Workforce Effort and Outcome Optimisation

Alex James

RESRODEL
The Resource Role Model

Project Controls EXPO
Melbourne, Australia

Alex James

- Civil engineer > 30 years
- Transport design, project + business case management
- MIEAust, CPEng, RMCP

- Workforce analysis + solutions > 8 year
- Founder of RESRODEL
- Project Leader ISO 30343 ‘Workforce Allocation

How can we make society both more **productive** and more **humane**?

***Attributed as Peter Druker's life's work**

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- more **delivery**
- increased **margins**
- greater **wellbeing**

Manage
human effort
better

Better Workforce Decisions

1. Forecast effectiveness
2. Interventions that optimise
3. See the change to results

Too Often…

Poor-quality **products** or **services**
are **delivered** late
by **stressed people**
or **low utilization**
erodes margins

Workforce data

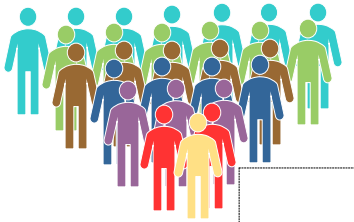
is

complex

How good are we?

- >25% reasons projects fail due to RM
- excess workloads cause 39% workplace stress
- RM ranked 2nd greatest difficulty in PMOs
- 93% of managers believe their workforce not optimised

Resource Management



	April	May	June	July
Project 11				
Project 12				
Project 13				
Project 14				
Project 15				
Project 16				
Project 17				

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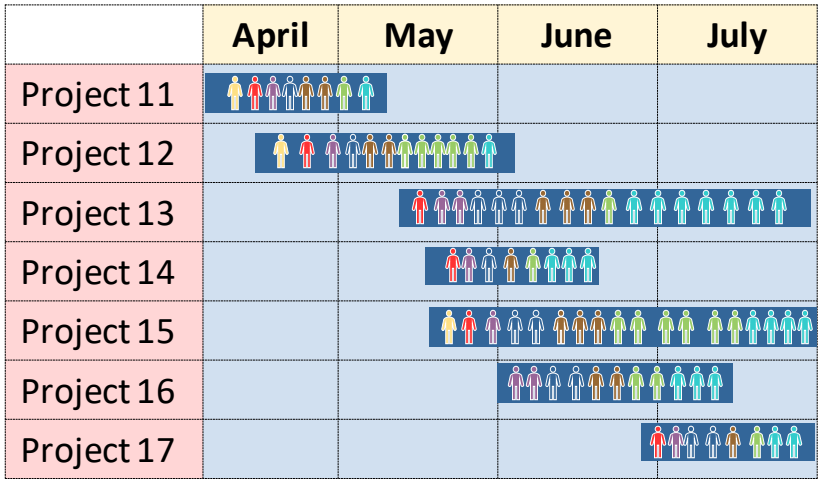
Resource Management

ORACLE PRIMAVERA



Google Sheets

Deltek Open Plan

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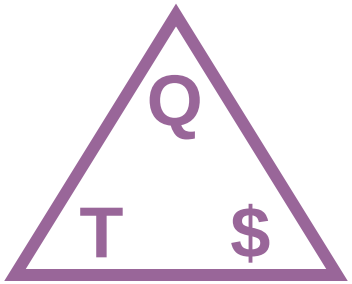
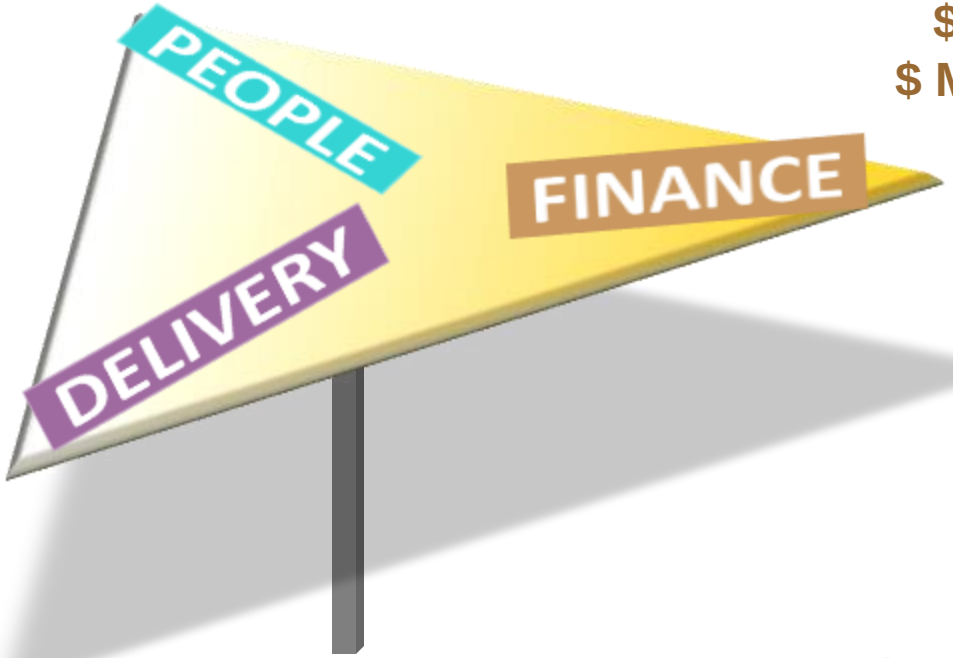
I can allocate…
…yet have limited visibility !

Balance Outcomes + Results





% UTILISATION
$ VALUE
$ MARGIN

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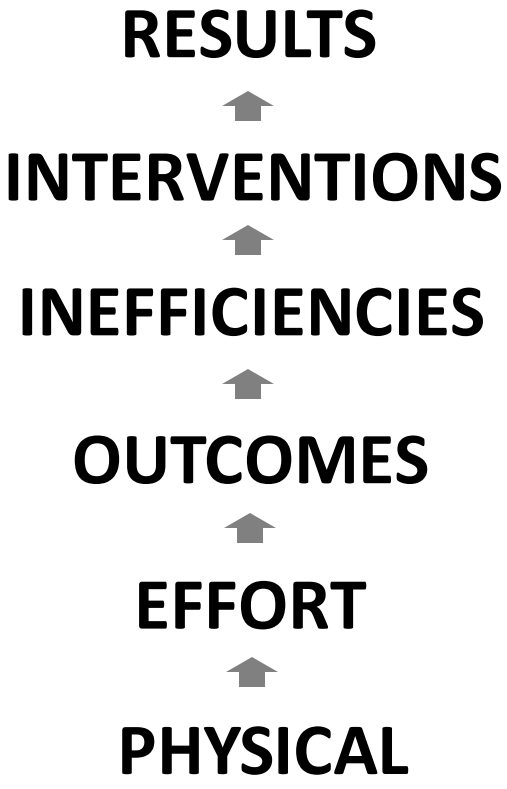
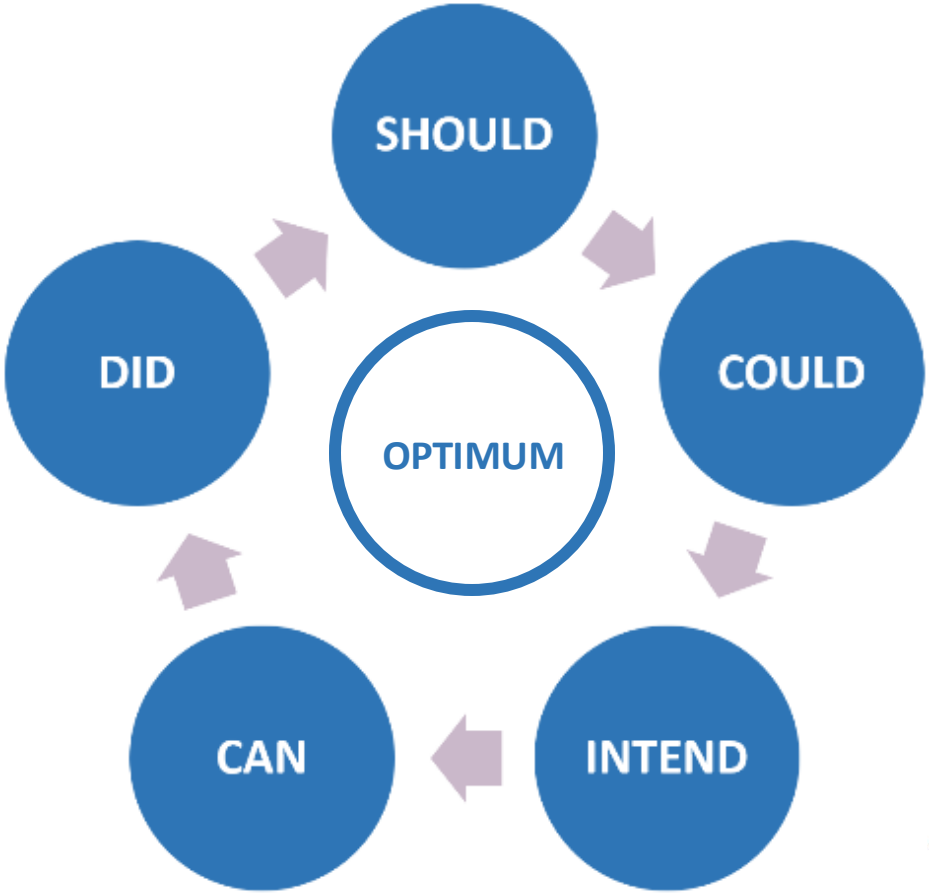
Levels of Abstraction



Context



To Be Better

Comprehend + optimise

future workforce

effort + outcomes

EFFORT MANAGEMENT

This Presentation

A. **Nature of effort and workforces**

B. **Effort Analysis**

   1. Forecasts
   2. Optimise
   3. Results

Get better Workforce outcomes

C. **Application**

D. **Benefits**

Part A: Overview

A1. Effort
A2. Wellbeing
A3. Whole Workforce
A4. Resource management

A1. PHYSICAL EFFORT

Ingredients and consequences of effort

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

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Effort Product

Effort = Quantity

x Time

x Rate

Effort Product

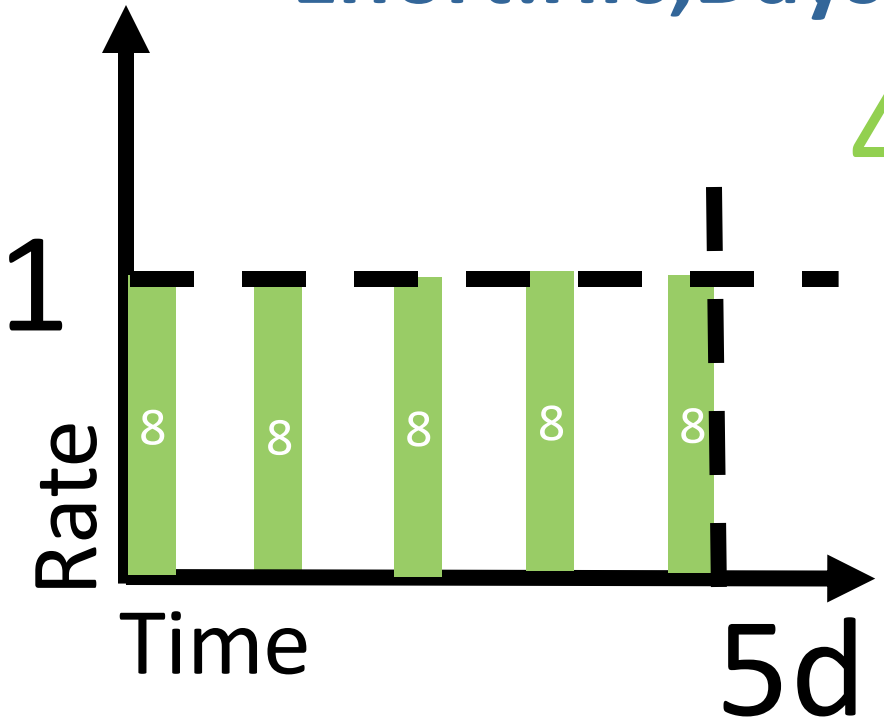
Effort = Quantity
x Duration
x Periods
x Rate

Units:
FTE, weeks, days, hours, minutes

Standard Effort

Standard Effort

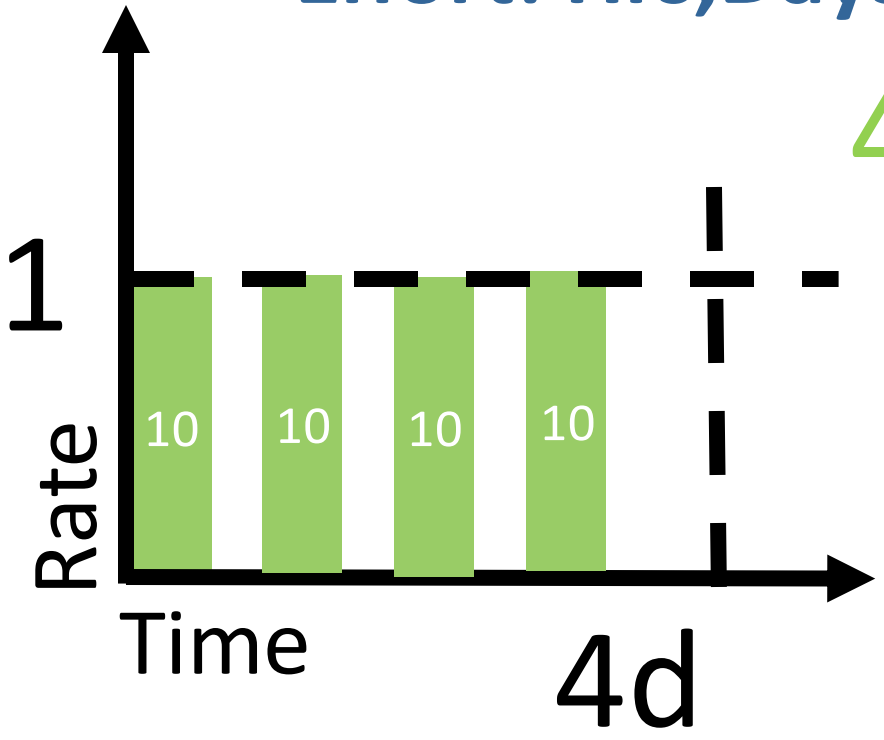
Effort:Hrs,Days,Week



Fewer
Longer
Days

Effort: Hrs,Days,Week

40h



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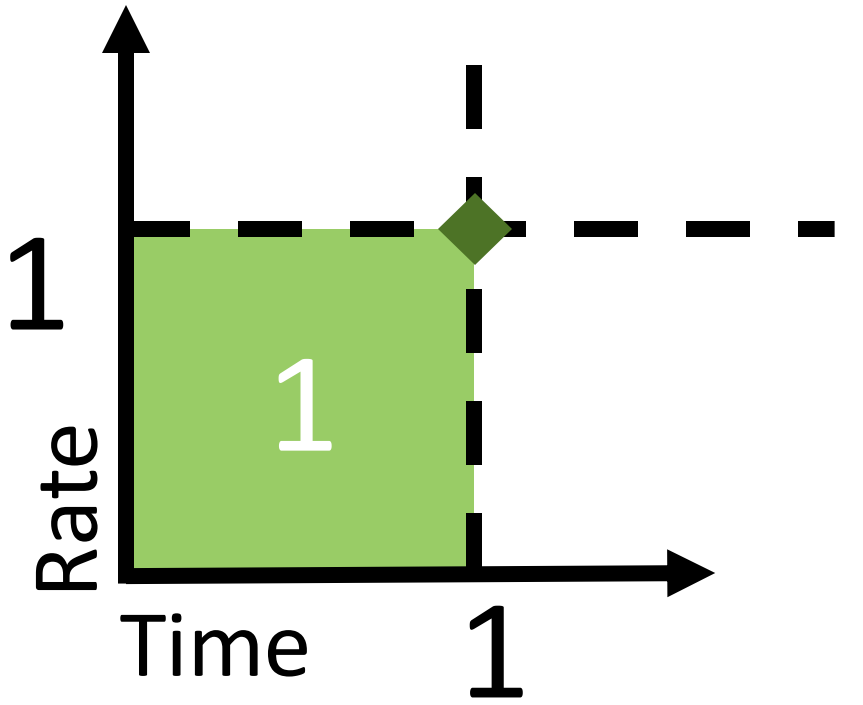
Standard Effort

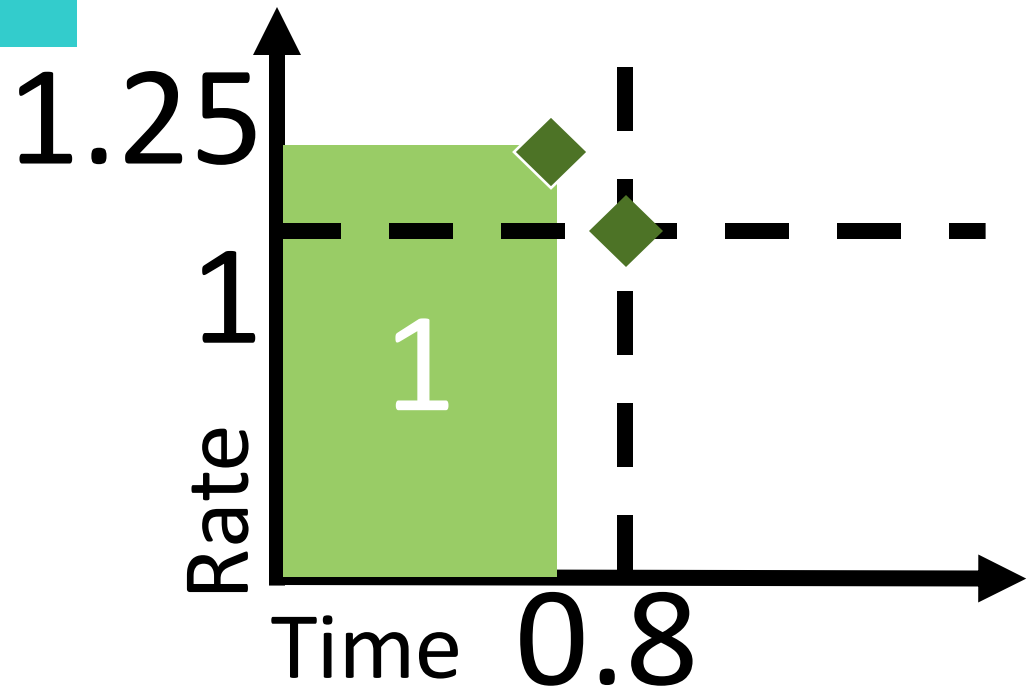
Effort: Normalised



x1 person

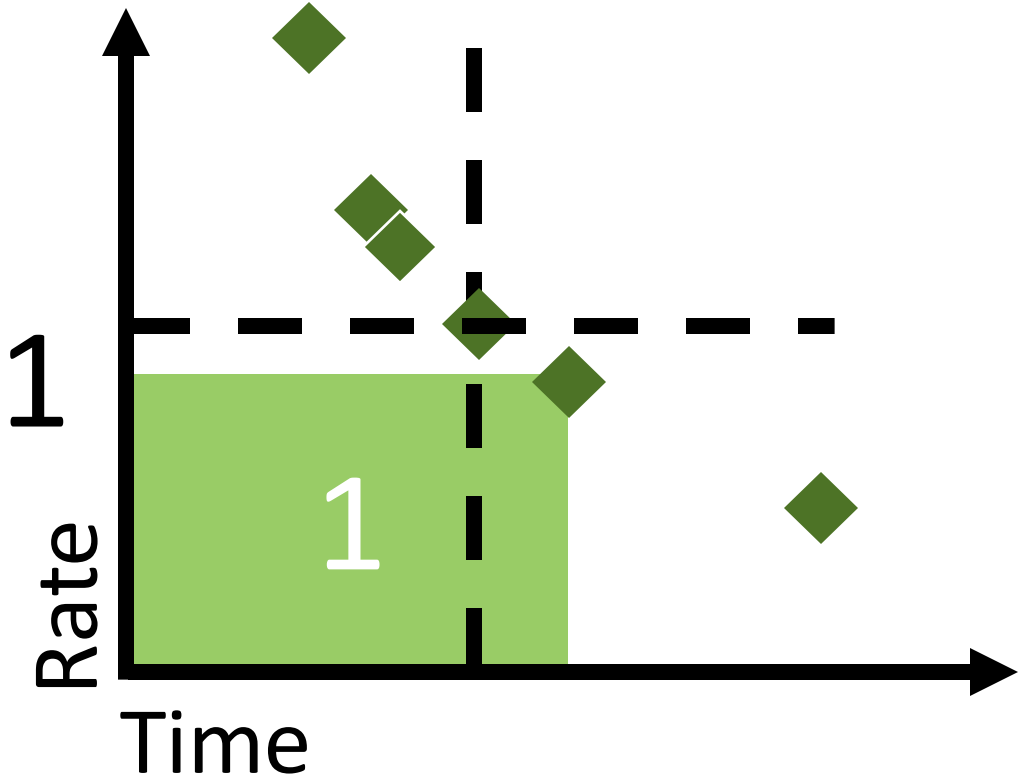
Effort: Normalised

Earlier
Faster



Effort: Normalised

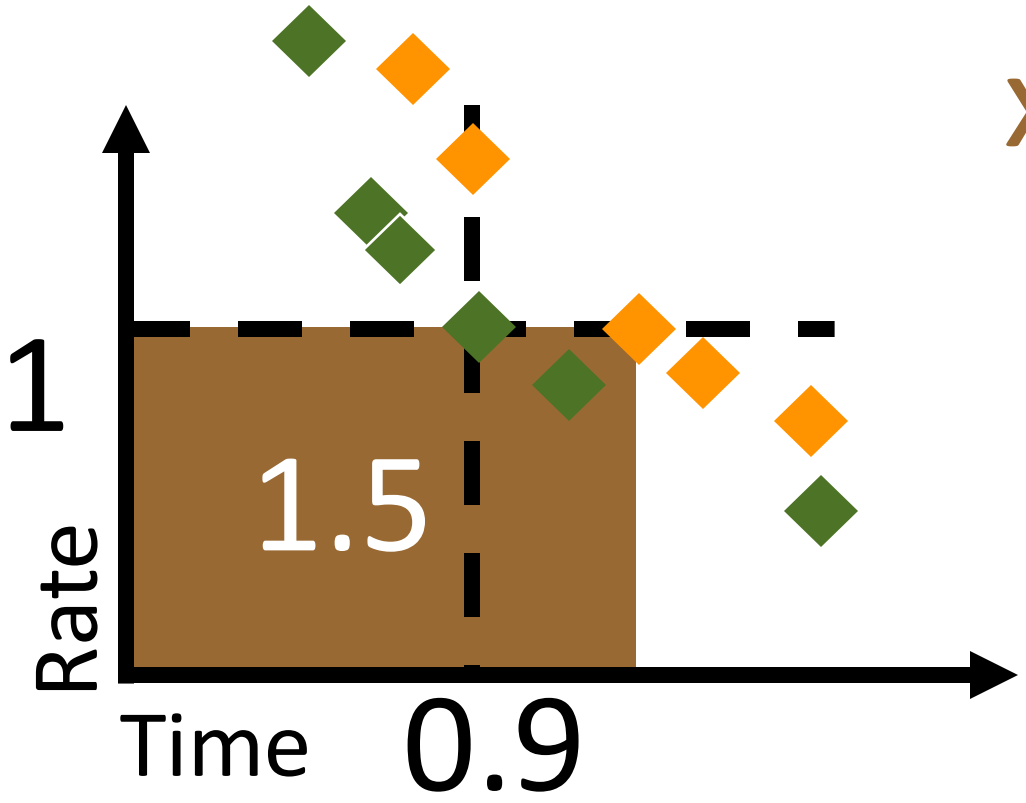
Longer
Slower



Longer

Effort: Excessive

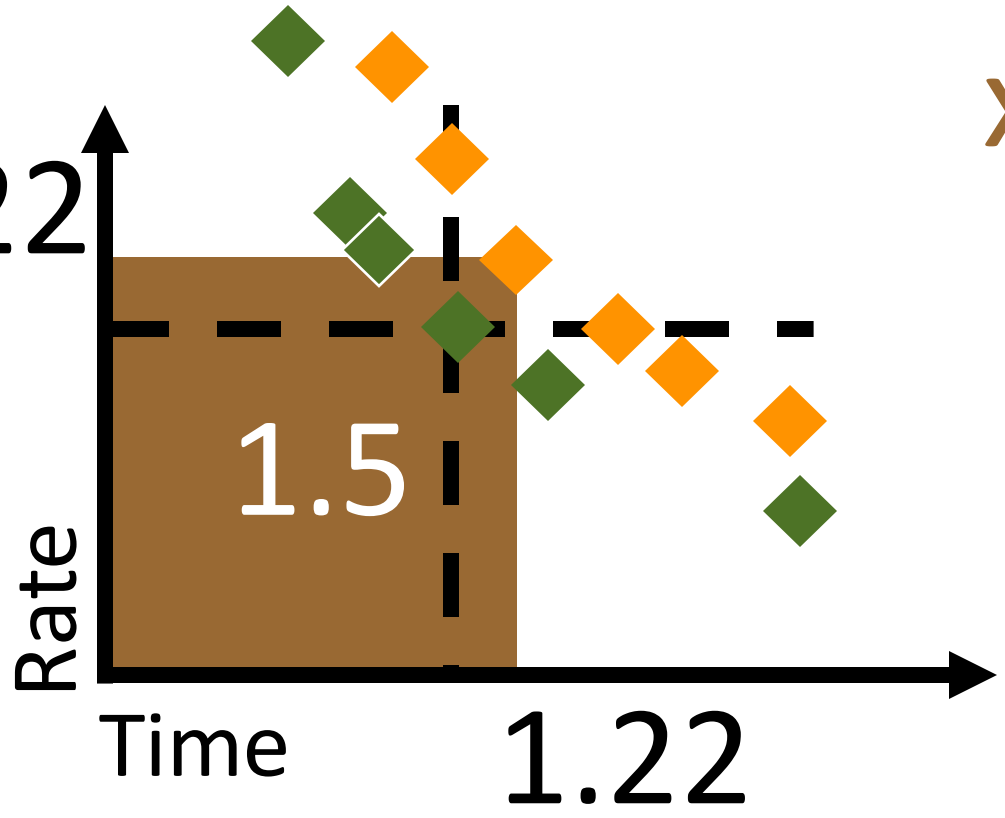
x1.5



Effort: Excessive

Longer + Faster !

x1.5



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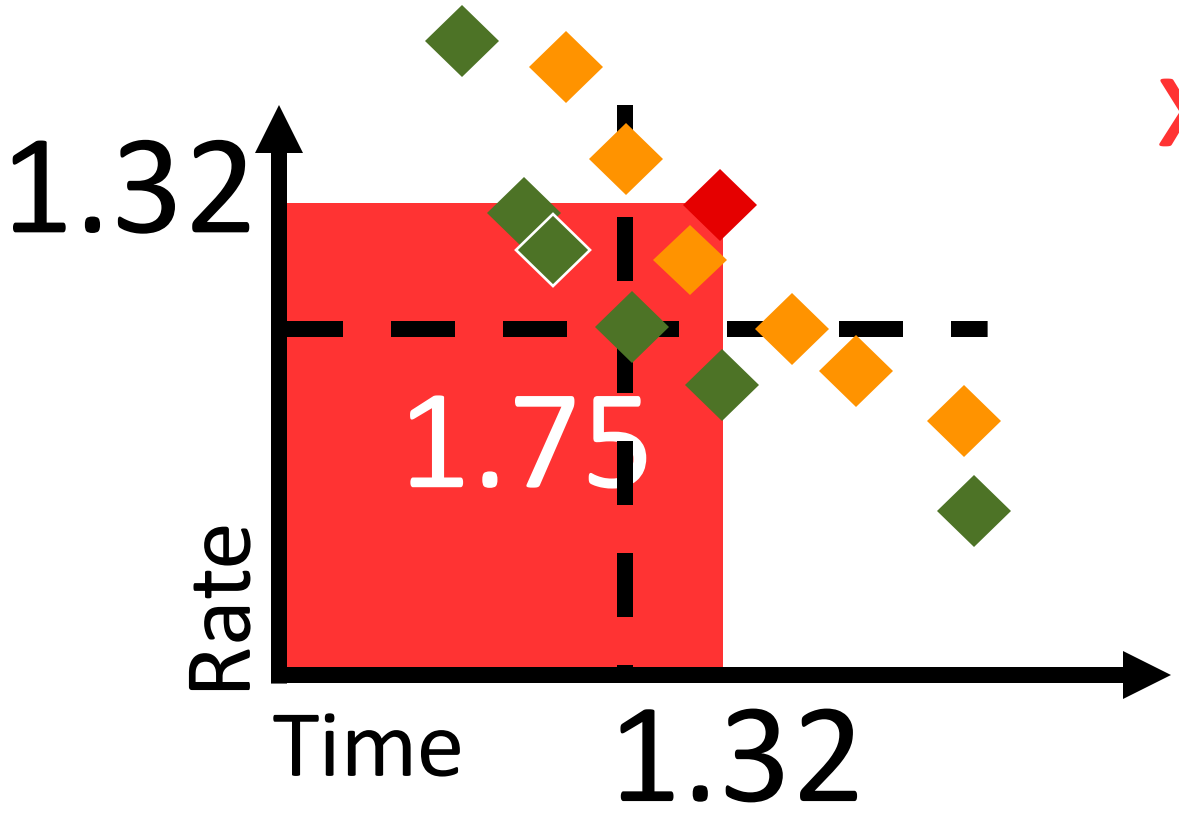
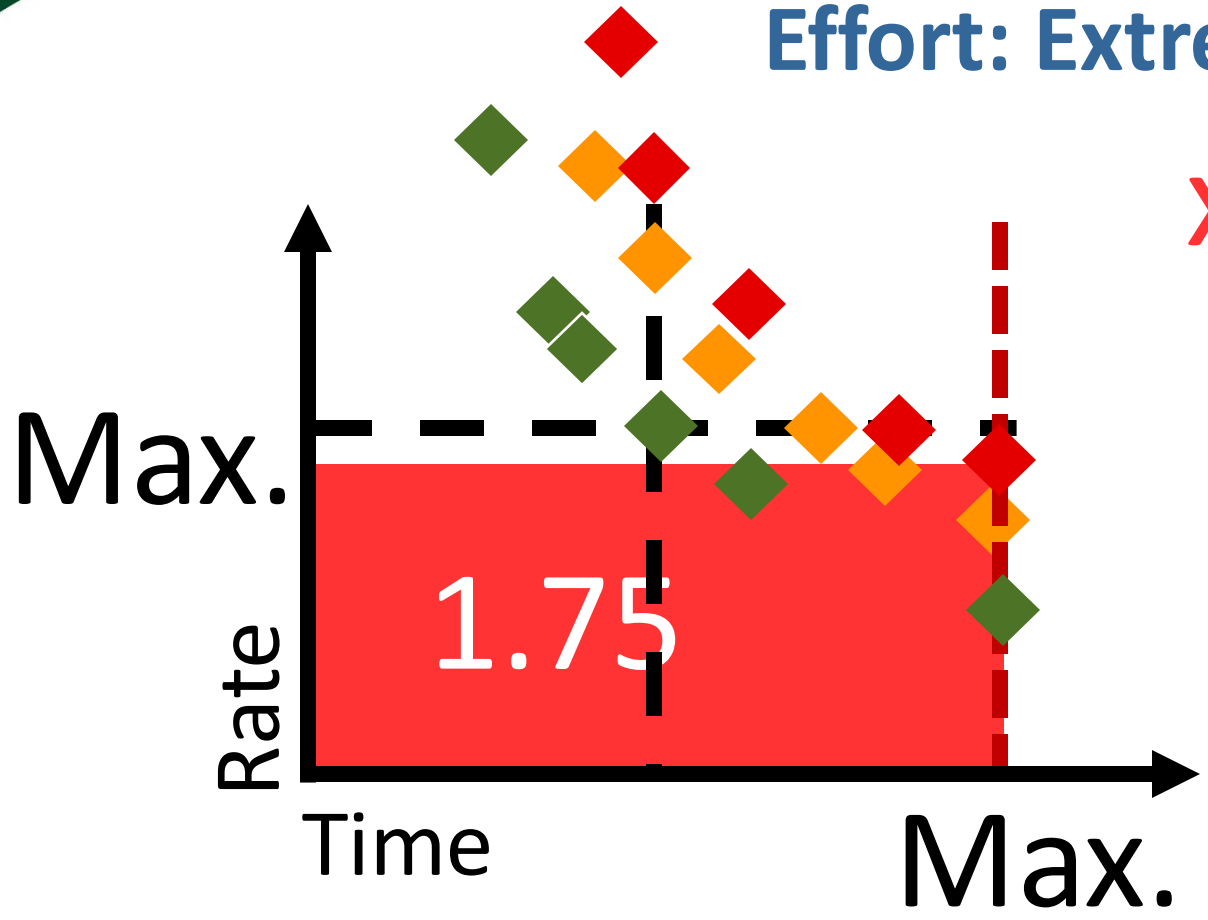
Effort: Extreme

x1.75



Effort: Extreme

x1.75



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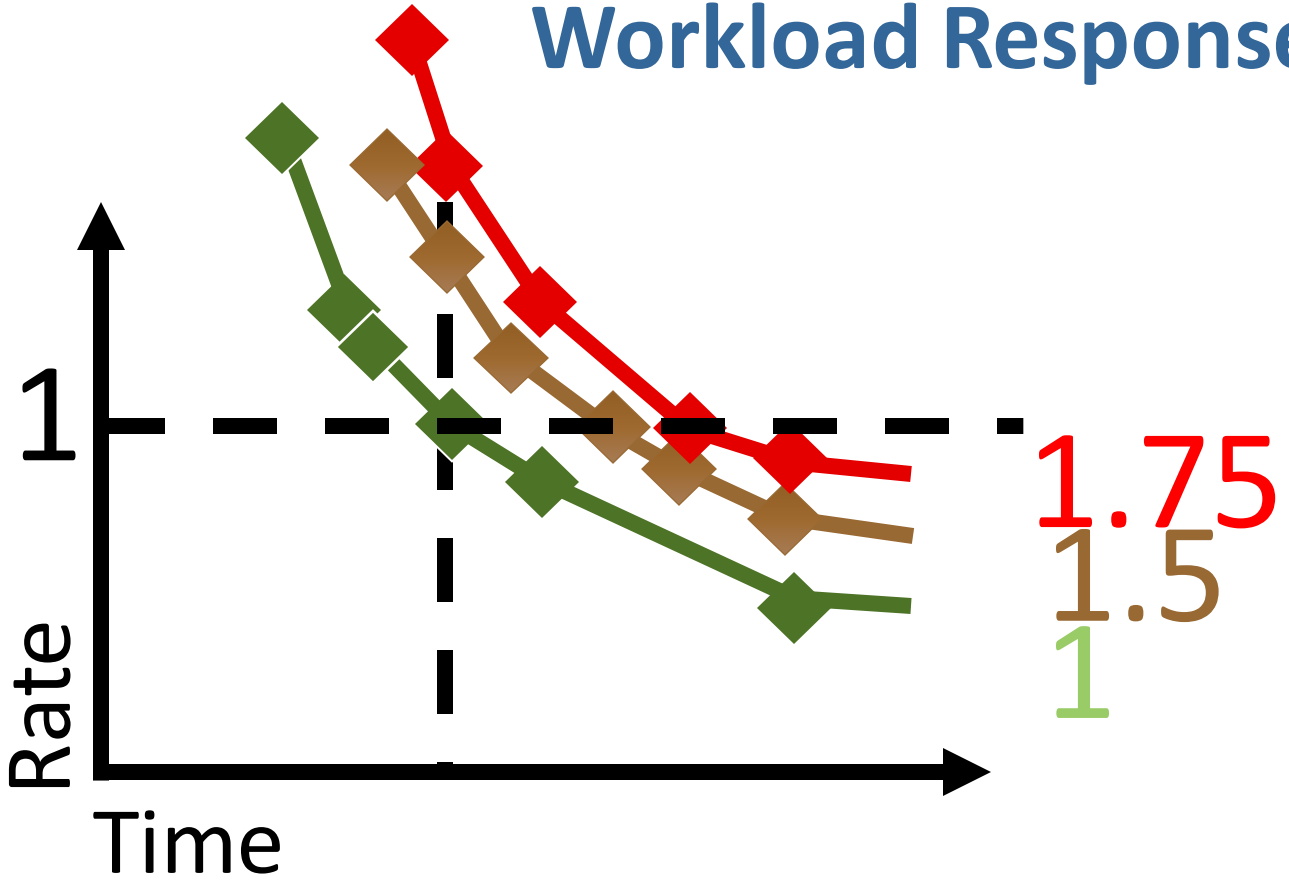
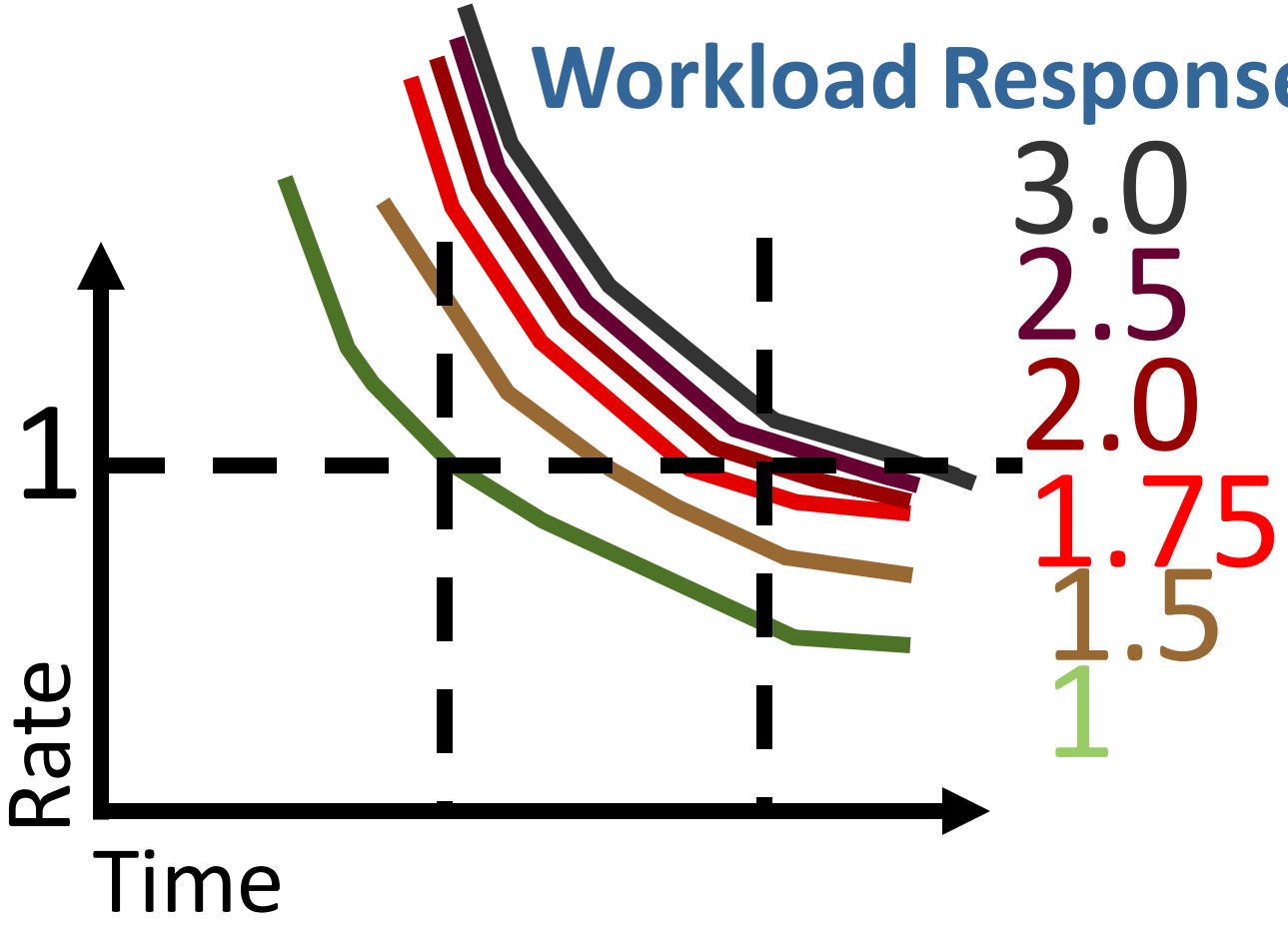
Workload Response



Workload Response



*Indicative Only

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Excess work causes…

people to work

longer + faster

but…**at a cost!**

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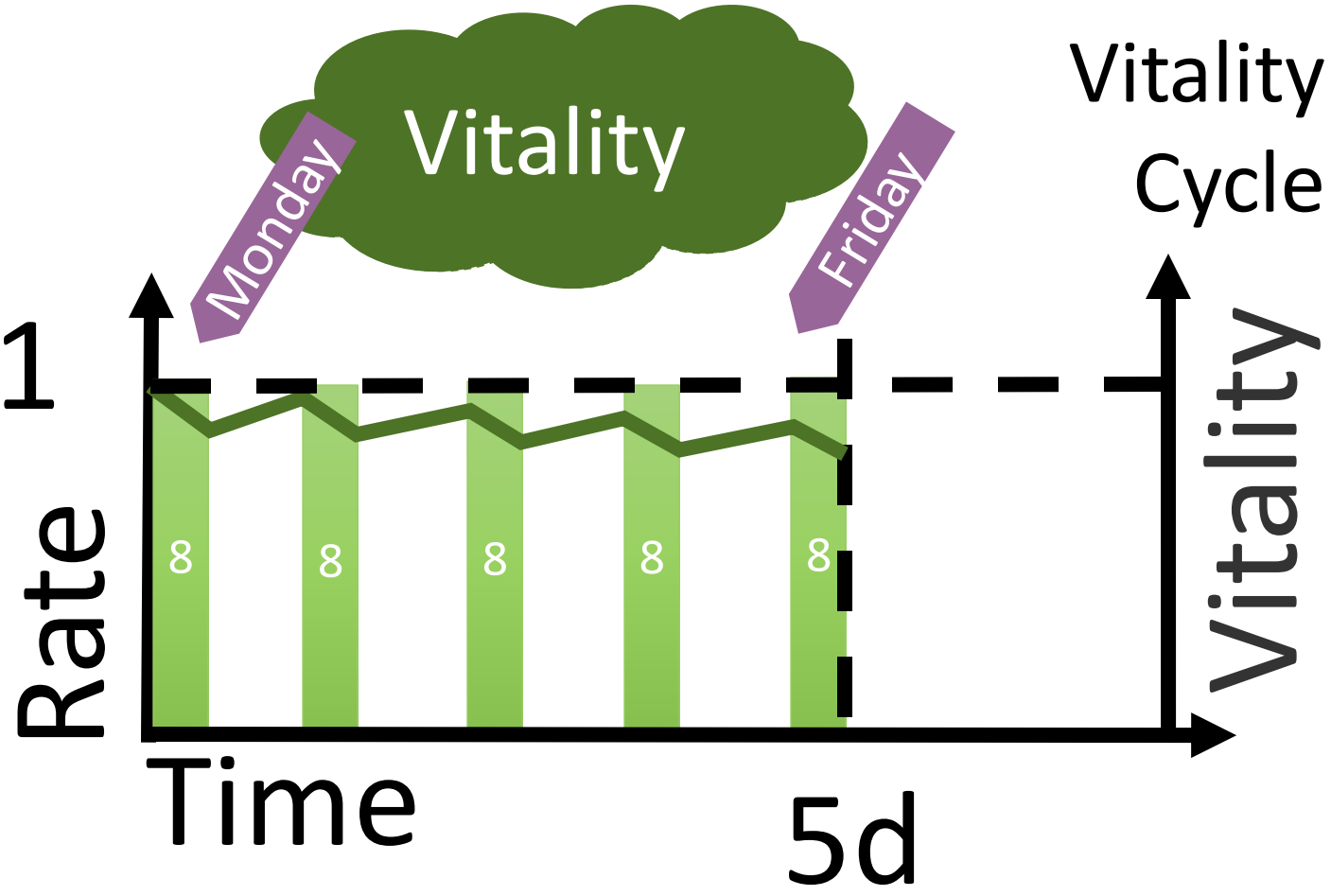
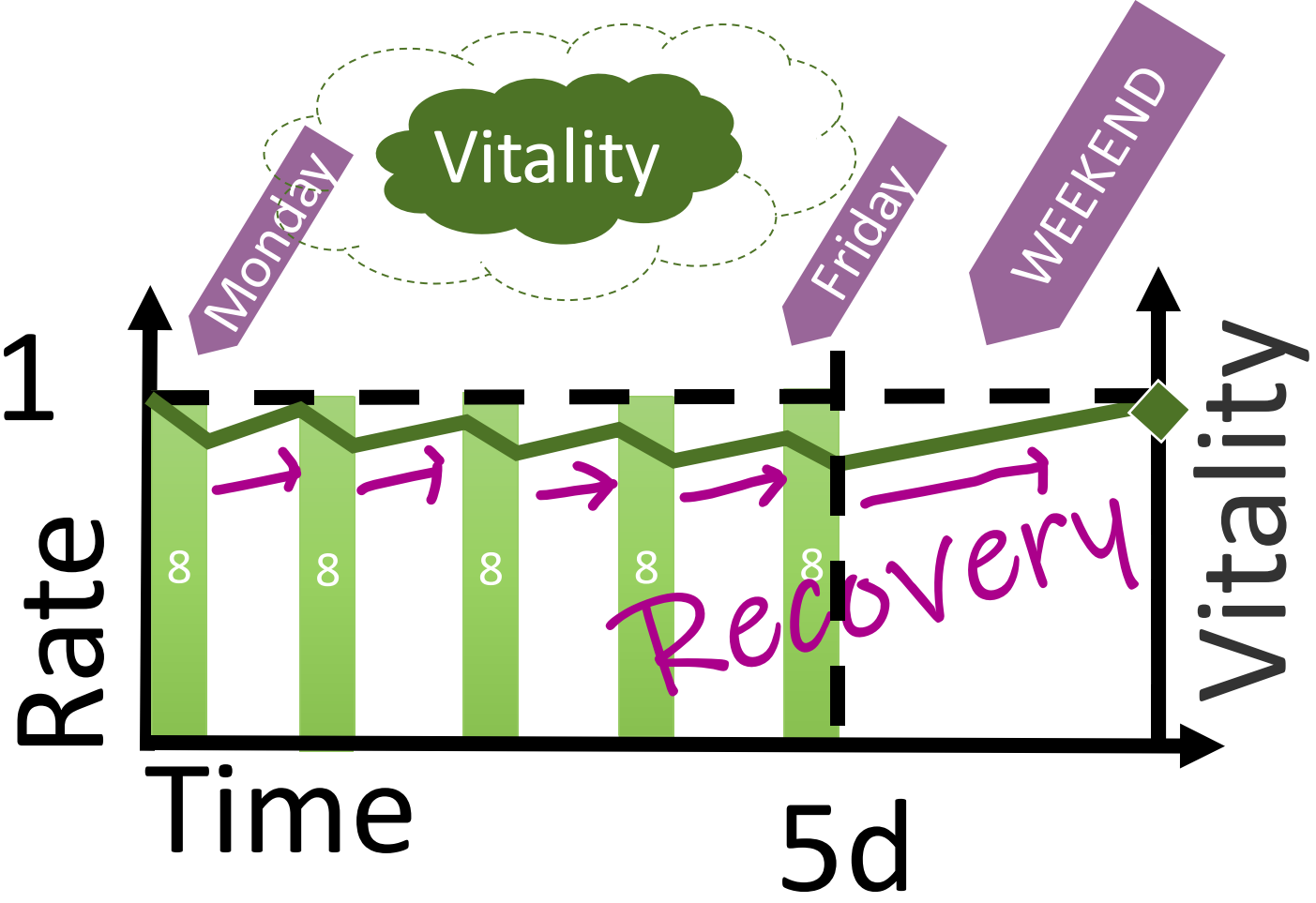
A2. VITALITY AND WELLBEING

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

x1



x1



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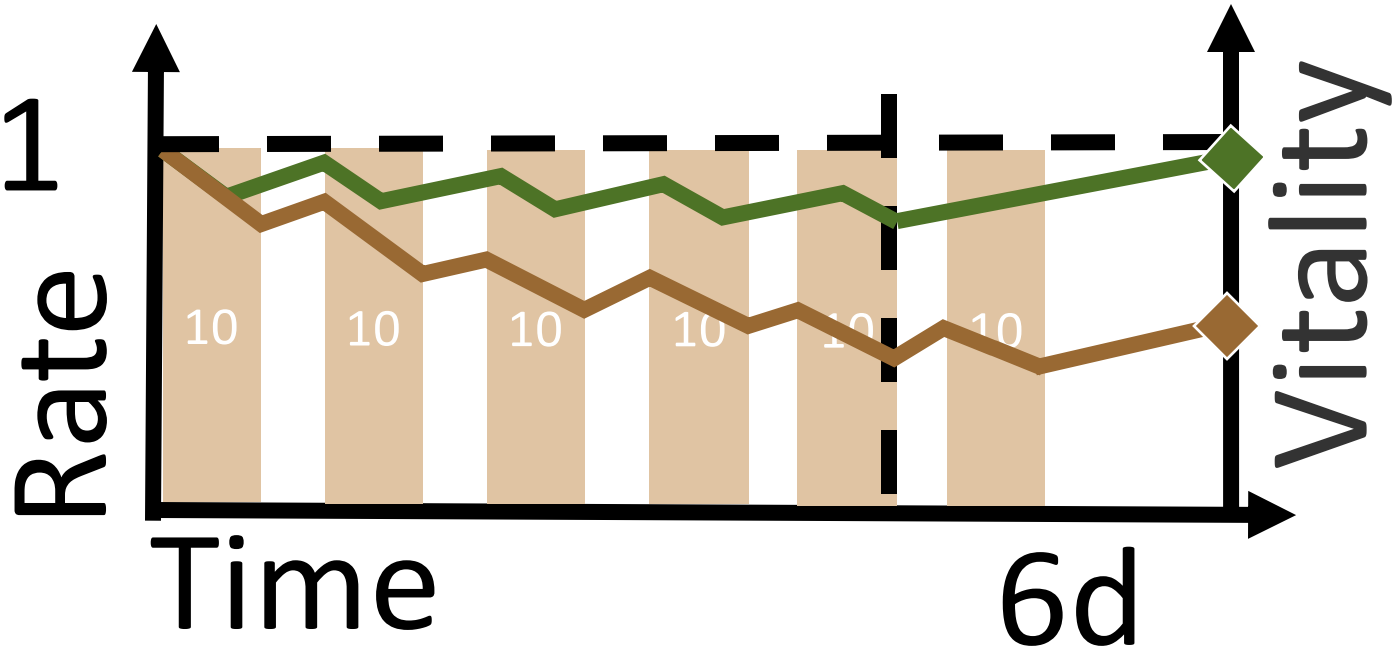
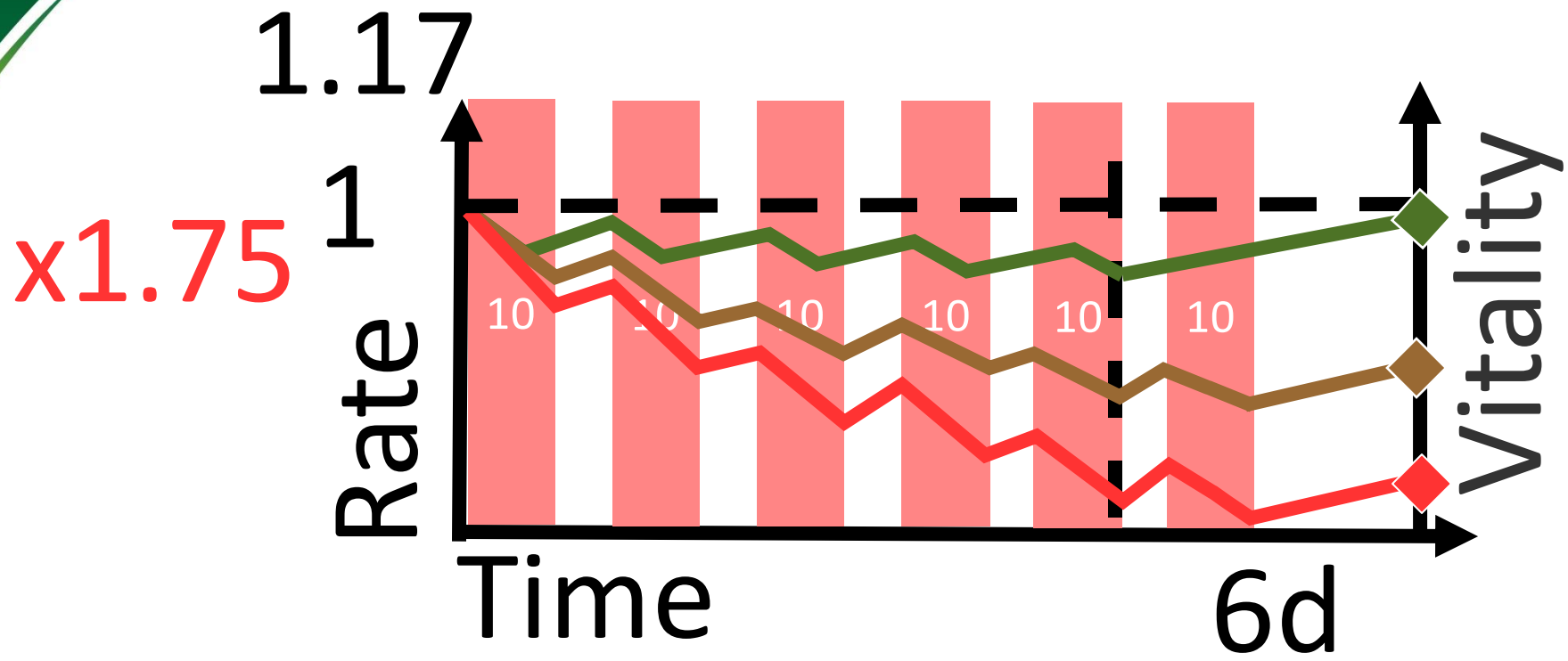
Vitality Drawdown

x1.5



*Indicative Only

Vitality Burnout



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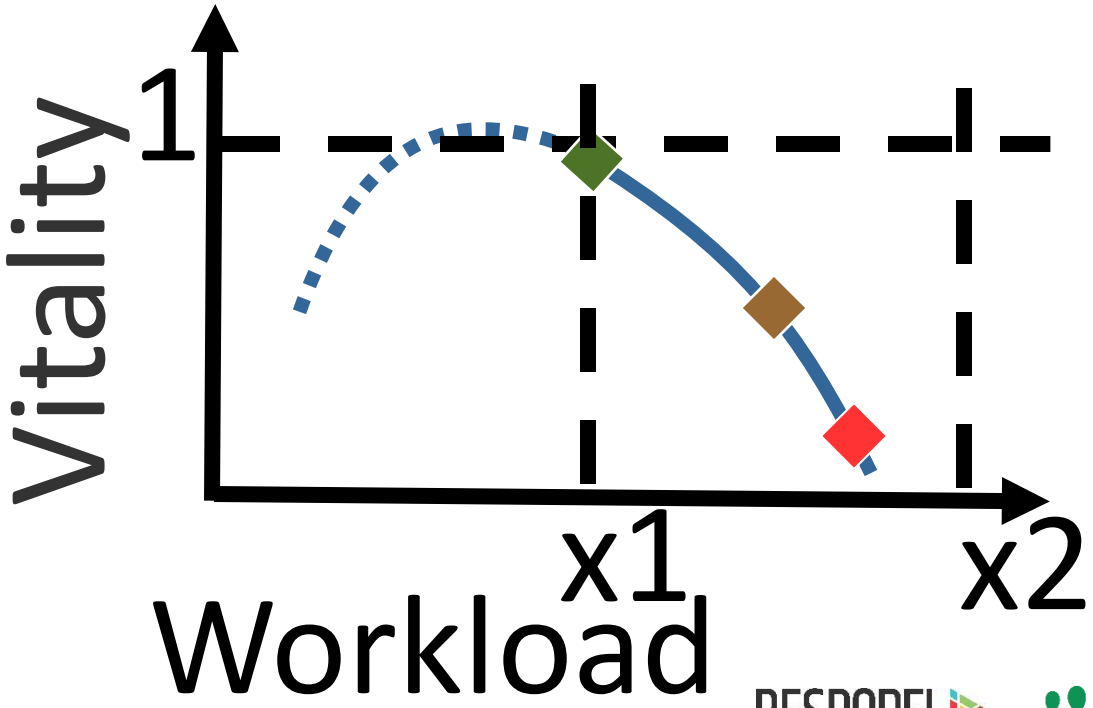
Vitality from Workload



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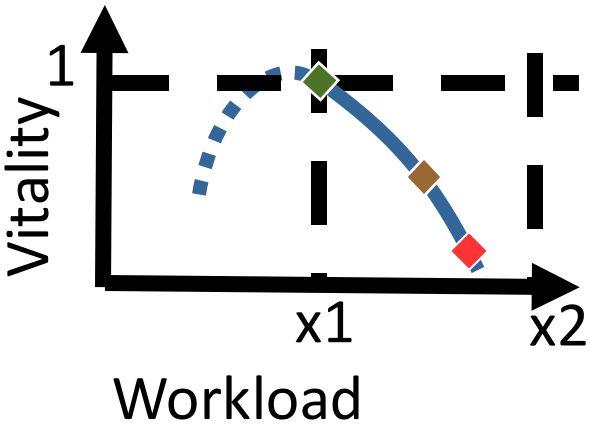
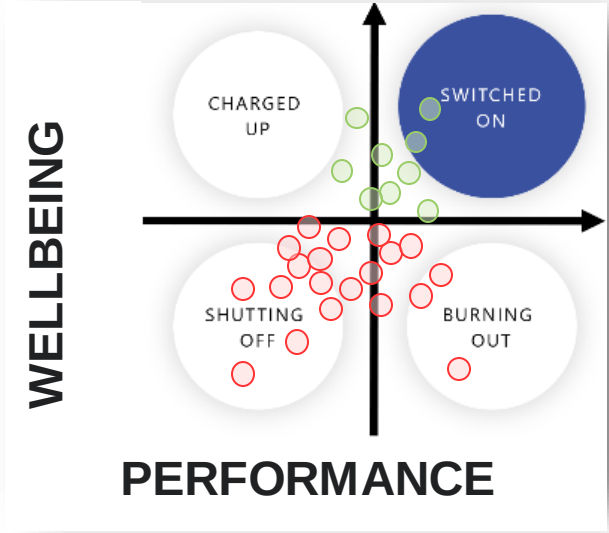
Wellbeing from Workload





Ref.: www.bennybuttom.com

Wellbeing from Workload

WORKLOAD

JOB DEMAND-RESOURCE THEORY

DEMAND

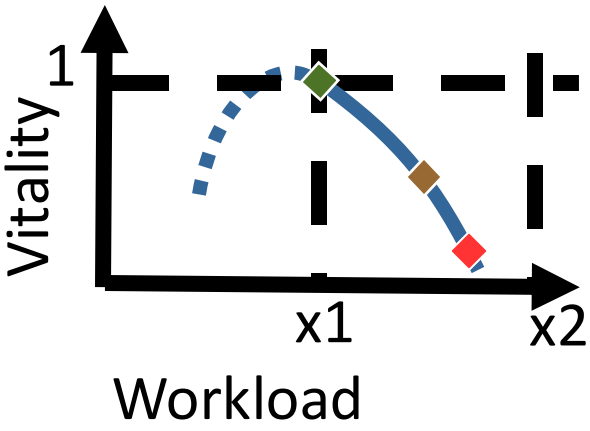
Strain

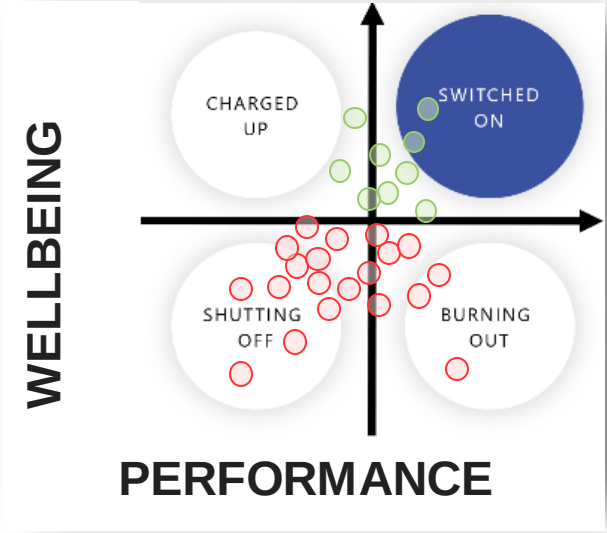
- work pressure
- emotional demands

RESOURCES

Motivation

- career opportunities
- supervisor coaching
- role-clarity
- autonomy





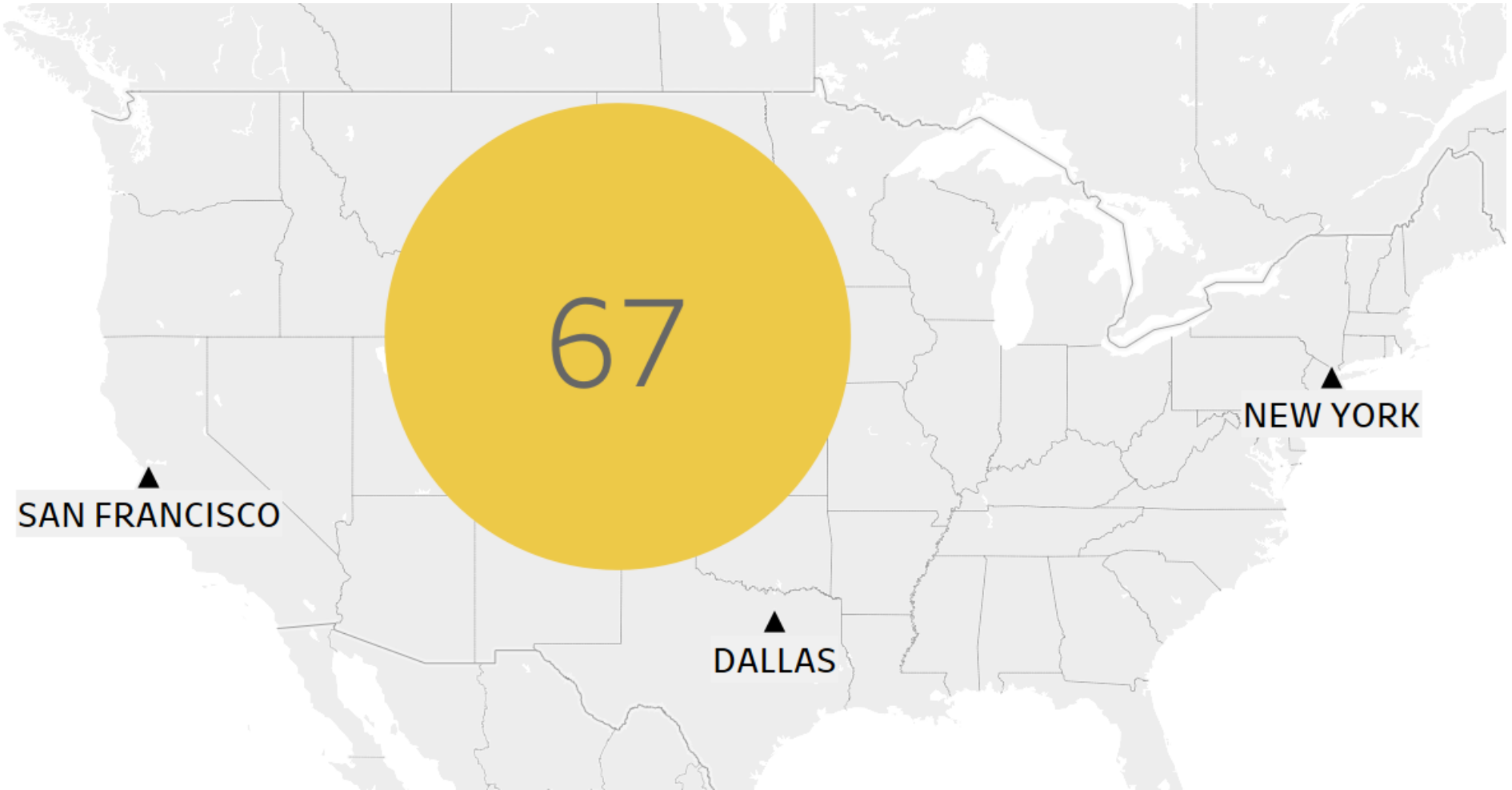
Ref.: www.bennybuttom.com

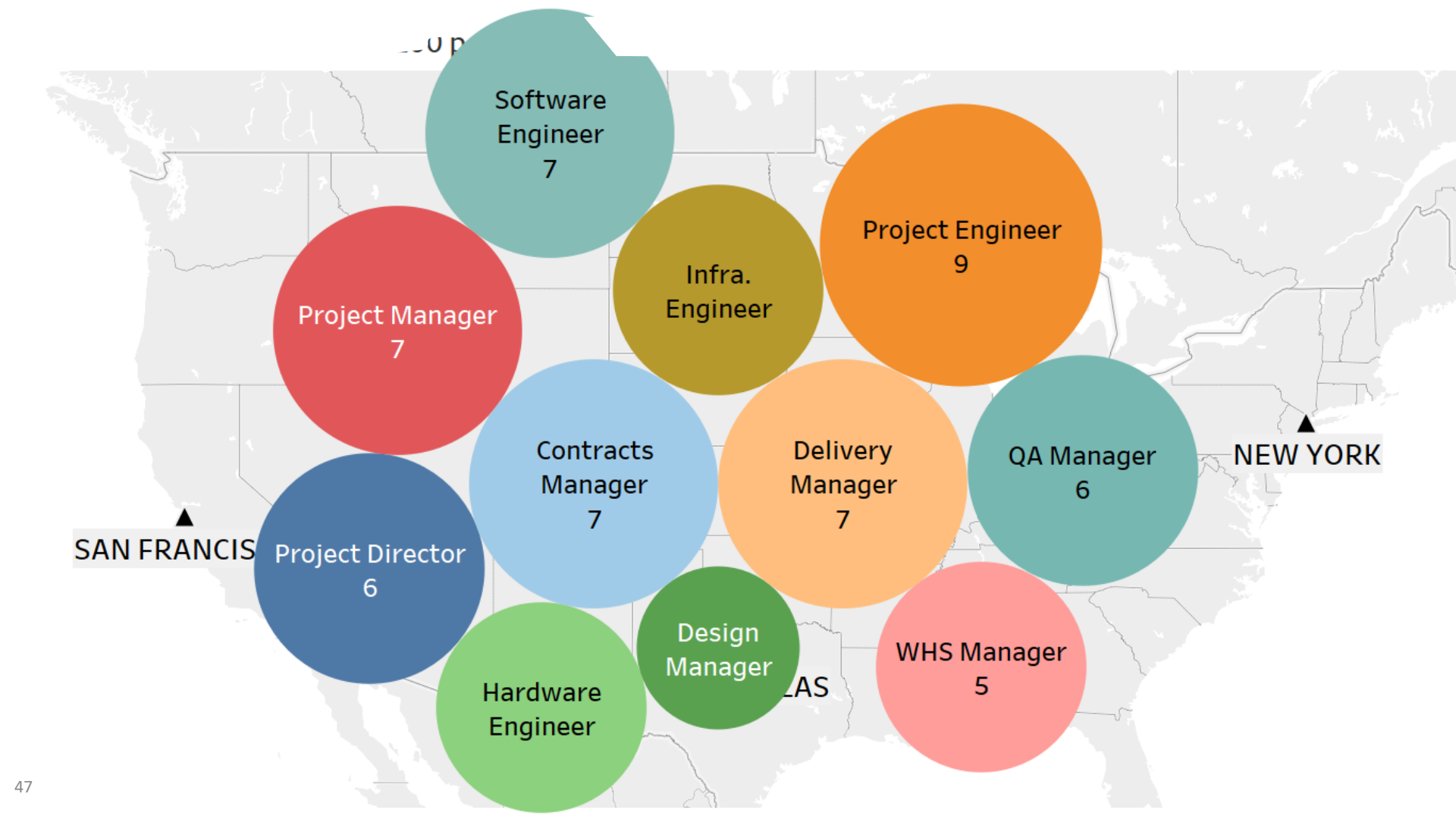
Ref.: Wikipdedia - Job Demand-Resource Theory

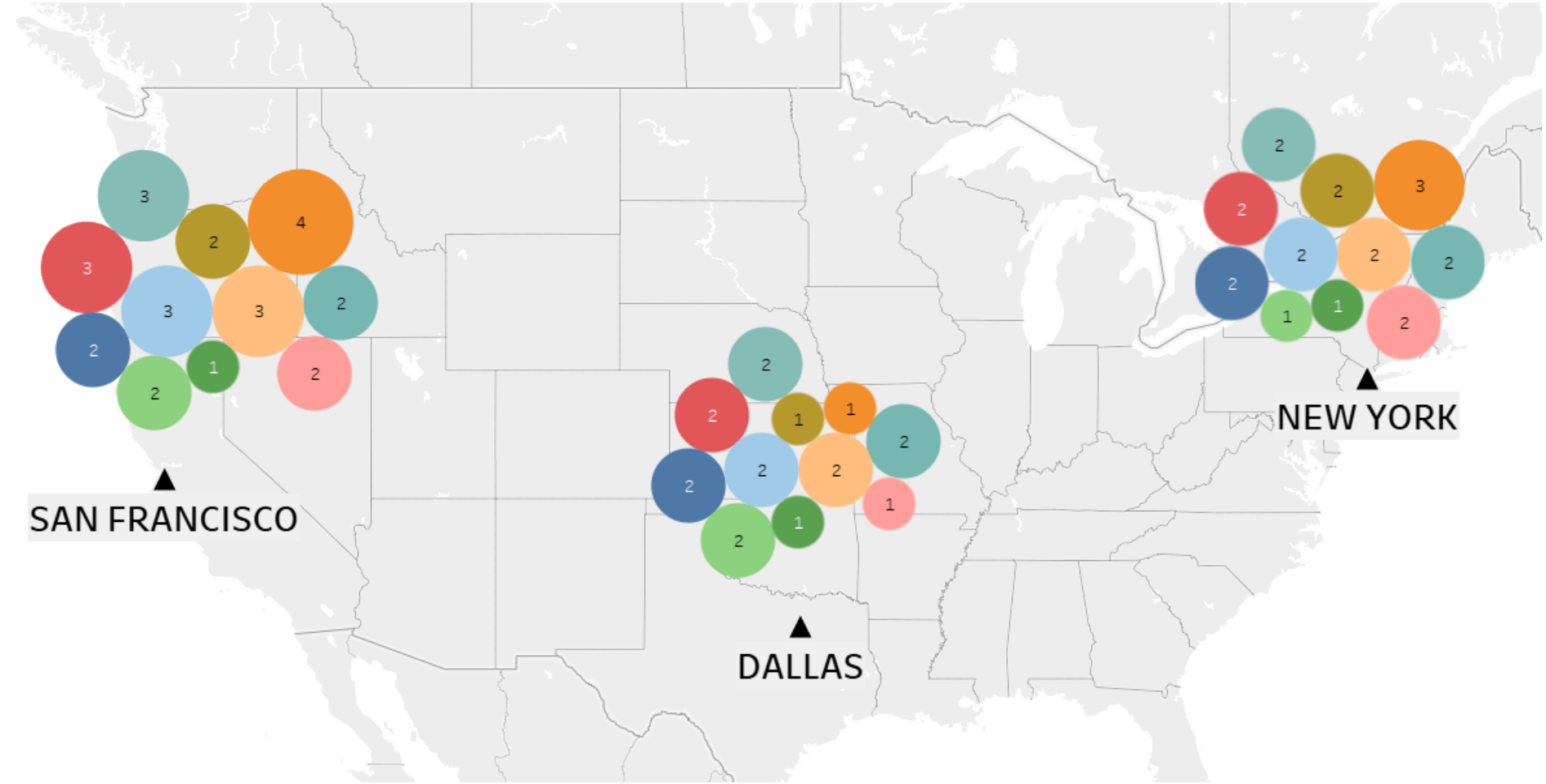
A3. THE WHOLE WORKFORCE

Workforces in Workforces

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS


67
NEW YORK
SAN FRANCISCO
DALLAS


Software Engineer 7
Project Engineer 9
Infra. Engineer
Project Manager 7
Contracts Manager 7
Delivery Manager 7
QA Manager 6
NEW YORK
SAN FRANCIS
Project Director 6
Design Manager
WHS Manager 5
Hardware Engineer

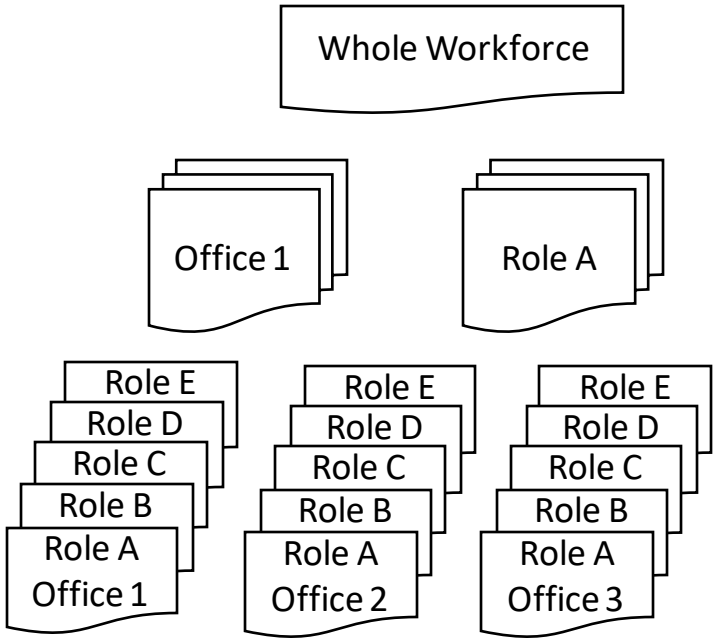

SAN FRANCISCO
DALLAS
NEW YORK

Workforce Levels

LAKE Level

POND Level
(Offices + Roles)

POOL Level



A3. RESOURCE DECISIONS

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

Manager's Responsibility

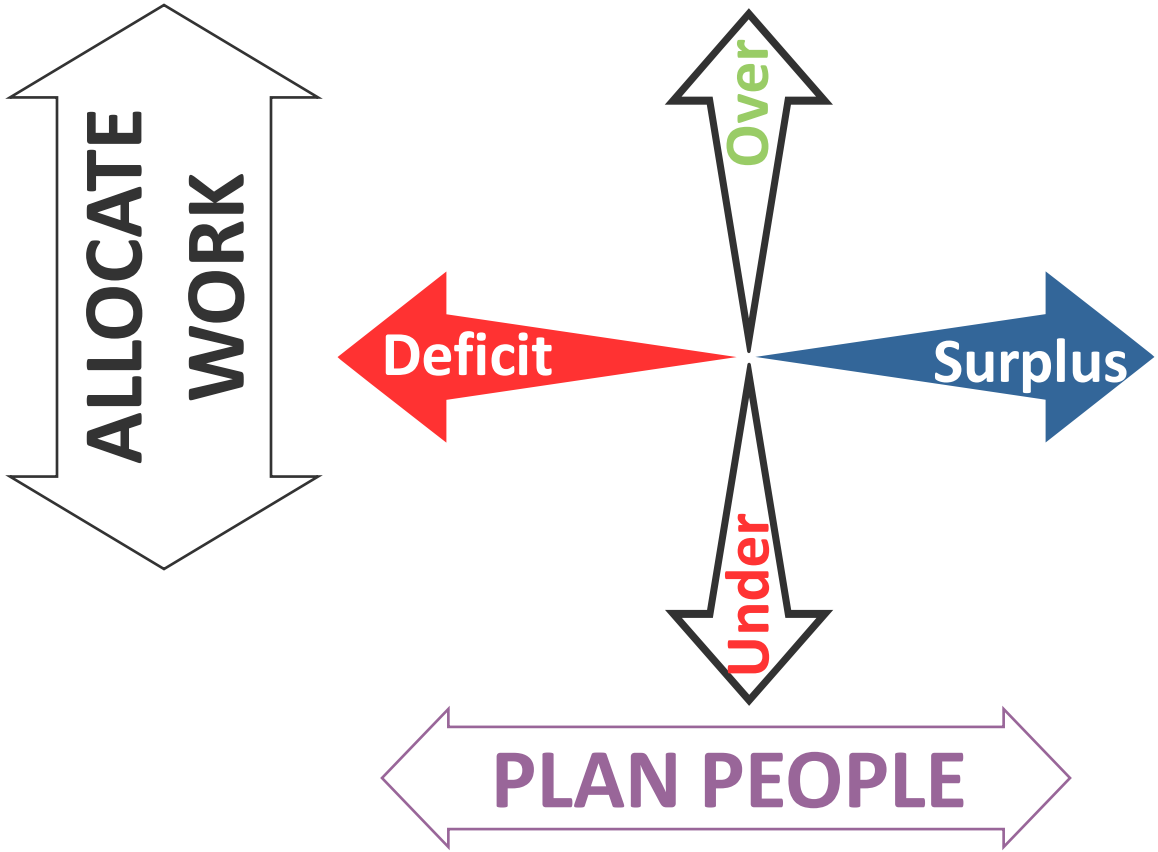
1.Plan

increase or reduce people or work

2. Allocate

people to work, overtime

Poor Resource Management



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Solve **Gaps** in Effort

NEED

Role	Project	Jan	Feb	Mar	Apr	May	Jun
Project Engineer	CA-054	1.0	1.0	1.0	1.0	1.0	1.0
	CA-059	2.0	2.0	3.0	3.0	3.0	2.0
	CA-067						
	CA-069		1.0	1.0	1.0	1.0	1.0
	Total	3.0	4.0	5.0	5.0	5.0	6.0
Project Manager	CA-054	1.0	1.0	1.0	1.0	1.0	1.0
	CA-059	1.0	1.0	1.0	1.0	1.0	1.0
	CA-067			1.0	1.0	1.0	1.0

HAVE

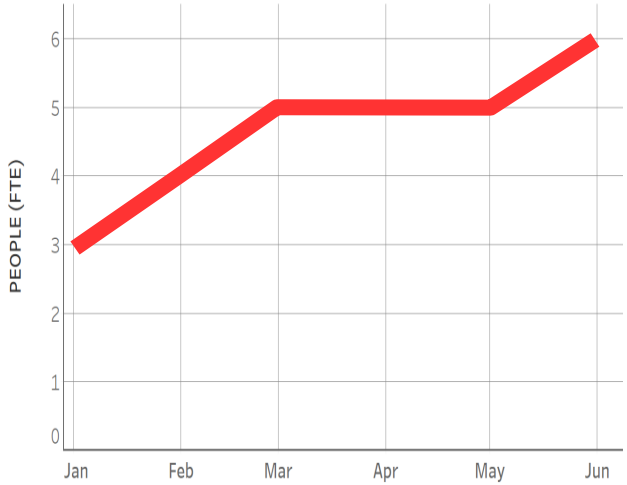
NEED

Jan	Feb	Mar	Apr	May	Jun
3.0	4.0	5.0	5.0	5.0	6.0

Capacity By Role

			Jan	Feb	Mar	Apr	May	Jun
Project Engineer	BR	Keny Macdo	1.0	1.0	1.0	1.0	1.0	1.0
		Levi Barr	1.0	1.0	1.0	1.0	1.0	1.0
		Total	2.0	2.0	2.0	2.0	2.0	2.0
	ME	Alison Conner	1.0	1.0	1.0	1.0	1.0	1.0
		Clive Culter	1.0	1.0	1.0	1.0	1.0	1.0
		Lucy Bell	1.0	1.0	1.0	1.0	1.0	1.0
		Randall Hammond	1.0	1.0	1.0	1.0	1.0	1.0
		Total	4.0	4.0	4.0	4.0	4.0	4.0
	SY	Dianne Lawson	1.0	1.0	1.0	1.0	1.0	1.0
		Ellsworth Butler	1.0	1.0	1.0	1.0	1.0	1.0
		Paul Pink	1.0	1.0	Leave	1.0	1.0	1.0
		Total	3.0	3.0	3.0	3.0	3.0	3.0
	Total		9.0	9.0	9.0	9.0	9.0	9.0
Project Manager	BR	Lynne Matthews	1.0	1.0	1.0	1.0	1.0	1.0
		Sadie Fleming	1.0	1.0	1.0	1.0	1.0	1.0
		Total	2.0	2.0	2.0	2.0	2.0	2.0
	ME	Dana Lee	1.0	1.0	1.0	1.0	1.0	1.0
		Jean Wilson	1.0	1.0	1.0	1.0	1.0	1.0
		Lavern Daniels	1.0	1.0	1.0	1.0	1.0	1.0
		Total	3.0	3.0	3.0	3.0	3.0	3.0
	SY	Brian Mosley	1.0	1.0	1.0	1.0	1.0	1.0

2.0



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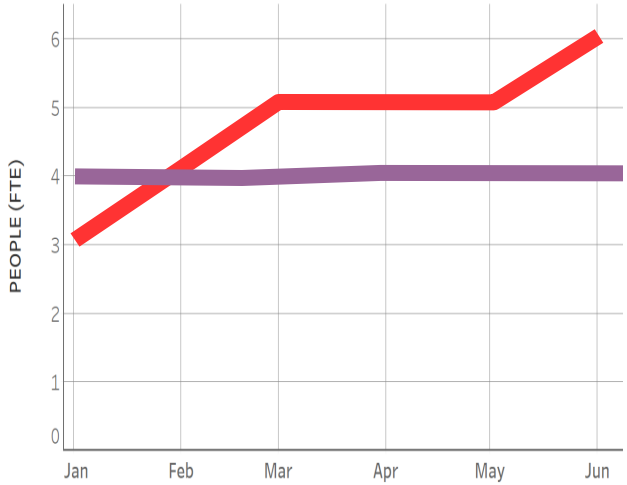
USE

NEED

HAVE

Resource Name	Project	Jan	Feb	Mar	Apr	May	Jun
Alison Conner	CA-054	1.0	1.0	1.0			
	CA-x1						2.0
	Total	1.0	1.0	1.0			2.0
Clive Culter	CA-059	1.0	1.0	1.0	1.0	1.0	1.0
	Total	1.0	1.0	1.0	1.0	1.0	1.0
Lucy Bell	CA-054						1.0
	CA-069		1.0	1.0	1.0	1.0	1.0
	Total		1.0	1.0	1.0	1.0	2.0
Randall Hammond	CA-057						
	CA-059	1.0	1.0	1.0	1.0	1.0	1.0
	CA-067						
	Total	1.0	1.0	1.0	1.0	1.0	1.0
Grand Total		3.0	4.0	4.0	3.0	3.0	6.0

Jan	Feb	Mar	Apr	May	Jun
3.0	4.0	5.0	5.0	5.0	6.0
4.0	4.0	4.0	4.0	4.0	4.0



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NEED

HAVE

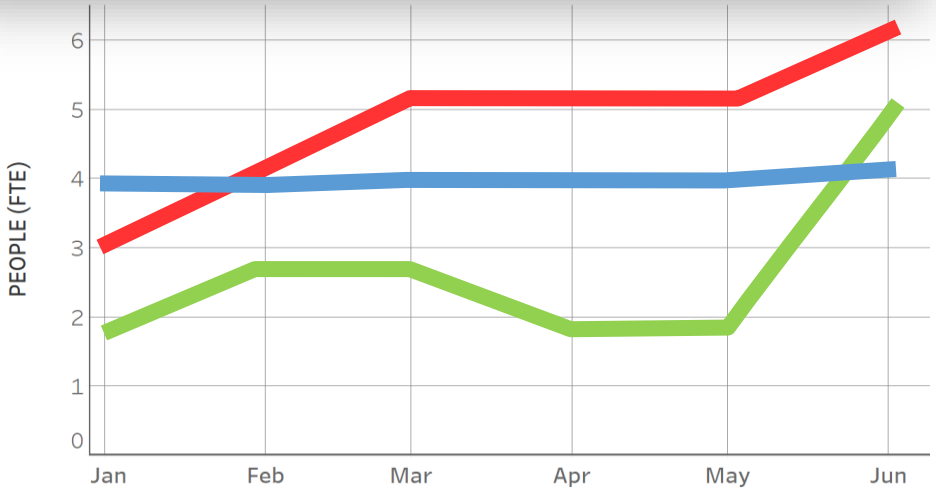
USE

DEMAND

CAPACITY

ALLOCATION

Jan	Feb	Mar	Apr	May	Jun
3.0	4.0	5.0	5.0	5.0	6.0
4.0	4.0	4.0	4.0	4.0	4.0
3.0	4.0	4.0	3.0	3.0	6.0



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NEED

HAVE

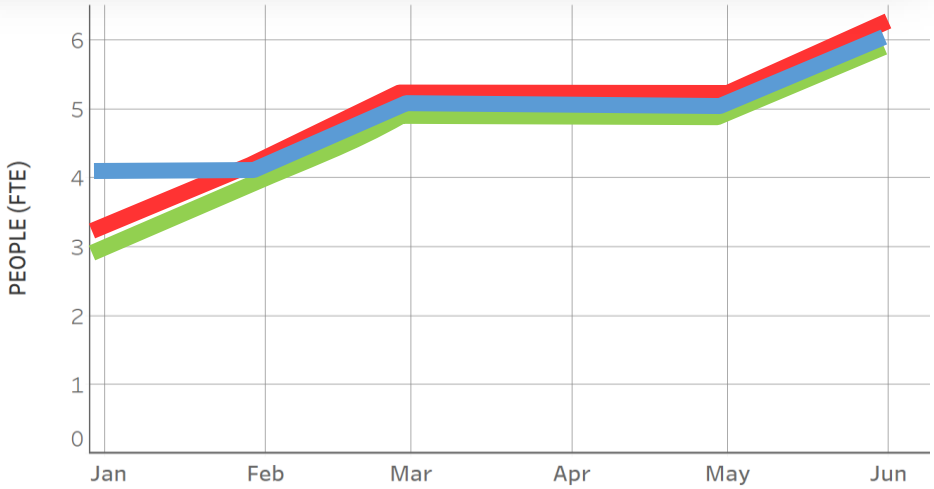
USE

DEMAND

CAPACITY

ALLOCATION

Jan	Feb	Mar	Apr	May	Jun
3.0	4.0	5.0	5.0	5.0	6.0
4.0	4.0	4.0	4.0	4.0	4.0
3.0	4.0	4.0	3.0	3.0	6.0



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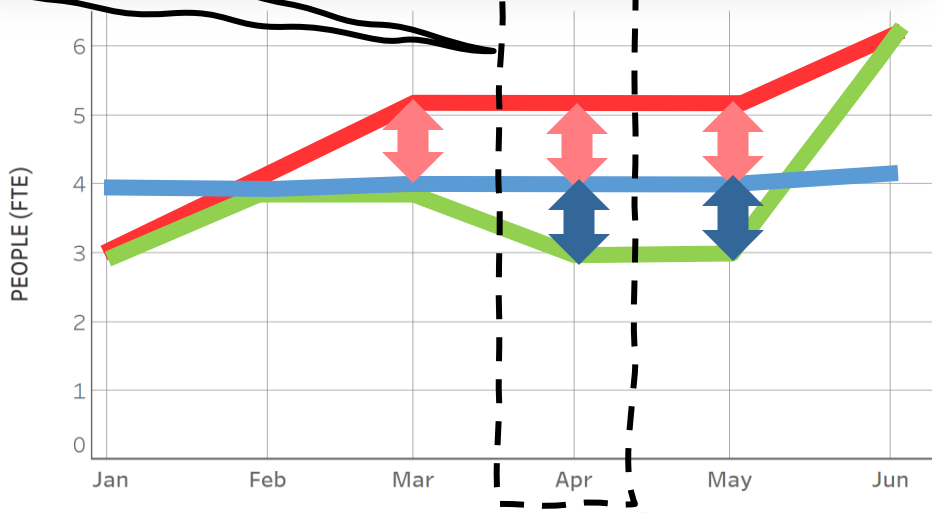
Project Eng.
in
San Fran.

Jan	Feb	Mar	Apr	May	Jun
3.0	4.0	5.0	5.0	5.0	6.0
4.0	4.0	4.0	4.0	4.0	4.0
3.0	4.0	4.0	3.0	3.0	6.0



DEMAND

CAPACITY

ALLOCATION

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Real Questions

1. Can we **deliver?**
2. Will we be **profitable?**
3. Will our **people** be okay?
4. How do we **balance results?**

Part B ANALYSIS

Get insights for better workforce decisions

Levels of Analysis

B1. Forecasts

B2. Interventions

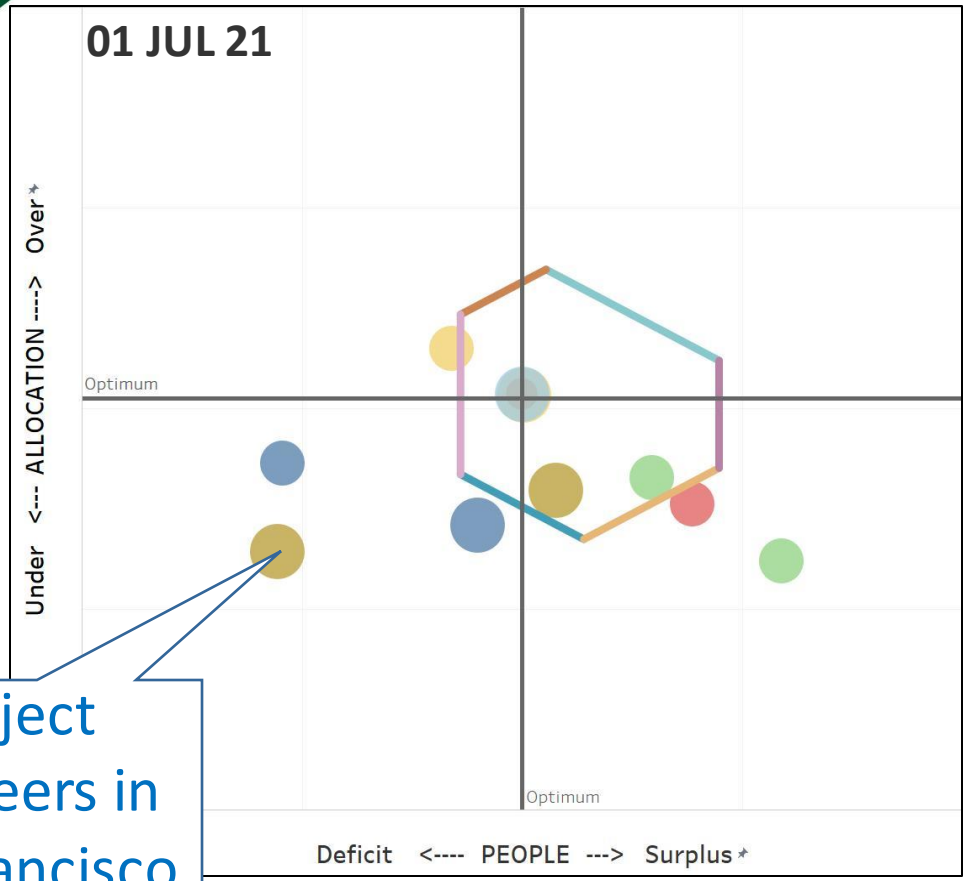
B3. Results

B1 Forecast

B.1.1 EFFORT OUTCOME WINDOW

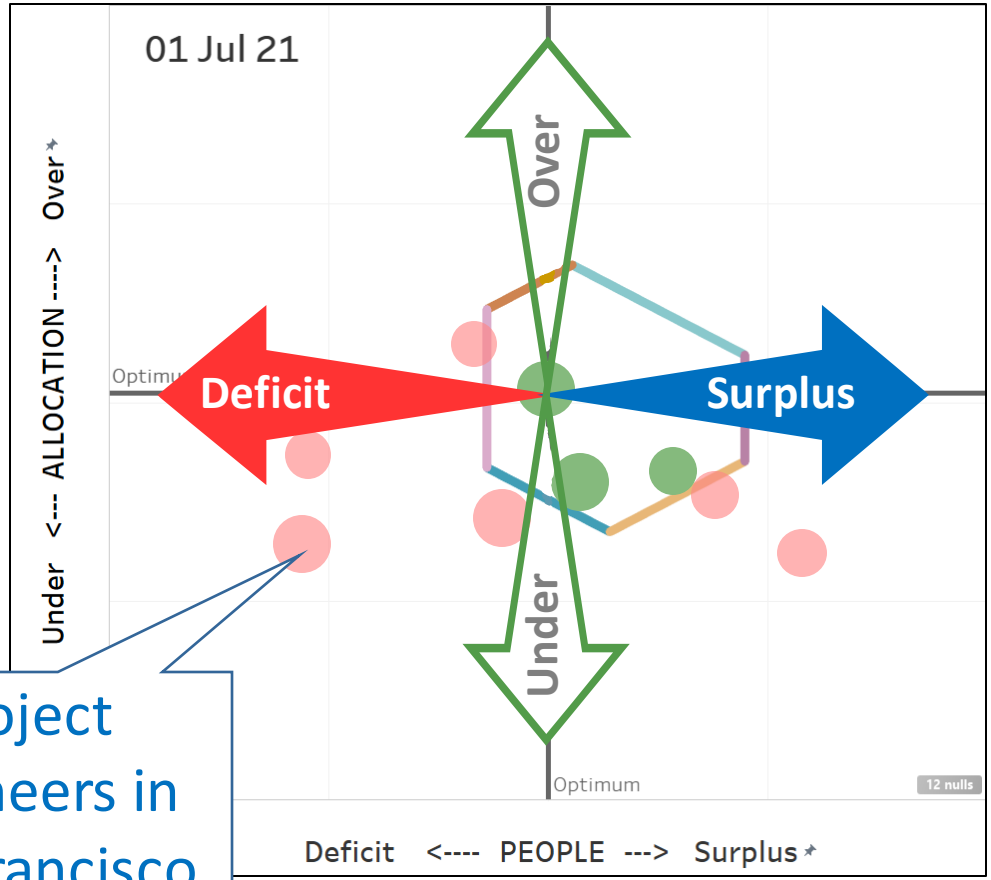
At glance understand your workforces' effectiveness

EOW



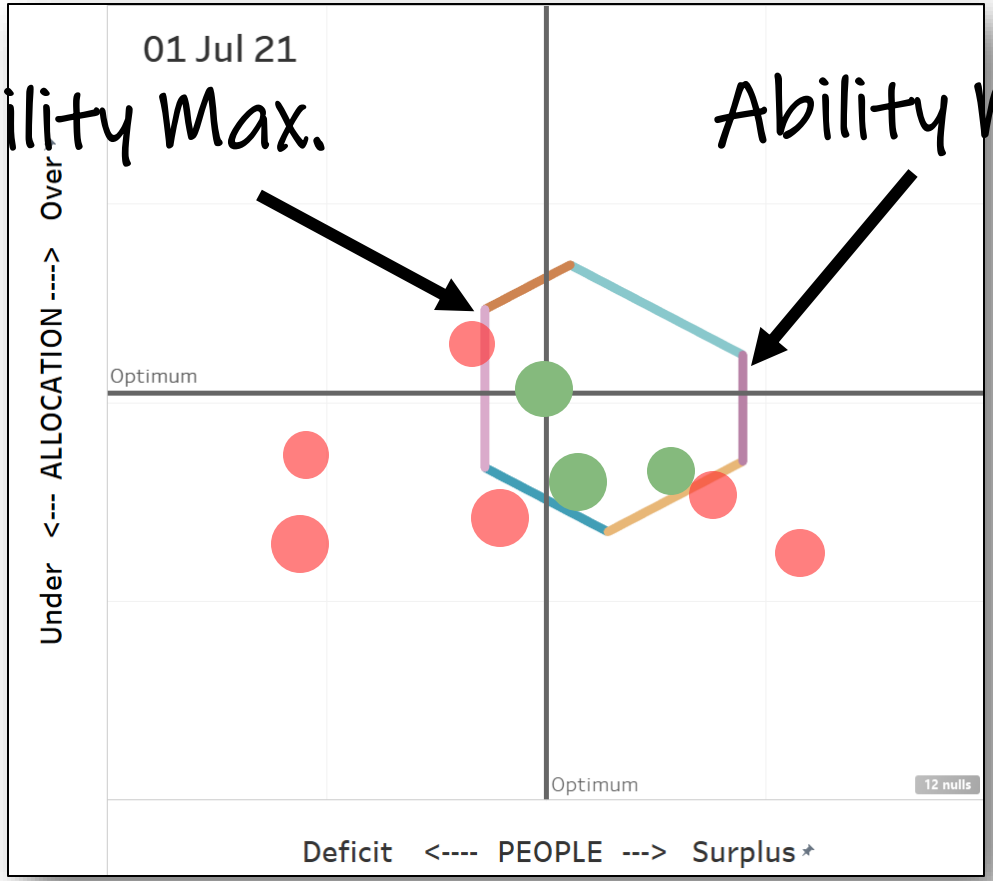
Project engineers in San Francisco

IMPLICATIONS



Project engineers in San Francisco

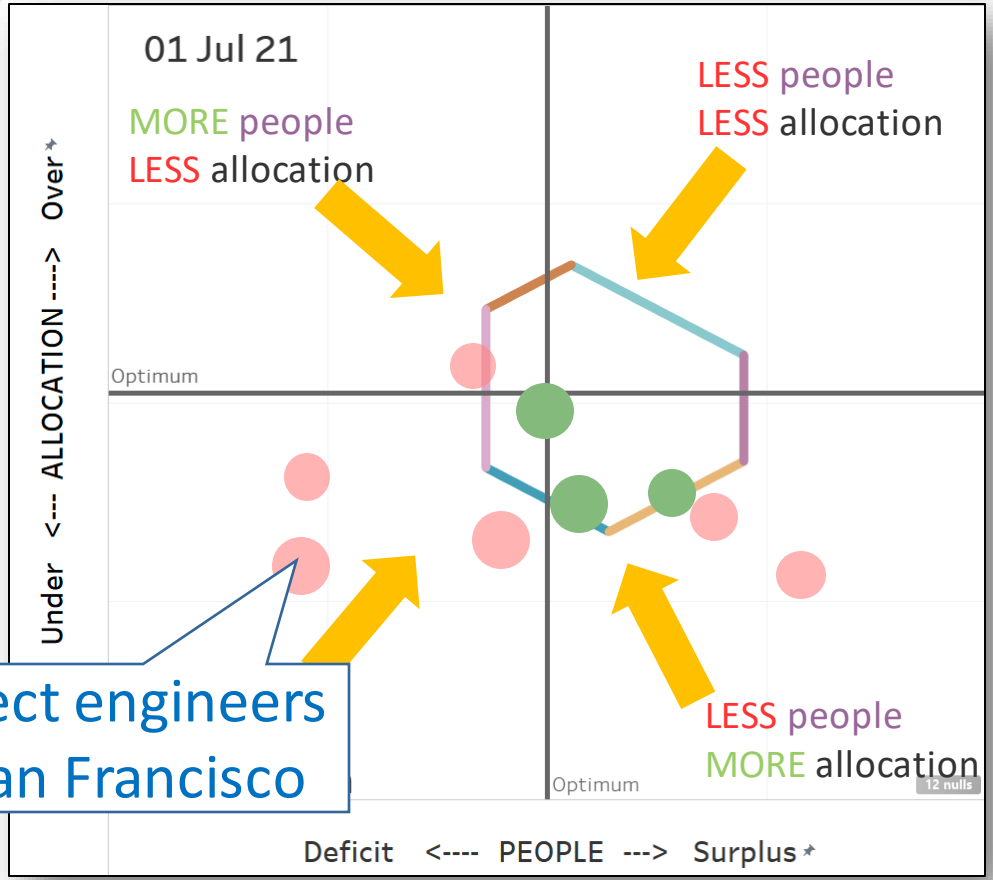
Outliers



Outcome Tolerances

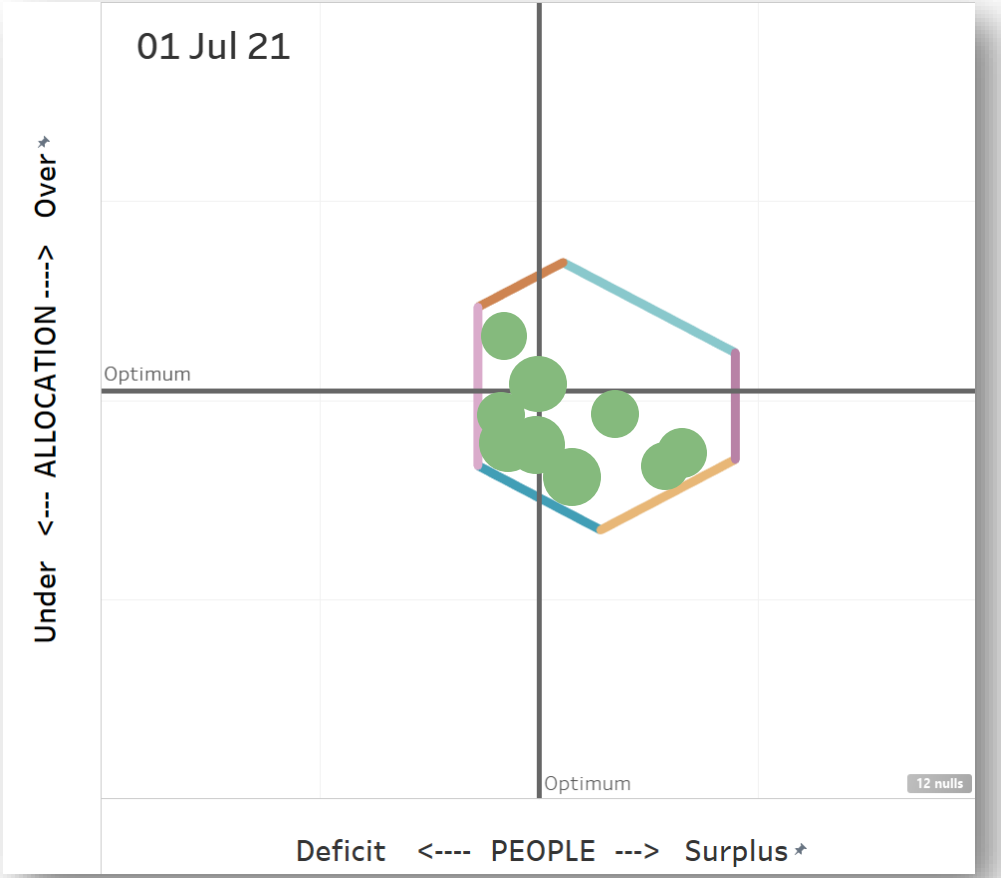
ABILITY	Max.	1.4
ABILITY	Min.	0.9
EFFICIENCY	Max.	1.2
EFFICIENCY	Min.	0.75
INTENSITY	Max.	1.2
INTENSITY	Min.	0.8

INTERVENTIONS



Project engineers in San Francisco

IMPROVED


01 Jul 21
Under <--- ALLOCATION ---> Over
Optimum
Optimum
12 nulls
Deficit <---- PEOPLE ---> Surplus

B1 FORECASTS

B1.1 OUTCOMES

Know when and where your workforce will be ineffective

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

Outcome Forecasts

ABILITY to deliver services or products

EFFICIENCY of people used (utilization)

INTENSITY productivity of people

Outcome Ratios

$ABILITY_p$ (Ap) = Capacity / Demand

$EFFICIENCY_i$ (Ei) = Allocation / Capacity

$INTENSITY_i$ (Ii) = Demand / Allocation

p = Potential, i = Intent

Effort Translated To Outcomes

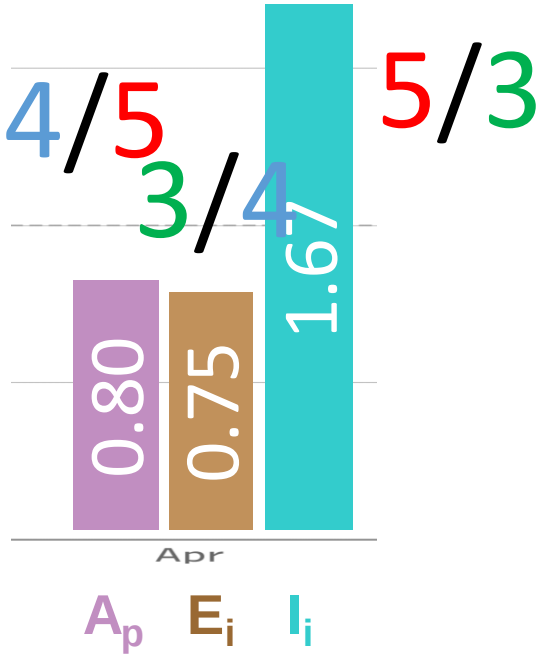
EFFORT

D=5

C=4

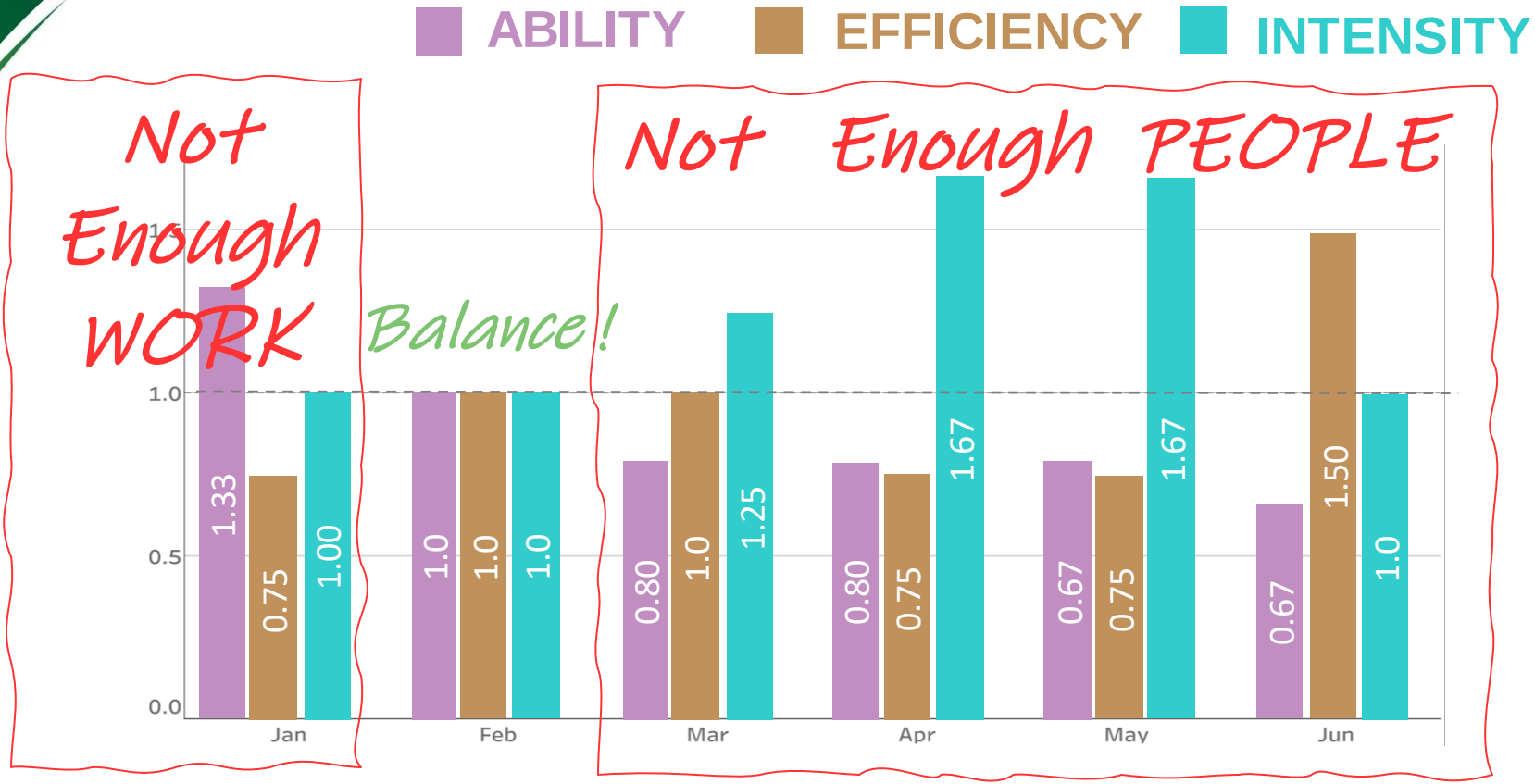
A=3

OUTCOMES



ABILITY EFFICIENCY INTENSITY

Outcomes Period By Period

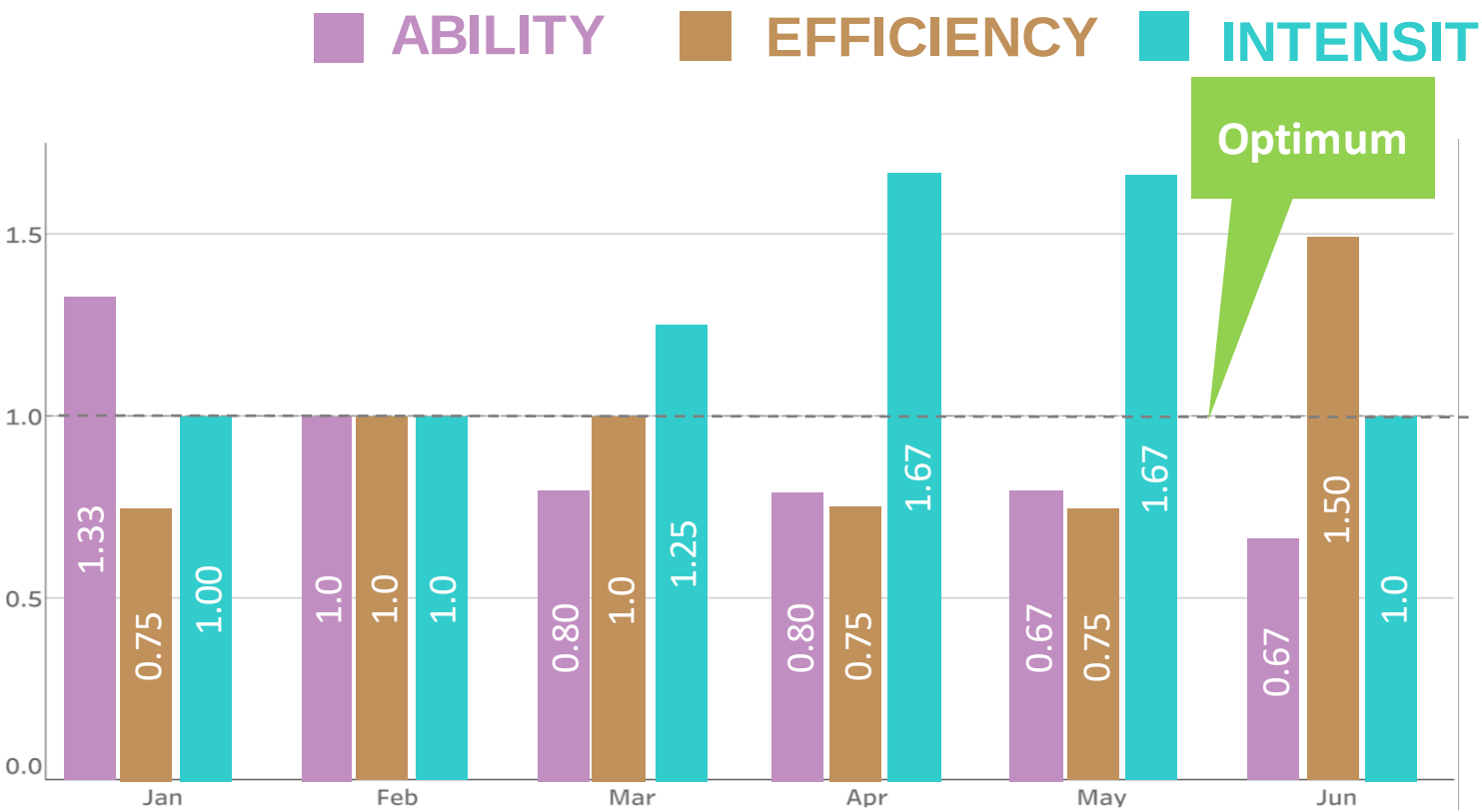


B2.2 FORECAST INEFFICIENCIES

Roll up and drill down into your workforce inefficiencies

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

Outcomes By Period

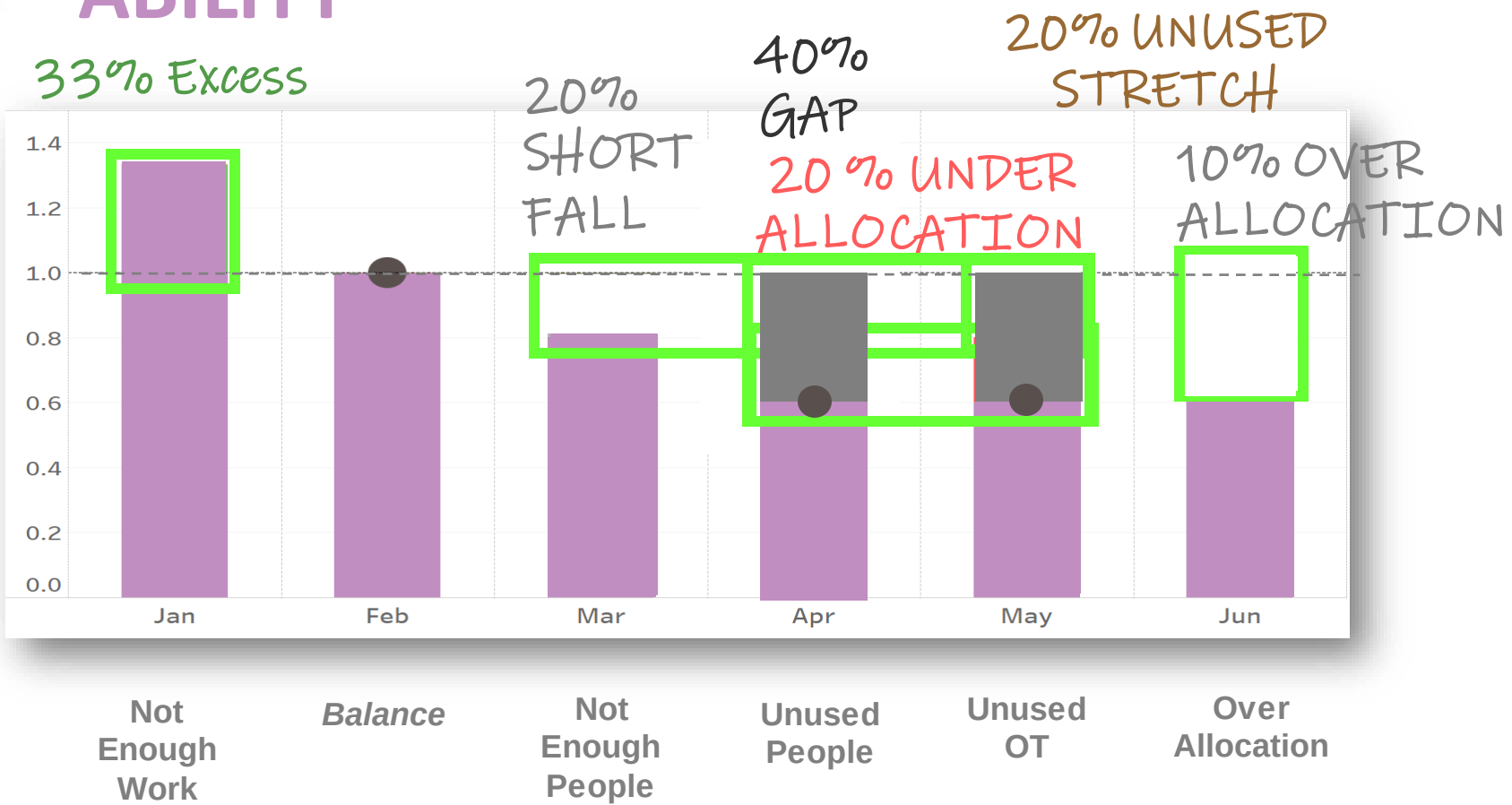


RESRODEL
The Resource Role Model

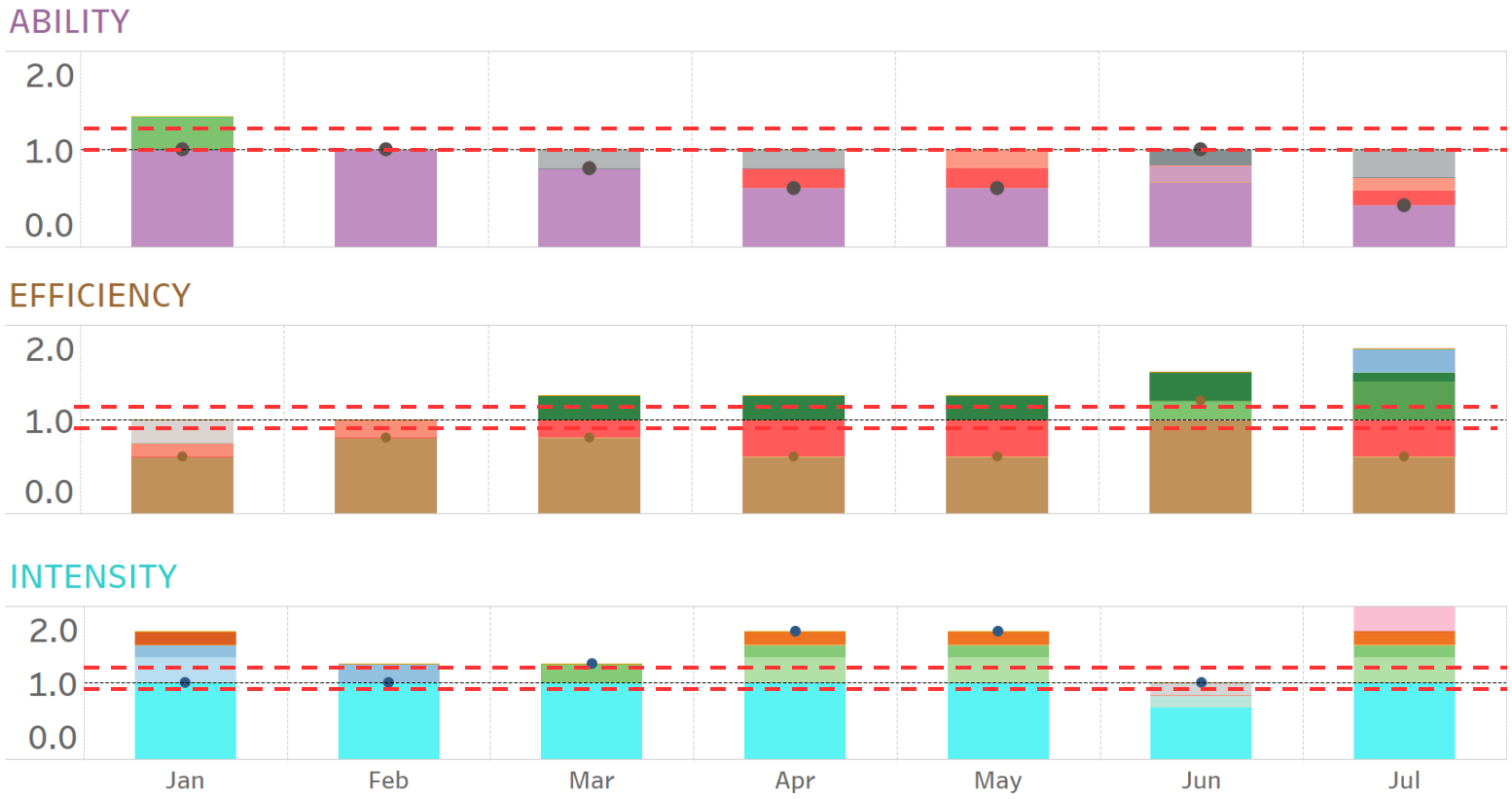
Project Controls EXPO
Melbourne, Australia

Inefficiencies

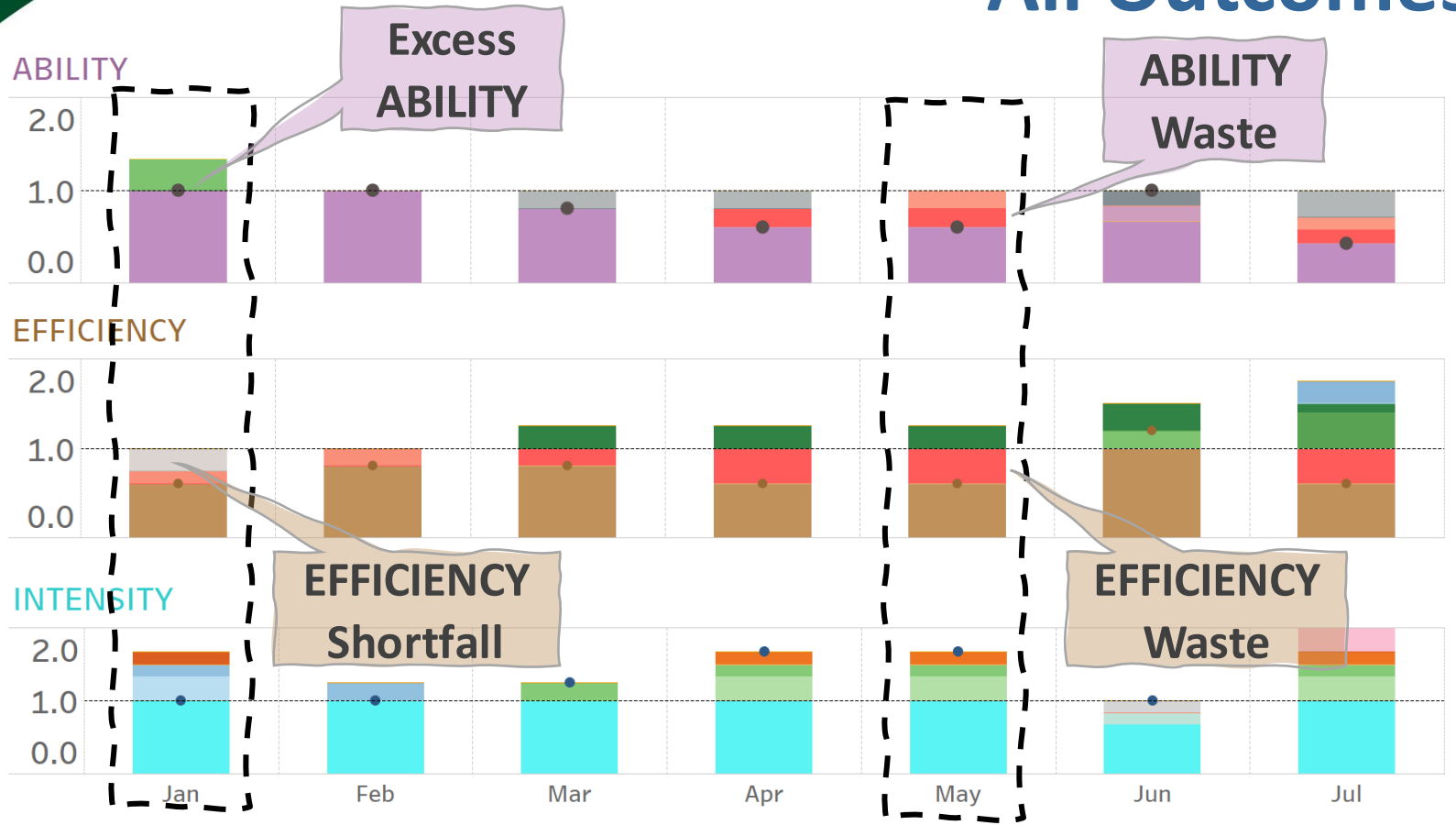
ABILITY



All Outcomes



All Outcomes



RESRODEL
The Resource Role Model

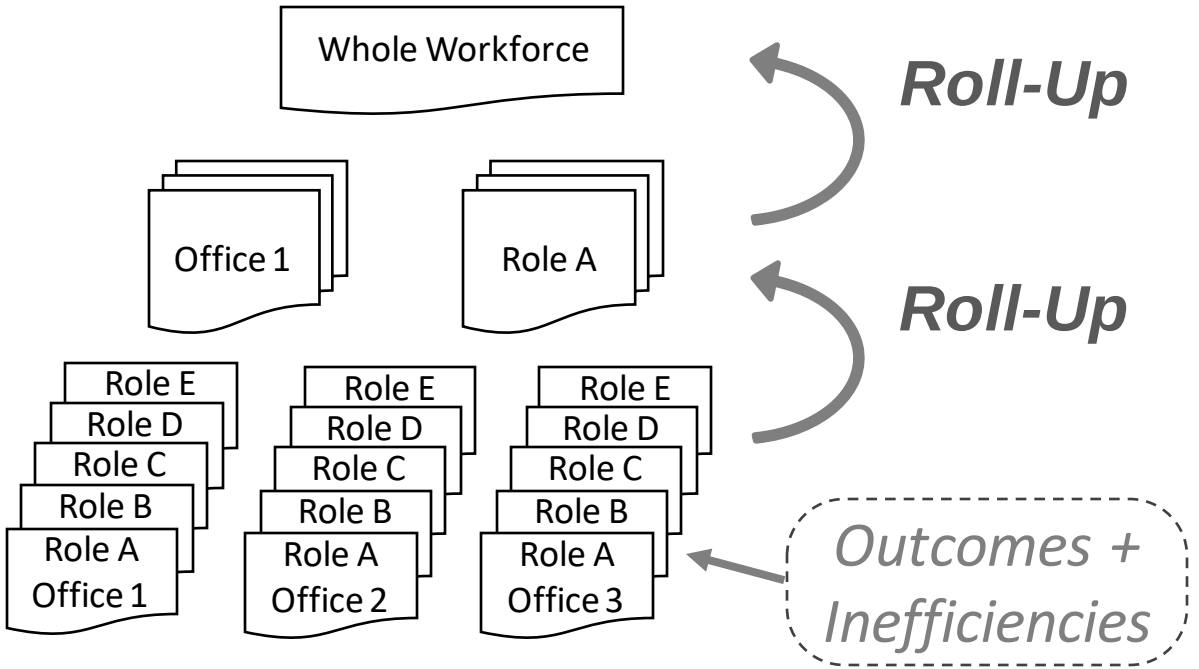
Project Controls EXPO
Melbourne, Australia

Roll Up

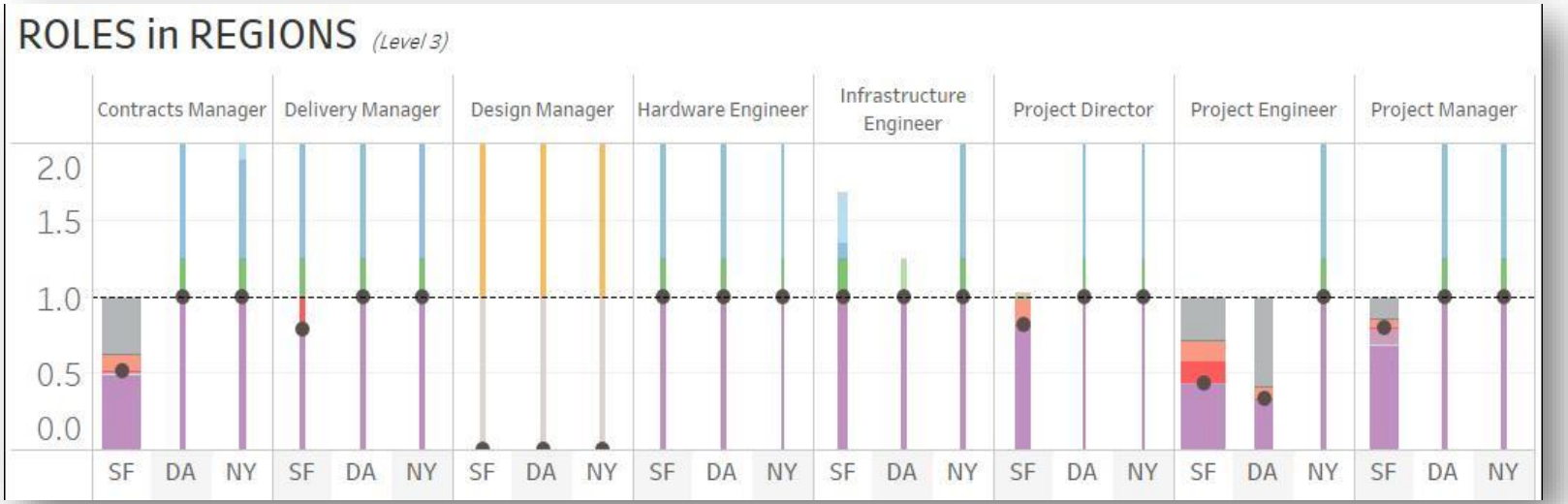
LAKE Level

POND Level
(Offices + Roles)

POOL Level



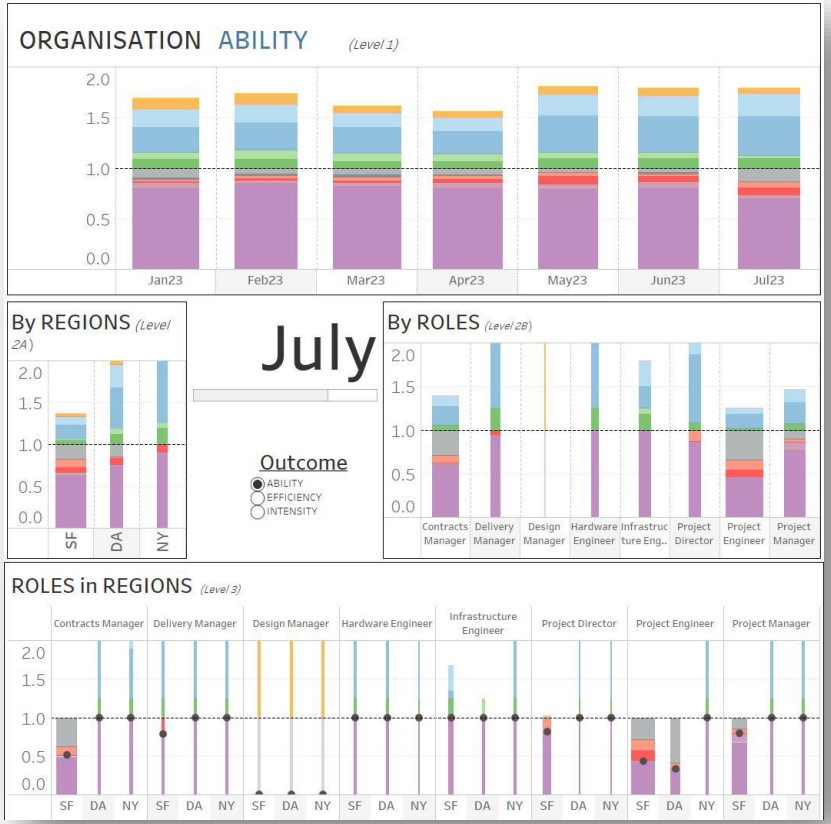
All Pools



Roll Up

Roll-Up

Roll Up



Roll-Up

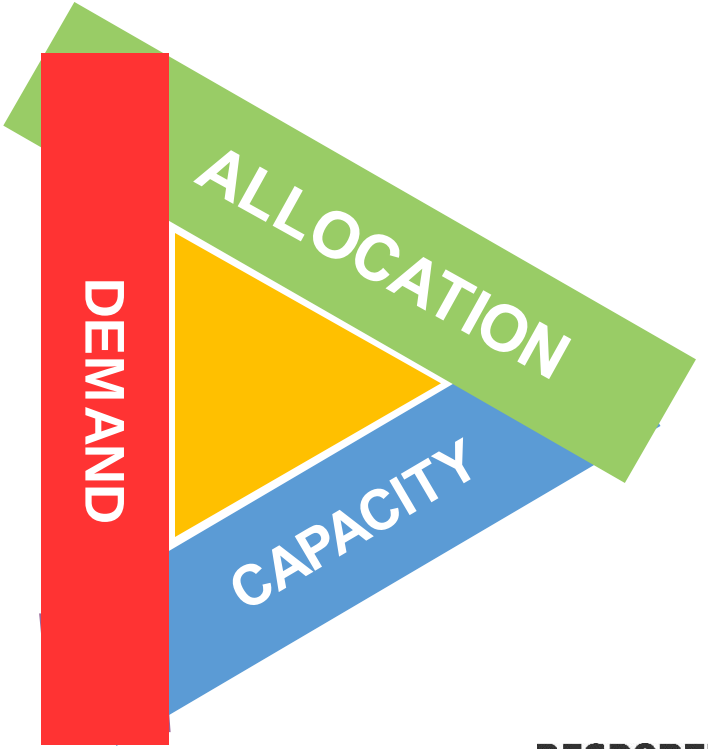
Roll-Up

RESRODEL
The Resource Role Model

Project Controls
EXPO
Melbourne, Australia

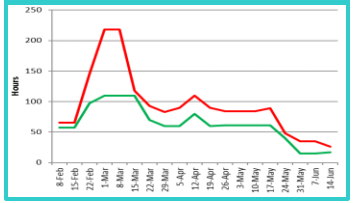
EFFORT THEORY

Circular + Continuous

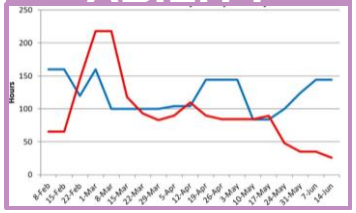


Effort → Outcome

INTENSITY

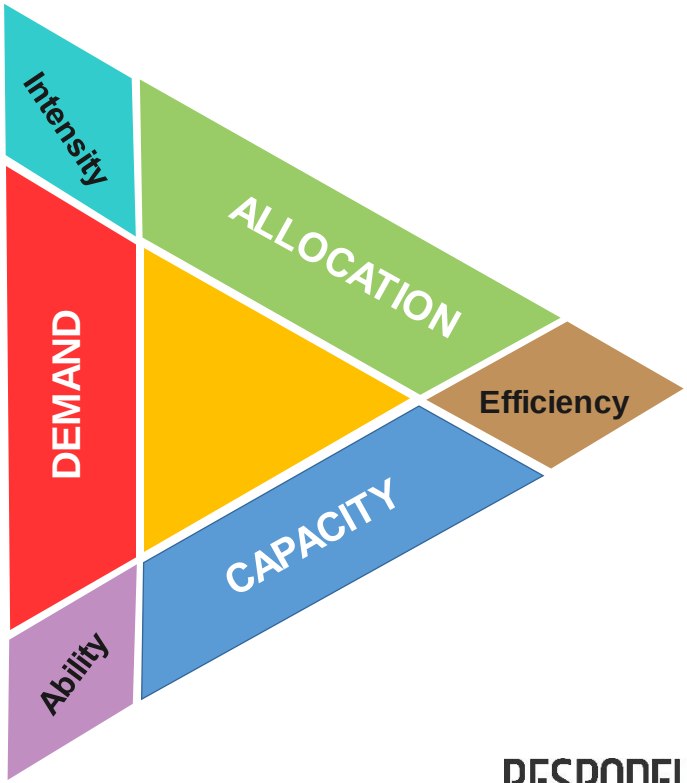


ABILITY



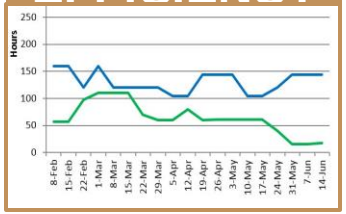
D
A

C
D



A
C

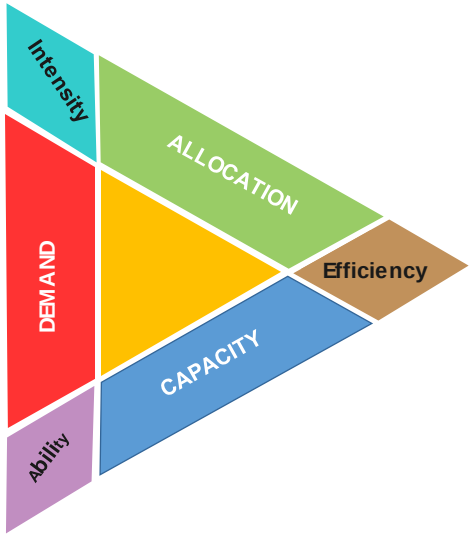
EFFICIENCY



RESRODEL
The Resource Role Model

Project Controls EXPO
Melbourne, Australia

EFFORT MANAGEMENT THEOREM



Definitions

Effort Management (EM)

sub-domain of WFM spanning WF Planning and WF Allocation

Advanced Effort Management (AEM)

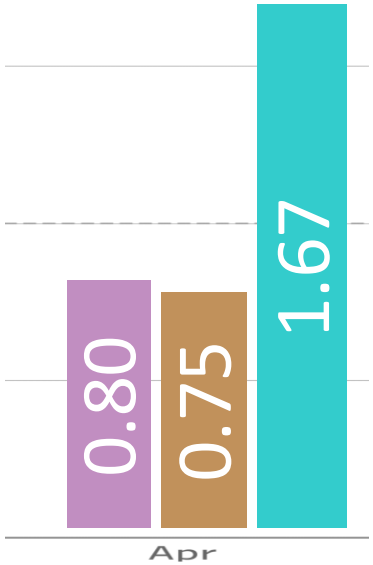
deeper actionable insights to forecast + optimise a workforce

Outcome Unity Equation

$$ABILITY_p \times EFFICIENCY_i \times INTENSITY_i = 1$$

Outcome Unity Equation

ABILITY x EFFICIENCY x INTENSITY = 1



0.8 x **0.75** x **1.67** = **1**

Outcome Interdependence

If

Workload intensity constant = 1

and

Ability to deliver = 1.25

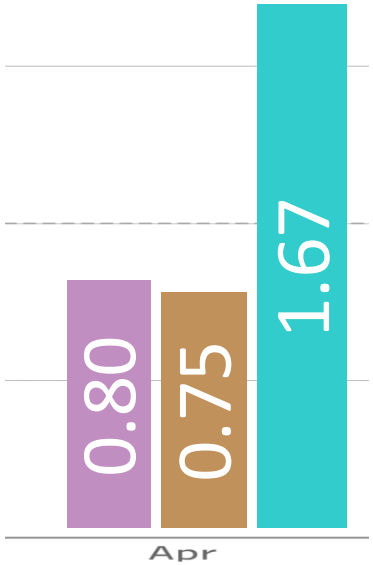
then

Efficiency (utilization) = 0.8

because $1 \times 1.25 \times 0.8 = 1$

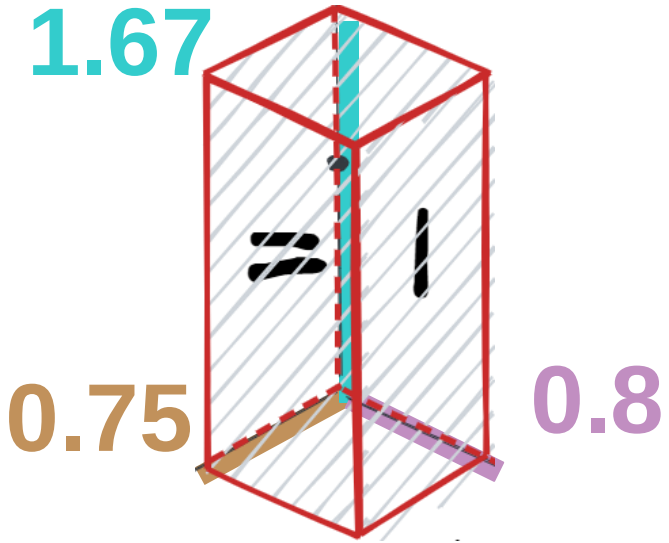
Outcome Unity Equation

ABILITY x EFFICIENCY x INTENSITY = 1



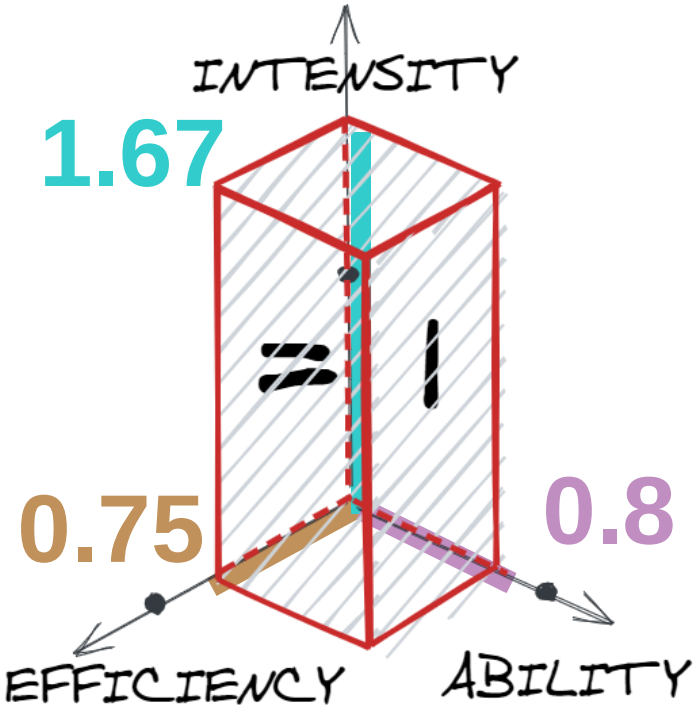
0.8 x **0.75** x **1.67** = **1**

3D Unified Volume



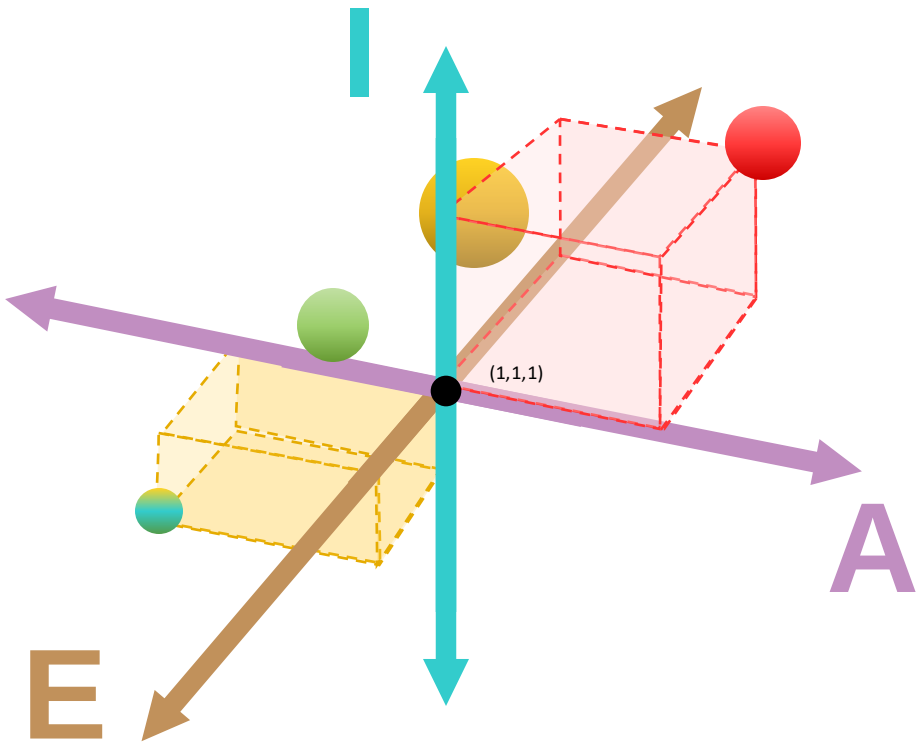
$$0.8 \times 0.75 \times 1.67 = 1$$

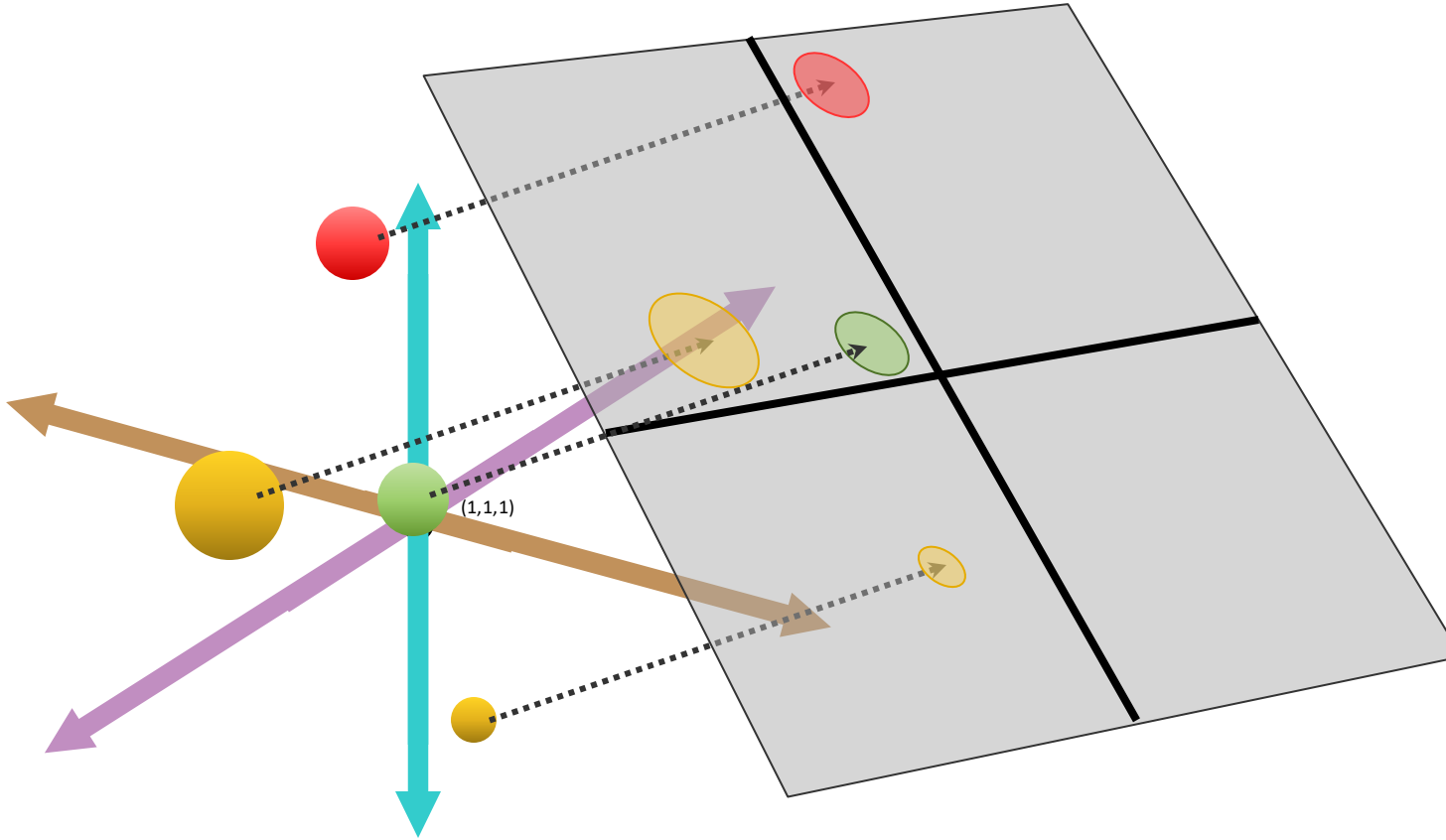
3D Unified Volume



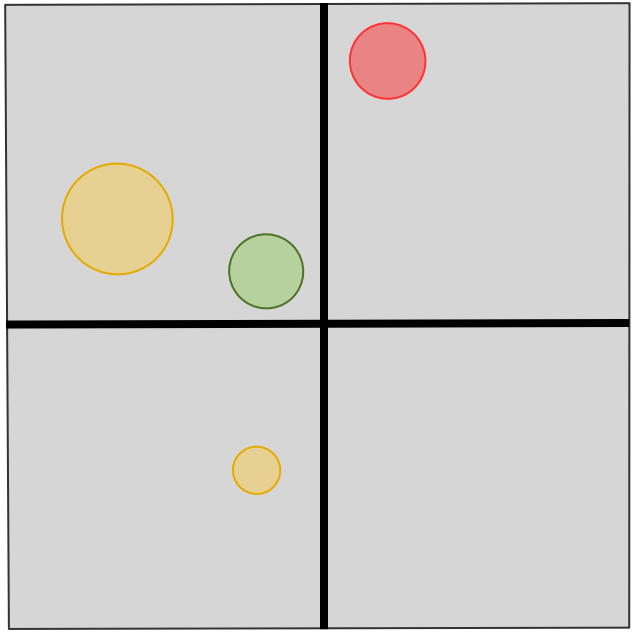
$$0.8 \times 0.75 \times 1.67 = 1$$

All Workforces

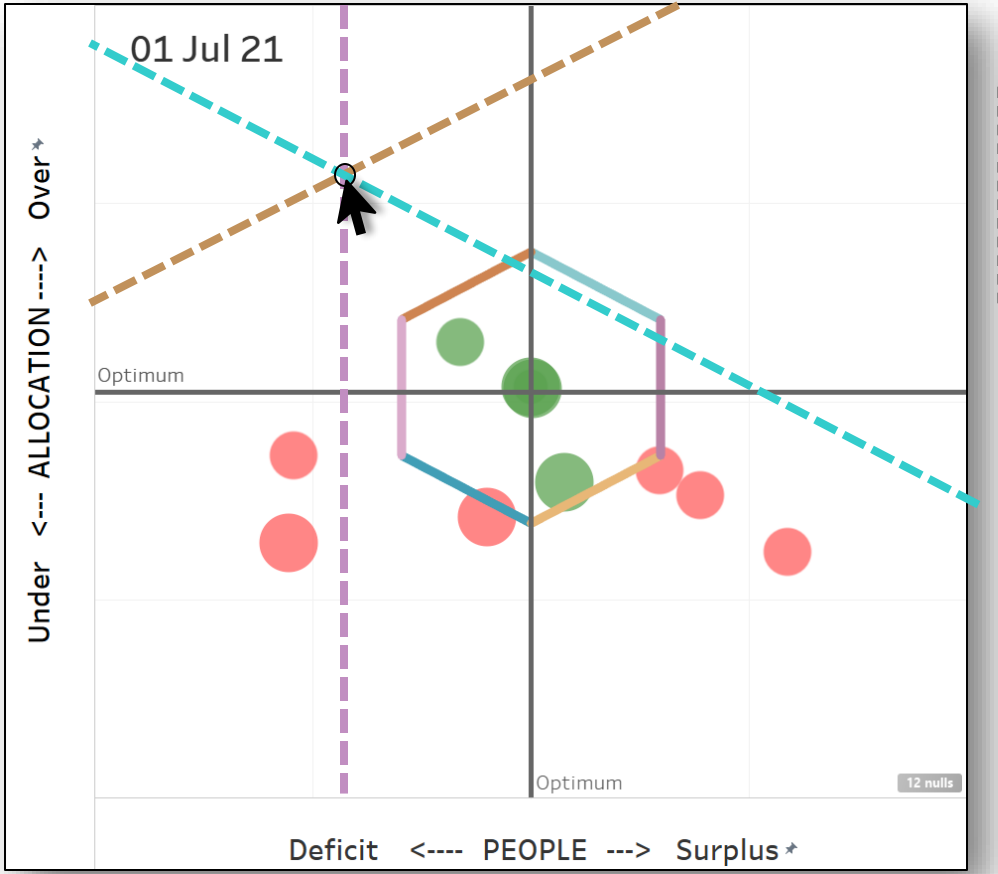



(1,1,1)

Effort Outcome Window

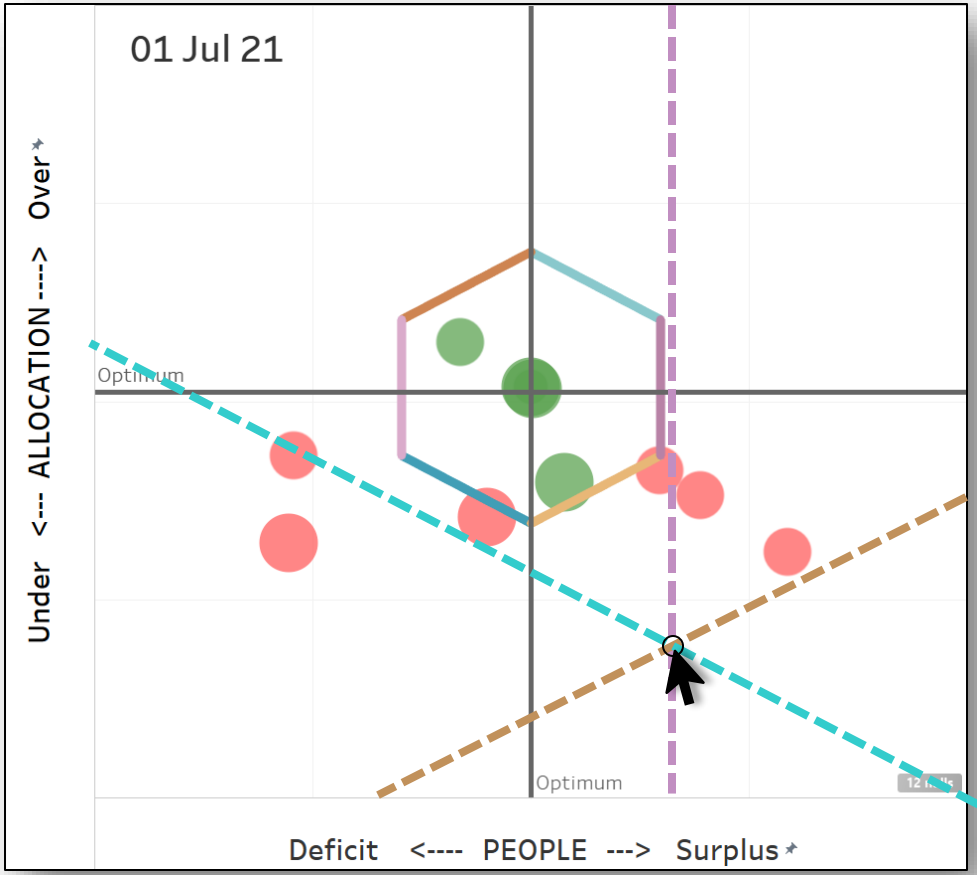


3D Point



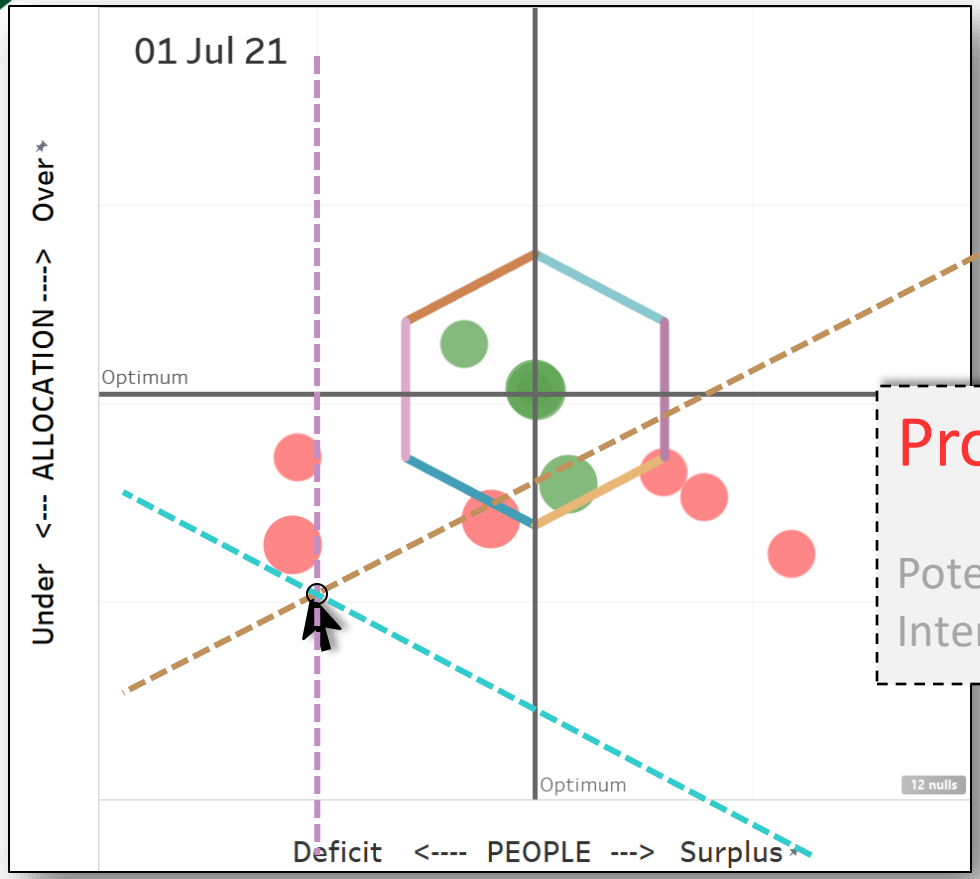
	AB	EF	IN
Potential	**0.37**	2.67	0.30
Intent	1.25	**3.33**	**0.80**

3D Point



	AB	EF	IN
Potential	**1.25**	0.8	1.67
Intent	0.75	**0.60**	**1.33**

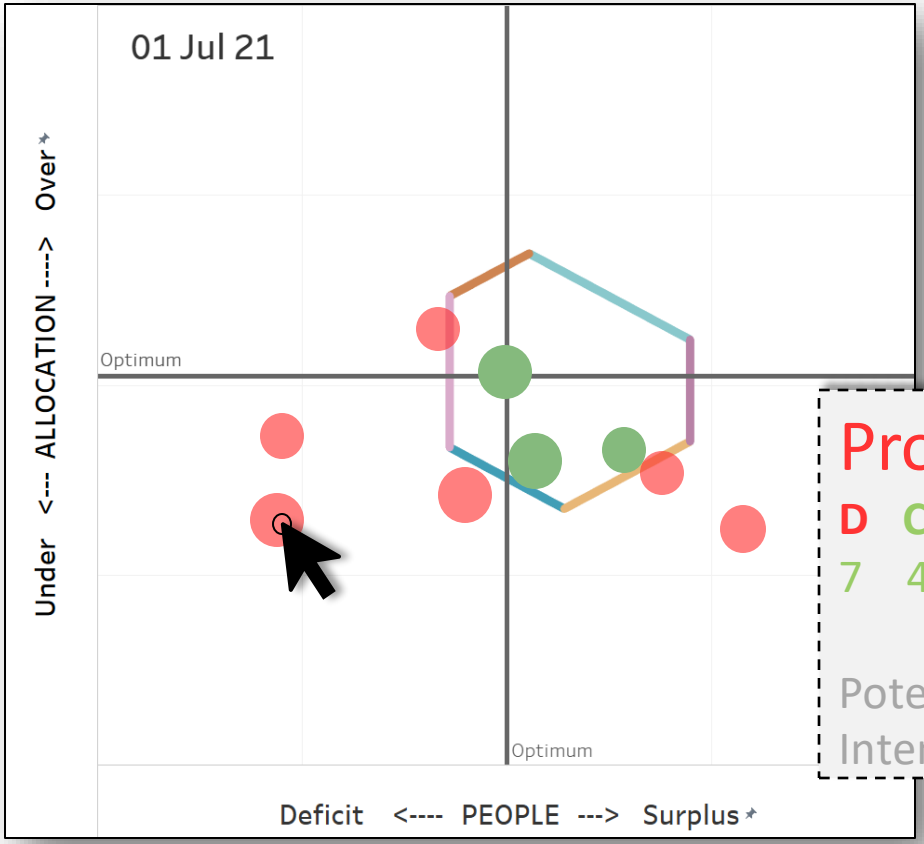
3D Point



Proj. Eng in SF

	AB	EF	IN
Potential	**0.43**	1.67	1.00
Intent	0.60	**0.54**	**0.57**

Effort Outcome Window



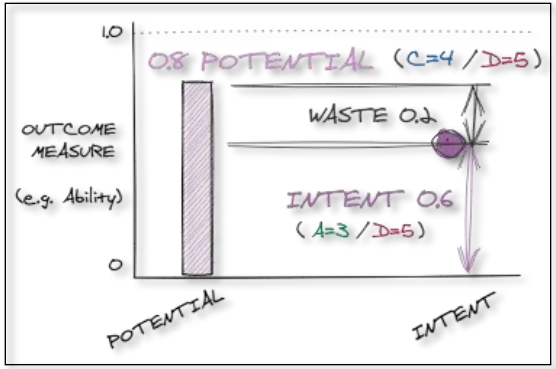
Proj. Eng in SF

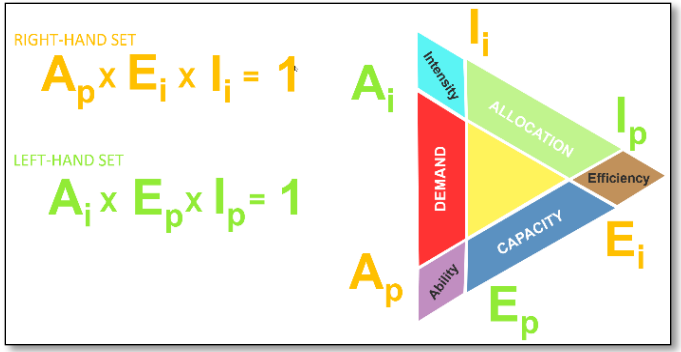
D C A

7 4 3

	AB	EF	IN
Potential	**0.43**	1.67	1.00
Intent	0.60	**0.54**	**0.57**

Further Theory



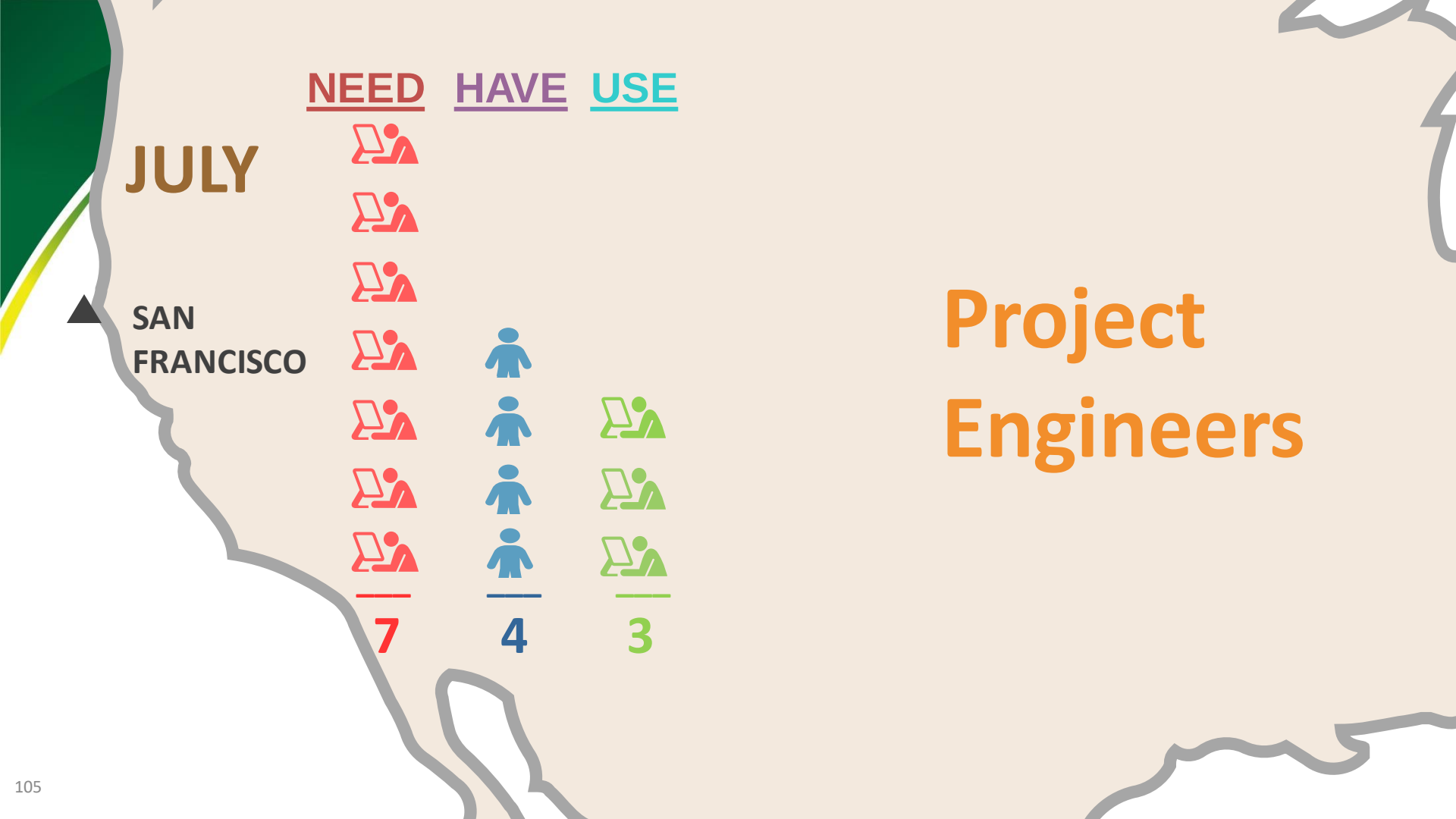


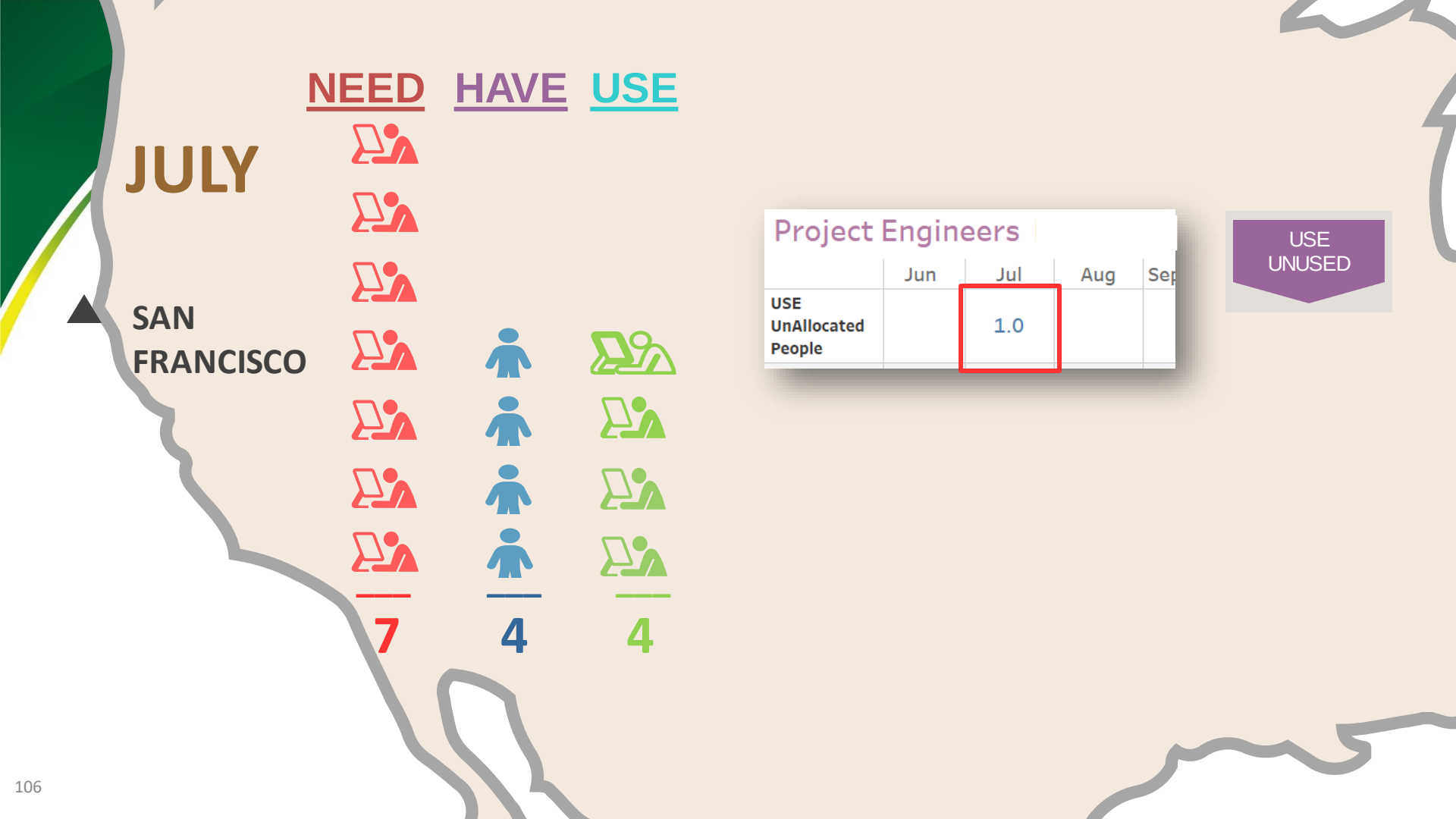
Right-Hand Set				Left-Hand Set			
• $Ability_p$	=	C/D	(2)	• $Ability_i$	=	A/D	(5)
• $Efficiency_i$	=	A/C	(3)	• $Efficiency_p$	=	D/C	(6)
• $Intensity_i$	=	D/A	(4)	• $Intensity_p$	=	C/A	(7)

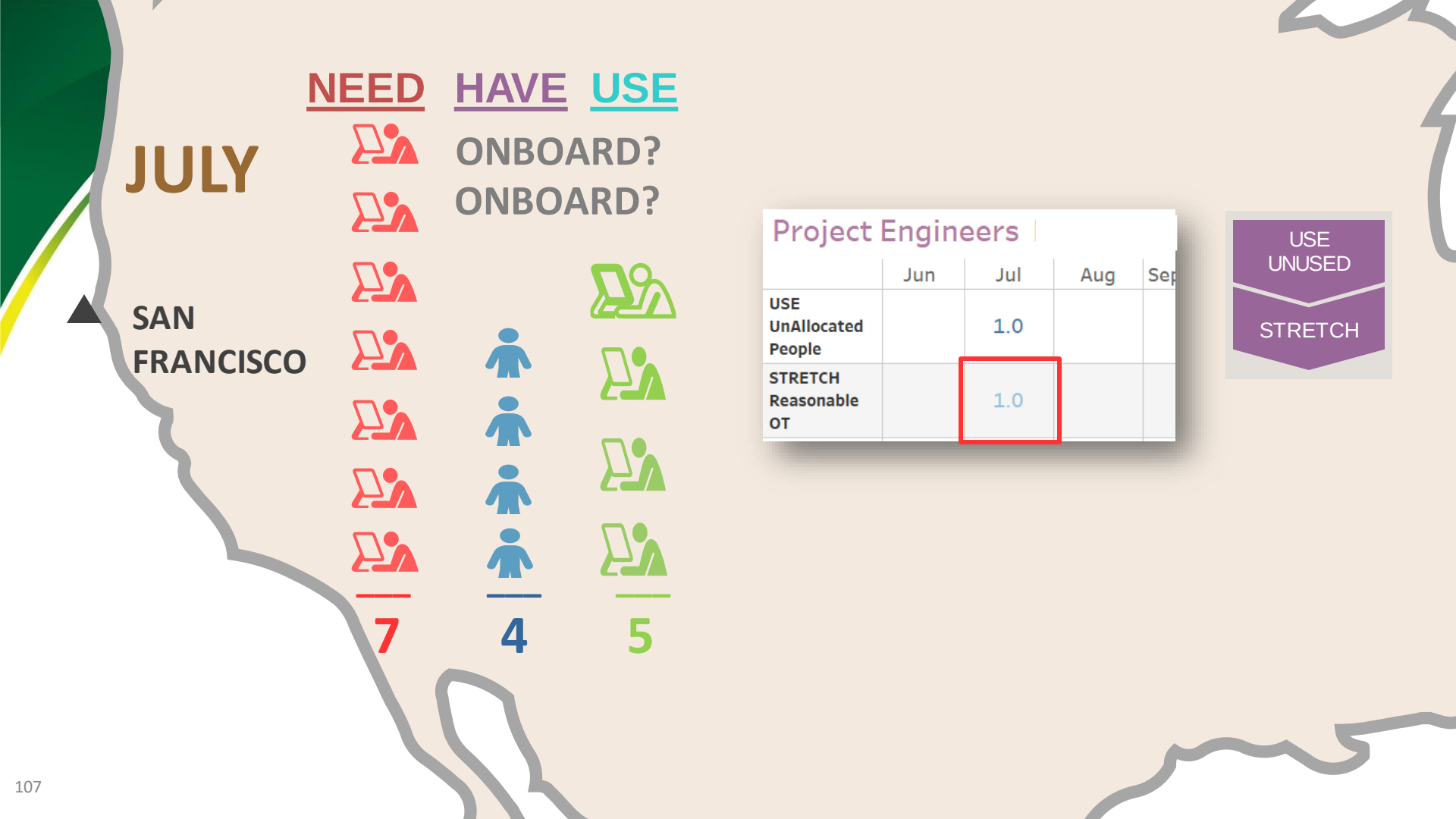
B2 INTERVENTIONS

GET INTERVENTIONS THAT OPTIMISE

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS


NEED
HAVE
USE
JULY
SAN FRANCISCO
7
4
3
Project Engineers


NEED
HAVE
USE
JULY
SAN FRANCISCO
7
4
4
Project Engineers
Jun
Jul
Aug
Sep
USE UnAllocated People
1.0
USE UNUSED



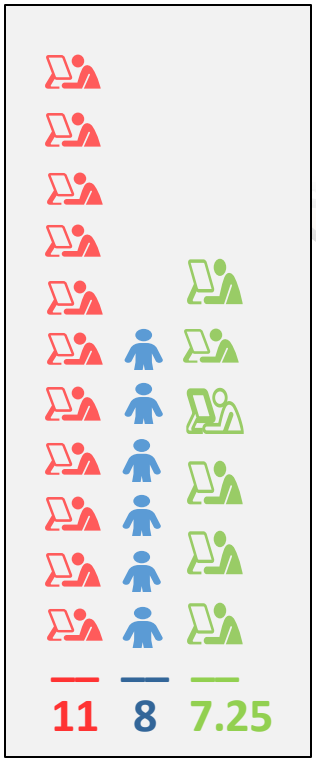
Project Engineers

	Jun	Jul	Aug	Sep
USE UnAllocated People		1.0		
STRETCH Reasonable OT		1.0		

USE UNUSED

STRETCH

JULY



Project Engineers By Region		Jun	Jul	Aug	Se
USE UnAllocated People	SF		1.0		
	DA				
	NY	1.0		1.0	1
STRETCH Reasonable OT	SF		1.0		
	DA				
	NY		0.3	0.8	0

USE UNUSED

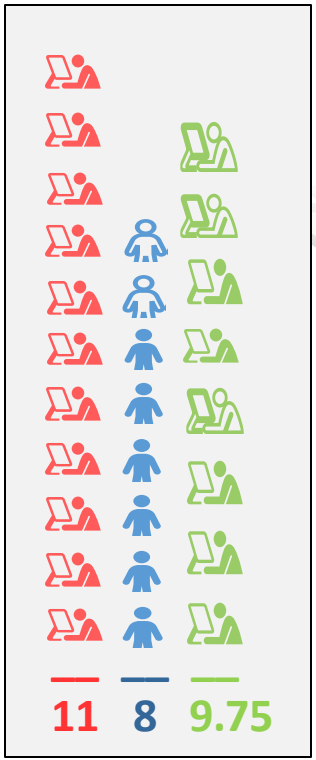
STRETCH

SAN FRANCISCO

DALLAS

NEW YORK

JULY



Project Engineers By Region

		Jun	Jul	Aug	Se
USE UnAllocated People	SF		1.0		
	DA				
	NY	1.0		1.0	1
STRETCH Reasonable OT	SF		1.0		
	DA				
	NY		0.3	0.8	0
TRANSFER People / Work	SF		1.0		
	DA	2.0	- 2.0	2.0	2
	NY		1.0		

USE UNUSED

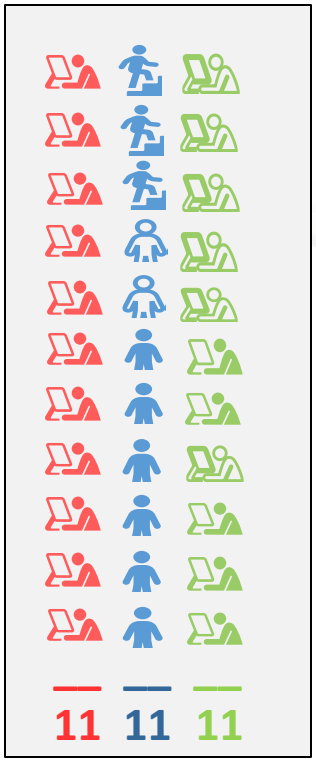
STRETCH

SHARE

SAN FRANCISCO

NEW YORK

DALLAS



JULY

SAN FRANCISCO

Project Engineers By Region

		Jun	Jul	Aug	Se
USE UnAllocated People	SF		1.0		
	DA				
	NY	1.0		1.0	1
STRETCH Reasonable OT	SF		1.0		
	DA				
	NY		0.3	0.8	0
TRANSFER People / Work	SF		1.0		
	DA	2.0	-2.0	2.0	2
	NY		1.0		
ONBOARD Gap Fill	SF		0.5	1.2	1
	DA				
	NY		0.5	0.1	
ONBOARD Replace OT	SF		1.6	1.1	1
	DA				
	NY		0.4	1.1	0

USE UNUSED

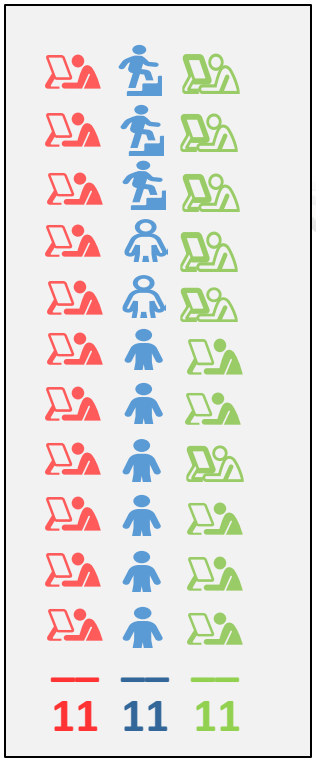
STRETCH

TRANSFER

ONBOARD

NEW YORK

DALLAS



JULY

SAN FRANCISCO

Project Engineers By Region

		Jun	Jul	Aug	Se
USE UnAllocated People	SF		1.0		
	DA				
	NY	1.0		1.0	1
STRETCH Reasonable OT	SF		1.0		
	DA				
	NY		0.3	0.8	0
TRANSFER People / Work	SF		1.0		
	DA	2.0	- 2.0	2.0	2
	NY		1.0		
ONBOARD Gap Fill	SF		0.5	1.2	1
	DA				
	NY		0.5	0.1	
ONBOARD Replace OT	SF		1.6	1.1	1
	DA				
	NY		0.4	1.1	0
Aquire Work / Downsize	SF				
	DA				
	NY				

USE UNUSED

STRETCH

TRANSFER

ONBOARD

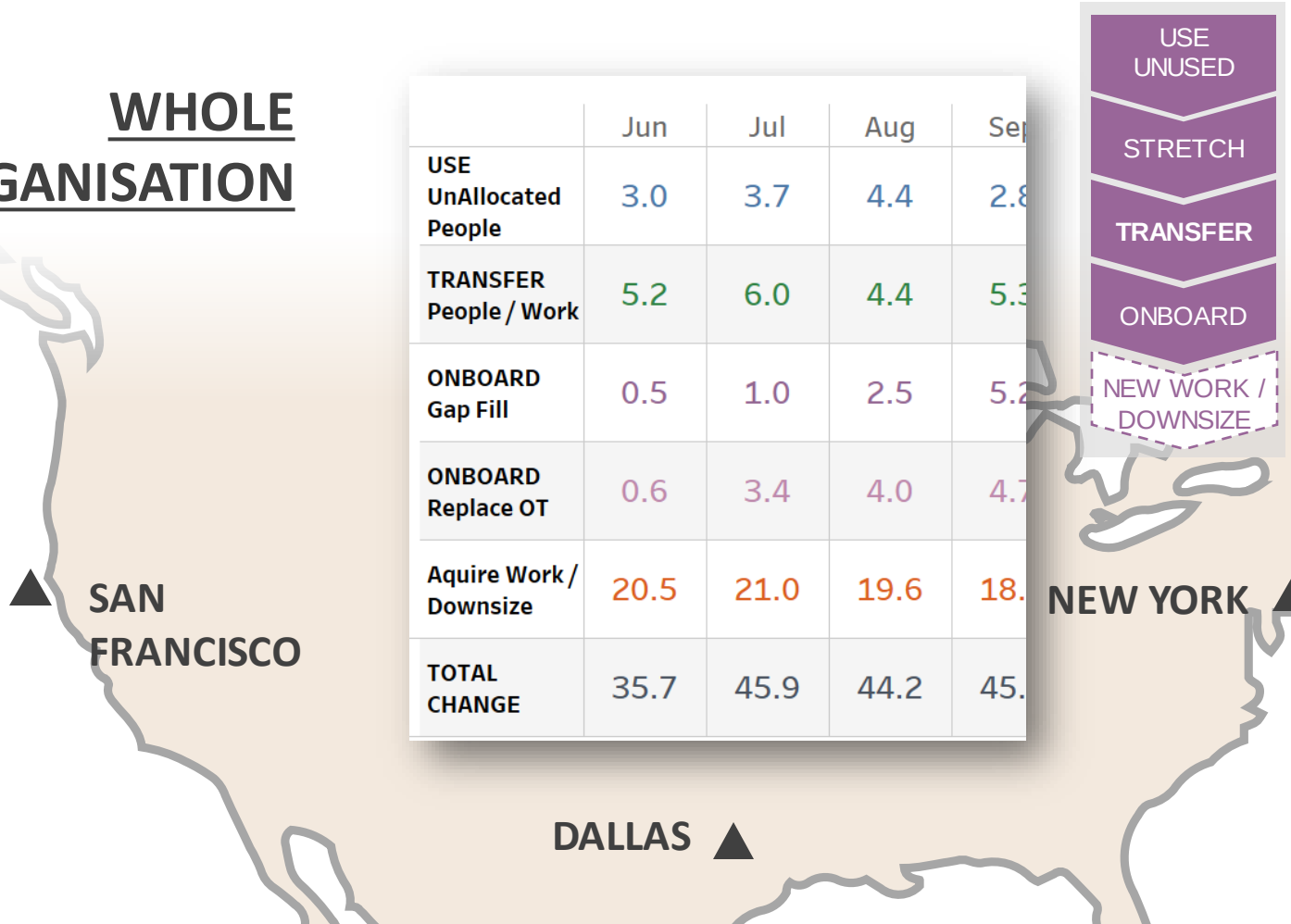
NEW WORK / DOWNSIZE

NEW YORK

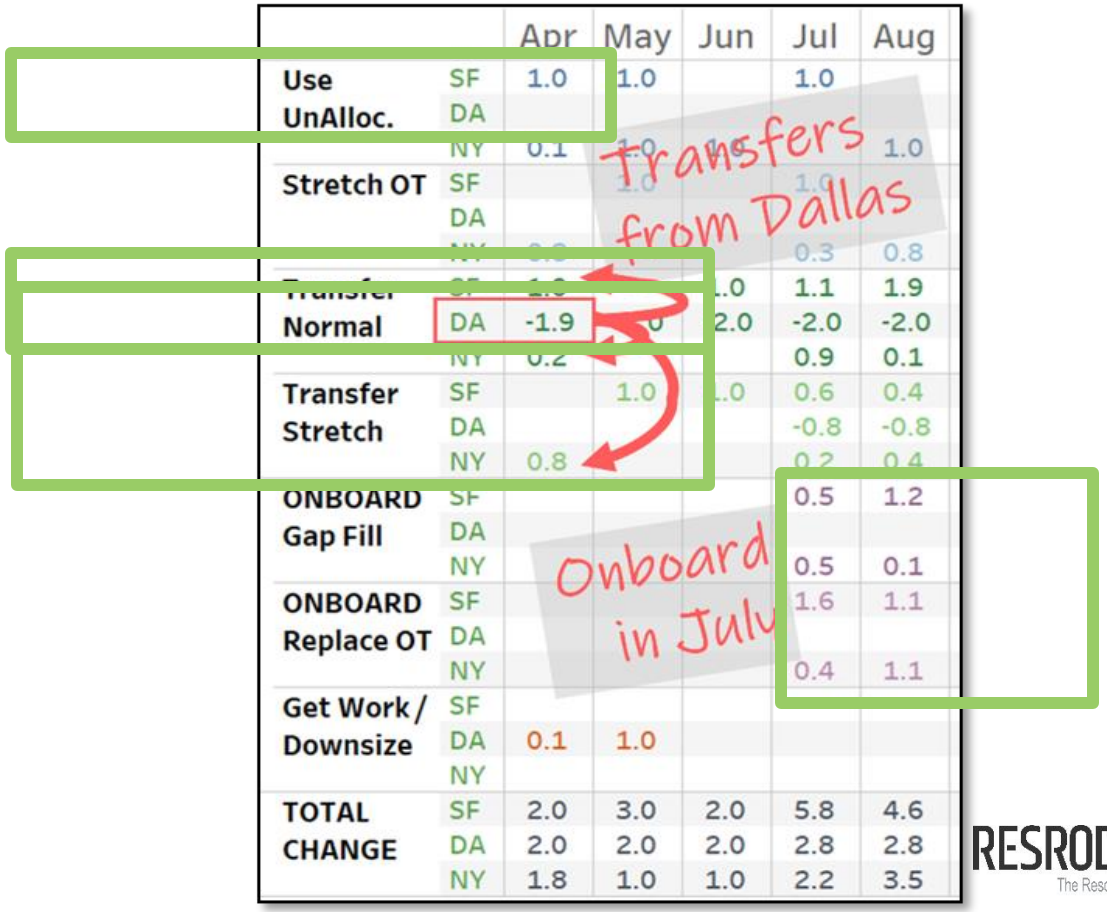
DALLAS

WHOLE ORGANISATION

	Jun	Jul	Aug	Sep
USE UnAllocated People	3.0	3.7	4.4	2.8
TRANSFER People / Work	5.2	6.0	4.4	5.3
ONBOARD Gap Fill	0.5	1.0	2.5	5.2
ONBOARD Replace OT	0.6	3.4	4.0	4.7
Aquire Work / Downsize	20.5	21.0	19.6	18.
TOTAL CHANGE	35.7	45.9	44.2	45.

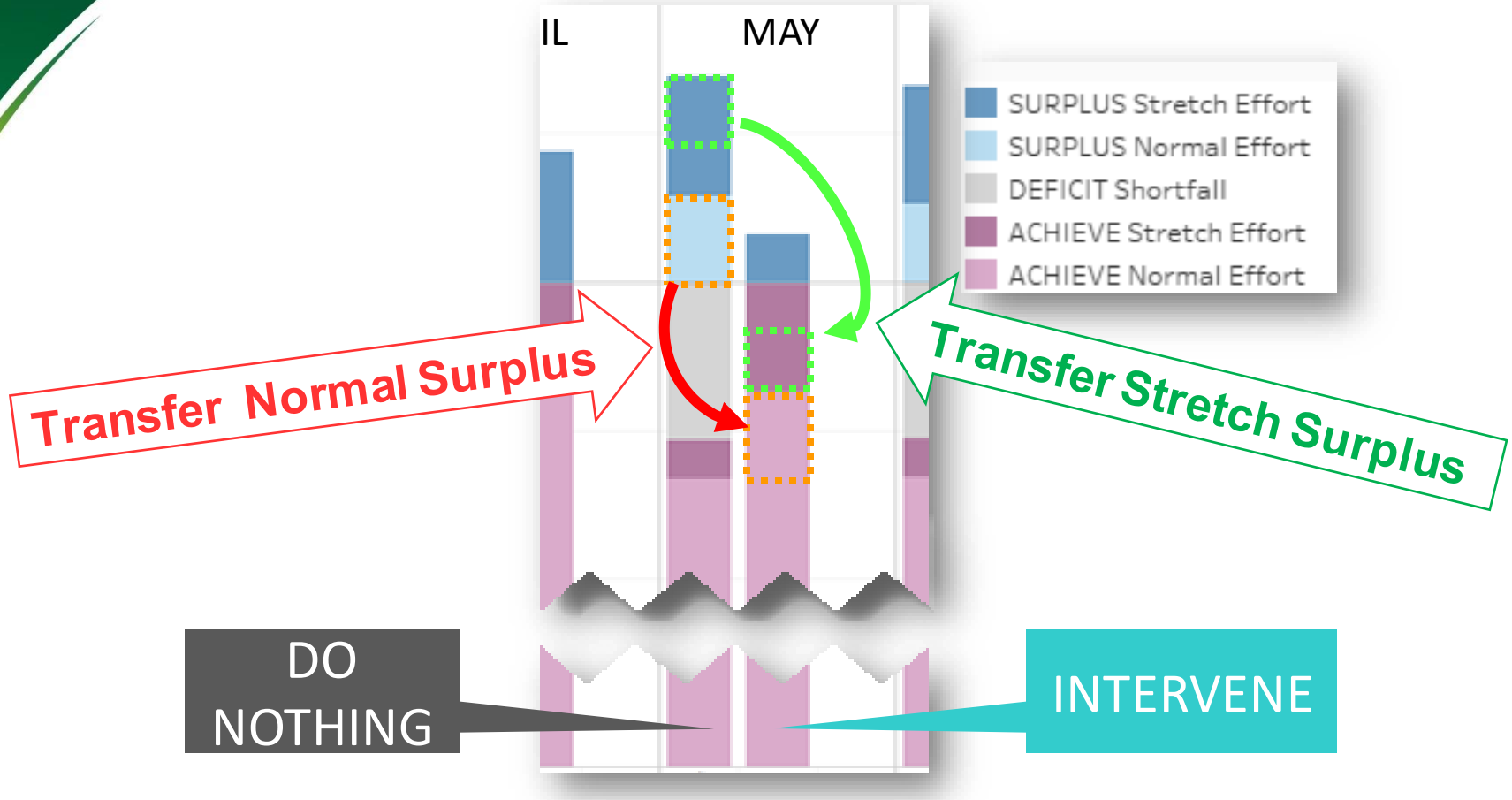


Precise Interventions



		Apr	May	Jun	Jul	Aug
Use UnAlloc.	SF	1.0	1.0		1.0	
	DA					
	NY	0.1	1.0	1.0		1.0
Stretch OT	SF		1.0		1.0	
	DA					
	NY				0.3	0.8
Normal	SF			1.0	1.1	1.9
	DA	-1.9	0	2.0	-2.0	-2.0
	NY	0.2			0.9	0.1
Transfer Stretch	SF		1.0	1.0	0.6	0.4
	DA				-0.8	-0.8
	NY	0.8			0.2	0.4
ONBOARD Gap Fill	SF				0.5	1.2
	DA					
	NY				0.5	0.1
ONBOARD Replace OT	SF				1.6	1.1
	DA					
	NY				0.4	1.1
Get Work / Downsize	SF					
	DA	0.1	1.0			
	NY					
TOTAL CHANGE	SF	2.0	3.0	2.0	5.8	4.6
	DA	2.0	2.0	2.0	2.8	2.8
	NY	1.8	1.0	1.0	2.2	3.5

Transfer Surplus to Deficit



B3: RESULTANT IMPACTS

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

Good Decisions

1. **Translate outcomes → results**

Outcomes Into Results

Ability
Efficiency
Intensity

Delivery
Margins
Well-being

Good Decisions

1. Translate outcomes → results
2. Select interventions by compromise
3. Understand resultant impacts between scenarios

Delivery

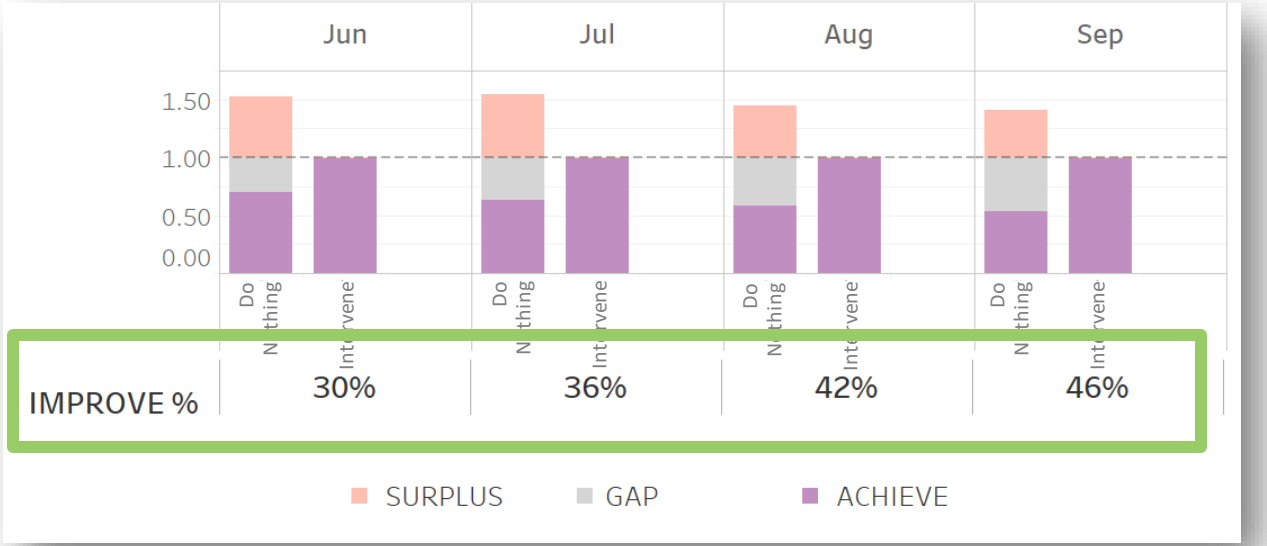
Quantity

Time

Quality

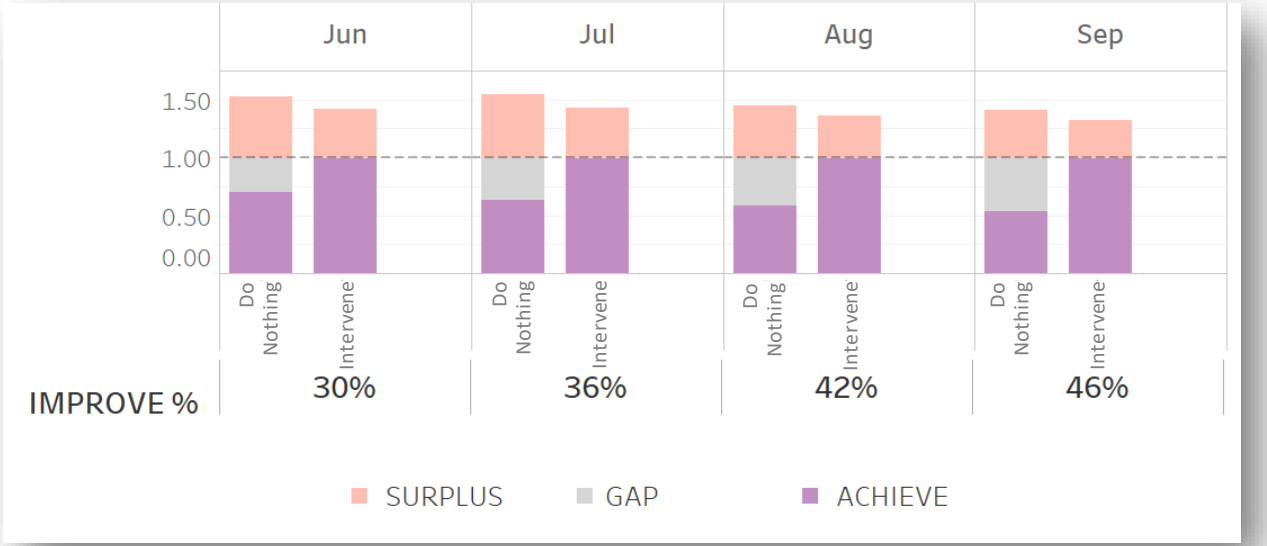
Step 5: Delivery – Do Nothing

USE UnAllocated People	☑
TRANSFER People / Work	☑
ONBOARD Gap Fill	☑
ONBOARD Replace OT	☑
Aquire Work / Downsize	☑



Delivery – Select Interven.

USE UnAllocated People	☑
TRANSFER People / Work	☑
ONBOARD Gap Fill	☑
ONBOARD Replace OT	☑
Aquire Work / Downsize	☐



Margins

INEFFICIENCIES

e.g.

Ability shortfall = lost production = revenue loss

Efficiency shortfall = low utilization = unnecessary cost

INTERVENTIONS

e.g.

Increase Ability = revenue increase

Increase Efficiency = cost reduction

Margin Impact

USE UnAllocated People	☑
TRANSFER People / Work	☑
ONBOARD Gap Fill	☑
ONBOARD Replace OT	☑
Aquire Work / Downsize	☐

Well-being

Workload Intensity

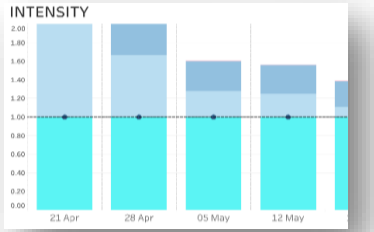
+

Well-being/ performance survey

=

Well-being/ performance forecast

Resro.OPT



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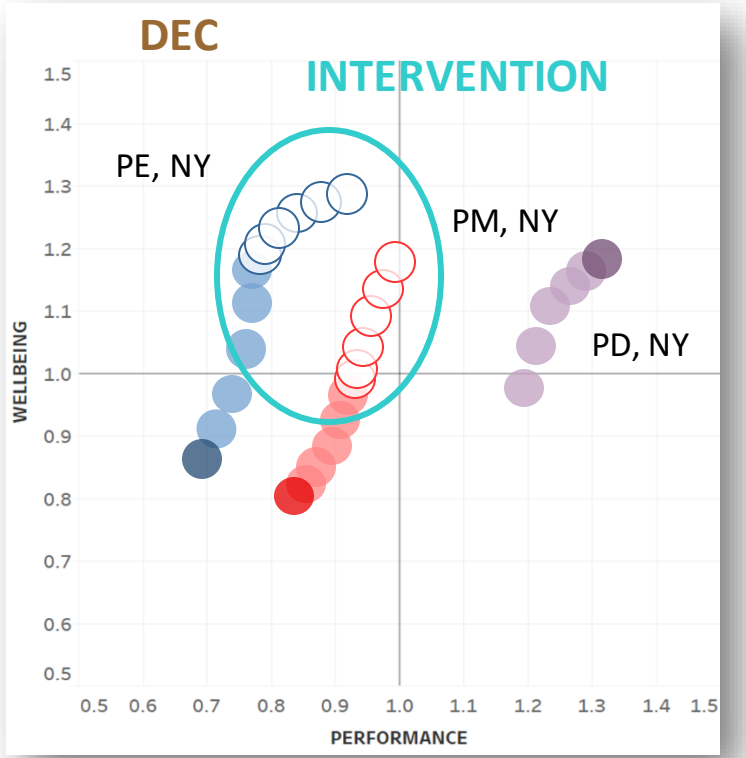
Well-being



WELLBEING →

PERFORMANCE →

*Subject to ongoing research, development, testing and validation

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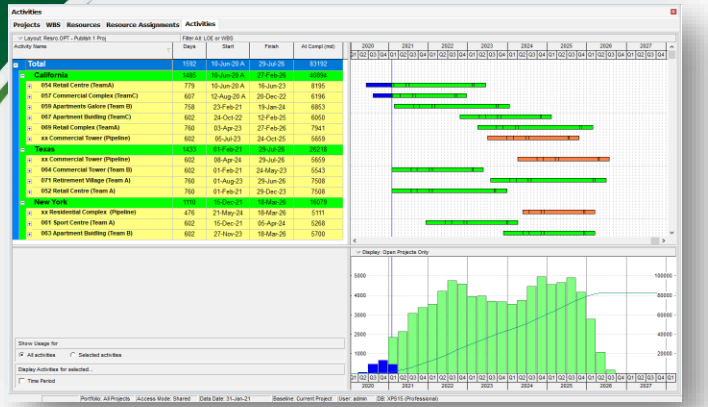
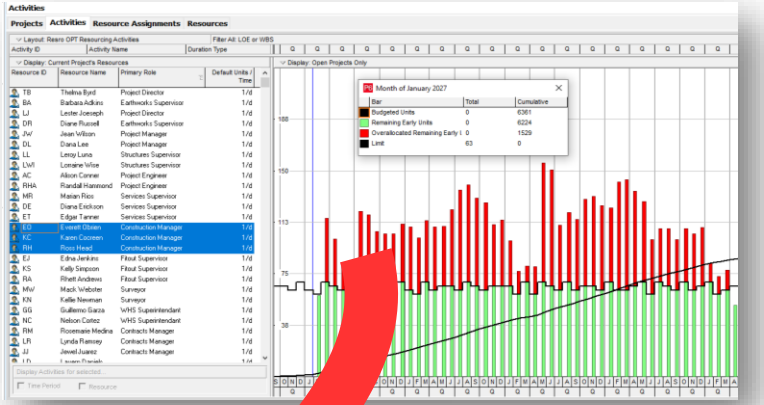
PART C: APPLICATION

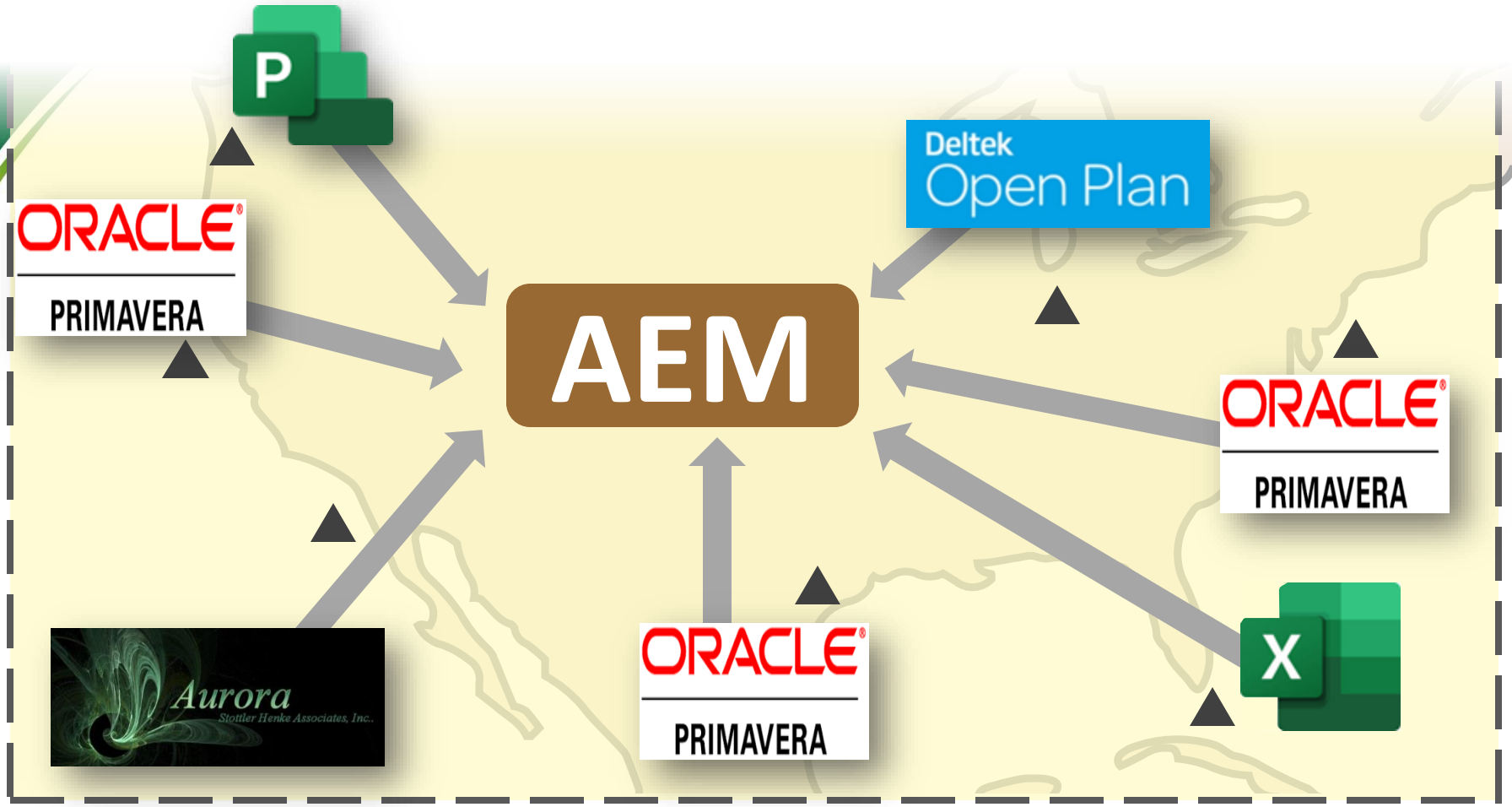
Export To Spreadsheet





Region	Project	Role	Resource Name	Activity Name	Column	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23
CA	CA-054-RET	Project Manager	Jean Wilson	DESIGN									
CA	CA-054-RET	Contracts Manager	Rosemarie Medina	DESIGN									
CA	CA-054-RET	Project Director	Thelma Byrd	DESIGN									
CA	CA-054-RET	Project Engineer	Alison Conner	DESIGN									
CA	CA-054-RET	Project Engineer	Alison Conner	CONSTRUCTION		22	21	22					
CA	CA-054-RET	Construction Mana	Everett Obrien	CONSTRUCTION		22	21	22					
CA	CA-054-RET	Contracts Manager	Rosemarie Medina	CONSTRUCTION		17.36	16.57	17.36			15.78		
CA	CA-054-RET	WHS Superintende	Guillermo Garza	CONSTRUCTION		13.2	12.6	13.2	13.2	13.2	12		
CA	CA-054-RET	Project Manager	Jean Wilson	CONSTRUCTION		21.7	20.71	21.7	21.7	21.7	19.73	1.97	
CA	CA-054-RET	Project Director	Thelma Byrd	CONSTRUCTION		8.68	8.29	8.68	8.68	8.68	7.89	0.79	
CA	CA-054-RET	Surveyor	Kellie Newman	CONSTRUCTION		43.4	41.43	43.4	43.4	43.4	39.46	3.95	
CA	CA-054-RET	Surveyor	Kellie Newman	TESTING AND COMMISSION								4.2	4
CA	CA-054-RET	Construction Mana	Everett Obrien	TESTING AND COMMISSION								10.5	10
CA	CA-054-RET	Contracts Manager	Rosemarie Medina	TESTING AND COMMISSION								21	20
CA	CA-054-RET	WHS Superintende	Guillermo Garza	TESTING AND COMMISSION								12.6	12
CA	CA-054-RET	Services Supervisi	Marian Rios	TESTING AND COMMISSION								21	20
CA	CA-054-RET	Structures Supervis	Leroy Luna	TESTING AND COMMISSION								21	20
CA	CA-054-RET	Project Engineer	Alison Conner	TESTING AND COMMISSION								21	20
CA	CA-054-RET	Project Manager	Jean Wilson	TESTING AND COMMISSION								21	20
CA	CA-054-RET	Project Director	Thelma Byrd	TESTING AND COMMISSION								4.2	4
CA	CA-054-RET	Earthworks Supervi	Barbara Adkins	EARTHWORKS									

EXPORT


P
ORACLE
PRIMAVERA
Deltek
Open Plan
AEM
ORACLE
PRIMAVERA
Aurora
Stottler Henke Associates, Inc.
ORACLE
PRIMAVERA
X

Users

Project controllers
Resource managers
Workforce planners
Estimators
Data analysts


ABILITY of ORGANISATION
USE UnAllocated People
TRANSFER People / Work
ONBOARD Gap Fill
ONBOARD Replace OT
Aquire Work / Downsize
Jun
Jul
Aug
Sep
IMPROVE %
30%
36%
42%
46%
SURPLUS
GAP
ACHIEVE
Outcome
ABILITY
EFFICIENCY
INTENSITY
TOTAL ORGANISATION
SAN FRANCISCO
NEW YORK
DALLAS
APRIL
DEC
PE, NY
PM, NY
PD, NY

PART D: BENEFITS

PHYSICAL → EFFORT → OUTCOMES → INEFFICIENCIES → INTERVENTIONS → RESULTS

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Do Better

- Link effort → results
- Start with: Need, Have + Use

Effort Management Theorem

Outcome Unity Equation

Advanced Effort Mgt.

- Forecast outcomes
- Recommend interventions
- Translates change into results
- EOW unified visualisation

Actionable Insights

- Deliver more
- Increase Margins
- Improve well-being

Effort Management

A new way to find
greater productivity
in a humane society

Workforce effort and outcome optimization

Alex James

alex.james@resrodel.com

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Outcome Ratios

Set 1: ABILITY$_p$ = Capacity / Demand

EFFICIENCY$_i$ = Allocation / Capacity

INTENSITY$_i$ = Demand / Allocation

Set 2: ABILITY$_i$ = Allocation / Demand

EFFICIENCY$_p$ = Demand / Capacity

INTENSITY$_p$ = Capacity / Allocation

p = Potential, i = Intent

Example Tools

- Oracle Primavera P6 ™ (or other)
- AEM in spreadsheets
- Tableau™ / PowerBI ™

STEPS

1. collate effort
2. forecast workforce
3. report and compare at all levels
4. suggest optimisations
5. select interventions + assess impacts
6. decide and act

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Example Workforce