APICS 2006 International Conference

Stabilisation & Process Improvement in nab Lending Services

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Objectives for discussion

- NAB background
- Operational differences
- Improvement from where?

Introduction

- Capability gaps – 'Match fit'
- What is 'Match Fit'?
- What is AOM?
- S&OP and AOM overview
- Forecast Balance tolerances
- Matching supply & demand
- Benefits - Stabilisation
- Lessons - Stabilisation

Stabilise

- Where does 6 Sigma fit?
- 6 Sigma & Lean deployment
- Transferable tools
- Difficulties in the services industry
- Benefits – Improve
- Lessons - Improve

Improve

nab Background

- The company traces its history back to the establishment of The National Bank of Australasia in 1858.
- The Group is organised around three regional businesses: Australia, UK/Europe and New Zealand
- Brands include National Australia Bank (Australia), Bank of New Zealand (New Zealand), Yorkshire Bank and Clydesdale Bank (United Kingdom).
- As at June 30 2004, prior to the sale of its two Irish banks, the group had 10,799,297 customers globally
- As at September 30 2004, NAB (Australia) employed 24,567 people
- Net profit for the 2004/2005 financial year was $4.37 billion

Operational differences

–No Finished Goods stock

–Customers are often involved in production process which introduces constraints in terms of timing and quality

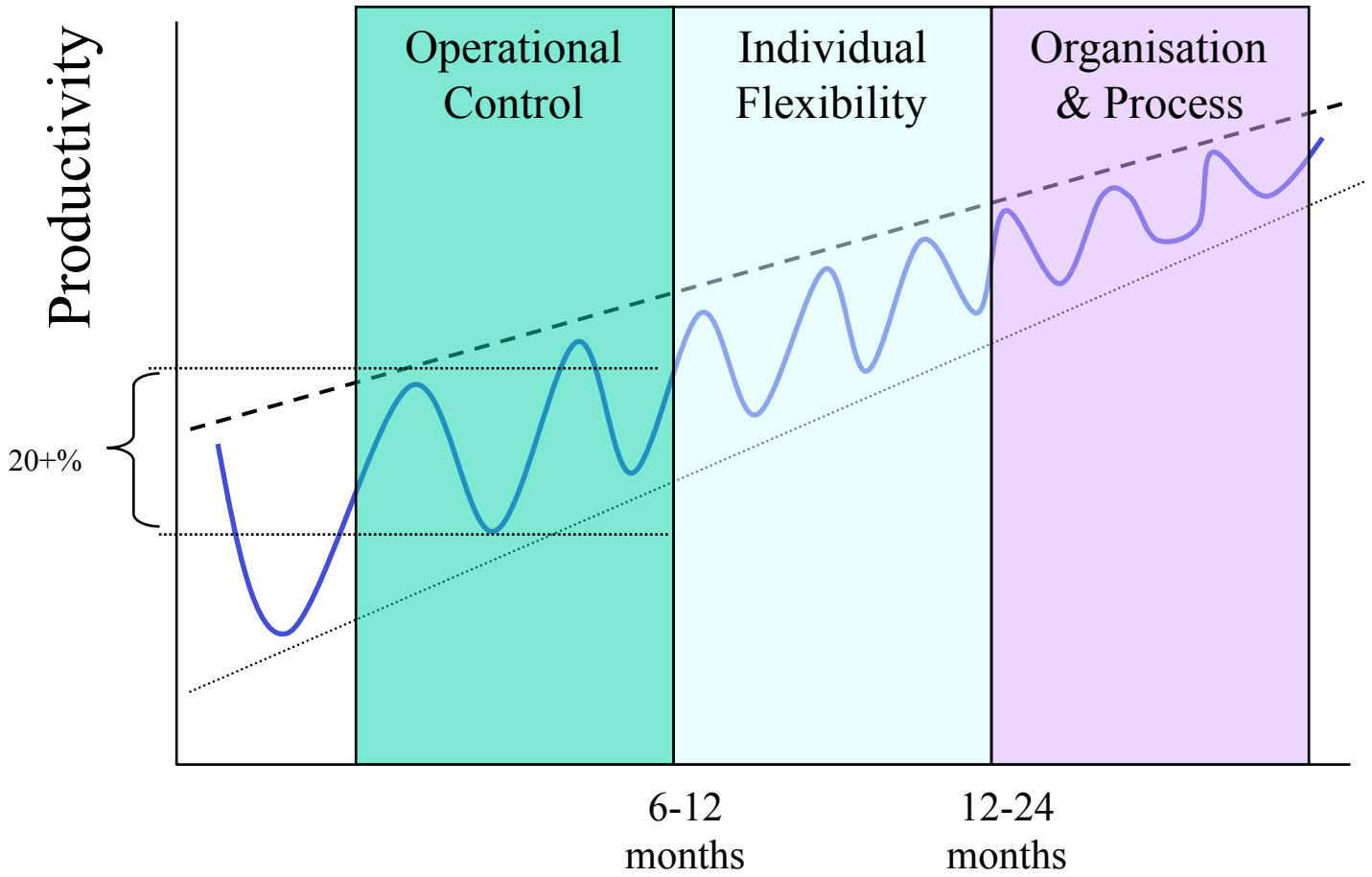
–Service is perishable – meet it or don't

–People are key resources in the production system, we cannot switch the dial to a specific production rate every day

–There is a line of visibility for the customer which can be crossed multiple times during the production process

–Transaction volumes are usually large and no two "products" are the same

Improvement from where?



Capability gaps – 'Match Fit'

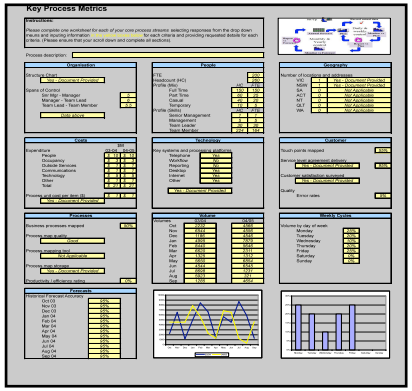
- **An analysis on our Operations areas conducted in 2003 showed we didn't have the following capabilities;**

  - Business drivers unknown
  - Process maps were almost non existent
  - Resource planning was a hit & miss affair
  - Forecast volumes weren't known or communicated
  - Metrics reporting wasn't specific to business requirements

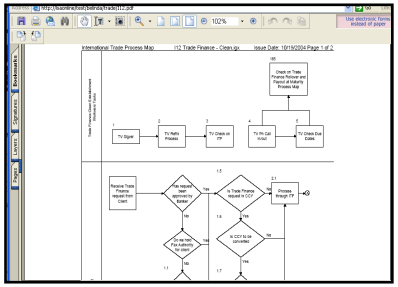
- **These gaps caused us to go through a 'Match Fit' stage in each of the Operations areas, which is still rolling through other businesses.**

What is ‘Match Fit’?

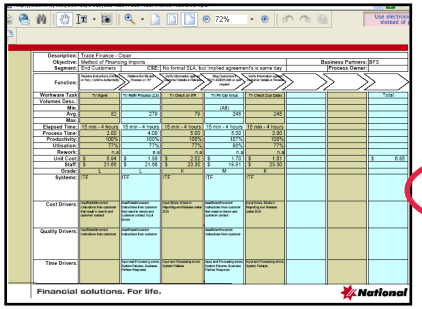
Operational Diagnostic



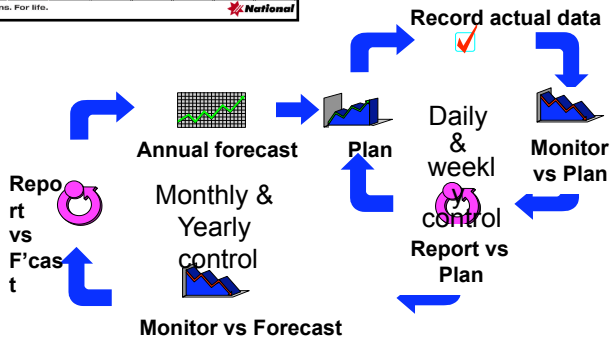
Process Maps & Simulation



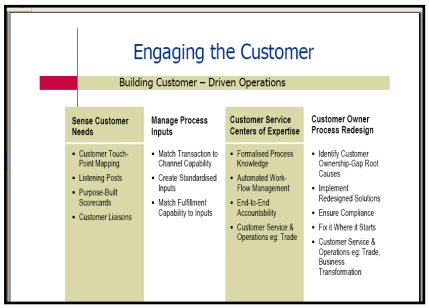
Business Driver Template



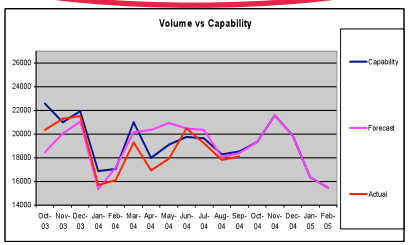
Active Operations Management



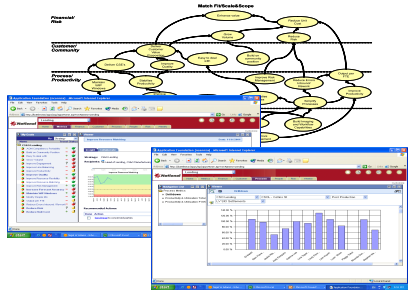
Customer Touch Points



Sales & Operational Planning

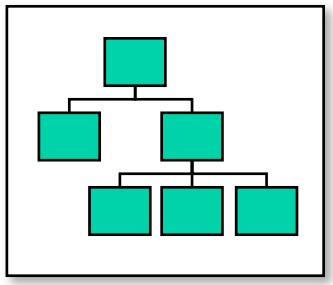


Strategy Maps and Manufacturing Metrics

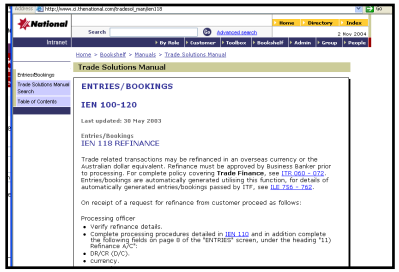


Service Level Agreements

Specialist Manufacturing Recruitment



Policies & Procedures



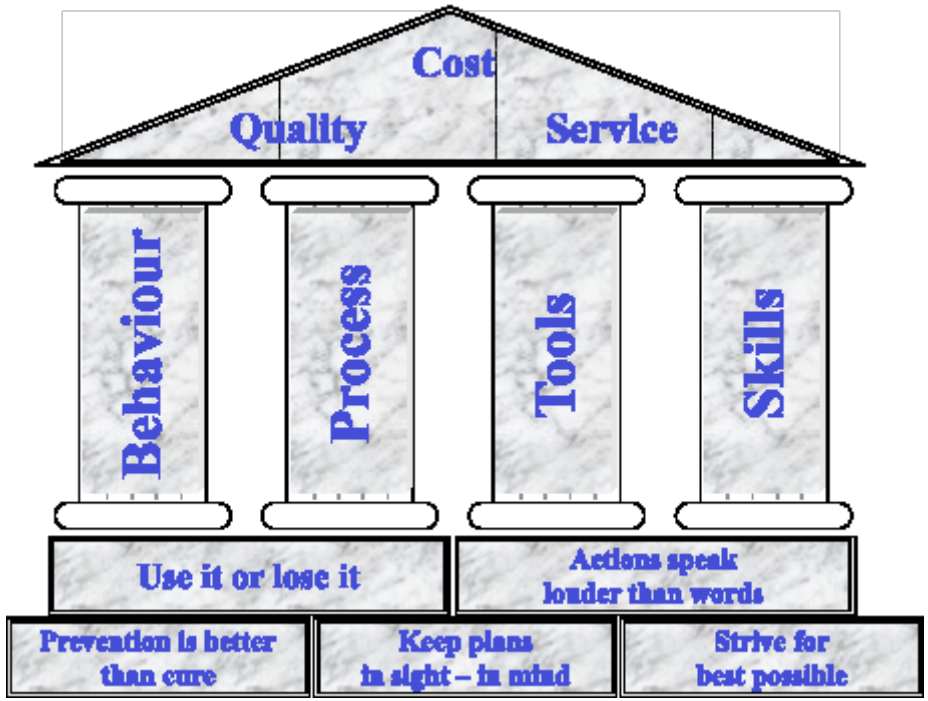
What is AOM?

- **AOM is short for Active Operations Management. It relates to the methodology of how we run our operations, nationally**

OUTCOMES

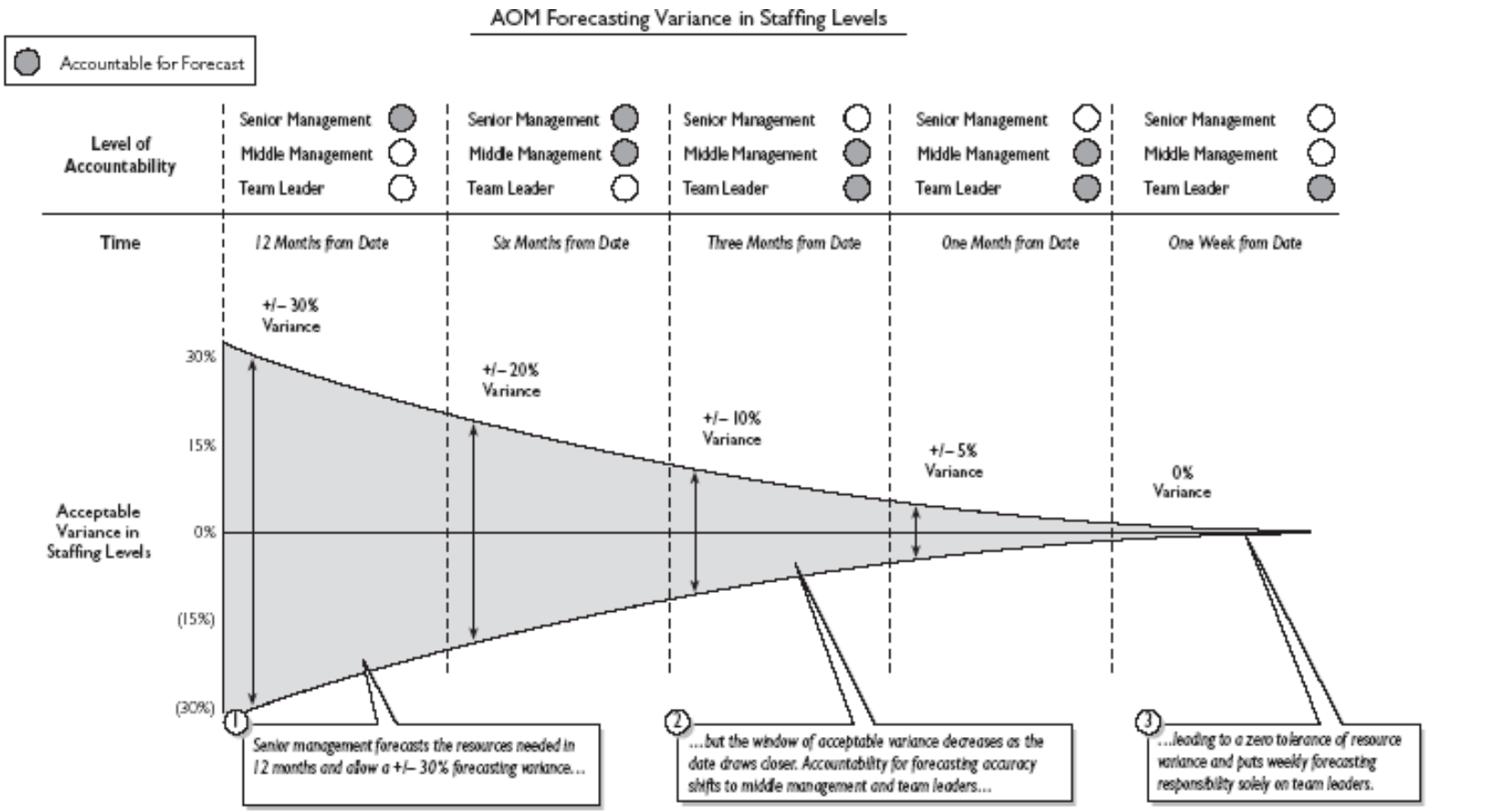
ACTIONS

IDEAS
(Key Principles)



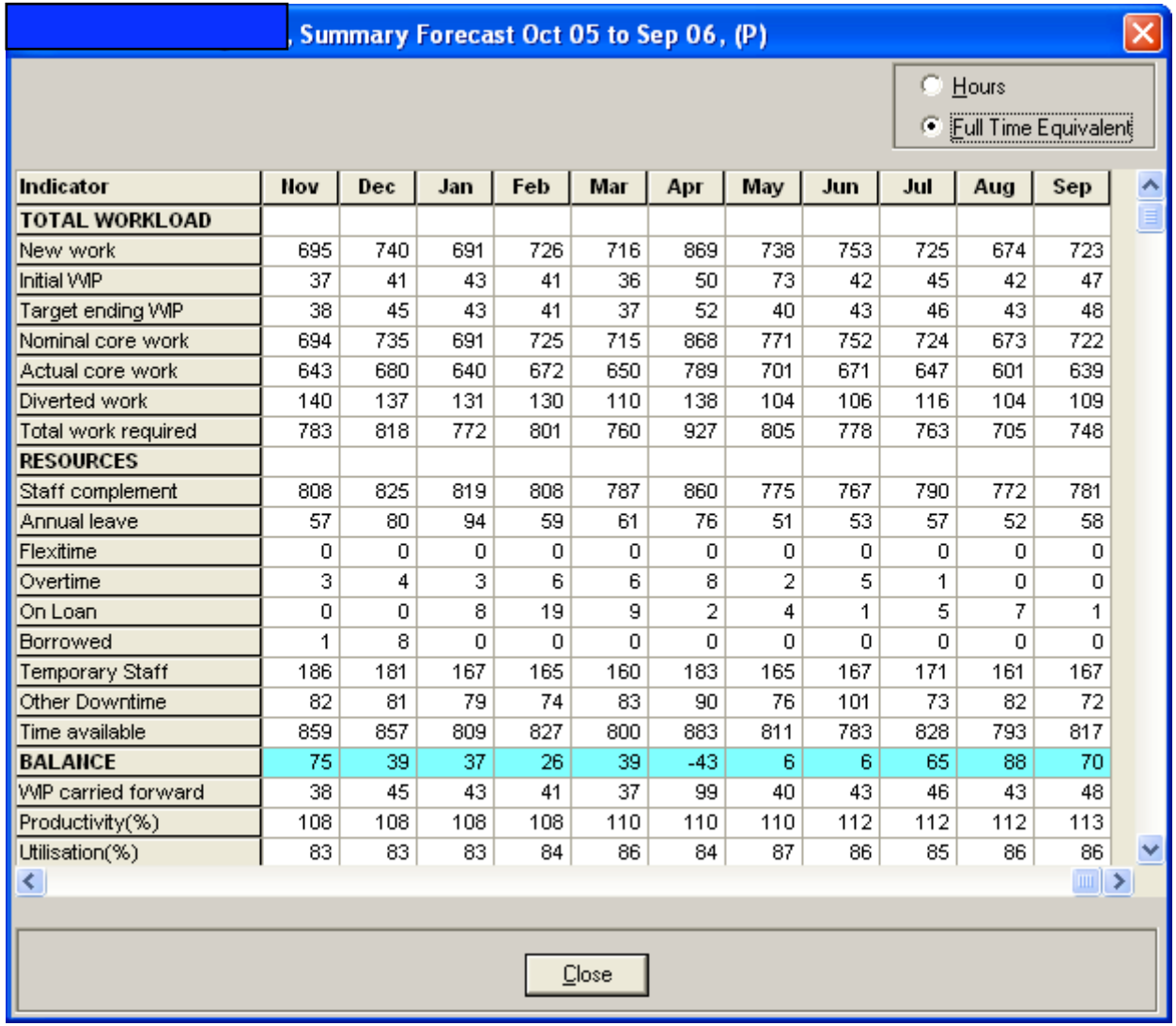
Stabilise

S&OP and AOM overview



Stabilise

Forecast balance tolerances



Indicator	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
TOTAL WORKLOAD											
New work	695	740	691	726	716	869	738	753	725	674	723
Initial WIP	37	41	43	41	36	50	73	42	45	42	47
Target ending WIP	38	45	43	41	37	52	40	43	46	43	48
Nominal core work	694	735	691	725	715	868	771	752	724	673	722
Actual core work	643	680	640	672	650	789	701	671	647	601	639
Diverted work	140	137	131	130	110	138	104	106	116	104	109
Total work required	783	818	772	801	760	927	805	778	763	705	748
RESOURCES											
Staff complement	808	825	819	808	787	860	775	767	790	772	781
Annual leave	57	80	94	59	61	76	51	53	57	52	58
Flexitime	0	0	0	0	0	0	0	0	0	0	0
Overtime	3	4	3	6	6	8	2	5	1	0	0
On Loan	0	0	8	19	9	2	4	1	5	7	1
Borrowed	1	8	0	0	0	0	0	0	0	0	0
Temporary Staff	186	181	167	165	160	183	165	167	171	161	167
Other Downtime	82	81	79	74	83	90	76	101	73	82	72
Time available	859	857	809	827	800	883	811	783	828	793	817
BALANCE	75	39	37	26	39	-43	6	6	65	88	70
WIP carried forward	38	45	43	41	37	99	40	43	46	43	48
Productivity(%)	108	108	108	108	110	110	110	112	112	112	113
Utilisation(%)	83	83	83	84	86	84	87	86	85	86	86

Stabilise

Matching supply & demand

Where demand is greater than supply;

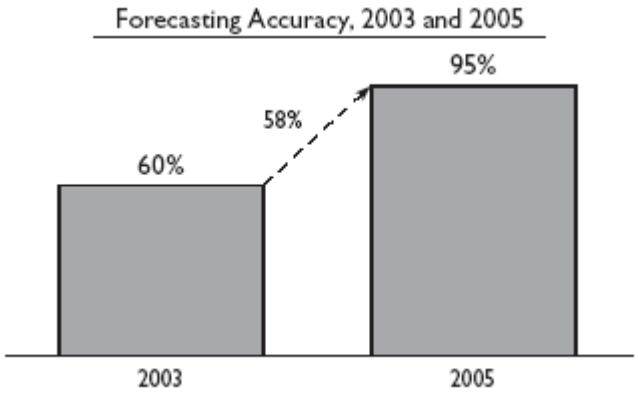
- Staff sought from other areas (within department, site or interstate)
- Increase Utilisation (ie: reduce meetings, training, etc)
- Look for further productivity / output gains
- Overtime
- Hire temporary staff
- Minimise leave
- Increase in WIP

Where supply is greater than demand;

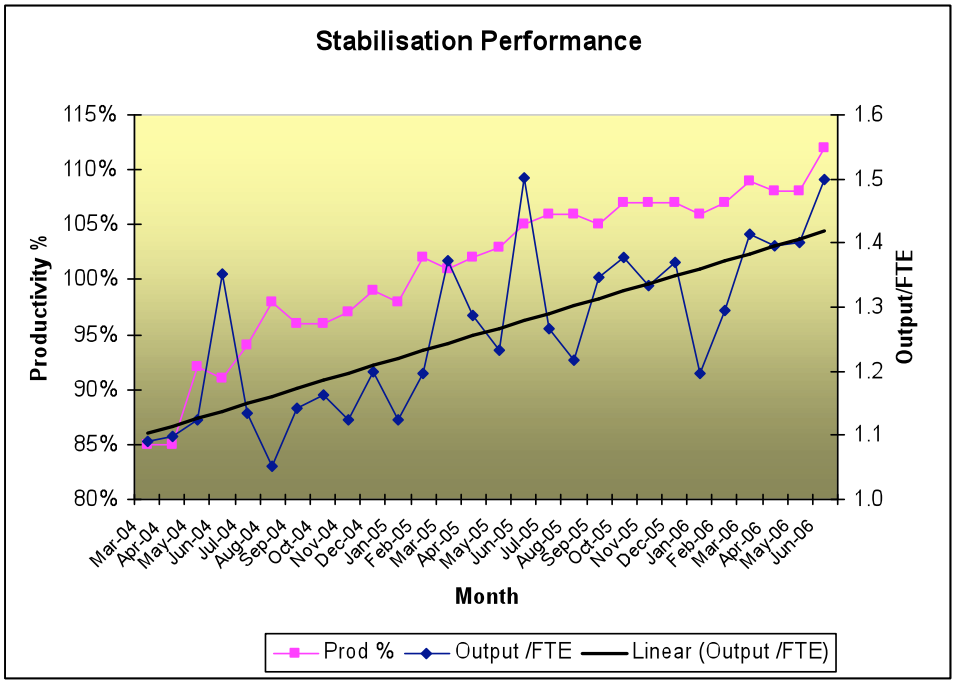
- Excess staff deployed to other areas (within department, site or interstate)
- Decrease Utilisation (ie: increase training, cross skilling, etc)
- Overtime bans
- Minimise Temporary staff usage
- Maximise leave
- Decrease in WIP

Stabilise

Benefits - Stabilisation



Memo AOM Investments	
Training costs:	$1.1 Million
License costs:	$0.4 Million
Total costs:	$1.5 Million
ROI:	Six to Nine Months

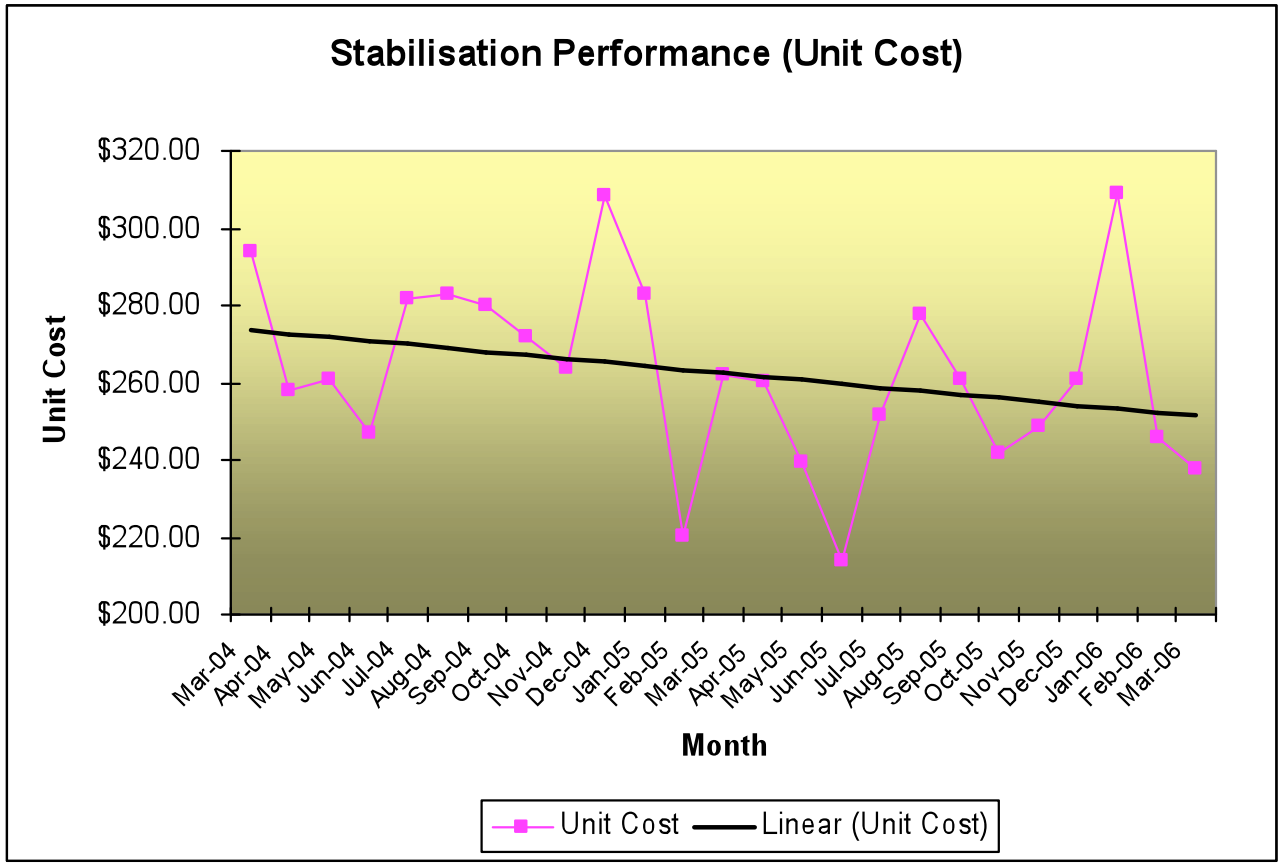


Highlights:

- A 58% improvement on forecast accuracy
- A ROI in 6-9 months
- A 27% increase in productivity in just over two years
- An 16% increase in output in just over two years
- Improvements achieved just through 'stabilisation'

Stabilise

Benefits - Stabilisation



Highlights:

- A 7% reduction in unit cost over two years
- Based on a $90 million yearly budget, this translates to about a $6.3 million saving through 'stabilisation'

Stabilise

Lessons – Stabilisation

- Executive level ‘buy in’
- Ensure a common language is established in the S&OP forum
- All managers must be committed to the ‘journey’
- Establish and communicate a monthly planning calendar for the year
- Share successes and failures, and be open to suggestions
- Document inputs, outputs & processes
- Employ and engage appropriate SME’s
- When goals are achieved, set others to maintain the momentum
- Team leader and manager attrition due to increased accountability

Where Six Sigma & Lean fit

Lean and Six Sigma methodologies are the progression to process improvement once process management with AOM and Match fit has been achieved.

Process Management

Process Improvement

A.O.M	Match Fit	Six Sigma/ Lean

Key principles

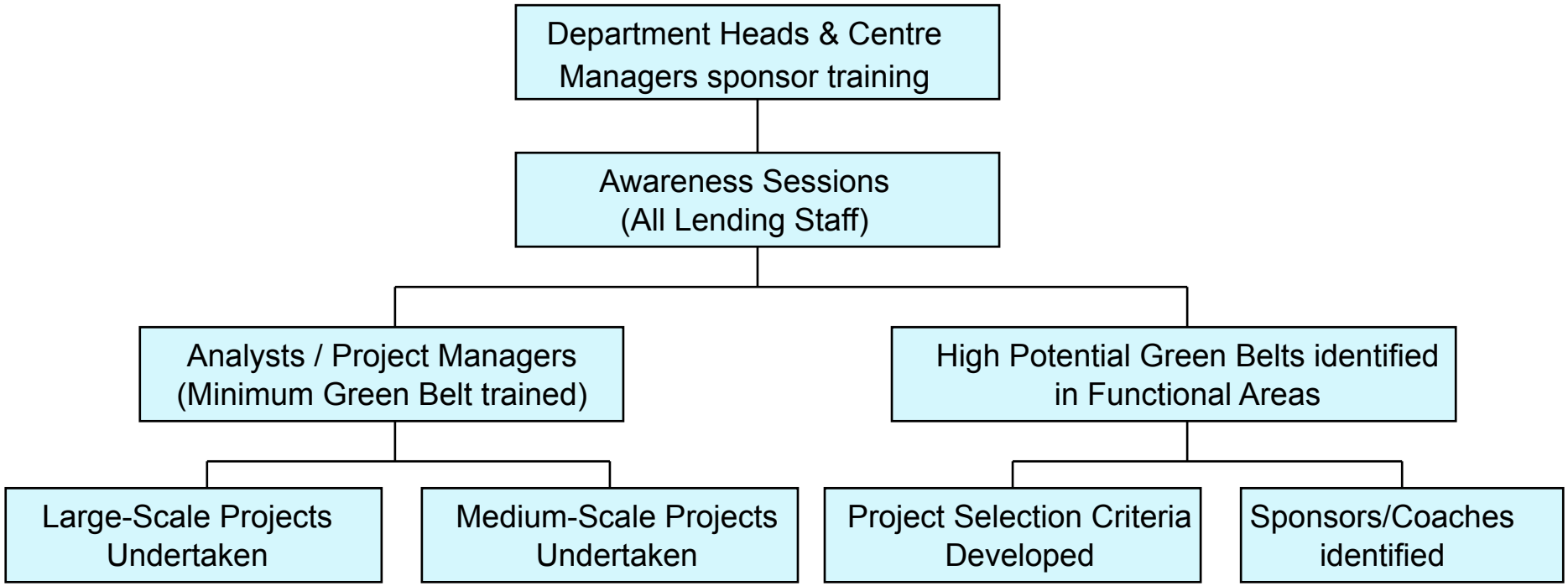
Focusing on the customer

Understanding and managing variation

Using data and not jumping to solutions

Six Sigma Deployment Strategy

- The deployment of Six Sigma has been through a Top-Down approach in Lending services



All Projects to follow the Six Sigma methodology

Six Sigma Transferable Tools

Not all tools available in Six Sigma and Lean methodologies are appropriate for use in the Financial Services industry. Some of the tools Lending Services have used successfully are:

- Project Charter
- Voice of the Customer
- Data Collection tools, Sample size calculations, Process Mapping
- Analytical tools such as Box Plots, Pareto Charts and Run Charts
- Metrics including Throughput, Baseline/Improved DPMO

Define - Project Charter

Problem Statement

- The Business customer experience can be improved by quicker turnaround times and accurate Stamping and Registration documentation.

- NAB Lending pay a considerable amount in fines each year due to late Stamping and Registration

Goal Statement

- Reduce process lag time and inbound / outbound errors from BBC's & Lending Services.

Scope

In

- BFS Custom
- LS Settlement (Receiving Deeds), Stamping & Registration processes

Out

- MCG, PFS, Third Party & BNZA

Define - VOC

Voice of the Customers

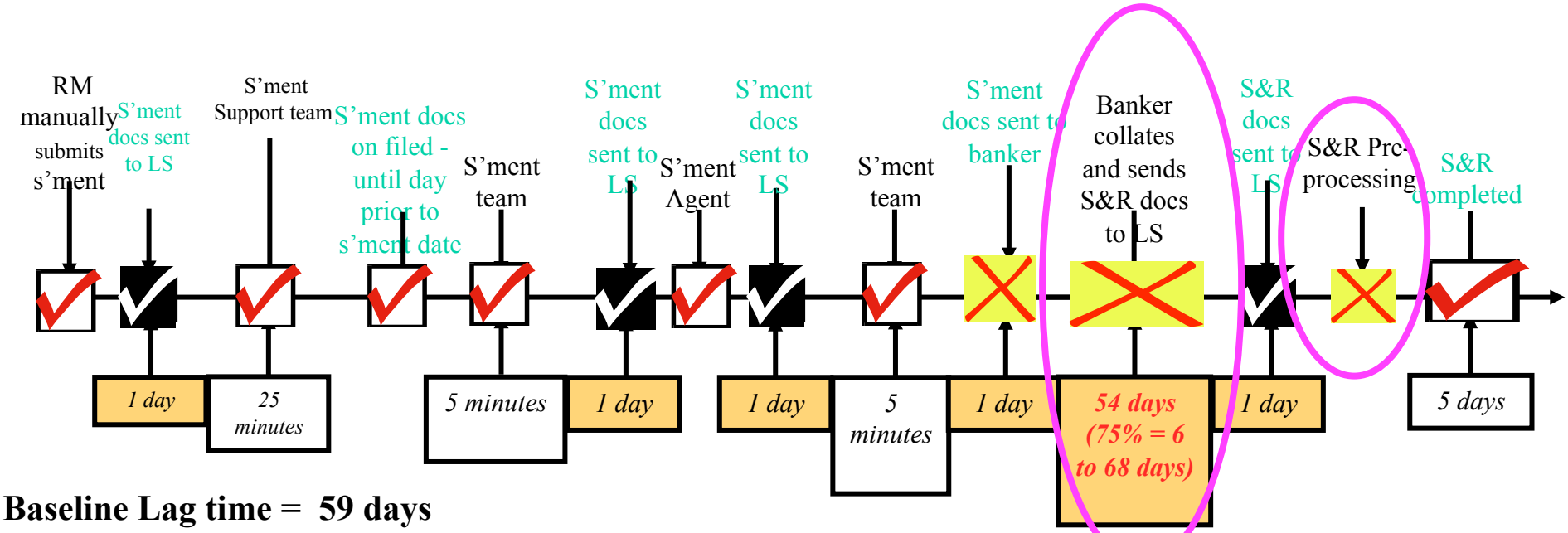
Banker feedback was obtained from the four pilot sites. Two key S&R VOC issues are below:

VOC	Key Issues	Measurement Requirement	Critical to Quality (CTQ)
TIME: Docs takes too long to get stamped and registered correctly	Wants security documents to be stamped and registered immediately after settlement.	Days from when documents are settled to when documents are stamped and registered	Security documents to be stamped and registered within 10 days after settlement
ERRORS: Documents are always returned from Lending and required re-execution / corrections	Wants to have a better understanding of security documents to be able to correctly execute and send instructions for Stamping & Registration	Stamping and Registration errors and frequency	Stamping & Registration errors to Lending Services = 0

Measure - Baseline

The Process was mapped and time measured to determine the Baseline.

Value stream analysis was performed to identify the value added and non-value added functions.



Baseline Lag time = 59 days

Waste - Non value added

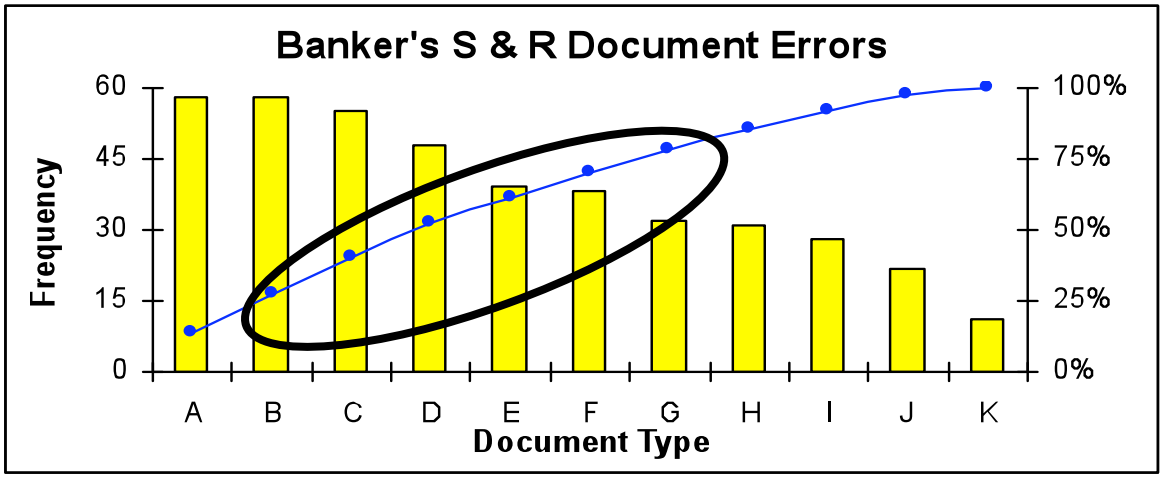
Value added work

Business added work

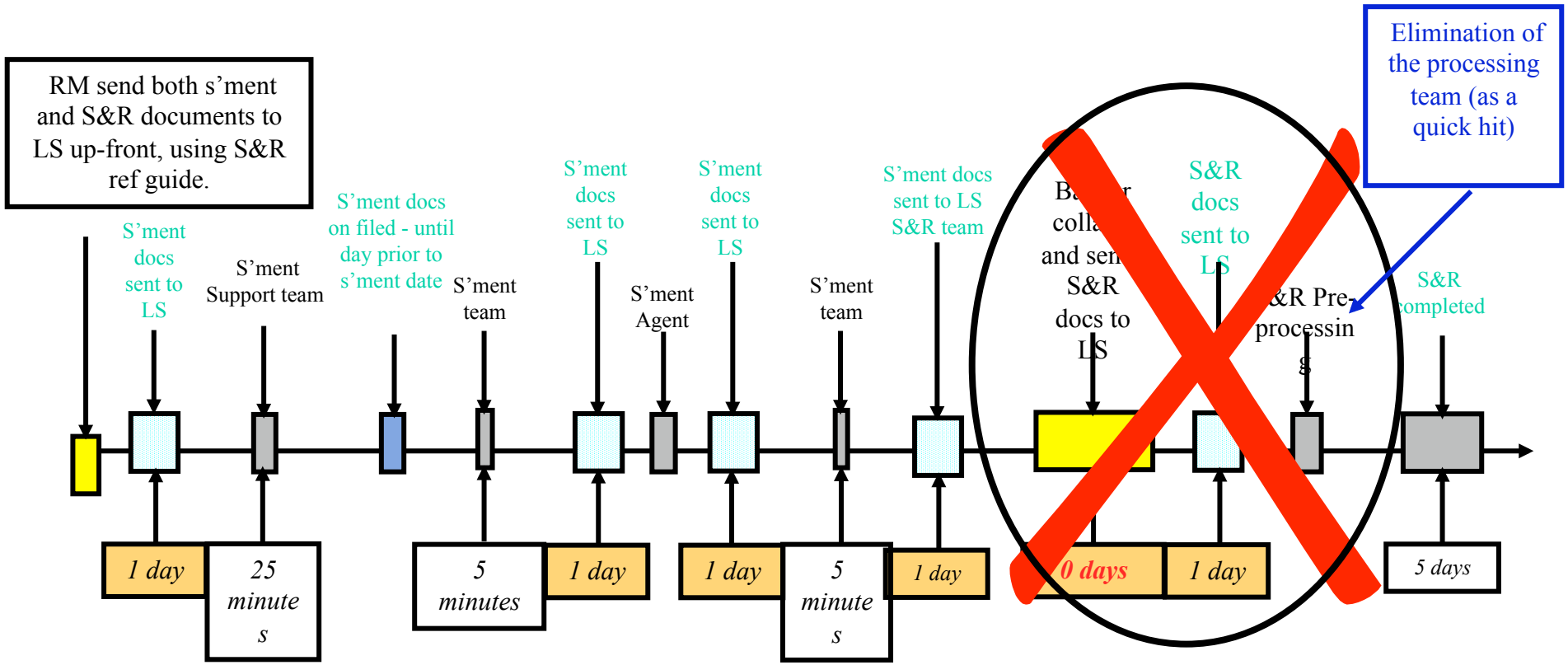
Analyse

Correlation and boxplots analysis confirmed that there is a relationship between errors within the files and the time taken to complete. Pareto analysis shows all green shaded documents are government forms.

Error based on documents type	Legend	Errors count	Accumulative %
RMD / Goods Mortgage Errors	A	58	13.81%
Errors on Mortgages	B	58	27.62%
RMD Stat Dec errors	C	55	40.71%
Errors on TOL	D	48	52.14%
Form 309 errors	E	39	61.43%
S& R details errors	F	38	70.48%
Prime Stamping document errors	G	32	78.10%
Notice of Sale errors	H	31	85.48%
Multijurisdiction Statement errors	I	28	92.14%
Bill of Sale errors	J	22	97.38%
Production errors	K	11	100.00%
Total		**420**	



Improve



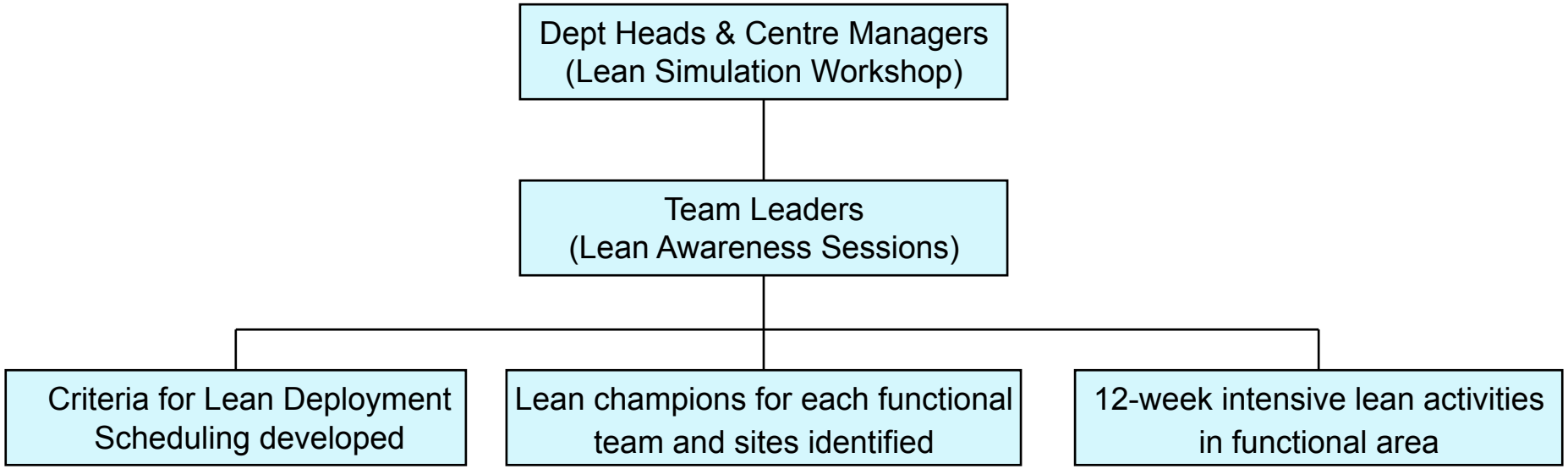
Total cycle time = 9 days

Total lag / dead time = 4 days

Benefits

* **Reduction in lag time by 55 days.**
* **Reduction in late stamping fees est. $700k p.a**
* **Elimination of the pre-processing team**

Lean Deployment Strategy



Install a culture of continuous improvement

Lean Transferable Tools

The Lean tools implemented in the first iteration are:

- Value Stream Mapping
- 5S
- 8 Wastes
- Visual Factory
- First In First Out (FIFO)

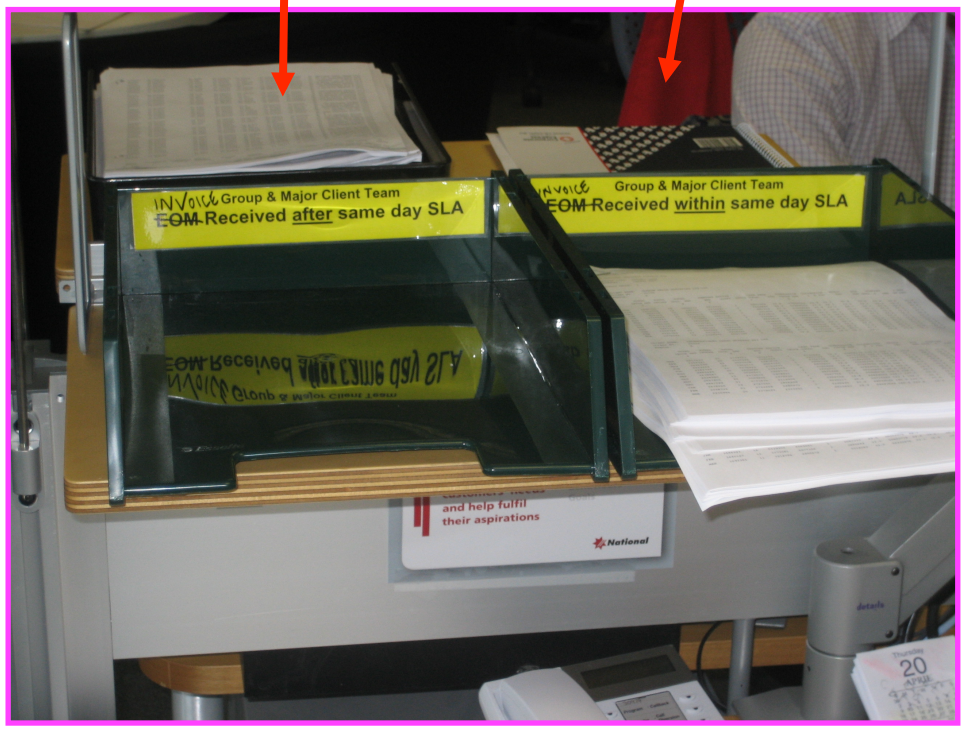
- There are a number of Lean tools available. The above tools were selected for the first rollout, as they are easy to grasp and provide large visible benefits.

- Lean is about continuous improvement. As the business is transformed, more tools will be introduced to continue to achieve incremental improvement.

Example of FIFO

- The files that come in first are the ones which are worked on first and out the door first. Work is completed in the correct order.

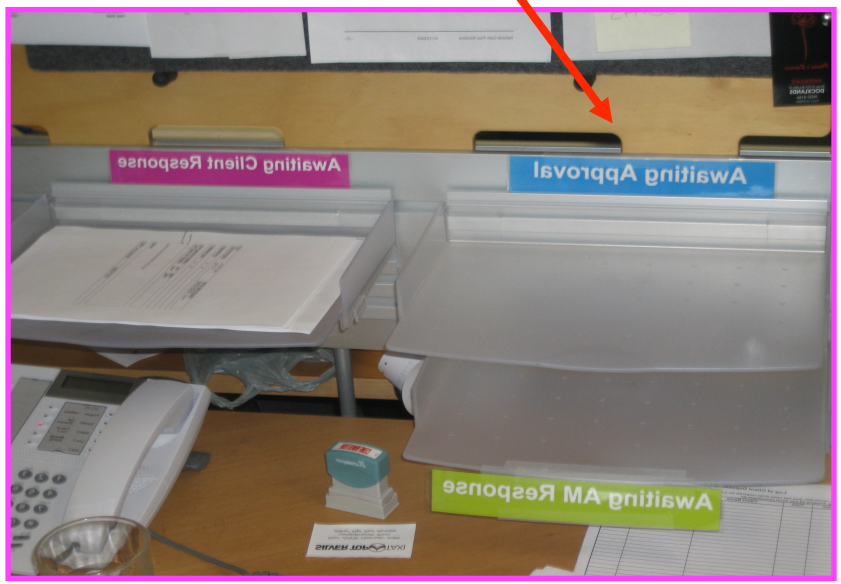
Files due today Files Due Tomorrow



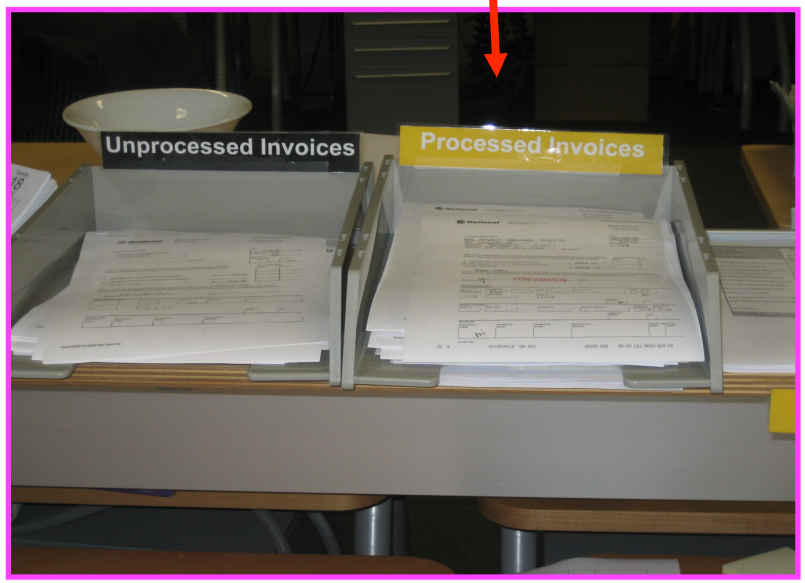
Example of Visual Factory

- Visual factory is the use of visual controls to allow all team members to see how their process is performing.
- Visual Factory includes; labelling, visual displays and charts

Barriers to workflow or file completion are colour coded, visual and easily identified as it happens (enabling quick resolution)



Employee workload is transparent. Team members can see when other team member needs assistance



Example of 5S

Before

After

Lean Implementation

Tasks	July				Aug				Sep					Oct					
	3	10	17	24	31	7	14	21	28	4	11	18	25	2	9	16	23	30	6
Design																			
Matchfit (Process map Current State)																			
Lean Awareness workshops (Vic)																			
Lean Awareness workshops (NSW)																			
Team 1																			
- Value stream map and 8 wastes identification																			
- 5S																			
- FIFO/Min, Max																			
- Visual factory																			
Audit 5S, use of visual fact etc																			
- Implement 8 wastes																			
Process "To Be" determined																			
Implement new process																			
Team Recognition, celebration																			

Difficulties in the Services industry

The difficulties experienced when using manufacturing based tools in a services environment include:

- Lack of useable data
- Voice of the Customer data is difficult to obtain
- The culture of using metrics is relatively new as compared to manufacturing
- Additional time must be allocated to allow team members to learn and understand the concepts.
- The process is highly paper based or electronic - harder to see inefficient areas

Lessons – Improve

- Must be implemented as a top-down approach
- Awareness sessions for all staff gain buy in for the methodology and assist when implementing improvements
- Training which is rolled out must be adapted to suit the audience. Highly statistical presentations are not viable for an area in its infancy
- Necessity to engage cross functional teams with members from both financial services and other industry backgrounds.
- Financial Services industry examples are related to more easily than traditional manufacturing examples

Thank you