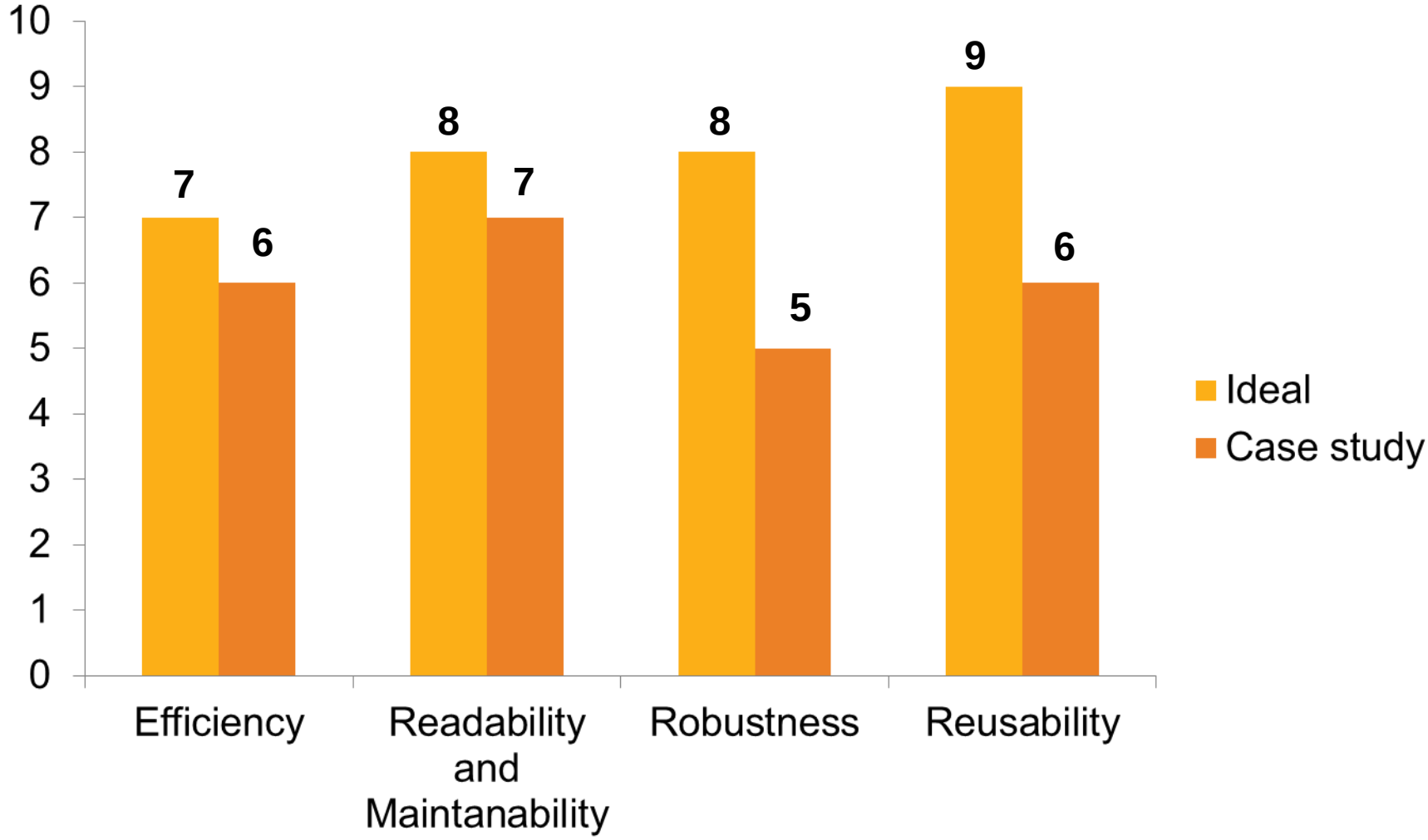
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Training Methodology – M1 Cont'd



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Training Methodology – M1 Cont'd



Training Methodology – M2

Objectives Module 2:

- Improve programming efficiency
- Reminder of some tips and techniques to improve efficiency
- Learn new tips for efficiency gain
- Select and remember some techniques that you will apply
- Follow-up with manager through action log

Duration: 5.5 hours

Type: Interactive Workshop (class size of 12)

Training Methodology – M2 Cont'd

Topic	Duration (mins)	Purpose
Introduction	25	- Ensure audience understand course objectives
Key factors to measure efficiency	10	- Define each key factor, how to measure and what are the trade-offs - explain the SASFULLSTIMER option and how to interpret results through a practical case.
Programming Data Vector (PDV)	40	- Learn how can knowing the PDV change your programming approach.
Code Challenges	30	- Breath, interactive & learn. Should be fun.
Arrays/Hashing	60	- Sell Array to the audience .Hash is more like an introduction.
Quiz	20	- Energize and learn.
Call Execute	40	
SAS Perl Regular expressions	30	
Work in Unix	40	
Debrief + feedback	20	- Explain expectations from management post-meeting - Ensure audience understand the expectations from management in terms of actions/objectives

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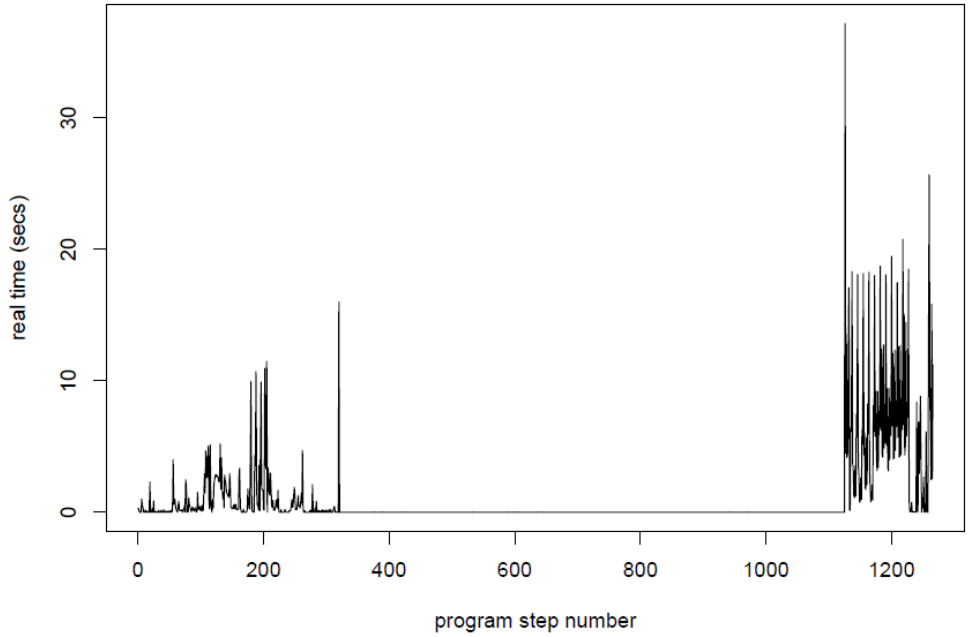
Embedding Strategy

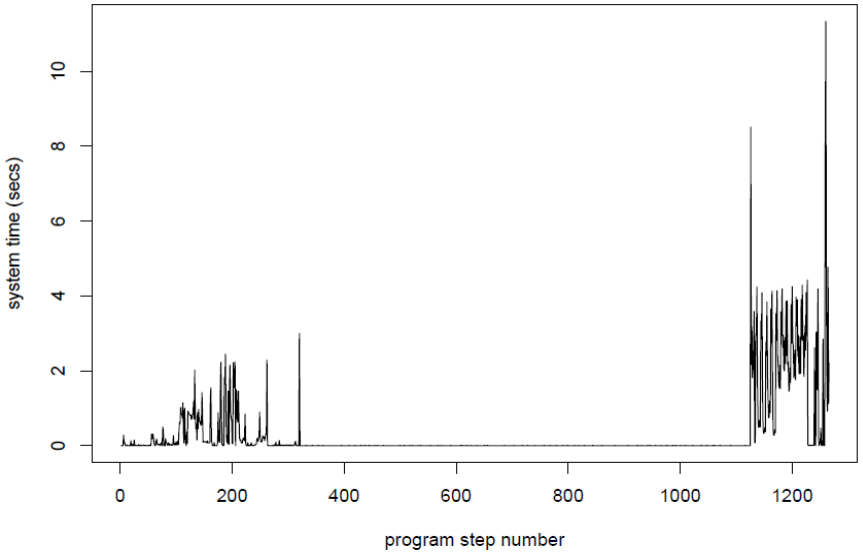
How can we embed this within our organization?

1. Action Log after each module was discussed with manager
2. Added to all programmers objectives
   - Objectives varied based on level
3. Fixed agenda item at group meetings
4. Management encourage more discussion on the programming approach
5. Incorporate into COTY award
6. Scan usage
   - Still being implemented
7. *Provide diagnostic tools*
   - Still being implemented

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Diagnostic tool - PLACEHOLDER





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Outcomes

- Solicited Feedback

150+ 5 sites 80%+



- Unsolicited Feedback

From:
To:
Cc:
Subject: Implementation of NPP learnings in NIBR SR

Sent: Tue 7/28/2015 11:15 AM

Hi [redacted]

I am glad to say that NIBR SR is implementing the learning from NPP workshops. Couple of years ago, I used to mention to [redacted] that NIBR programmers are not optimally demonstrating programming practices that means writing code with efficient techniques. Now I am very happy that things are moving towards positive direction as mentioned below in my write-up to [redacted] Midyear. Thank you very much for your NPP workshops initiation step ☺

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Outcomes Cont'd

- Other groups now implementing
  - *Pilot with Stats colleagues for working in Unix*
  - *Novartis Oncology are training all programmers*

- Presentations
  - *Several presentations occurring with clear sign of benefit*

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Acknowledgements

- Nicola Dupuis, Co-Lead of NPP
- Marjorie Nowak, Co-Lead of NPP

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Thank You



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Your Turn……



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