

Seaspin


What data to capture and why?


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Phases of Dashboards

There are three phases to dashboards/data that support service/product management.

 **Planning what work to do in the future**
make investment decisions. eg. Projects, headcount...

 **Tracking work once it is committed**
Helps understand status and tactical allocation.

 **Measuring the impact of past work**
provide feedback on value to refine strategy

--- Feedback - use  insights to improve 

Question – what stages have most data now?

1. Planning what work to do

Little -----Some-----Lots

2. Tracking work being done

Little -----Some-----Lots

3. Measuring the impact of what was done

Little -----Some-----Lots

Common Current Capability

12 Months?

?

Now.

Lots -  Dong

Some -  Planning

 Impact

None -

Q. if we were
twice as good at
one of these in
12 months, what
phase would move the
"outcome" needle the
most?



5 Basic Metric Rules

RESPECT INDIVIDUAL SAFETY

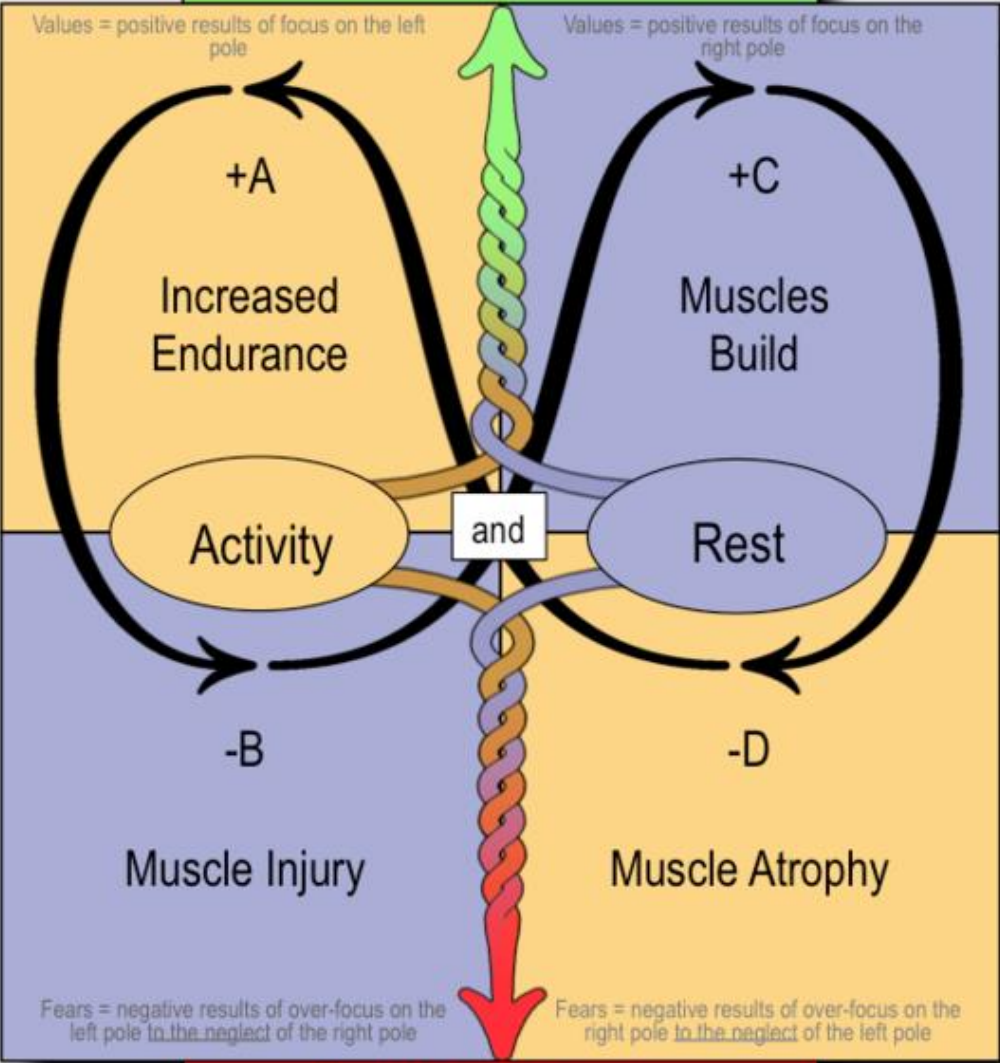
SHOW TRENDS

COMPARE DATA IN CONTEXT

SHOW UNUSUAL CLEARLY

BALANCED – AVOID OVER FOCUSING

Greater Purpose Statement (GPS) - Why leverage this polarity?
Run A Marathon



Assessing +A

How much endurance do I have right now?
How far can I run without overdoing it?

Assessing +C

Have I been getting enough rest to support a more strenuous workout?

Assessing -C

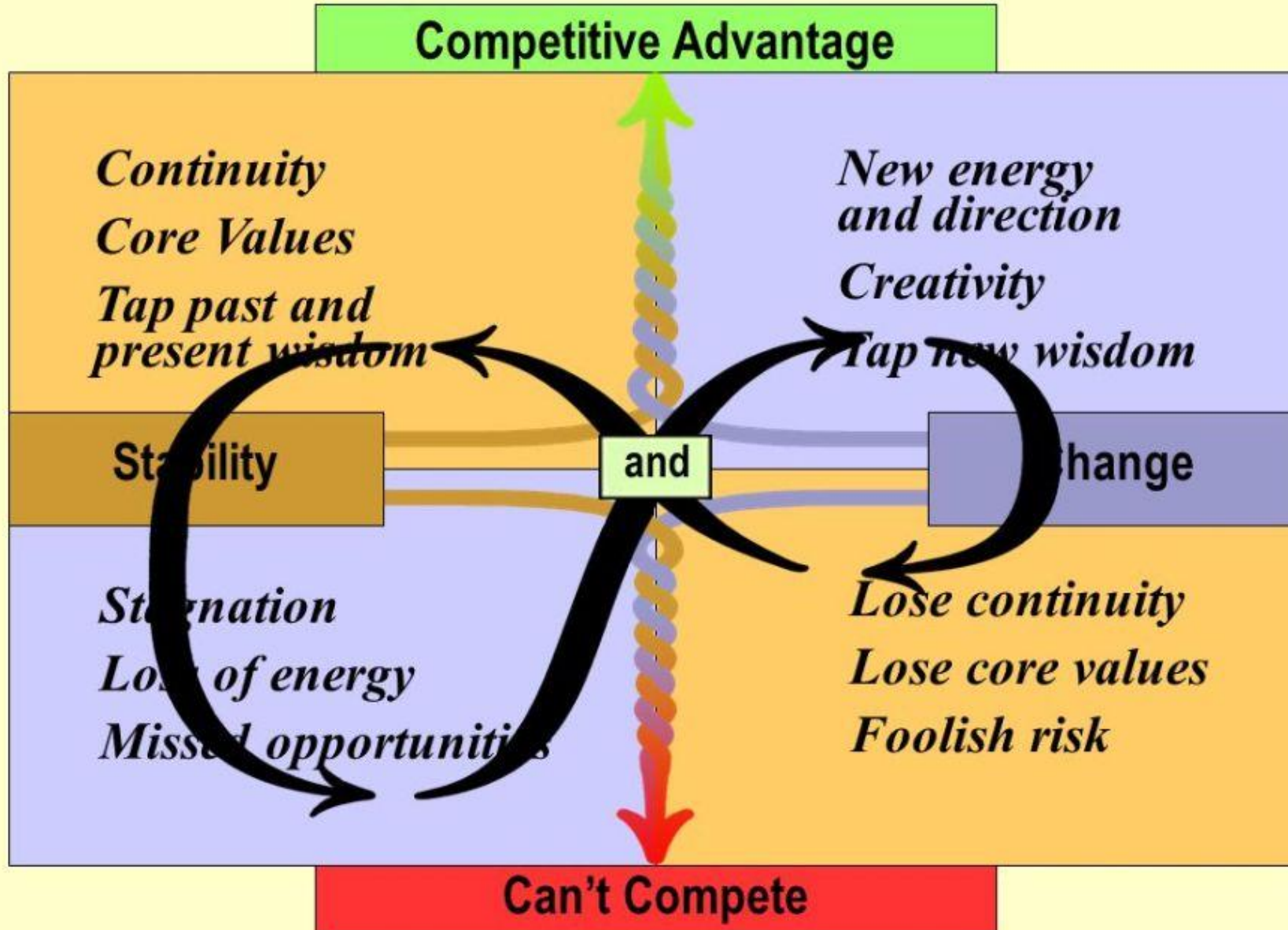
Do I have any sore muscles or injuries that I need to take into account?

Assessing -D

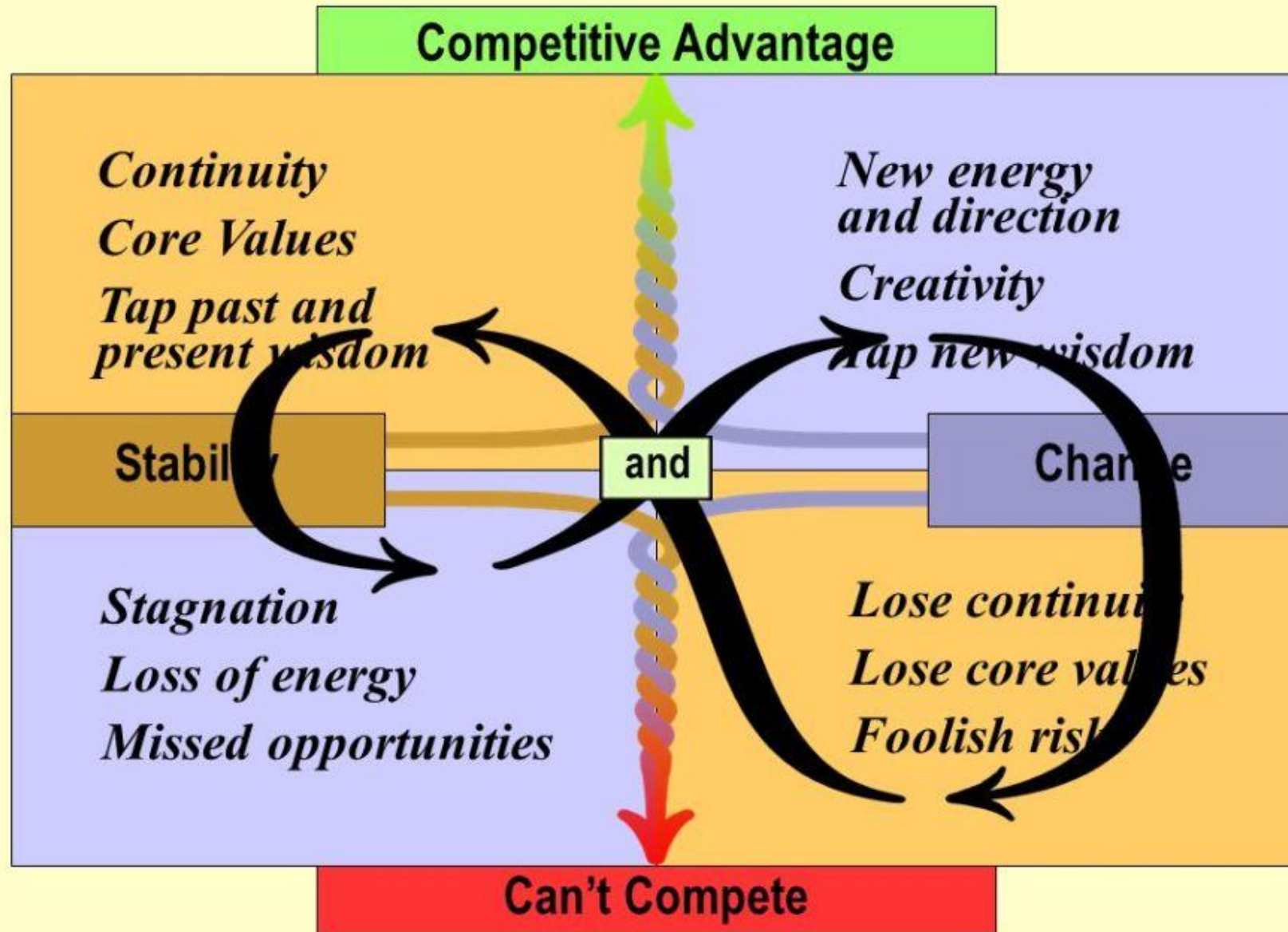
Do I have any stiffness or weakness from inactivity lately?

Can't Run A Marathon
Deeper Fear = Loss of GPS

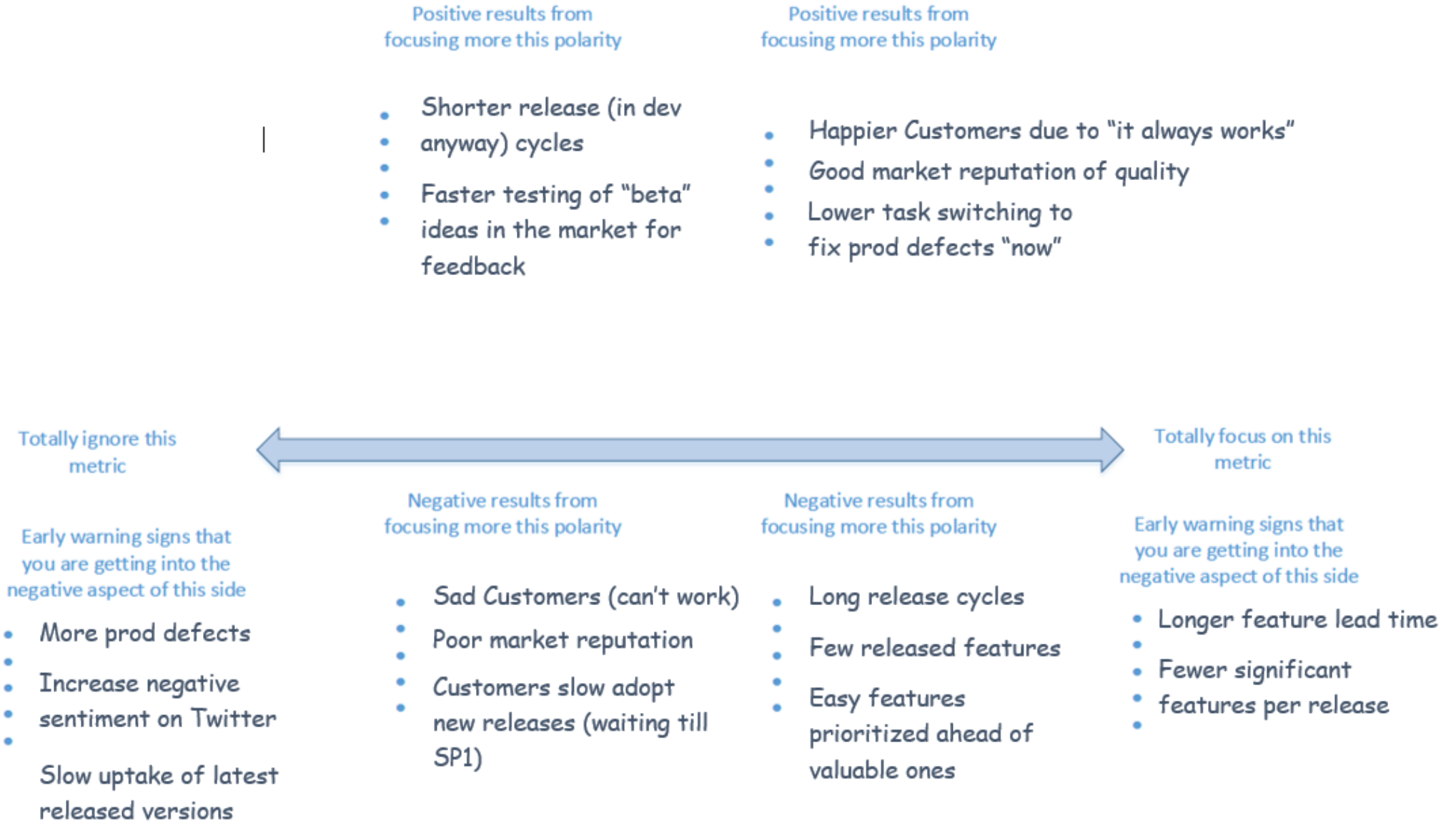
Overemphasis on Stability



Overemphasis on Change



Quality - Customer Reported Defects (escaped defects)



Metric: Output (Throughput or Velocity)

Positive results from focusing more this polarity

- Big & small things OK
- ?
- ?

Positive results from focusing more this polarity

- Smaller sized items encouraged
- ?
- ?

Totally ignore this metric

Early warning signs that you are getting into the negative aspect of this side

-
-
-
-
-

Negative results from focusing more this polarity

- No sense of flow
- ?
- ?

Negative results from focusing more this polarity

- Fake estimates
- Output > outcome
- ?

Totally focus on this metric

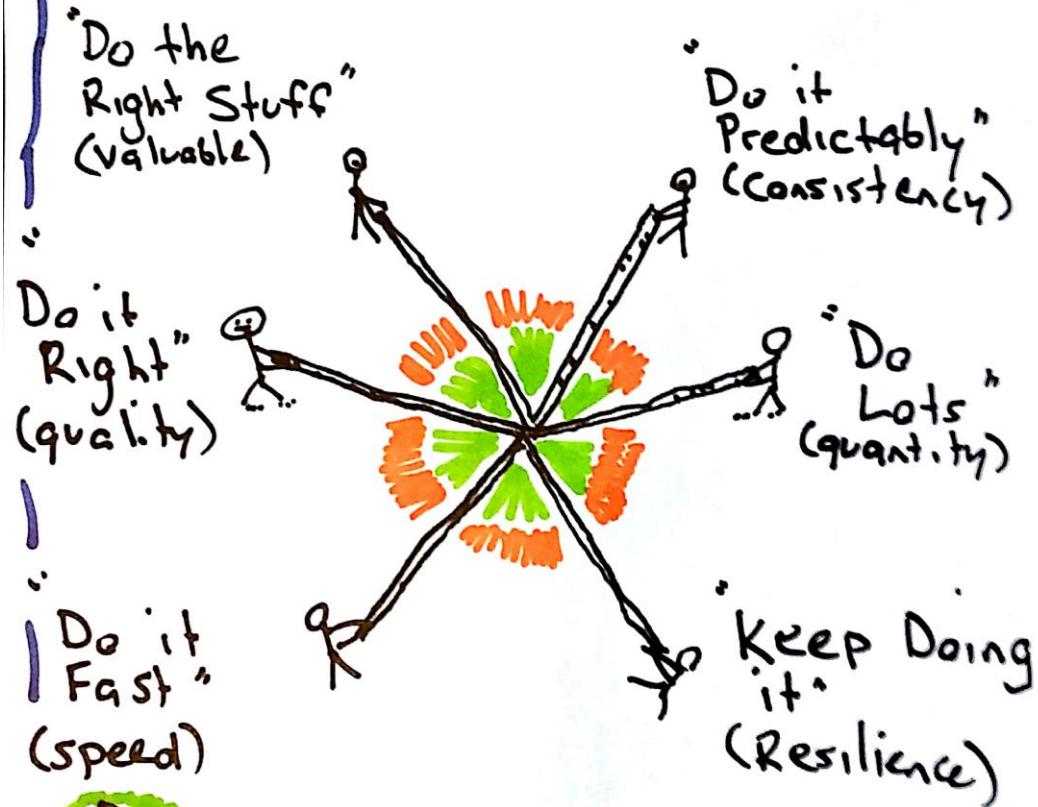
Early warning signs that you are getting into the negative aspect of this side

-
-
-
-

Balance Competing Forces

Help teams find balance across these six competing forces.

Don't over-do any one of these!



Do

- Trade wisely (a strength for a weakness)
- Measure Too MUCH as well as too little
- Define early warning signs of Too MUCH/little

My Awesome Team Dashboard

Show data for most recent Months
 (be patient, can take 10-20 seconds after change)

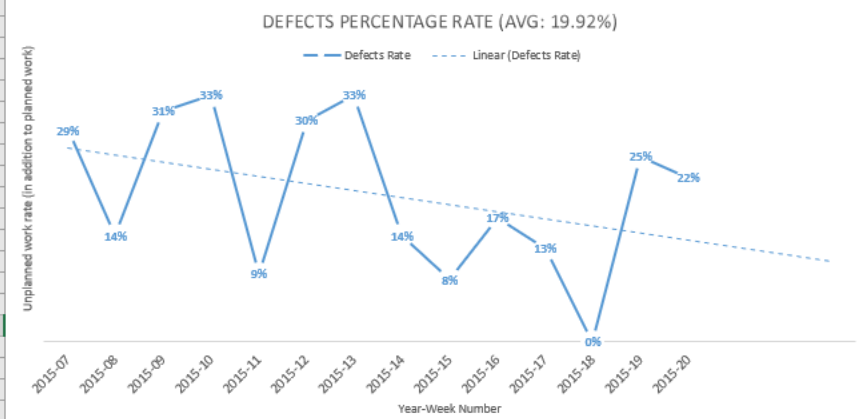
Work Type Filter

Showing from to

Coaching Tips:
 - Focus discussion on the trend not any one "bad" week in any of these dimensions (but discuss why bad weeks occurred)
 - Discuss the impacts of over-doing ANY ONE of these dimensions and early warning indicators of too much
 - Discuss ways to improve a weaker dimension by borrowing strength from another dimension - BALANCE

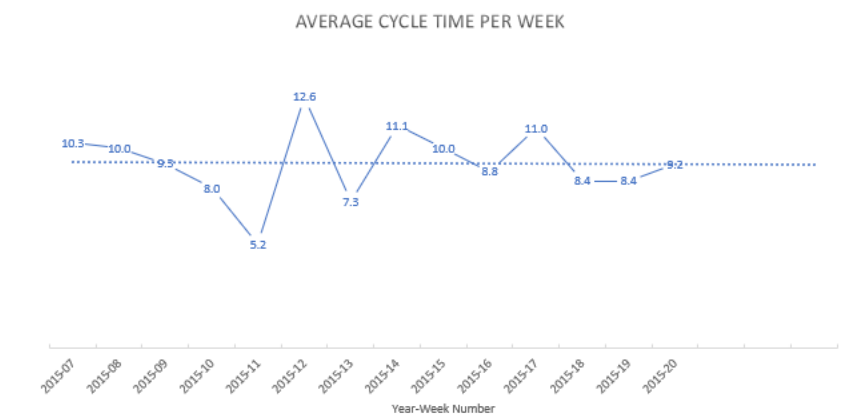
Quality - How Well - "Do It Right"

How much defect debt do we carry that impedes consistent delivery? Should be level, not up OR down!



Responsiveness - How Fast - "Do It Fast"

How fast do we deliver from starting something to finishing it? Look for trends by Work Type!



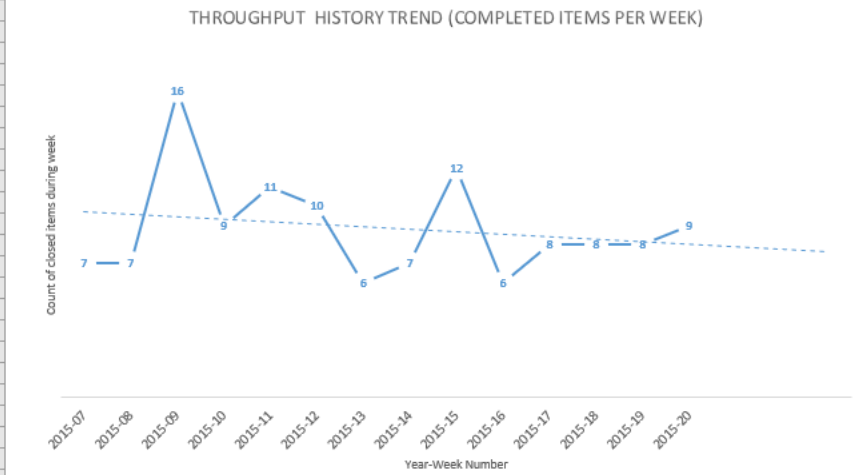
Value/Impact - How Valuable to Customers - "Do the Right Stuff"

Hmmm. What should you measure to make sure customers are seeing an outcome in what you are delivering?

Is the right work being selected that impact the customers in a meaningful way? Although productivity looks good, is valuable work being delivered? You thought it was valuable, but what did customers think?

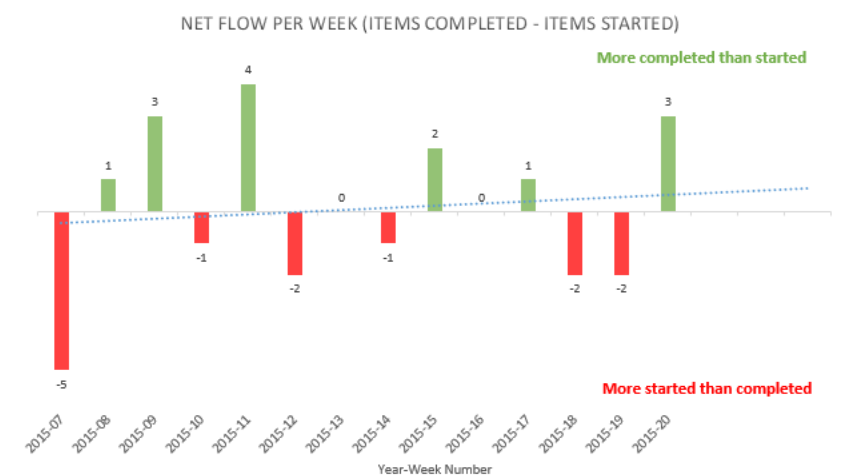
Productivity - How Much - "Do Lots"

What pace do we deliver work? Goal: Look for ways to increase. Watch quality & predictability if you overdrive!



Predictability - How Repeatable - "Do It Predictably"

How consistent is our completion pace? Goal: Keep around zero. Complete something in preference to starting.



Resilience - How Likely Are These Trends to Continue

Hmmm. What should you measure to make sure your are able to continue this performance in the future?

Are the team members happy? Are they going to leave? Is the team working at a sustainable pace, or are they exhausted? Are you about to take on challenges that are new to this team and will take time to learn?

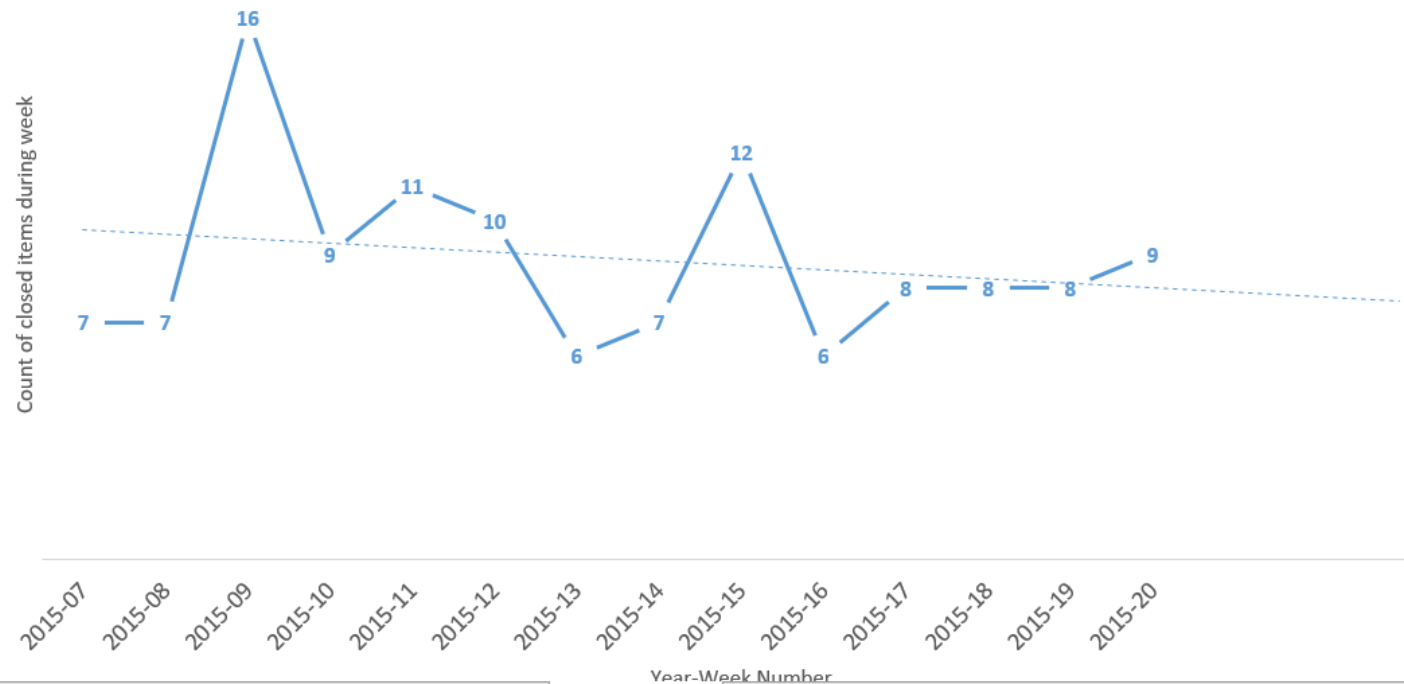
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THROUGHPUT HISTORY TREND (COMPLETED ITEMS PER WEEK)



<http://bit.ly/SimResources>

Yes, it is case sensitive, thanks for asking. Capital S and R.

Spreadsheets/Team Dashboard v4.xlsx

Outcome we want

Decision(s) we need

Insights needed to make decision

Measurement to "see" insight

Lower work in Progress (and cycle time)

- To stop starting and start finishing unblocked in-progress work.

- Do oldest stuff first if possible.
- Unblock work faster

- Age of WIP
- Why work is blocked.

Planned "priority" to be acted upon by teams

Start A before B because its higher Priority

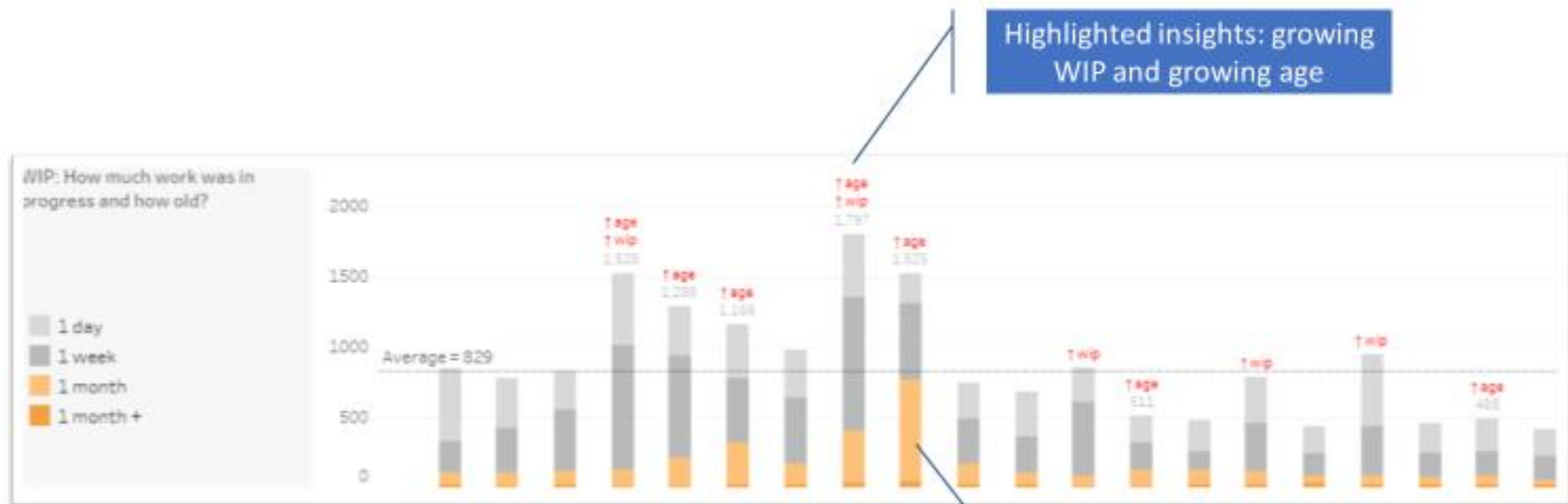
- Priority/urgency $A > B$
- Due Date approaching A...

- Planned
- Priority evident to team members.
 - Expected dates visible to team.

Outcome: To visualize and improve flow

- Outcome (we want to drive)
 - Reduce Work in Progress
 - Reduce cycle time of work
- Decisions (people need to make)
 - Lets finish the in-progress stuff before stating new stuff
 - Lets finish something that is older before something newer
- Insights (that help people make those decisions)
 - We have a lot of WIP compared to normal
 - Show warning if WIP grows $> x\%$ from prior week
 - We have an increasing “age” of in-progress work
 - Show warning if the average age of work grows $> x\%$ from prior week
- Measures (that show these insights)
 - Work in progress trend
 - Age of the work in progress trended and color coded from older to newer

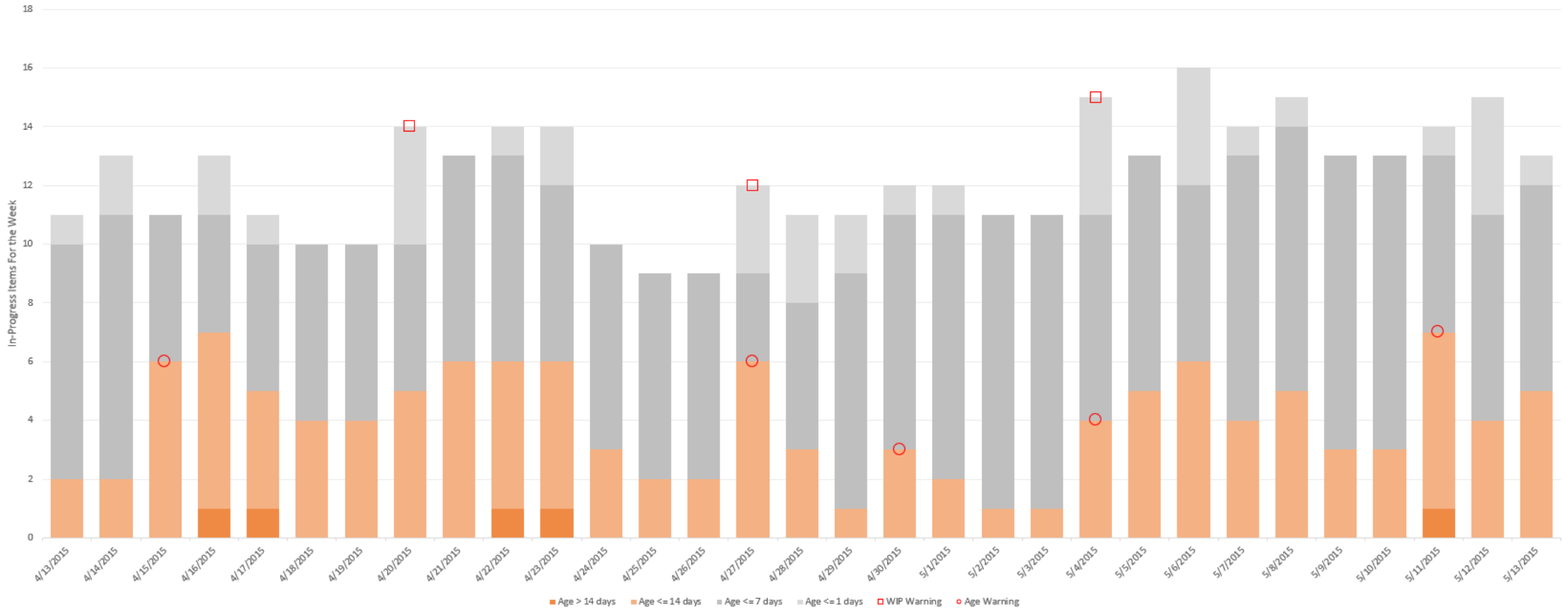
WIP and Age Measures



Highlighted insights: growing WIP and growing age

Color shows "age" of work trend

Work in Progress (WIP) and Age by Day



■ Age > 14 days
 ■ Age <= 14 days
 ■ Age <= 7 days
 ■ Age <= 1 days
 □ WIP Warning
 ○ Age Warning

What data to capture, what insights you will see and what you can do with it

	Seeing Work	Basic data for forecasting			Segmentation / categorization		Constraints	Prioritization / Value Maximizing	
Data	Capturing "Work"	Capture work "Completed" Date	Capture work "Arrival" Date	Capture work "Started" Date	Capture work "Type"	Capture work "Priority"	Capture blocked and queued time of work	Capture "Customer Value" of Work	Capture "Cost of Delay" of Work
Measure \ Insight	Visualize work	Throughput (or velocity) trend	Arrival rate or Incoming demand trend	Work in Progress	Filter metrics by work type	Filter metrics by priority	Process efficiency	Value throughput trend	Work start ordering by cost of delay
		Throughput (or velocity) stability	Lead-Time (arrived to completed)	Development Cycle-Time (started to completed)	Allocation of work by type	Allocation of work by priority	System Constraint Analysis (where blocked)	Work start ordering by value	Cost of delay of top n un-started work
			Age of arrivals trend	Age of in-progress trend	"Defect" Ratio trend	Wrong-order-o-meter		Value of un-committed work in backlog	
			System arrival rate stability trend	Team arrival rate (demand) trend				Value of in-process work	
Analysis		Forecast "how much" work per time period	Forecast "how long" to customer (lead time)	Forecast "how long" "in dev" (cycle time)	Forecast by "work type"	Forecast by "work priority"	Blocker sensitivity analysis	Investment ordering and optimization	Investment ordering and optimization

WORK STATES AND TIMES



customer Lead Time

Team Lead Time

Time to Commitment

Time to start

Time In-process

Time to Deploy

Look at

Longest

?

?

?

- Make "yes"/"no" decisions faster, more often.

?

Longest

?

?

- Team capacity or dependencies

?

?

Longest

?

- Dependencies or reducing WIP limits.

?

?

?

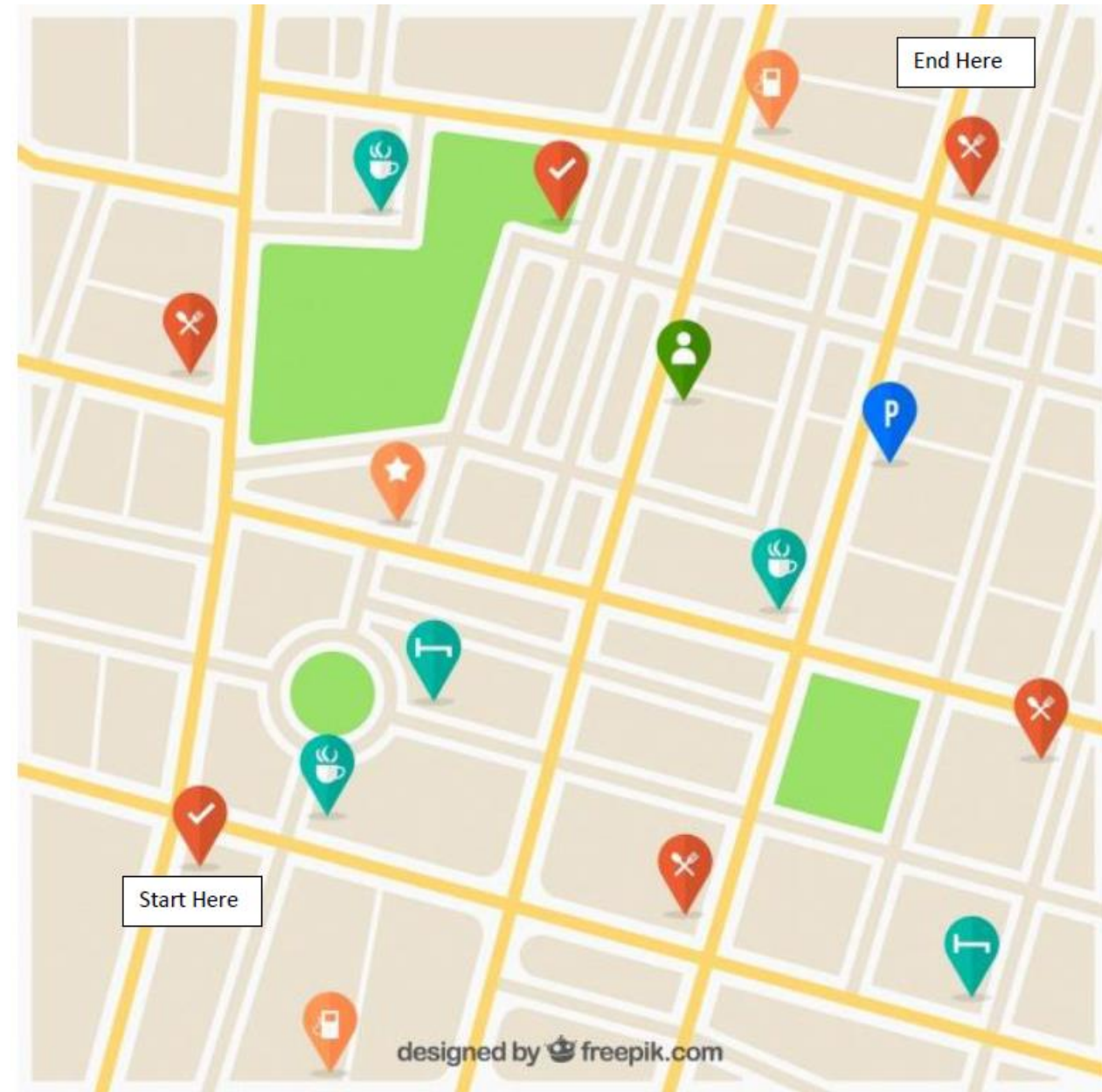
Longest

- Automate Deploy.

2) + dependencies

“When to Leave Home” Forecasting Exercise

Given two addresses compute the
“**when to leave home**” time
in order to arrive by a desired
target time.



Q1 – What is the general algorithm you might use to compute this time?

Spend 10 minutes discussing the problem and how you will compute the “leave home” time. Then decide on one person to present that algorithm using step-by-step sticky notes to the room in 2 minutes or less. Tip: start by discussing how you personally decide when to leave home when travelling to a fixed time event.

Extra credit: Define “success” for your solution.

After hearing and discussing all of the group’s ideas, spend 5 minutes and decide what method you think solves this problem the best.

Q2 – What data would you require to implement that algorithm?

Spend 5-10 minutes creating a sticky-notes for each input data or information required for your algorithm. Decide if its critical to have (can’t do without) or if it is an optimization (improves the forecast) and then decide on one person to present those stick-notes to the room in 2 minutes or less.

Extra Credit: For the critical data, describe what you will do if you can’t get or don’t yet have that data.

Q3 – What factors could cause forecasting error (arriving late)?

Spend 5-10 minutes discussing what external factors could cause forecasting error. Create a sticky-note for each factor and describe how you might “deal” with that factor in your forecasts. Decide on one person to present those sticky-notes to the room in 2 minutes or less.

Q4 – How might you measure success of this feature in production?

Spend 5 minutes discussing how to measure success in production, and how production data could improve the results over time. Decide on one person to present your findings to the room in 2 minutes or less.

Q5 – How might this same algorithm be used in forecasting when you need to start software features to deliver by a given date?

Spend 15 minutes as a group discussing how this technique might be used for forecasting software projects or features in multiple team environments. For example; What would need to be changed? What data you need for the feature/project and the system delivering those features/projects?

5 Data Driven Coaching Commandments

- Avoid Embarrassing People
 - (or they will just hide bad news)
- Act on Trends Not Single Measures
 - (lonely numbers make poor decision partners)
- Compare To See Insights
 - (or you will be misled by what you see)
- Highlight (Important) Insights
 - (the right ones and show me severity from expected)
- Balance Competing Forces
 - (and avoid doing more harm than good)

Avoid Embarrassment

- Public shaming = Data Hiding = No (reliable) Insights
- Show insights to the people who can fix issues, not those who can't
- There is always missing information, understand context before action

- Do
 - Celebrate insights from BAD news as much as GOOD news
 - Show data aggregated at a level where action makes a systemic difference
 - Always ask for context – “I see a decline, do we know why?”

Act on Trends

- Bad (or good) patterns cannot be seen from any single data point
- A single “worse” than expected measure may not be bad
 - Did it improve from last time (bad, but improving)?
 - Is it an outlier? Is it an erroneous measurement?
 - Is the difference significant enough to matter?
- Do
 - Track data over time to see change (trend)
 - Make insights and take action based on trend not value
 - Celebrate improving trends, even if not as good as you want yet

Compare to See Insights

- Compare actual trend against an expected trend to make insights.
- You need to compare against the RIGHT things to spot (the right) insights.
 - Size watermelons shouldn't be compared with apples (obvious)
 - Team formed five years ago shouldn't be compared with new team (less obvious)
- [Chart: Average fruit weight]
 - [your cherry farm needs to improve, you are way under average fruit weight]
 - [And your watermelon farm is way over average, bonus – promotion time]
- Do
 - Set expected values based on similar and appropriate prior examples and trends
 - Use comparisons to learn – “What is working here, and could be used there?”
 - When you get a false positive, ask “What caused us to think this was bad (or good)?” and fix

Highlight (Important) Insights

- Avoid “choose your own adventure” graphs (no obvious story/conclusion)
 - If you don’t highlight what IS significant, people will find their own
- Highlight where expected trend <> observed trend (by significant amount)
 - Severity of insights helps people take the right amount of action
- Audience: Highlight insights (only) TO those people who can take action

- Do
 - Highlight in an obvious way things that were NOT as expected
 - Show severity in a clear way, don’t make all insights equal
 - Show insights to people who can fix it, not people who can’t

Balance Competing Forces

- Over optimizing ANY one measure will cause impact elsewhere
- Being OK across many measurement dimensions > being EXCELLENT at one
 - See the 6 Dimensions to Balance I recommend
- Learn to anticipate the impacts of your actions on your system of measures

- Do
 - Measure competing dimensions
 - Look for early warning signs of over emphasis of any one metric
 - Constantly trade from something you are good at to improve something you aren't