



ANZTB SIGIST

Facilitators: Leanne Howard and Chris Dimitriadis (Sydney SIGIST
Committee)

& Steve Toms (ANZTB)

Date: 31st August 2010

Agenda

5:30 Welcome address by Leanne Howard and Chris Dimitriadis

5:30 Introduction to ISTQB / ANZTB / SIGISTs by Steve Toms

5:40 Testing Centre of Excellence by Mark Feldman

6:20 Networking & Refreshments

6:45 Testing Metrics by Bernie Beaudoin

7:25 Next SIGIST / Closing Address by Chris Dimitriadis



Testing Centre of Excellence

Mark Feldman

What about test governance...? The case for the Test Centre of Excellence

Why think about the TCoE at all?

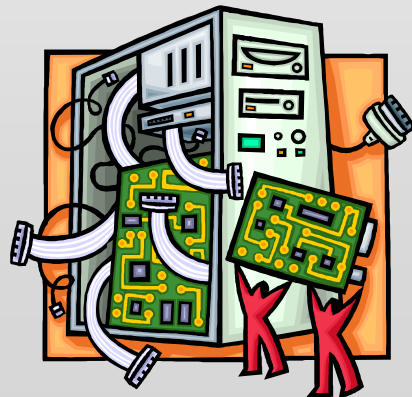
3 significant issues – lifespan of applications, common infrastructure, and ultimately test governance



1. Applications last longer than projects



- To get testing value over the applications lifecycle, we need to re-use *assets* – they are medium term
- So who gets to keep and maintain the assets?
- Potential compromise from short term project agendas –is the quality of the assets appropriate?



Test plans	Risk assessment	Test standards
Test cases	Updated source docs	Test processes
Test scripts	Test policies	Test expectations

2. Common infrastructure & capability is needed

- Tools - are expensive – cant be project funded
- Test environments – need to be controlled & productive
- Training and documentation, including the “testers interests”



Test environments

Deployment tools
Deployment process
Test Data
Test harnesses
Simulators
Hardware

Virtualisation systems

Test tools

Automation tools
Test mgt tools
Reporting tools
Utilities
Performance tools

Automation scripts
Capacity - licences
Configurations
Updates
Performance scripts

3a. (Test) Governance

Governance in general: The consistent ecosystem of management, policies, processes and decision rights, for an area of responsibility,

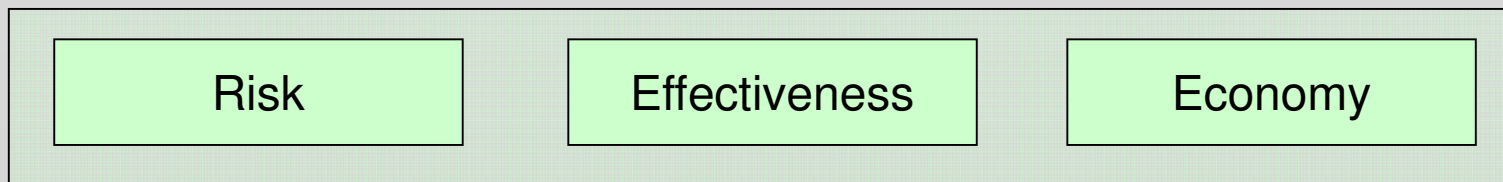
... that in turn,

... causes expectations to be met regarding performance, risk management and business support, thereby extending and sustaining the businesses strategies.

3b. Test Governance

- Standards and variability of testing outcomes – vs fragmented ad-hoc approach
 - Consistent approach, oversight and risk reduction
 - Economies of scale
 - Capabilities, organisational understanding and context
 - Central empowerment, central responsibility
- ... probably encompasses the first 2 issues as well...

Outcome and context focused, risk managed



= test governance

So....

- Project delivery activities on their own, don't cut it.
- People making decisions in isolation, and without an integrated company perspective, doesn't cut it.
- Testing is a specialised field, with non-trivial and non-generic skillsets. Having just anyone do it doesn't cut it.
- The board has no point of decision making, to allocate empowerment and demand accountability, for this function, which doesn't cut it.
- The primary reason we test is to *manage risk*. The risk cannot be managed effectively and economically, on a fragmented basis, which doesn't cut it.



What do we need?

- A focused place to park the responsibility and accountability
 - process,
 - tools,
 - best practice,
 - often provides people too

The test approach

- Four roles, specific to testing (the 4 “bases” to be covered), that demand focus:

Head of testing – testing and the organisation

Test practice – testing itself – the craft

Technical and hi-tech – the technology part

Operations - the people and delivery part



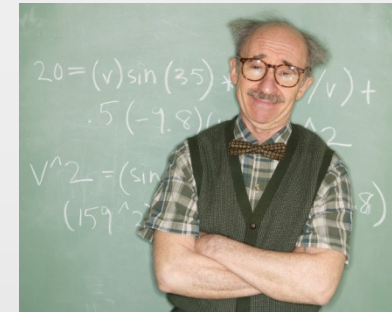
What will the TCoE do?

- Ensure that testing happens with a longer term view that matches the life of the application
- Ensure that decisions are made that give clear direction and action to
 - Acquiring and maintaining test environments
 - Acquiring and maintaining toolsets
 - Setting the required test practice, processes and standards
 - Interface the testing function effectively to the organisation
 - Achieving a satisfactory level of test governance
 - Matching required capability and capacity to anticipated workload (people, skills)

Base 1 – Head of testing

- Answers the questions:
 - Why are we doing this? Application portfolio? Value?
 - Does everyone else understand this?
 - How good are we doing it – roll-up view? How do I know?
 - Are we meeting company expectations? Are they meeting ours?
 - Where are we going with this and why?

Base 2 – Test Practice



- Answers the questions:
 - Are we testing the right things, and are we testing right?
 - Do we understand the external standards?
 - Do we apply the right standards and have appropriate processes in place? Is it defensible? Is it good?
 - Are people adhering to them?
 - How do we know?

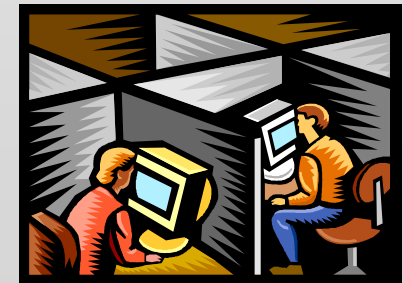
Base 3 – High Tech

- Answers the questions:
 - What tools should we use? Why?
 - Are they appropriate?
 - Are they up to date?
 - Can we find technical solutions to our challenges?
 - Are they working?
 - What are other people doing – now and in the future?

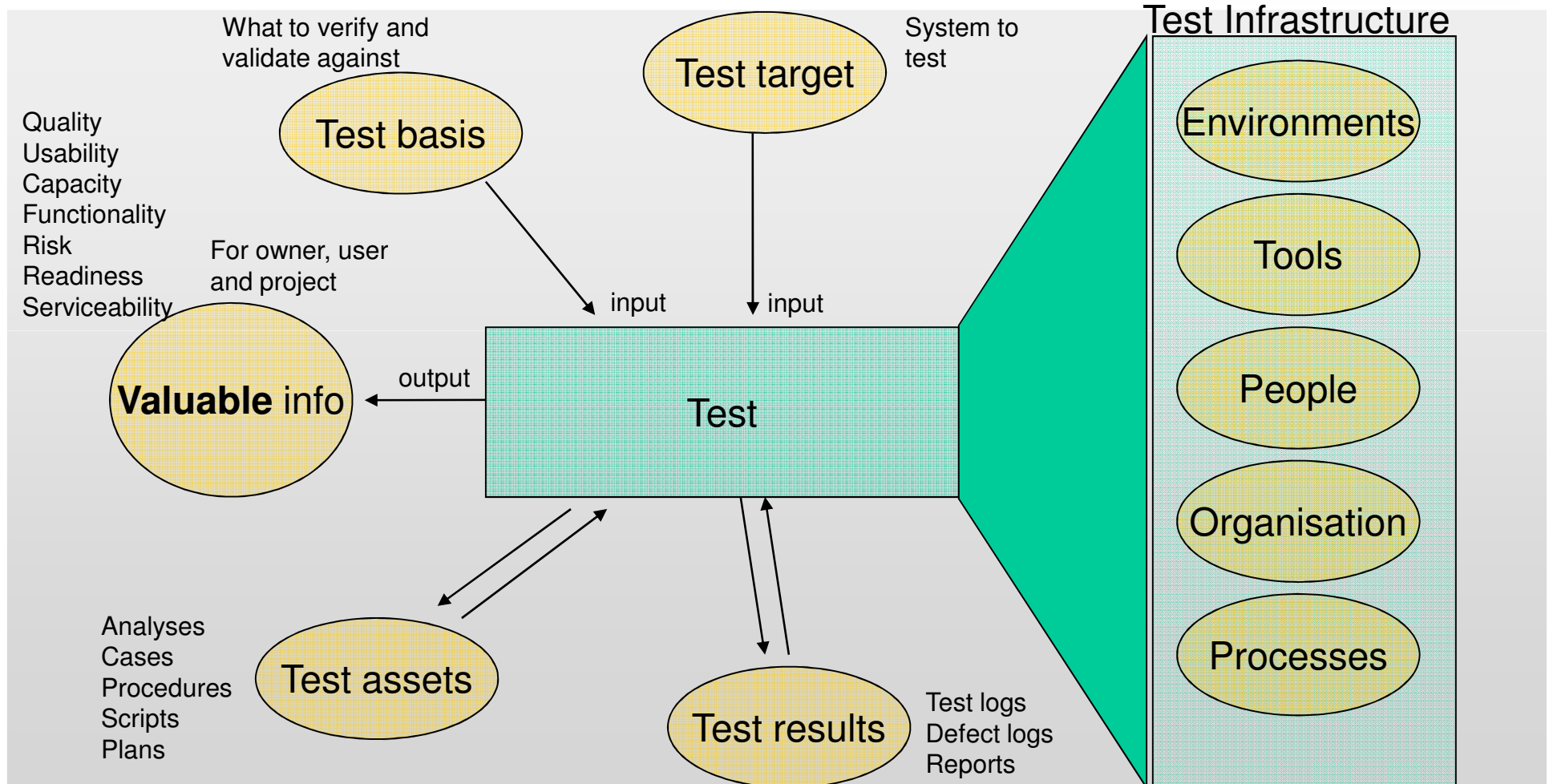


Base 4 – Operations

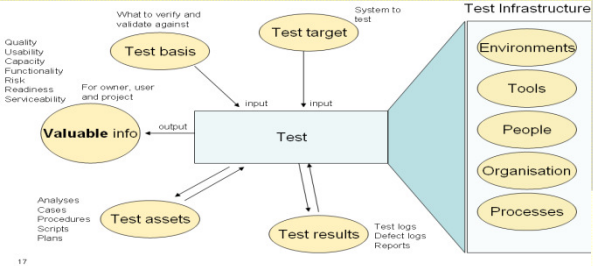
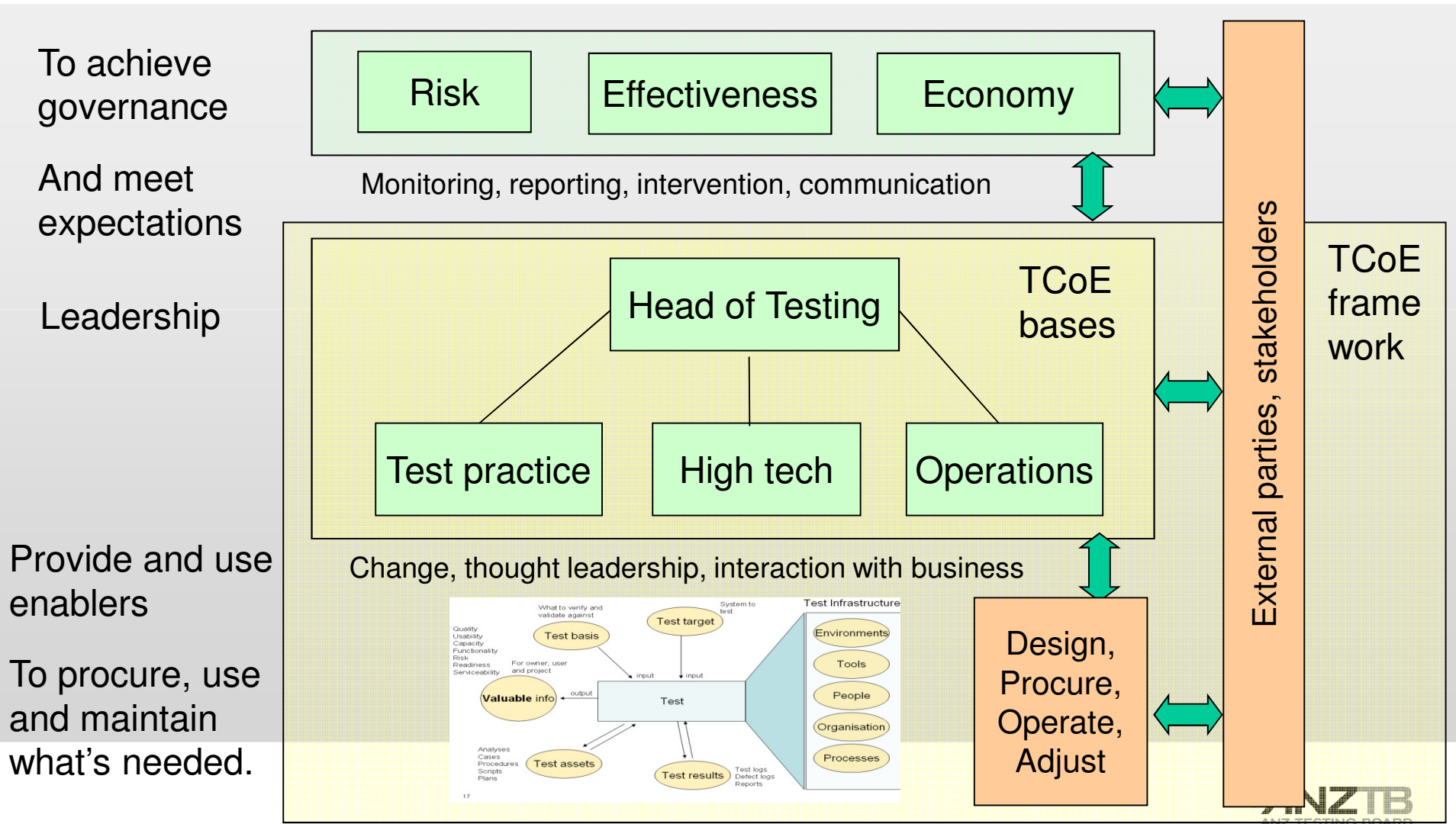
- Answers the questions:
 - Do we have enough people and equipment?
 - Do we have the required skillsets?
 - Does our delivery approach make economic sense?
Does it work?
 - Can we deliver testing implementations to the company with these resources, given our anticipated workload?
 - Do we have contingency plans?
 - Are we productive? Effective?
 - How do we manage our people and what is the reporting process?



Recap: the test engine



Back to test governance



Some benefits of a TCoE

- Belonging & career opportunities
- Shared experience and IP leveraged
- Backup and depth of skills – strategic resource pools
- Increased awareness of testing & participation by others
- Better reporting, better insight
- Common rationalised approaches

Summary



- Test governance has 3 main outcomes
 - Risk mitigation
 - Effectiveness
 - Economy
- Its not easy to deliver with a fragmented, varying approach
- The four identified bases of a nominated TCoE can cover them:
 - Head of testing
 - Test Practice
 - High Tech
 - Operations

Governance is ongoing, so is the TCoE



Things change. The TCoE should respond.



Thanks!

**Presented by Mark Feldman
of IV&V Australia**



Advanced Test Metrics

‘What to measure, When to measure it, and What does it mean?’

Bernie Beaudoin

Test Metric Basics



- **Data** – something we want to measure
- **Measurement** – the act of measuring the data against a known standard
- **Metric** – a quantified calculation or plot of two or more measurements
- **Indicator** – variable (or flag) that can be set to a prescribed state on a metric
- **Basic Test Metrics** – a set of metrics that are commonly used for test management
- **Advanced Test Metrics** – a set of derived metrics that are used for a test management holistic approach

Typical Questions asked by management



- What is the status of the test execution?
 - Famous last words – “Testing started late, we are running a little late...”
- When will the testing be finished?
 - Famous last words – “We need another week...”
- What is delaying the project?
 - Famous last words – “darn testers keep finding problems!!!”
- When can we deliver the code?
 - Famous last words – “on time, we will cut the test window down and ...”

The Real Questions

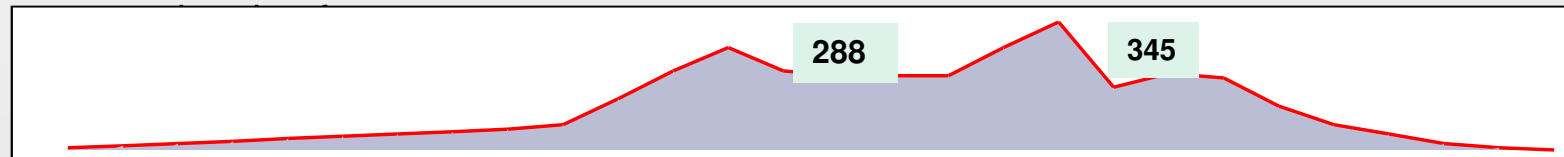


- Can we delivery the business solution?
 - on time, on budget, with high quality?
- If the project is behind schedule...
 - What can be delivered?
 - When can it be delivered?
 - What is causing the delay?
 - Can we do anything about the delay?

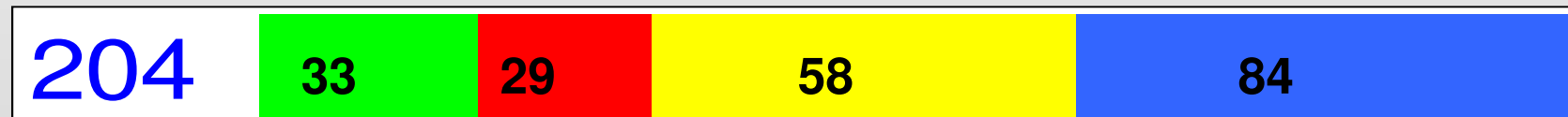
Test Execution Metrics (that make sense...)



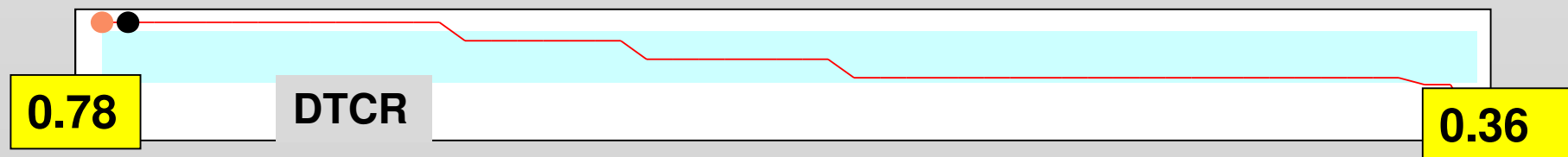
Open Defect Trend – the number of open defects measured over the test



Test Execution Metrics – the number of passed, failed, blocked, not run and in progress test cases measured at both a specific point in time and over the test execution timeframe.



Defect to Test Case Ratio – the number of open defects plotted against the number of passed test cases measured over the test execution timeframe



Defect Fix & Refix Ratios



...the number of times a defect has been returned for a fix over time

International Software Testing Qualifications Board

Defect Metrics

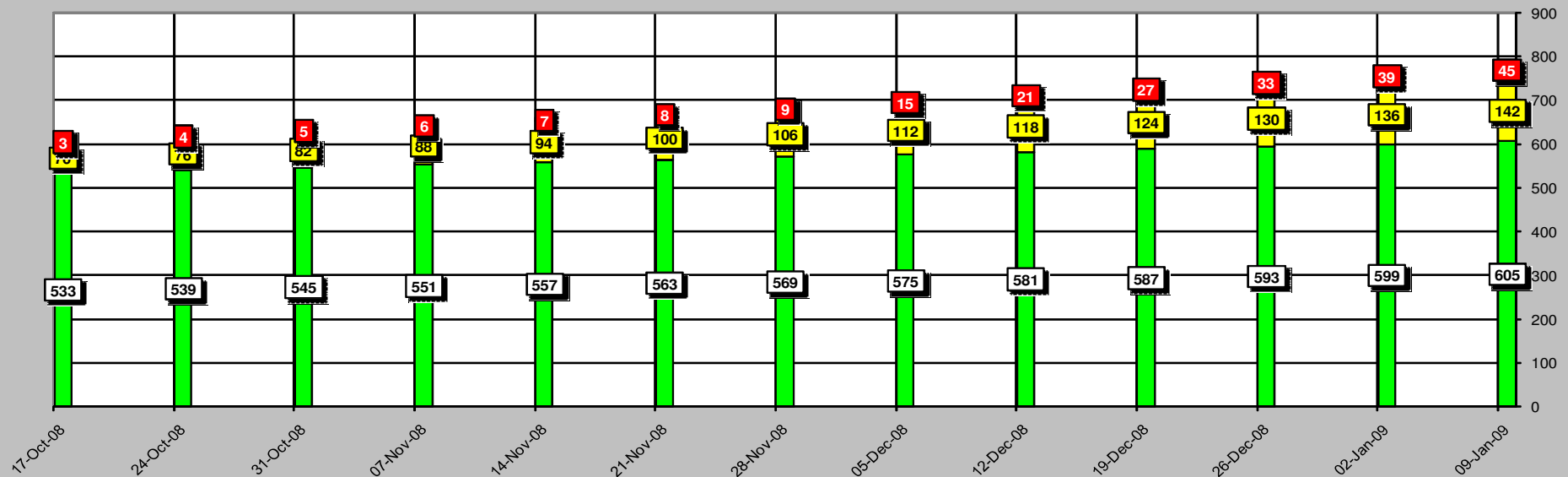
Defect Refix Failures – 09 Jan 09

Holistic Defect Failed Fix History

Date	Total Defects	Fixed 1st attempt	Fixed 2nd attempt	Fixed 3rd attempt	Fixed 4th attempt	Fixed 5th attempt	Fixed > 2 attempts	Total number of defects fixed	Total number of fix attempts	1st defect fix attempt efficiency	Overall defect fix inefficiency	% Failed Fix at 1st attempt
9/01/2009	976	605	142	37	7	1	45	792	1033	76%	130%	23.61%
2/01/2009	926	599	136	35	1	1	39	742	983	79%	128%	21.08%
26/12/2008	876	593	130	33	1	1	33	692	933	79%	128%	21.06%
19/12/2008	826	587	124	31	1	1	27	642	883	79%	127%	20.78%
12/12/2008	776	581	118	29	1	1	21	592	833	79%	128%	21.36%
5/12/2008	726	575	112	27	1	1	15	542	783	78%	128%	21.51%

Total Defects - Refix Failures

■ Fixed 1st attempt ■ Fixed 2nd attempt ■ Fixed > 2 attempts



Defect Turnaround Averages



How long does a defect stay in each status...

Defect Metrics

Critical Defect SLA Status – 09 Jan 09

Critical Defect Turnarounds (average hours)		Avg. Owner Hours	0 - 1 hours	1 - 6 hours	> 6 hours	on 09/01/09					
All System1 Applications (from 30/06/08 onwards)		Initial Response	Triage Assignment	Factory Turnaround	Deployment Turnaround	Testing Turnaround (gross)	Testing Turnaround (net)	Total Fixes	SLAs Missed	% missed	Average Fix
System13	SubSystem44	0.65	1.29	2.95	17.12	3.78	0.00	6	1	17%	5
System14	SubSystem87	0.05						1	0	0%	0
	SubSystem1		76.11	0.02	0.00	0.88	0.00	2	2	100%	77
	SubSystem64		3.40	0.10	0.00	0.00	0.00	1	0	0%	4
System15	SubSystem87	49.31						1	1	100%	49
System16	SubSystem76	30.60	84.45	0.02	0.00	0.00	0.00	2	2	100%	115
System18	SubSystem87		1.57					1	0	0%	2
	SubSystem96		1.41					1	0	0%	1
	SubSystem62		1.71					1	0	0%	2
	SubSystem48	0.09	24.35	0.01				1	1	100%	24
	SubSystem61		0.00					1	0	0%	0
	SubSystem57		72.07	18.33	13.92	10.05	0.00	16	14	88%	104
	SubSystem56		0.01					1	0	0%	0
	SubSystem6	0.39	38.82	131.22	16.26	45.73	0.00	10	9	90%	194
	SubSystem81	0.32	10.00	45.28	0.01	54.72	0.00	3	2	67%	110
	SubSystem60	0.32	2.17					2	0	0%	1
	SubSystem4		0.66					1	0	0%	1
	SubSystem55		0.01		11.92	2.67	0.00	3	1	33%	13
	SubSystem8	3.37	18.51	22.64	0.01	2.18	0.00	2	1	50%	24
	SubSystem73	1.37						1	0	0%	1
Holistic Average		6.39	43.38	48.32	11.21	22.84	0.00	57	34	60%	139

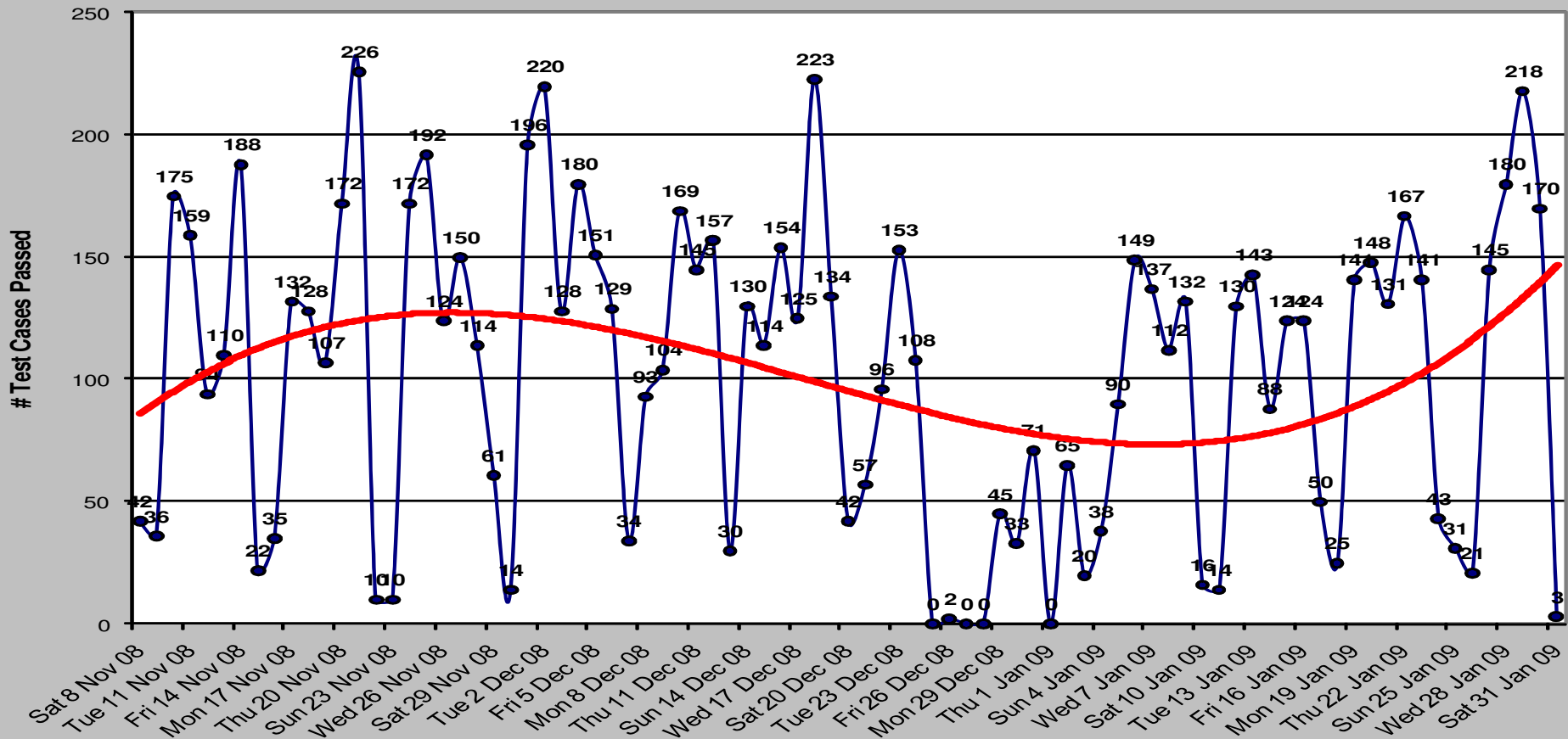
Test Execution Effectiveness

Are you getting value for your test dollars....



Test Execution Effectiveness
08-Nov-08 to 09-Jan-09 Passed Test Cases

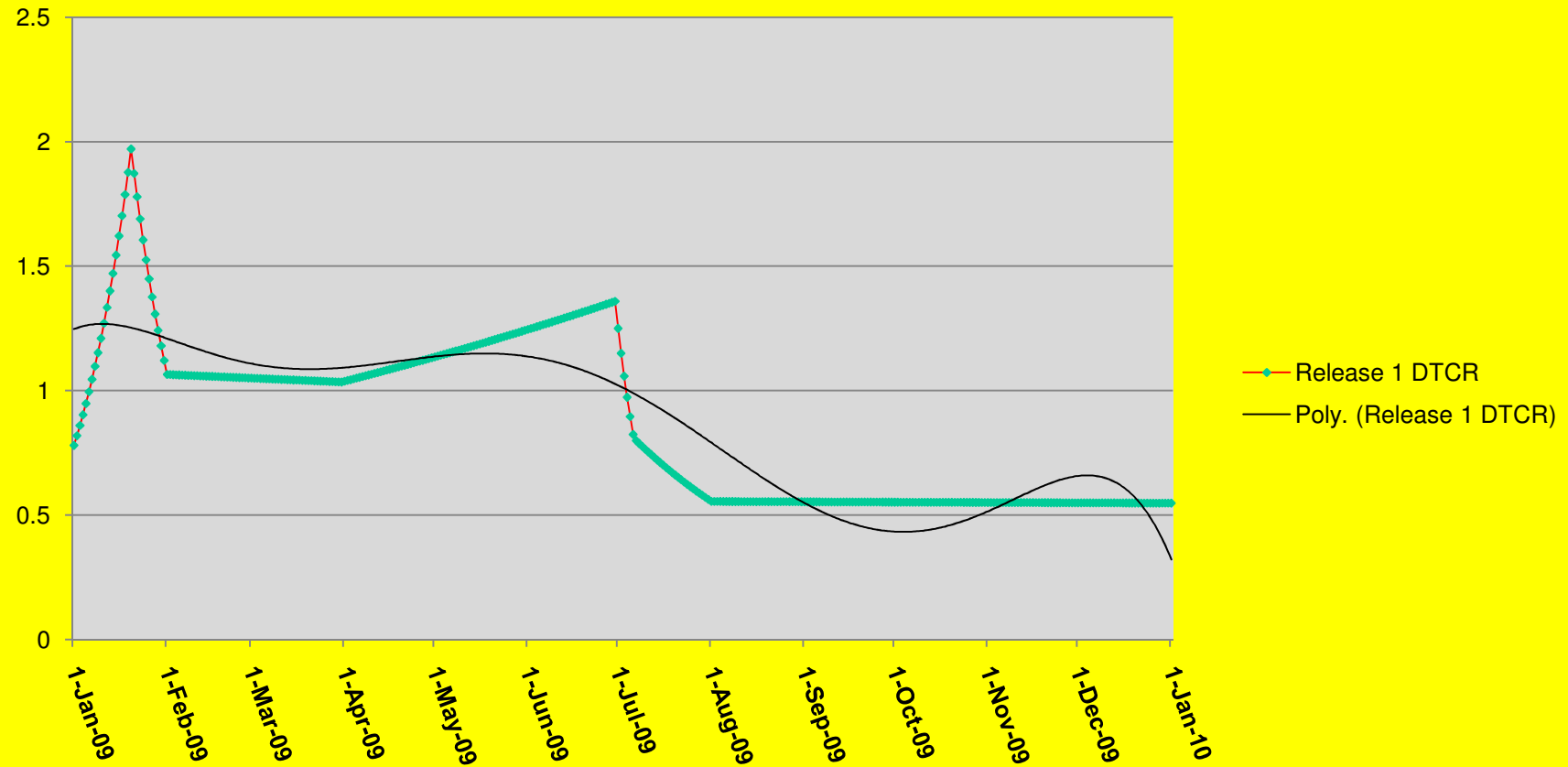
Test Cases Passed over last 2 months



Simple DTCR



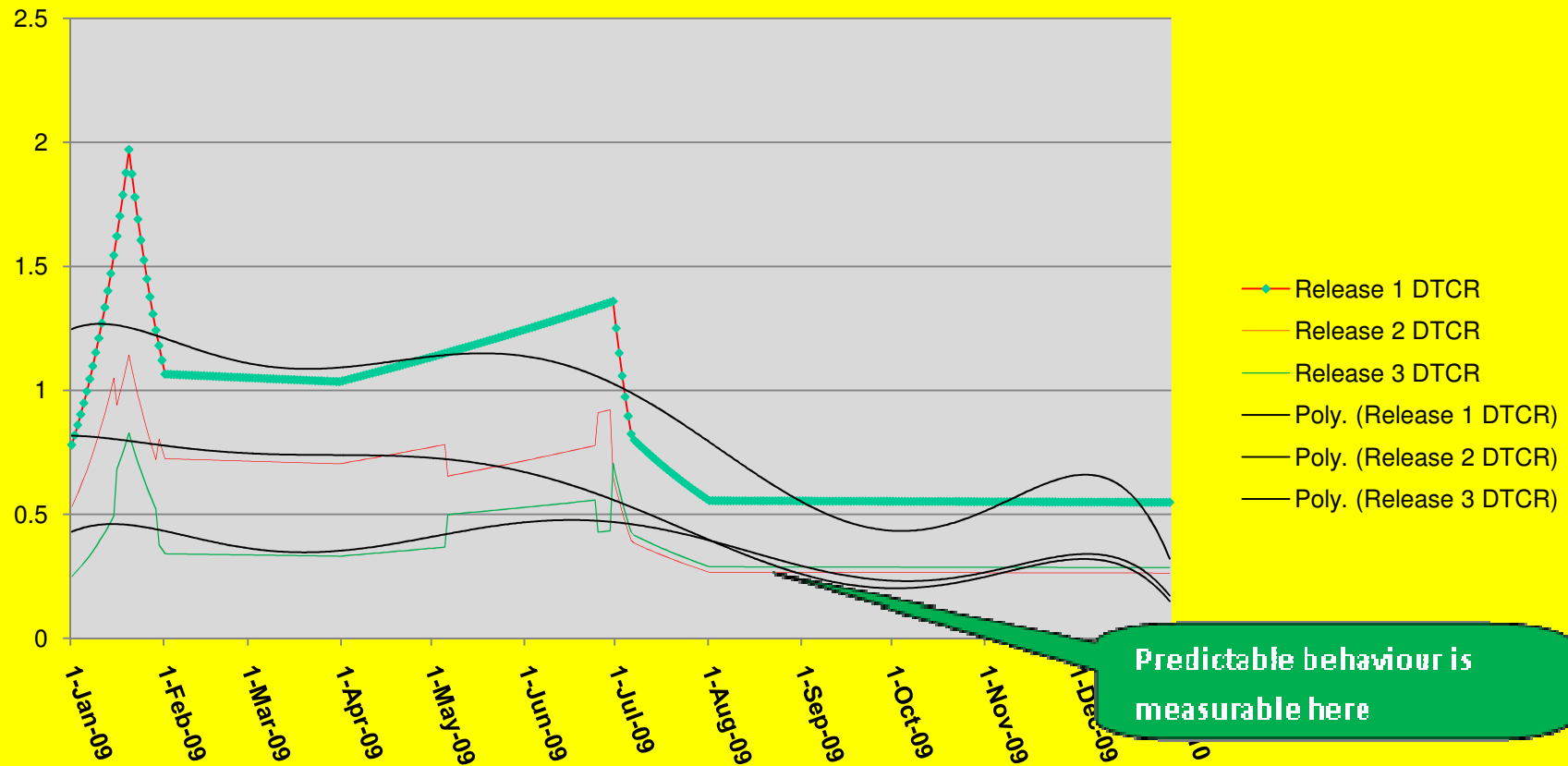
DTCR Over Time



DTCR for Early Predictive Analysis



Multiple Releases - DTCR Over Time

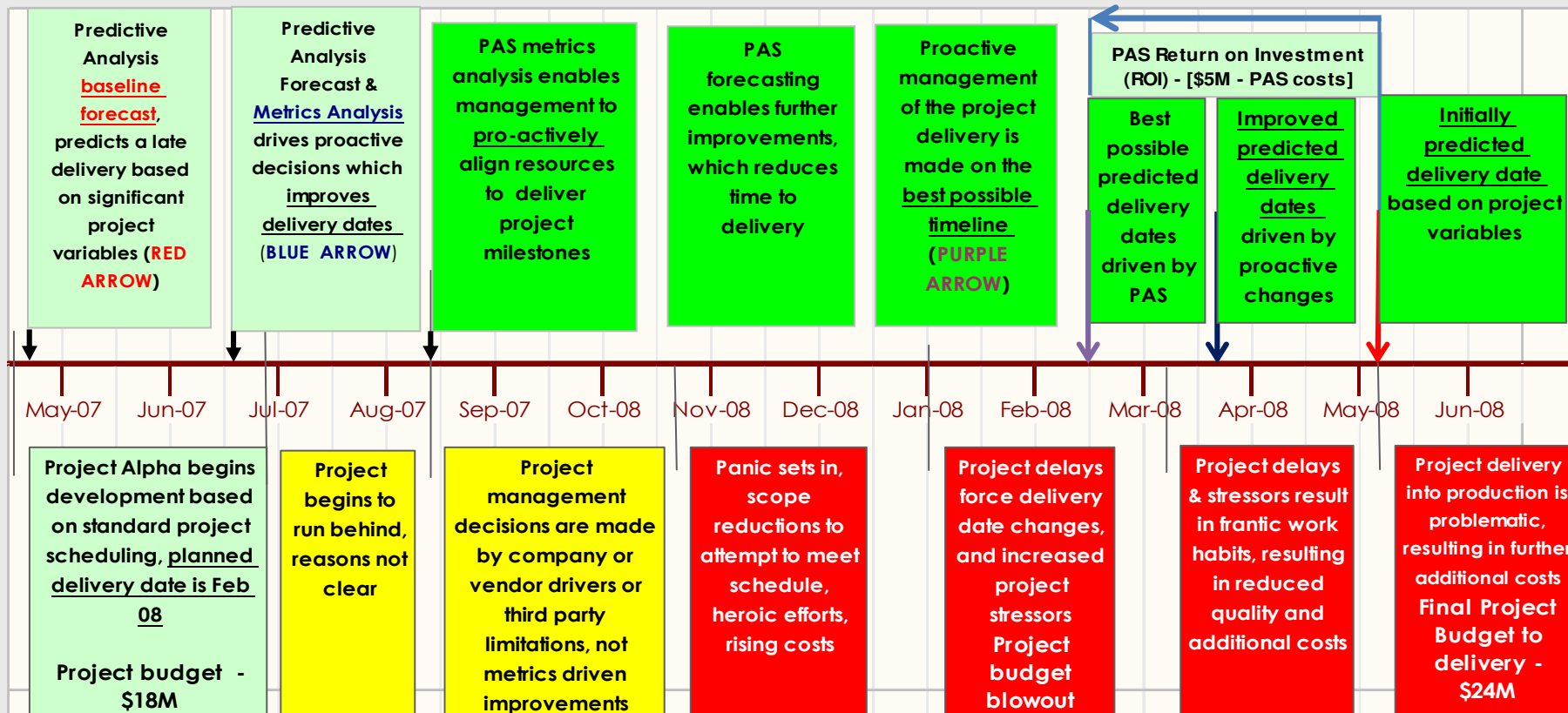


Predictable behaviour is measurable here

Thinking and working outside of the box'



How Predictive Analysis can impact a Project



How Projects can fall apart

Summary



- This is a quick overview of what can be done with advanced metrics and predictive analysis
- Any metrics analysis starts with ‘reasonably’ clean data (garbage in – garbage out)
- Ask the right question, then build a metric to answer the question, then report it.
- Have fun with metrics!