MEANINGFUL METRICS FOR MUNICIPALITIES TO DRIVE IMPROVEMENTS USING VALUE STREAM MAPPING

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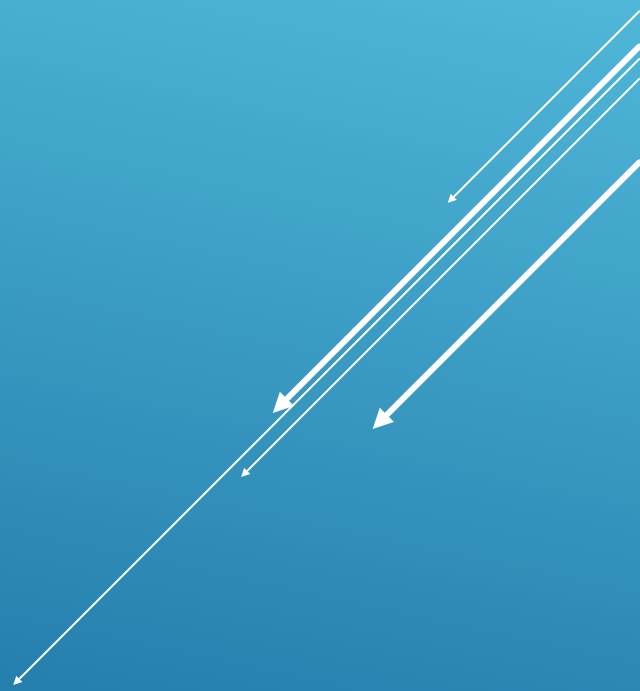
CHRP

Lean Six Sigma Master Black Belt

IPAC-SK Lieutenant Governor's Gold Medal Award

- Today's municipalities understand the need to use data and information to drive decision making for quality improvement initiatives and day-to-day operations. This workshop will walk participants through the steps to create a system value stream map for their municipality and how to build a comprehensive, yet highly functional, metrics system. The presentation will then tie together the metrics system, quality board huddles, quality improvement projects and system transformation.
- These connections will show participants that they cannot be a world class organization without having a comprehensive yet uncomplicated measurement system to identify how well the organization is performing and where its primary opportunities lie. This presentation will use case studies from a large city (Ottawa) a smaller city and a county to ensure all participants understand how this methodology will work in their environment.
- Participants will leave with a knowledge of:
- How to identify the number one measure for their municipality;
- How to identify and capture cascading metrics;
- How to build a data matrix to capture key performance indicators;
- How to identify the five key measures in each Value Stream Bucket;
- How to build a system Value Stream Map; and
- How to engage your complete organization in the exercise.




The High Cost of Low Taxes

Staff Time Saved

Facility / Region:	City Hall Fredericton
Project:	Reduced Billing Cycle Time

Actual Savings

Process 1	Preventative Maintenance
Baseline Process Time	93.0 Mins
Process Time after improvement	45.0 Mins
Actual Time Saved	48.0 Mins
% improvement	52%

Projected Savings

Process 1	Preventative Maintenance
Time saved	48.0 Mins
Number of times process occurs in a year	1690 Occurrences
	OR
# times process occurs in one person's shift **(day shift)**	
es process occurs in one person's shift **(evening shift)**	
times process occurs in one person's shift **(night shift)**	
# of staff completing process per **day shift** one facility	
# staff completing process per **evening shift** one facility	
# of staff completing process per **night shift** one facility	
# of days per week process completed	
# of facility performing this process	
Average Wage	$22.00
Time Saved	**1,352.0 Hrs**
Staff Dollars Reclaimed	**$29,744.00**

Dark Green
$$
Light Green

Pursuing Excellence Improvement Report (PEIR)

Facility / Region:	City Hall Fredericton
Project:	Reduced Billing Cycle Time

Overall Savings

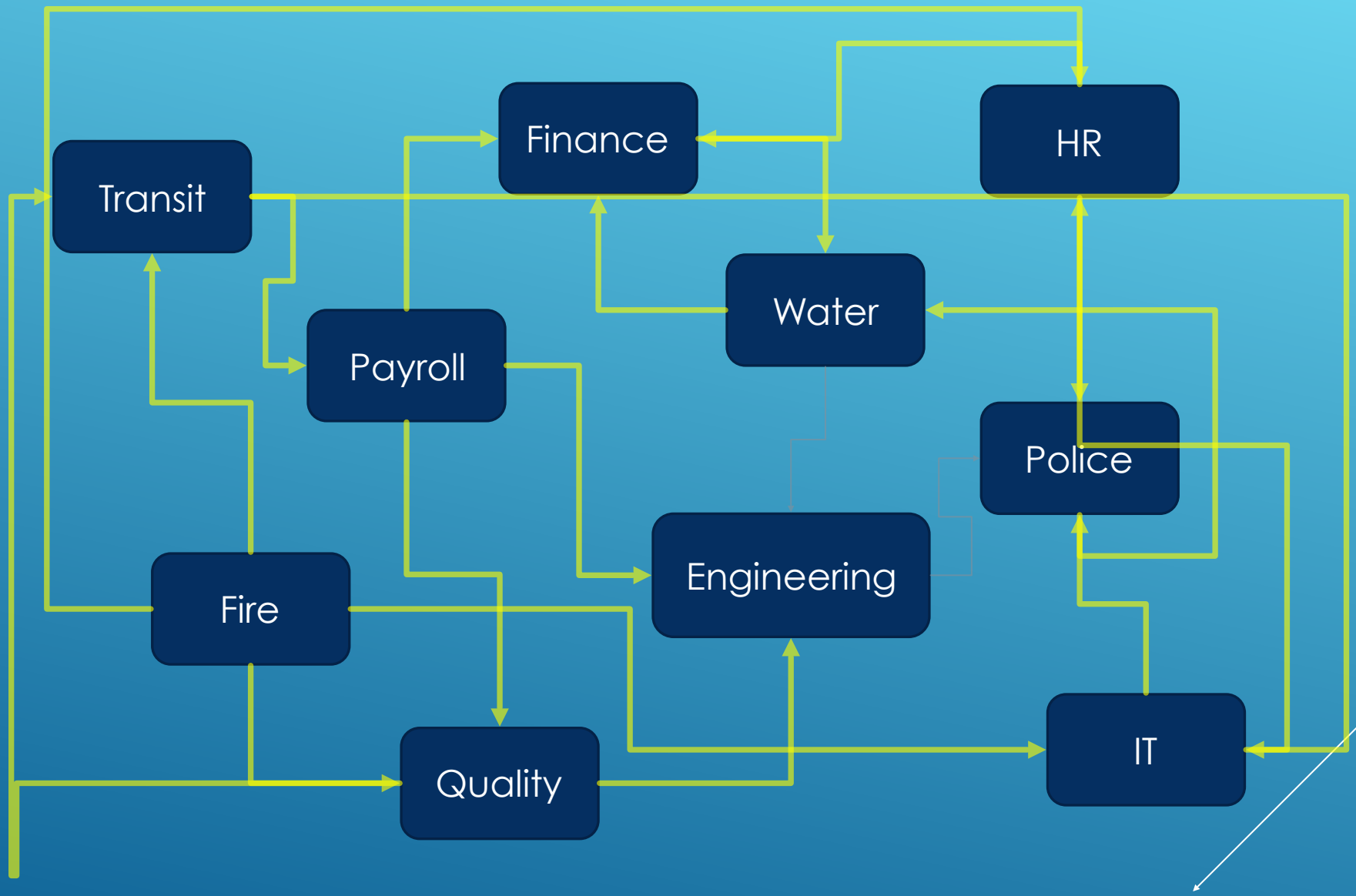
Staff Time Available to Reinvest:	1352 Hours
Client Wait Days Reduced	270510 Hours
Equipment Down time Days Reduced	
Meeting Time Hours Reduced	
Supplies Savings	
5S Space Savings	
Financial Resources Redeployable	
Staff Labour Dollars Re-allocated	$29,744.00
Processing Days Reduced	
Safety Occurrences Reduced	
Administrative Time Reduced	
Operational Costs Reduced	

Time Reinvested

Potential Areas of Time Reinvestment:
1. QI Project

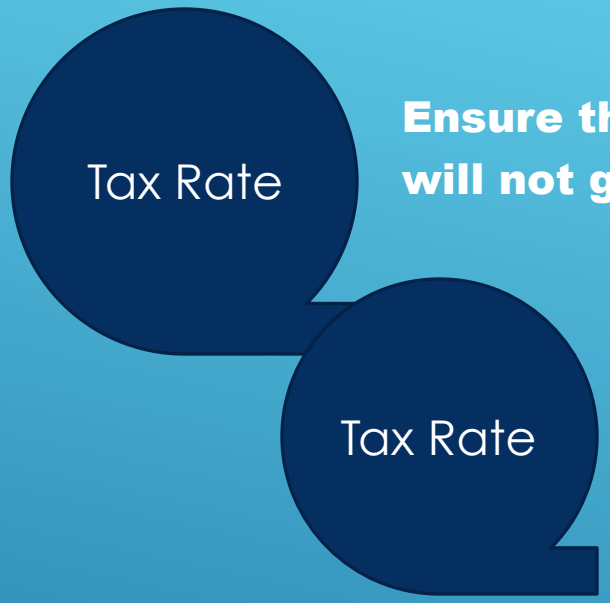
Only 2 new fire halls needed not 4, says City's fire chief

City will save millions of dollars fire chief says


Finance
HR
Transit
Water
Payroll
Police
Engineering
Fire
Quality
IT

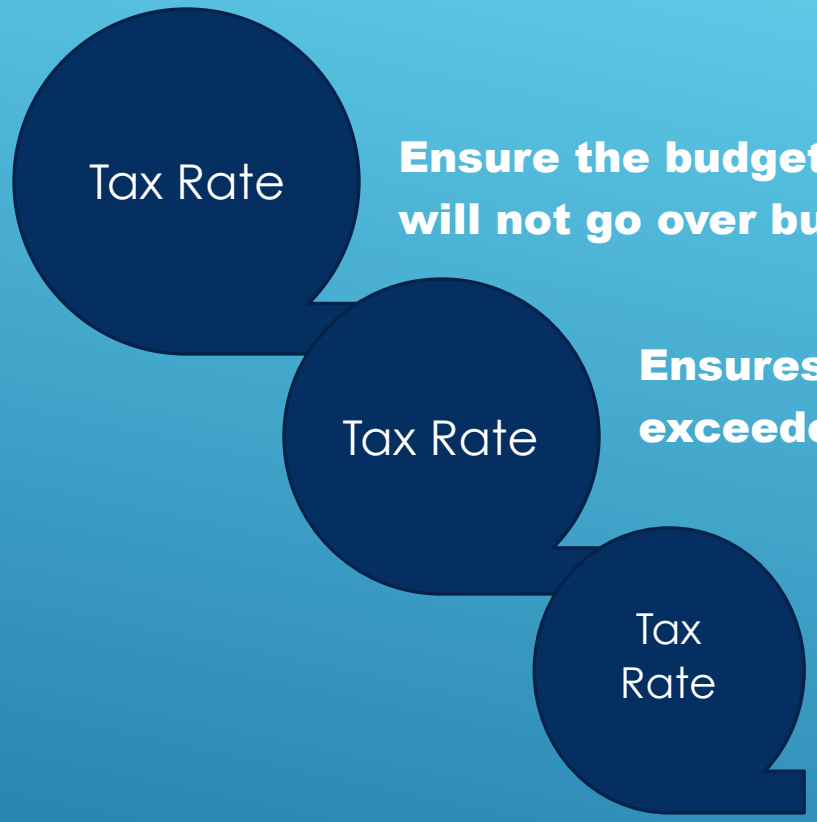
Tax Rate

Ensure the budgeted tax rate for the city will not go over budget.



Ensure the budgeted tax rate for the city will not go over budget.

Ensures the divisions budget is not being exceeded.



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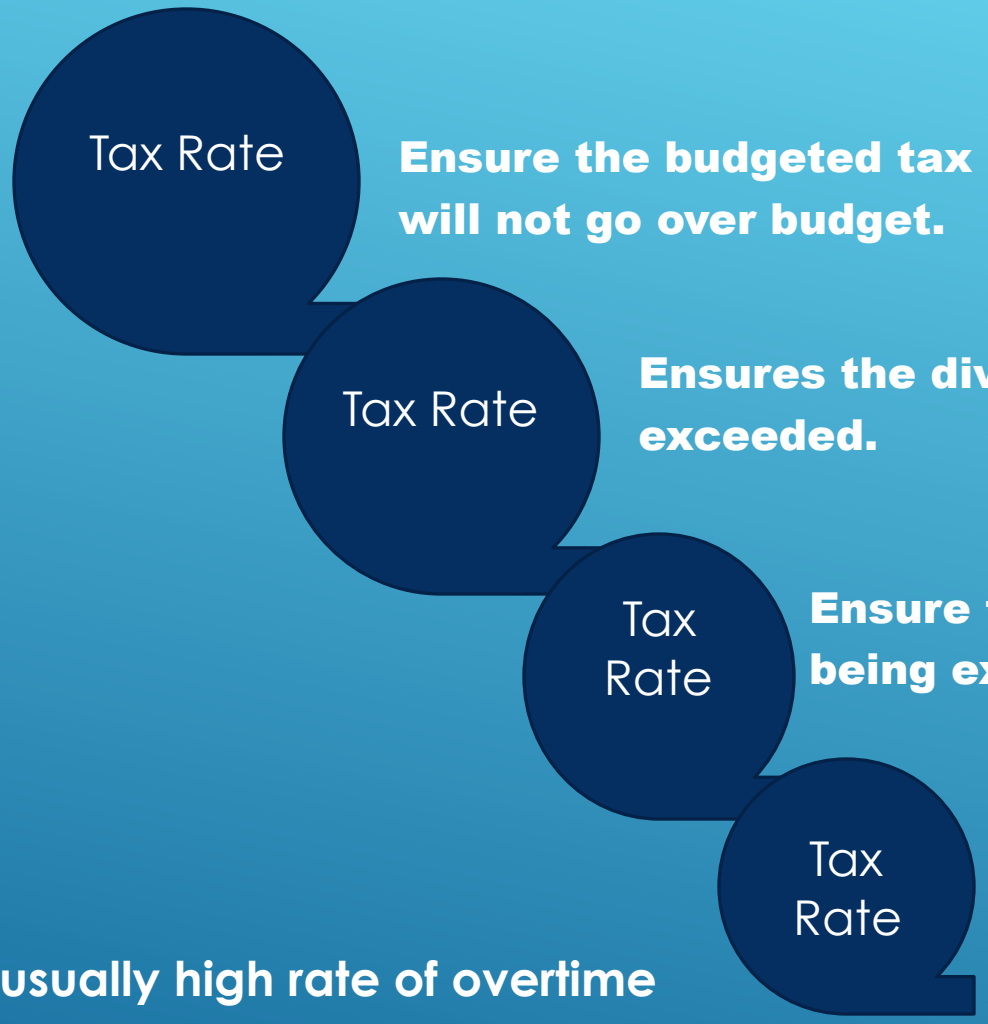
Ensures the divisions budget is not being exceeded.

Ensure the departments budget is not being exceeded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Ensure the work areas budget is not being exceeded
Unusually high rate of overtime

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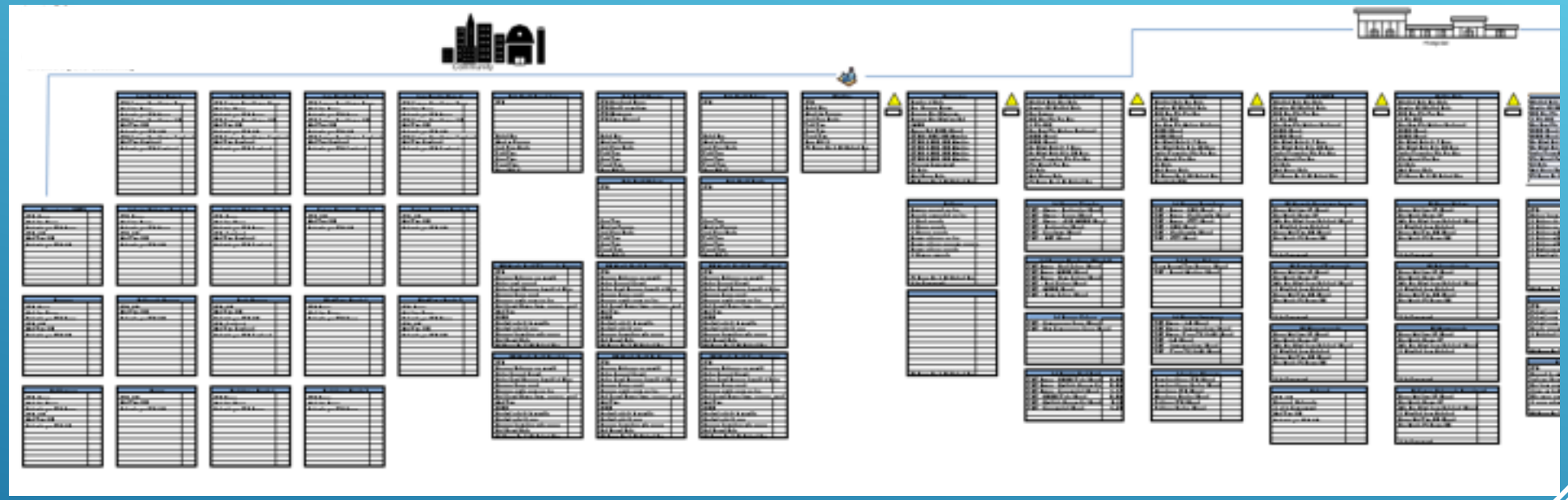
Tax Rate

Lean team

Rapid Improvement Events , PDSA's etc.



The Bucket List

System Matrix

Indicator Group (Quality, Service, Efficiency)	Potential Indicator	Indicator Definition	Indicator Location	Not required for the VSM	Will be added to VSM	Takt	Transit System
Quality	Number of complaints to the city by department	The total number of complaints accumulated by the city in the complaint tracker system. Both electronic and verbal	Front desk clerk, online database of electronic complaints				
Service	Total number of people using city public transit services	the total number of people using the city transit system by usage. This will count each individual that access a bus. If one person uses the bus three separate occasions in a day that will count as three.	Transit system on-board tracking system			■	
Efficiency	Total time to complete a building permit	time from request of a building permit until the permit is issued	Permit department electronic tracking system				

Cycle	Transit System
Cycle	Transit System
Cycle	Transit System
Quality	Transit System
Quality	Transit System
Quality	Transit System
Quality	Transit System
Satisfaction	Transit System
Satisfaction	Transit System
Financial	Transit System
Financial	Transit System
Takt	Finance department
Cycle	Finance department
Cycle	Finance department
Cycle	Finance department
Quality	Finance department
Quality	Finance department
Quality	Finance department
Quality	Finance department
Satisfaction	Finance department
Satisfaction	Finance department
Financial	Finance department
Financial	Finance department
Takt	Building permits and renovations
Cycle	Building permits and renovations
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Cycle	Building permits and renovations
Quality	Building permits and renovations
Quality	Building permits and renovations
Quality	Building permits and renovations
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Satisfaction	Building permits and renovations
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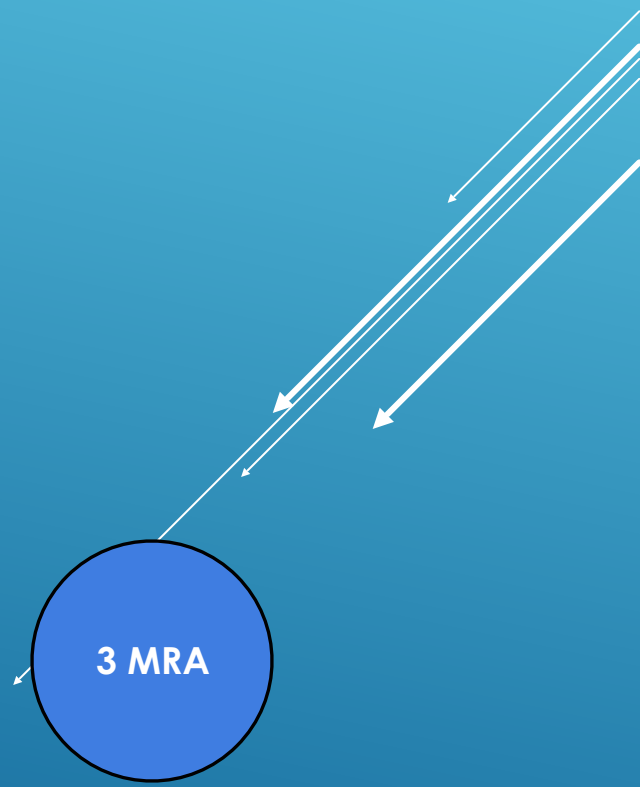
Finance	
Number of invoices received a month	527
Avg time to complete invoice entry (min)	12.0
Avg time to pay invoice (min)	15.0
Avg days to complete an invoice	8.0
Percent of invoices completed incorrectly	8.0%
Percent of invoices completed in 15 days	83.0%
Staff satisfaction	63.0%
Avg number of client complaints (mth)	28.0
Pd Hours As % Of Budget Hrs	105.0%

Takt time (demand)



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Cycle time

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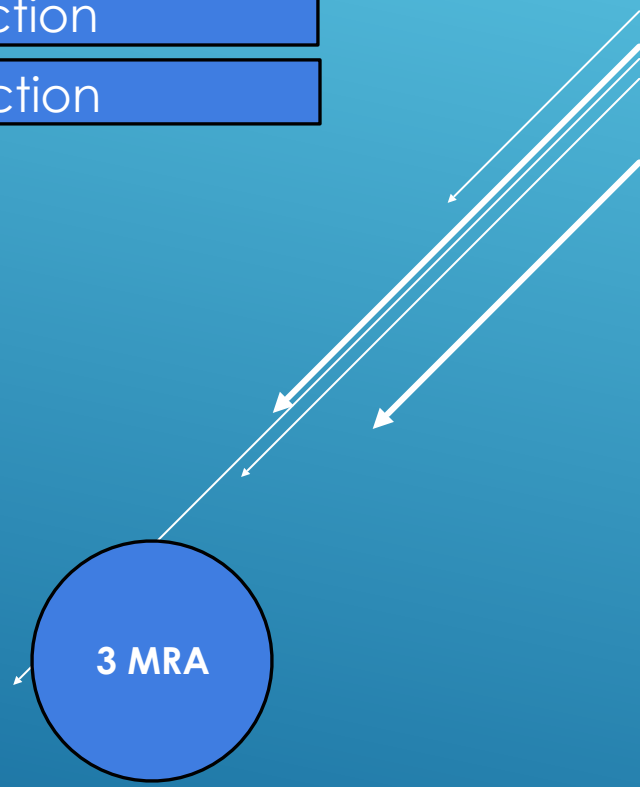
Satisfaction

Satisfaction



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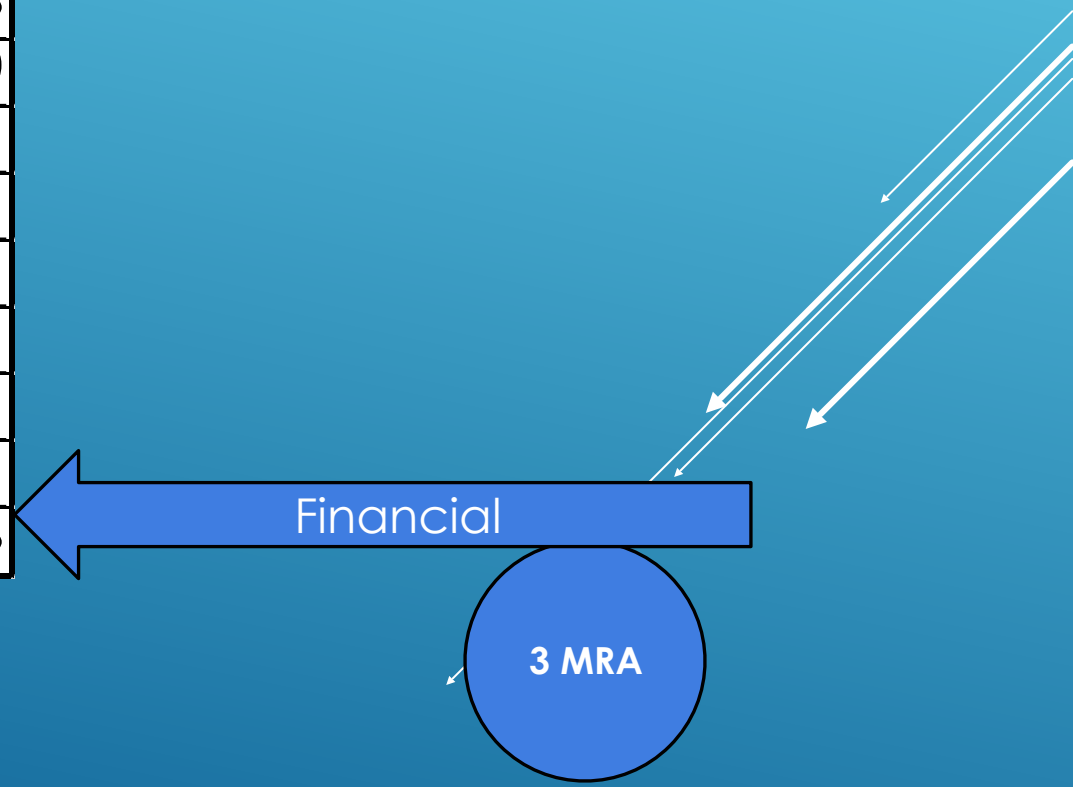


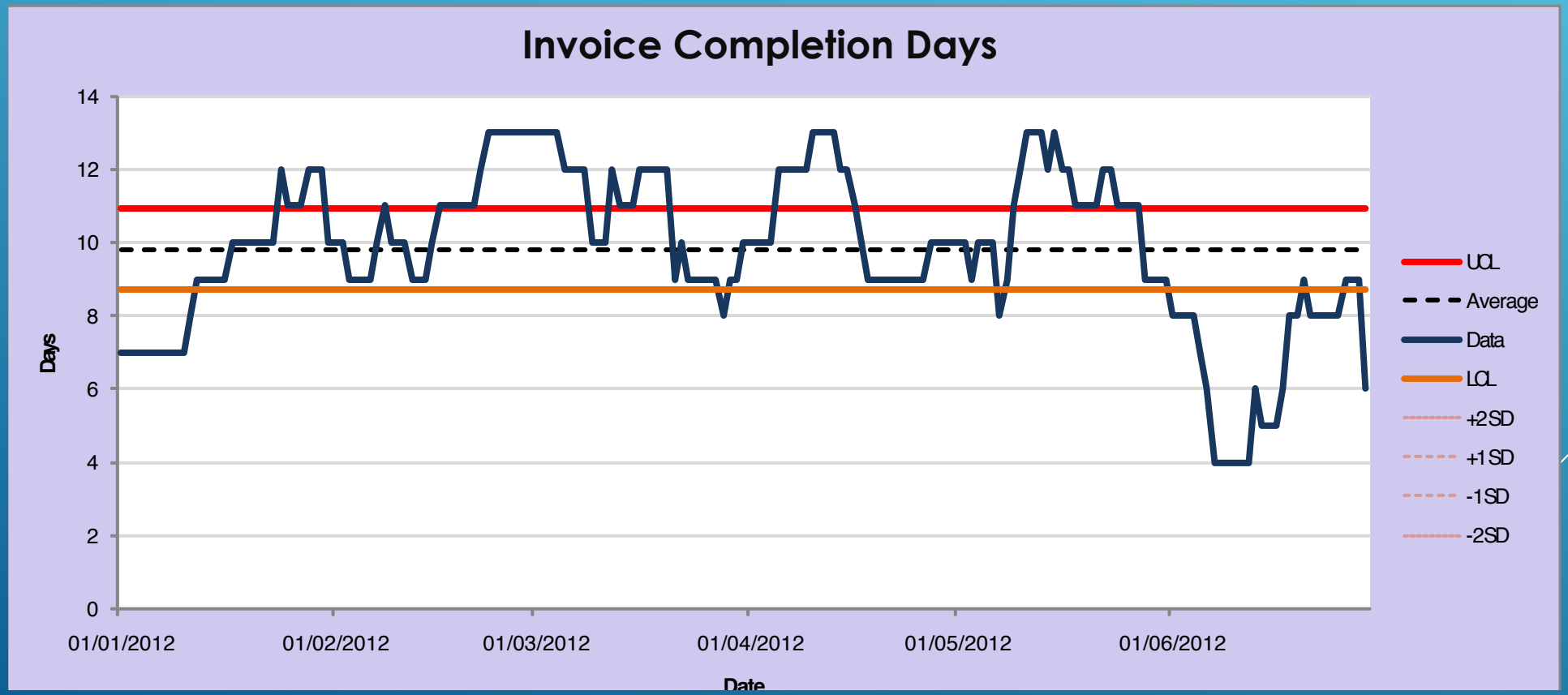
Aim: To have all of our passengers arrive safely at there destination with all of their belongings with no extra waiting.

Flight 276 Toronto to Winnipeg	
Scheduled boarding time	9:00
Minutes past scheduled boarding time	7
Number flight attendants	3
Passenger count	143
% Capacity of plane utilized	98%
Minutes past scheduled take off time	13
Gate to gate time (Minutes)	156
Minutes into flight last passenger served	47
Take off to landing time (Minutes)	139
% Time with seatbelts activated	23%
Altitude (Feet)	34,000
Arrival time past scheduled (Minutes)	2
Minutes until last luggage on carousel	26
% Pieces missing luggage	1.3%

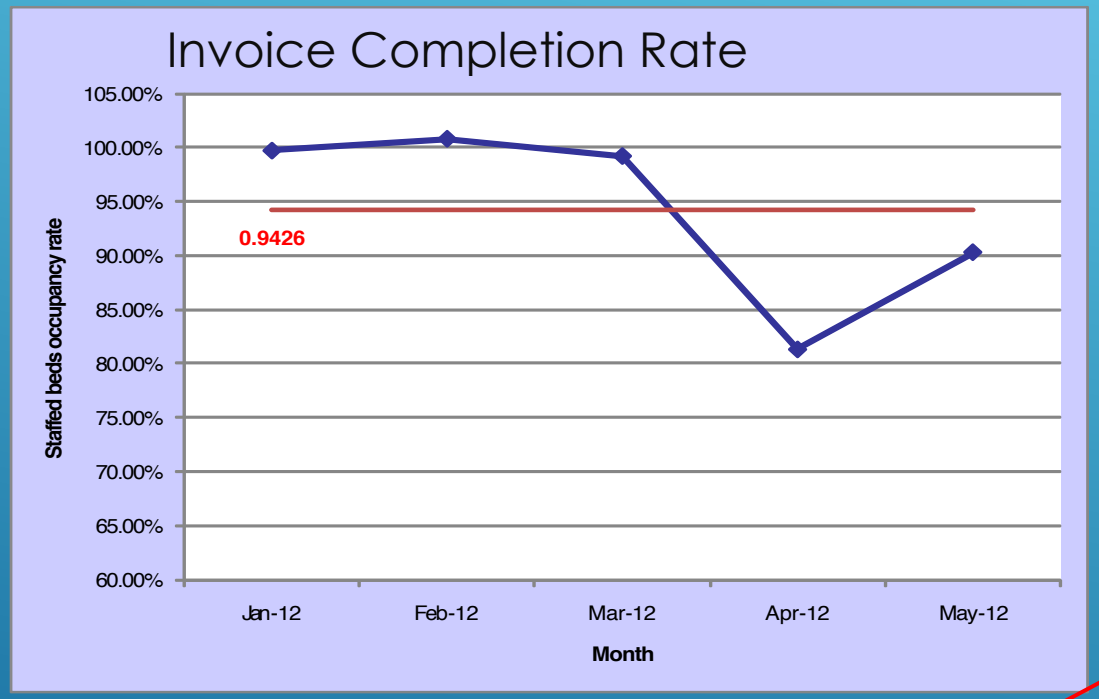
UNDERSTANDING TAMPERING

(ITS NOT A BAD WORD)

X (Individuals)					
Stats	Overall	Stage 1	Stage 2	Stage 3	Stage 4
UCL	10.9099				
Average	9.807692				
LCL	8.705482				

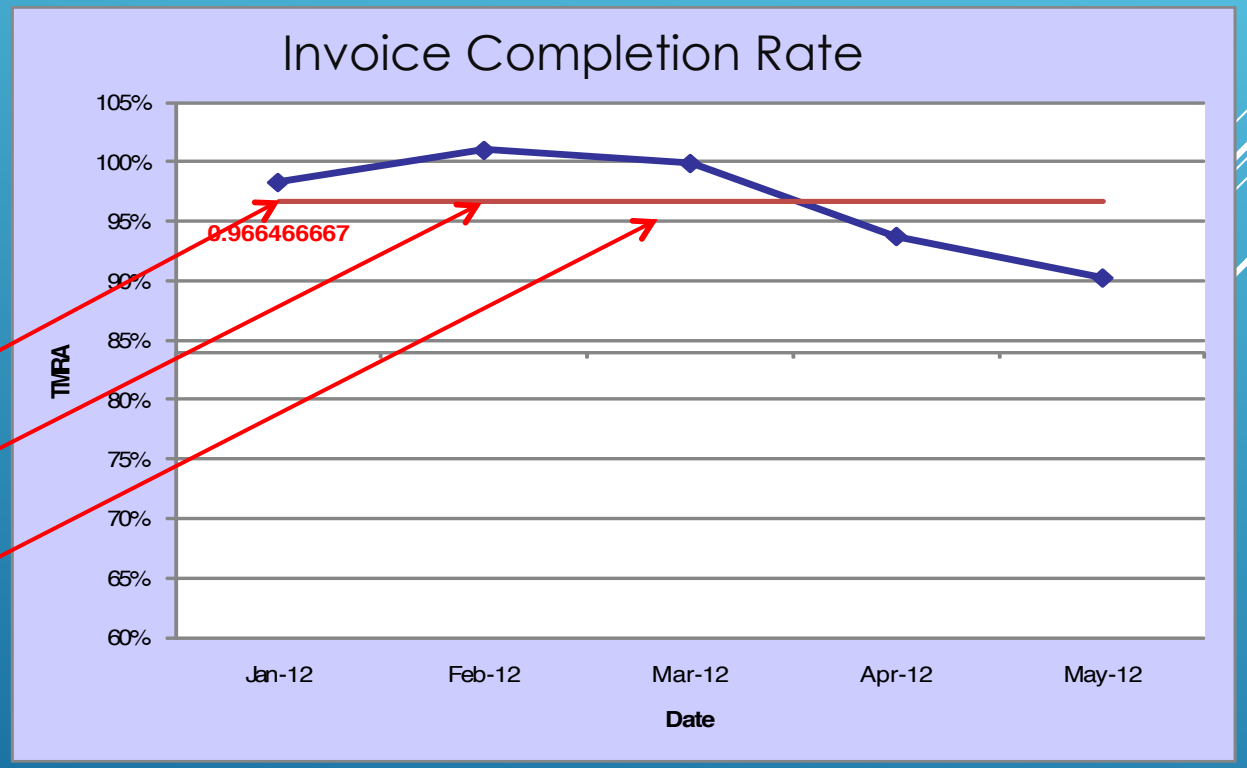


THREE MONTH ROLLING AVERAGE



Formula:

Month	Invoice payment
January	99.7%
February	100.8%
March	99.2%
April	81.3%
May	90.3%



(Jan + Feb + Mar) / 3 = three month rolling average (1)
(99.7 + 100.8 + 99.2) / 3 = **99.9%**

(Feb + Mar + Apr) / 3 = three month rolling average (2)
(100.8 + 99.2 + 81.3) / 3 = **93.7%**

(Mar + Apr + May) / 3 = three month rolling average (3)
(99.2 + 81.3 + 90.3) / 3 = **90.3 %**

As the graph indicates the TMRA smooth's data to see true trends versus abrupt variation.

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Percent of invoices completed in 15 days	83.0%
Staff satisfaction	63.0%
Avg number of client complaints (mth)	28.0
Pd Hours As % Of Budget Hrs	118.0%

Within warning trigger

Surpassed minimum trigger

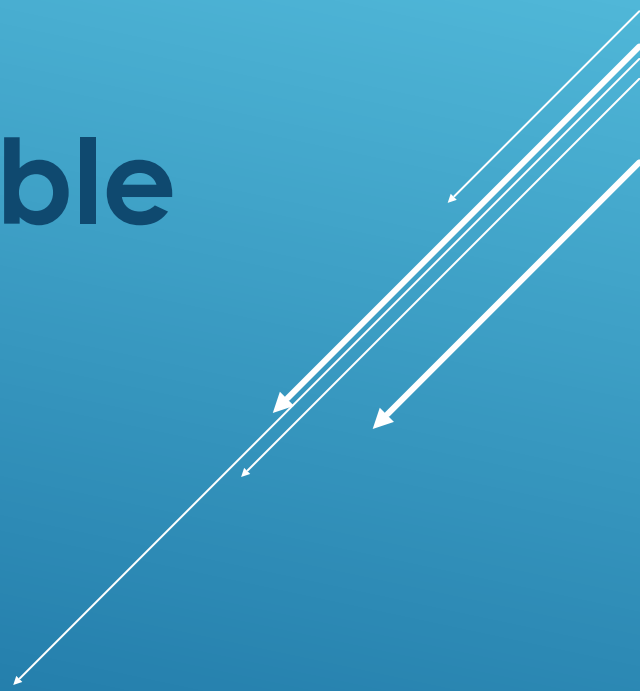
Surpassed minimum trigger


TRAINING
IMPROVEMENT
PRACTICE
FOCUS
INTELLIGENCE
LESSON
MOTIVATION


Great Dale, but
I have no Time!

Engagement = Emotional

Empowerment = Responsible

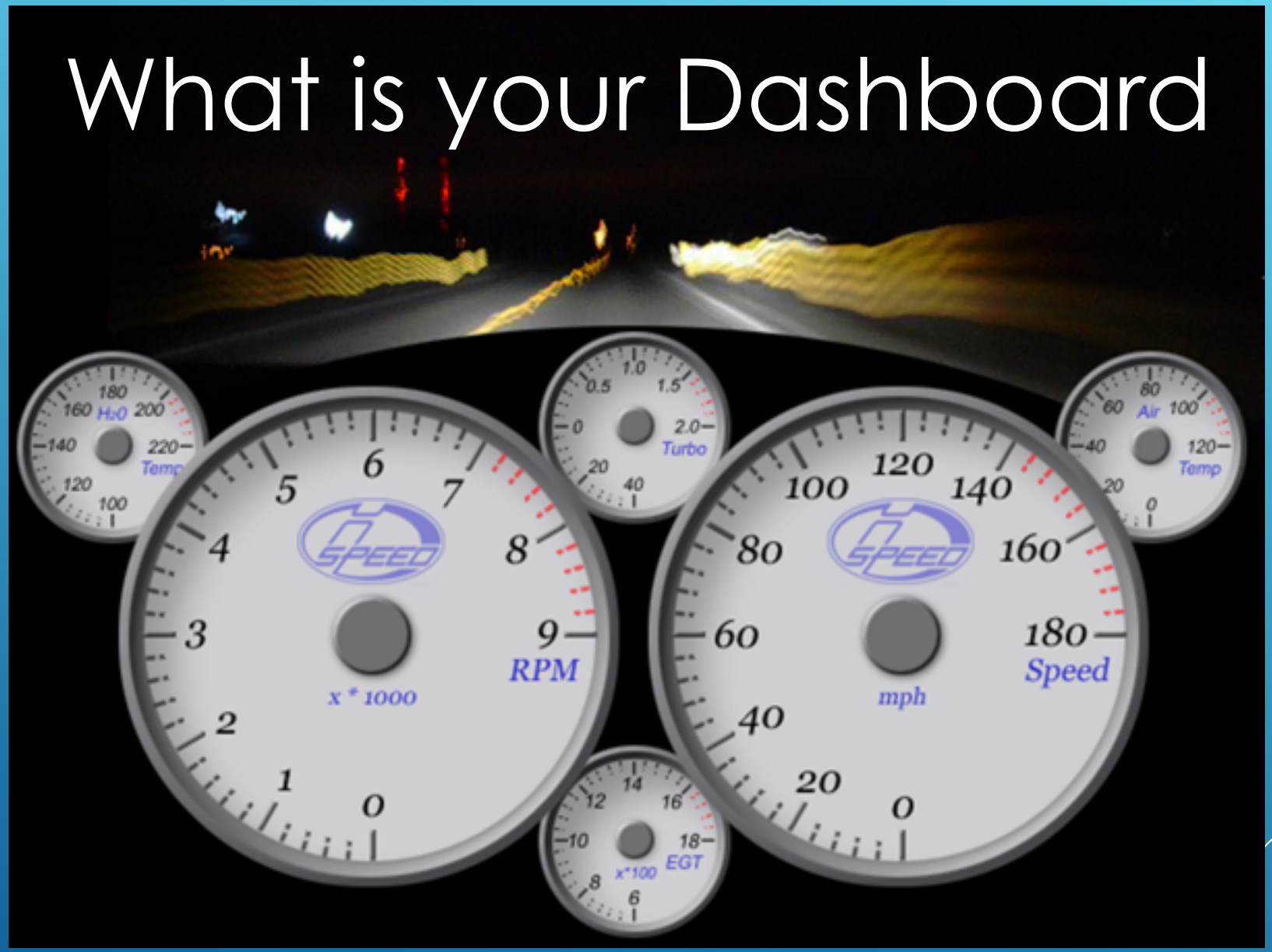


Check List

✓Mission
✓Vision
✓Values

✓Strategic
✓Tactical
✓Operational

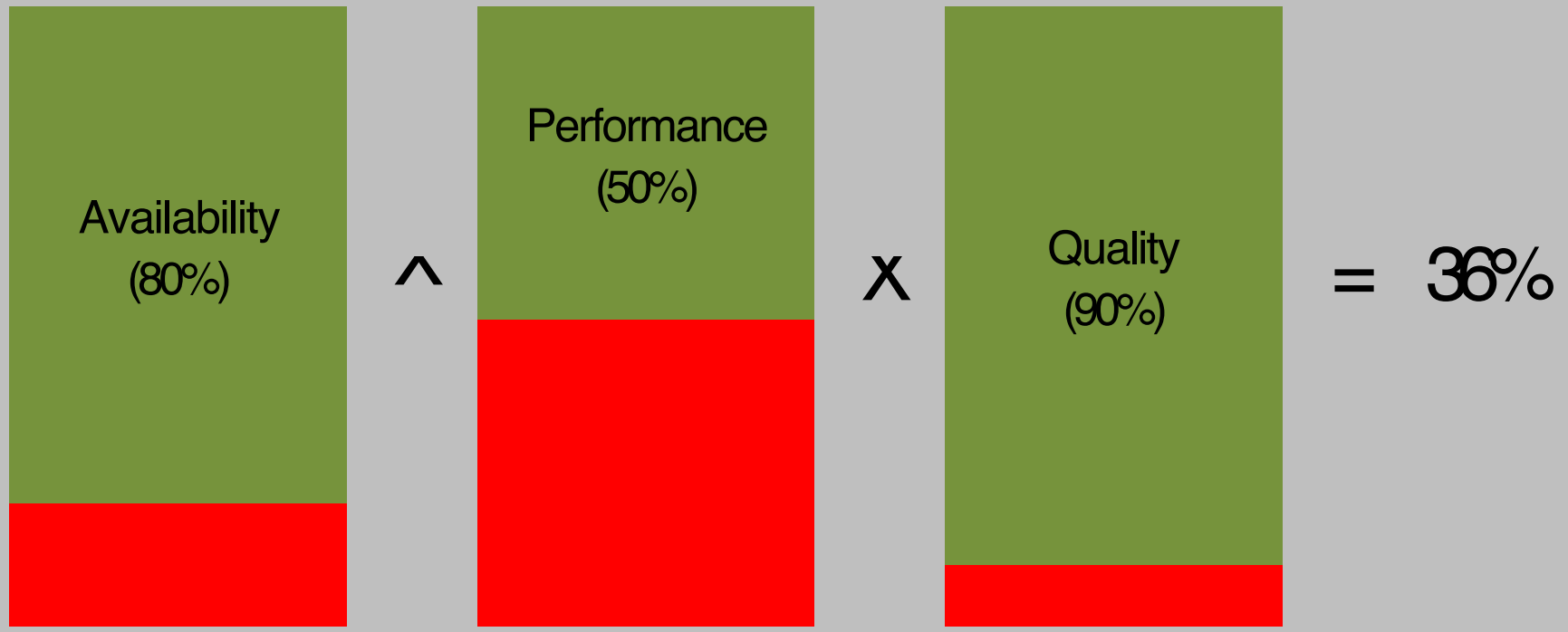
What is your Dashboard



OSE

Overall Service Effectiveness

What it measures



What slows or stops the work or service from being completed

How quickly we provide our service in relation to a standard or best practice

How well we provide our service in relation to a standard or best practice

Overall Service Effectiveness

Fill in only the green squares

Availability	Actual time worked	320	Planned time worked	420	76%	**Availability**
Performance	Ideal cycle time	21	Actual time worked	320	76%	**Performanc**
Quality	Good units service	19	Total planned units service	20	95%	**Quality**

Overall Service Effectiveness (OSE) **55%**

The Formulas

Availability *= Actual time worked / Planned time worked*

Performance *= Ideal Cycle Time / (Actual time worked / Total units serviced)*

Quality *= Good units serviced/ Total units serviced*

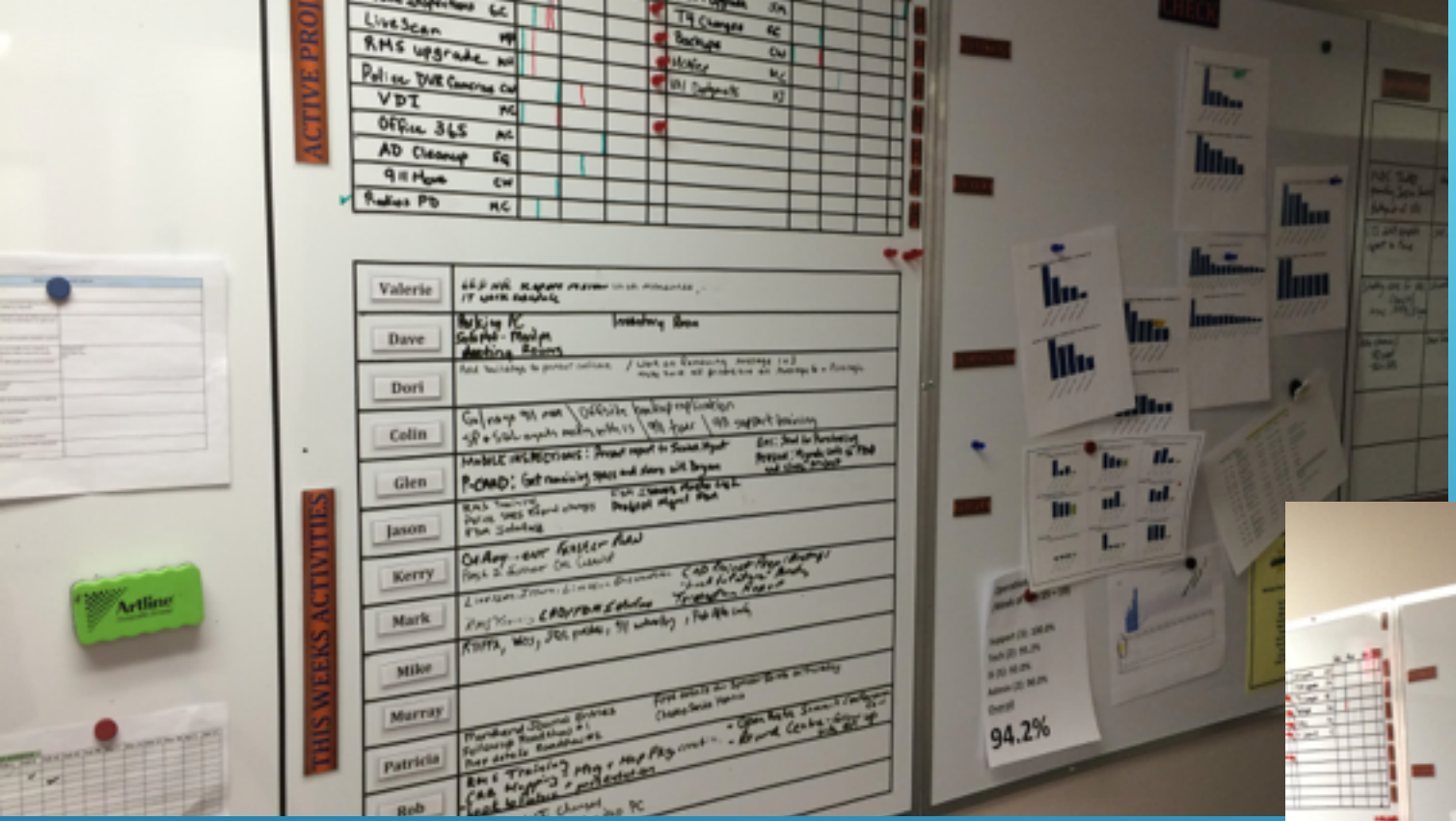
OSE takes into account all three **OSE Factors**, and is calculated as:

OSE *= Availability x Performance x Quality*

Definitions

Actual time worked	The time staff spent doing the assigned work - less downtime and equipment breakdown
Planned time worked	The scheduled time to be worked
Ideal cycle time	The optimal per unit time to complete the task
Good units serviced	The number of units of work actually completed
Total planned units service	The number of units of work scheduled to be completed

* all time in person minutes



Leadership Standard Work

Quality Board Huddles


THANK
YOU !