

Question:

What is the problem with showing just one measure?

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That measure is **optimized**,
and the **consequences** are **hidden**.

Question:

What is the difference between a measure and a dimension?

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Dimensions expose the **intent of the measures** and help identify tradeoffs.

It's complicated and imperfect...

Just remember the **goal**:

Find the **conflicts** and keep looking for **tradeoffs**

4) Balanced Performance Measures

What do we **measure (data)** for performance monitoring / improvement?

Reminder: Indicator Types

- Monetary vs Non-Monetary
- Internal vs. External
- Performance vs. Operational
- Leading vs. Lagging
- ...

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Another classification of indicators

1. Natural Indicators (Direct Measures)
2. Artificial Indicators (Indirect Measures)
3. Stand-in Indicators

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Natural Indicators

- When we can measure **directly** and **objectively** what it is exactly

- E.g.

Profit, Consumed Water, Deforested Land

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Artificial Indicators

- When we **can't** measure something **directly**, we look for an **indirect** implication
- Its **absolute value doesn't mean anything!**
 - It is its **trend** that is important, so we need **continued** measurement of it.
- E.g.
 - Customer Satisfaction (Using Surveys and Questionnaires)
 - A Research Value (Article Citations)
 - Economic Health: Growth or Recession (GDP)

Stand-in Indicators

- When we can't measure something **directly**, and we can't estimate an indirect implication
- **X indicates Y**
- E.g.
 - Body Mass Index in relation to Health
 - A Country's "GDP per Capita" in relation to its Well-being
 - Customer Loyalty (When we don't have customer satisfaction, we look into repeat customers)
 - Employee Loyalty (When we don't have employee satisfaction, we look into staff turnover)

Example

- For an indicator for “Industrialization of a Country”

We can look into its “Electricity Usage in Industries”

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Question (1/2)

- What type of indicator is “Life Expectancy”
- We need first to ask yourself:
“What did you want to measure that led you to this indicator?”

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Question (2/2)

- What type of indicator is “Life Expectancy” in a country?
- We need first to ask yourself:
 - “What did you want to measure that led you to this indicator?”
 - Was it Average of People’s Age?
 - Was it the Quality of Life in a country?

Question:

How do we measure “agility”?

What type of indicator it needs?

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Question:

How do we measure the effectiveness of a “change initiative”?

What type of indicator it needs?

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What makes a good “measure”?

- Spend a few moments and think of **what you currently measure for performance**

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Example

1. Telling you it is winter is not very useful, or that it was cold yesterday.
2. Knowing it would be freezing cold tomorrow is much more useful, and I can take action on that.
3. Make sure to wear warm clothing or cancel going hiking.

Do not Distribute

What makes a good “measure”?

- Spend a few moments and think of **what you currently measure for performance**

Tells you something

Tells you something
you didn't know

Tells you something
that might happen

Tells you something
that will happen
unless you act

Good Measures

allow you to see something you didn't know
that you can do something about

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Good Measures...

1. Don't violate the rules mentions in part 2 (Basic Rules of Data and Charts)
2. Help you “see” a tradeoff that others don't see
3. Help you “see” (gain insight) earlier that others are yet to see
4. Those insights lead to actions (that matter)
 - If they don't lead to actions, they are just for vanity

Definition: Lagging vs Leading Measures

- Lagging | پس نگر
- Leading | پیش نگر

- A leading measure **correlates** to a change in a future (lagging) measure.

Speculative

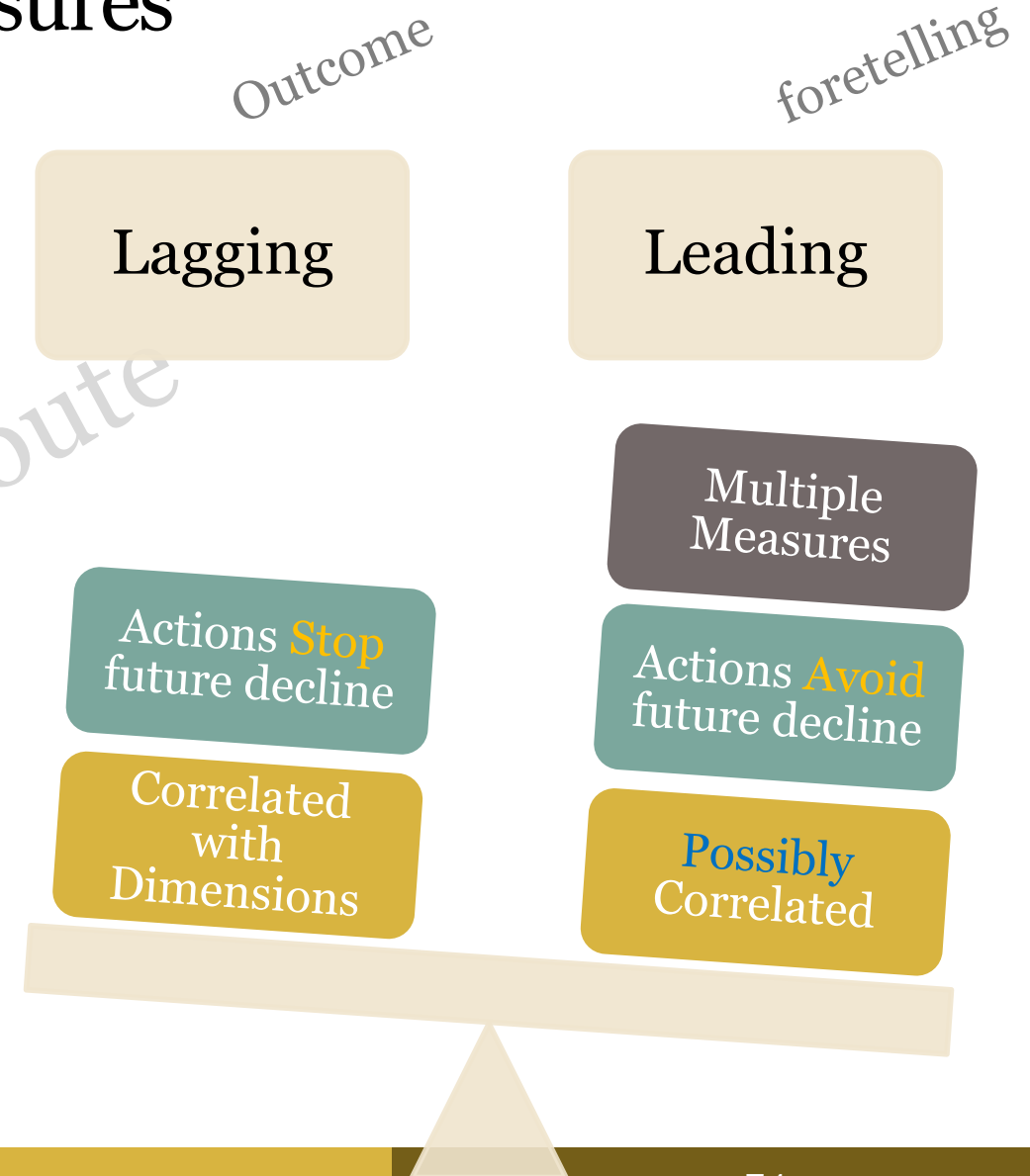
- A lagging measure is an **evidence** that something HAS occurred.

Definitive

Definition: Lagging vs Leading Measures

- Lagging | پس نگر
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Example

- Cold and Rainy weather forecast for next week means
Lower productivity for workforce and equipment at our project site

What if it doesn't rain and it's not too cold?

What if the situation is reversed?

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Measurement isn't Free

- Measurement **isn't free** (without cost),

So, we need to take the “**Cheapest**” and the “**Most Accurate**” measure we can, **that STILL give insight.**

- Compare:
 - Qualitative (surveys, subjective) versus Objective Quantitative measures
 - Story point velocity, vs Throughput

What we lose if we go with the other one?

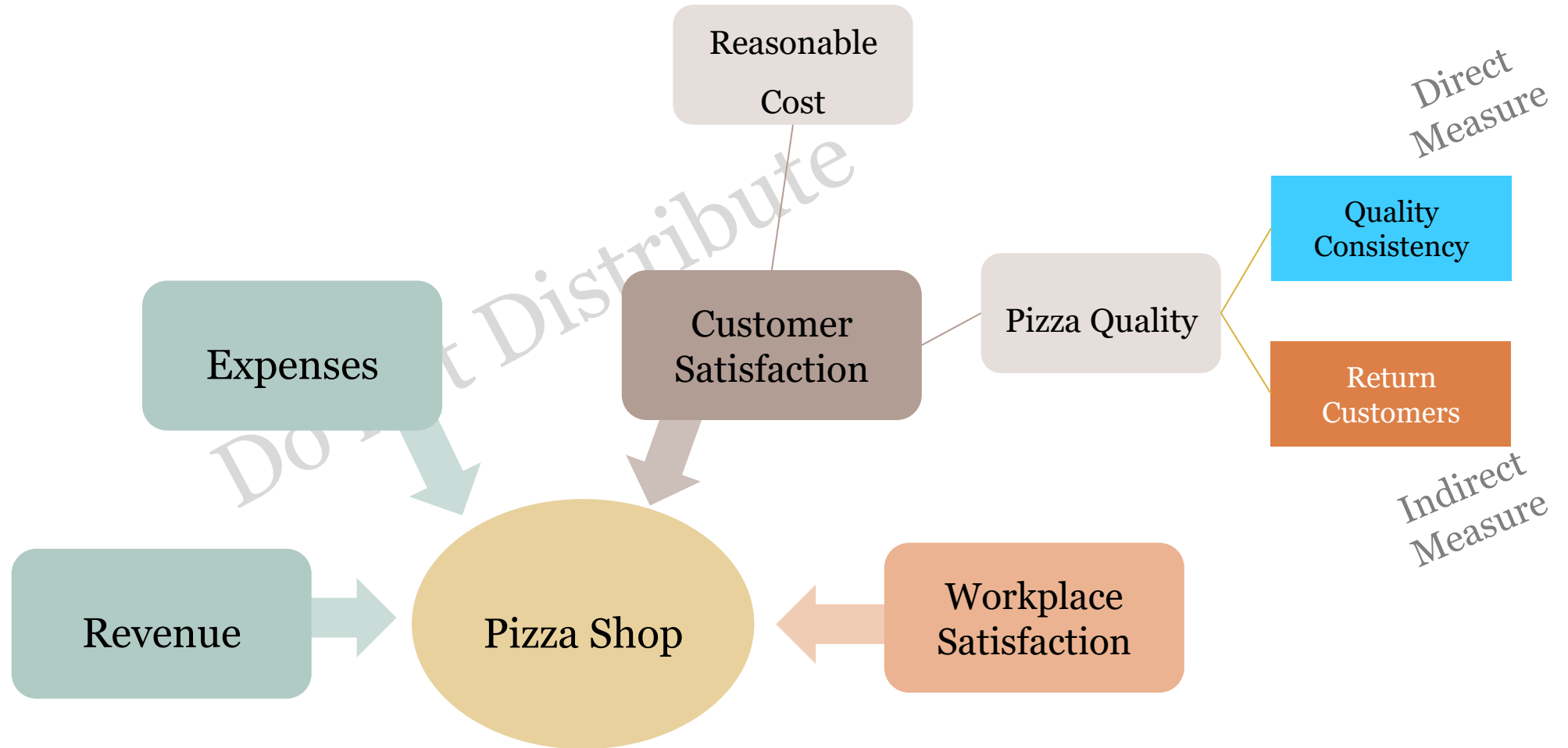
There is **never** going to be a **perfect** answer!

Measurement isn't free, and sometimes we **need to let go of**
perfect to make **a start of getting some insight** that is
actionable for our dimensions.

Example: Pizza Shop – Four Dimensions

“Condition”
Measure

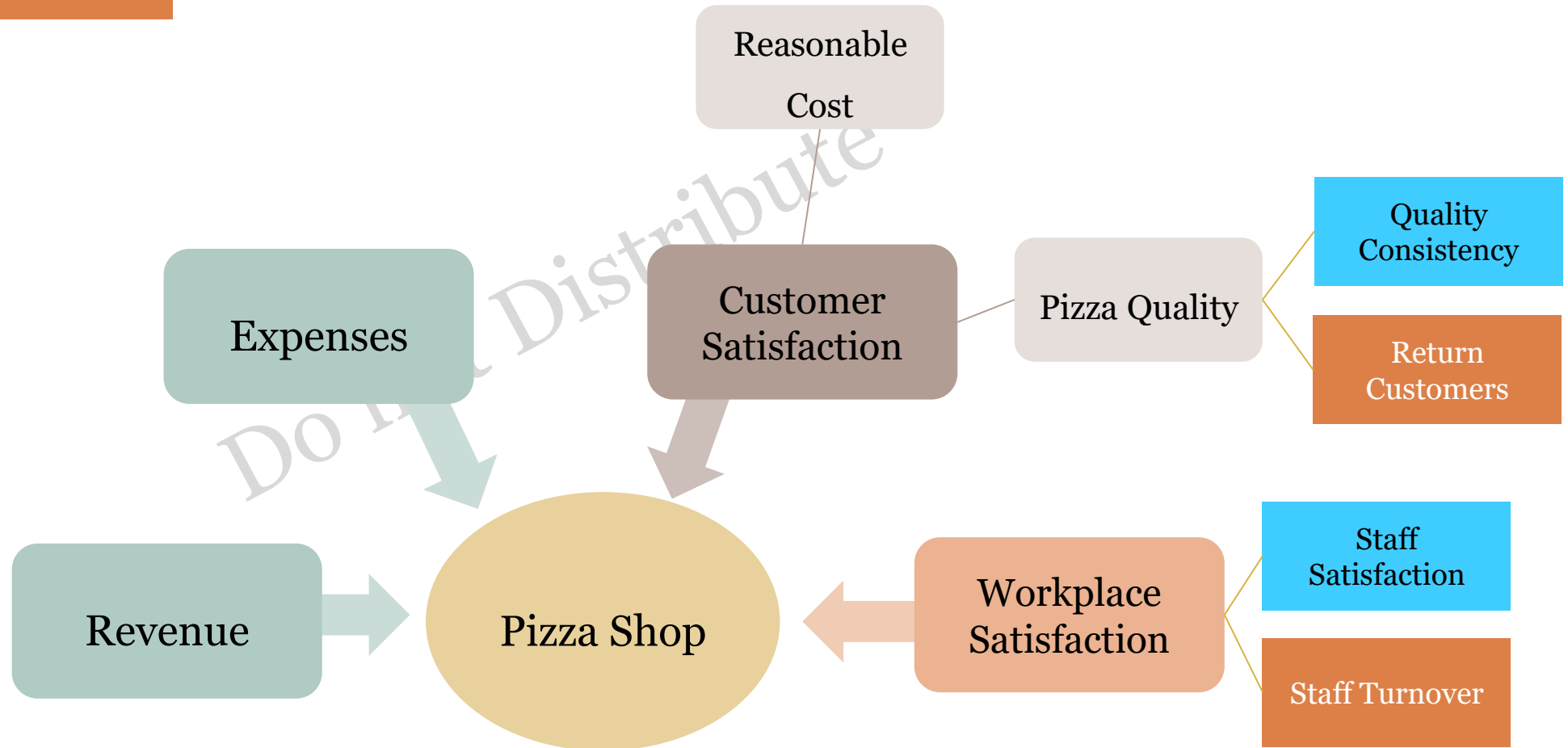
“Outcome”
Measure



Example: Pizza Shop – Four Dimensions

“Condition”
Measure

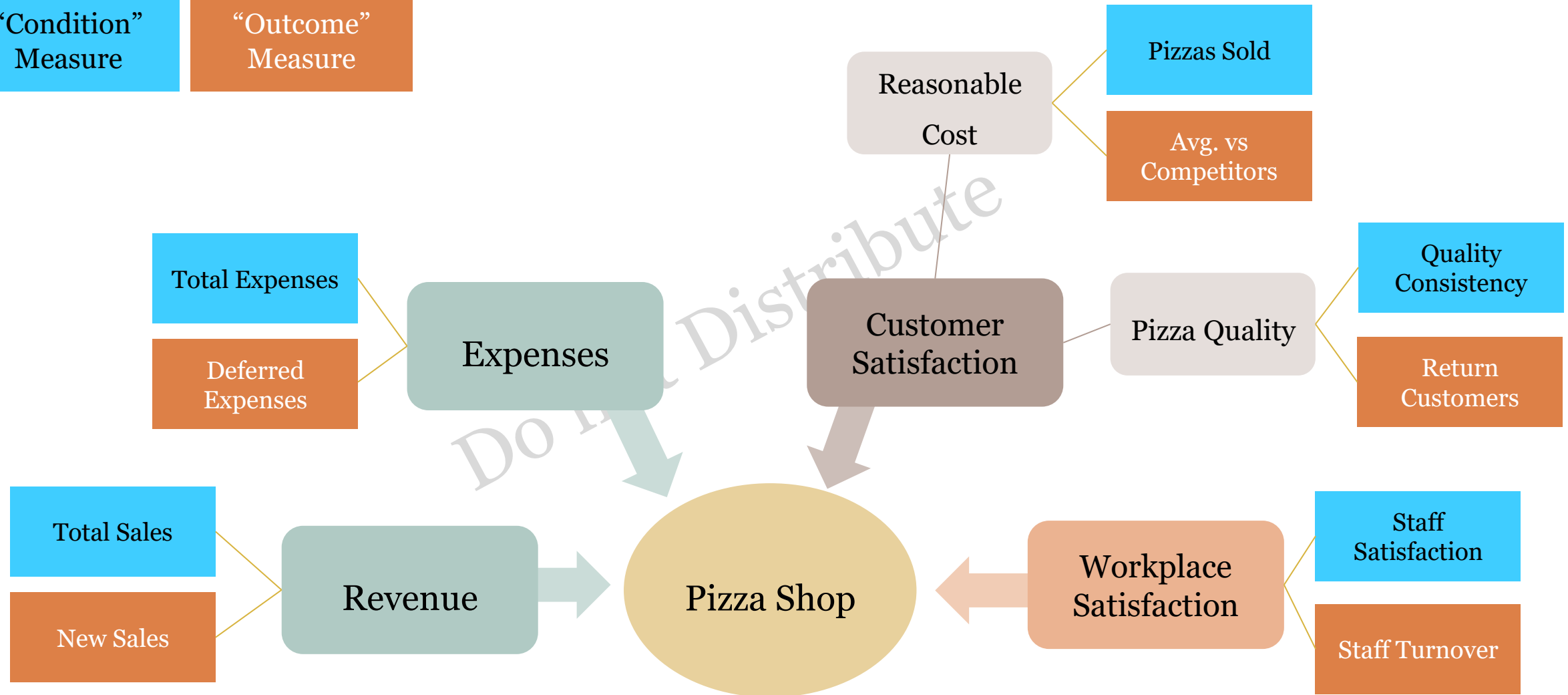
“Outcome”
Measure



Example: Pizza Shop – Four Dimensions

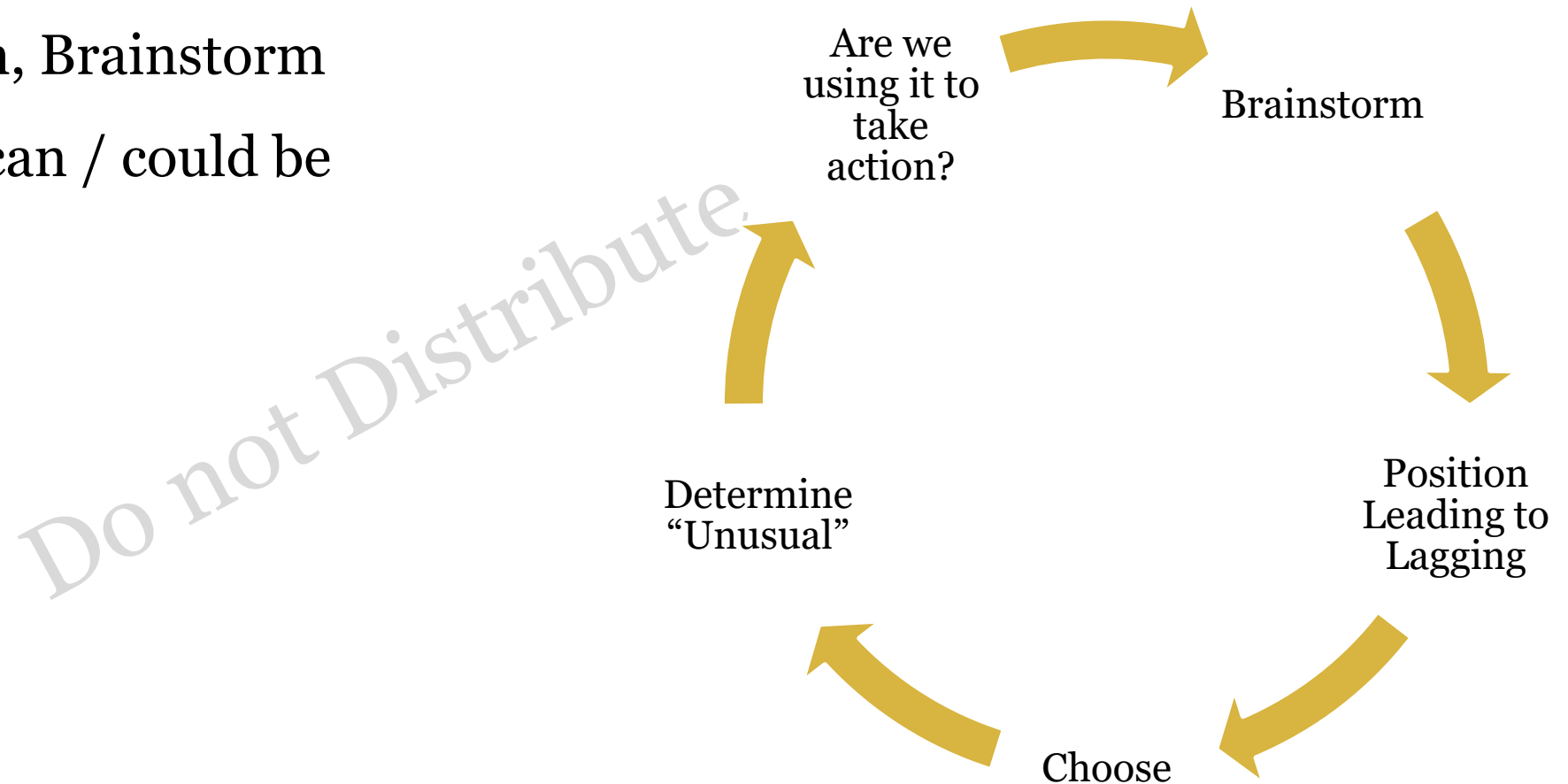
“Condition”
Measure

“Outcome”
Measure



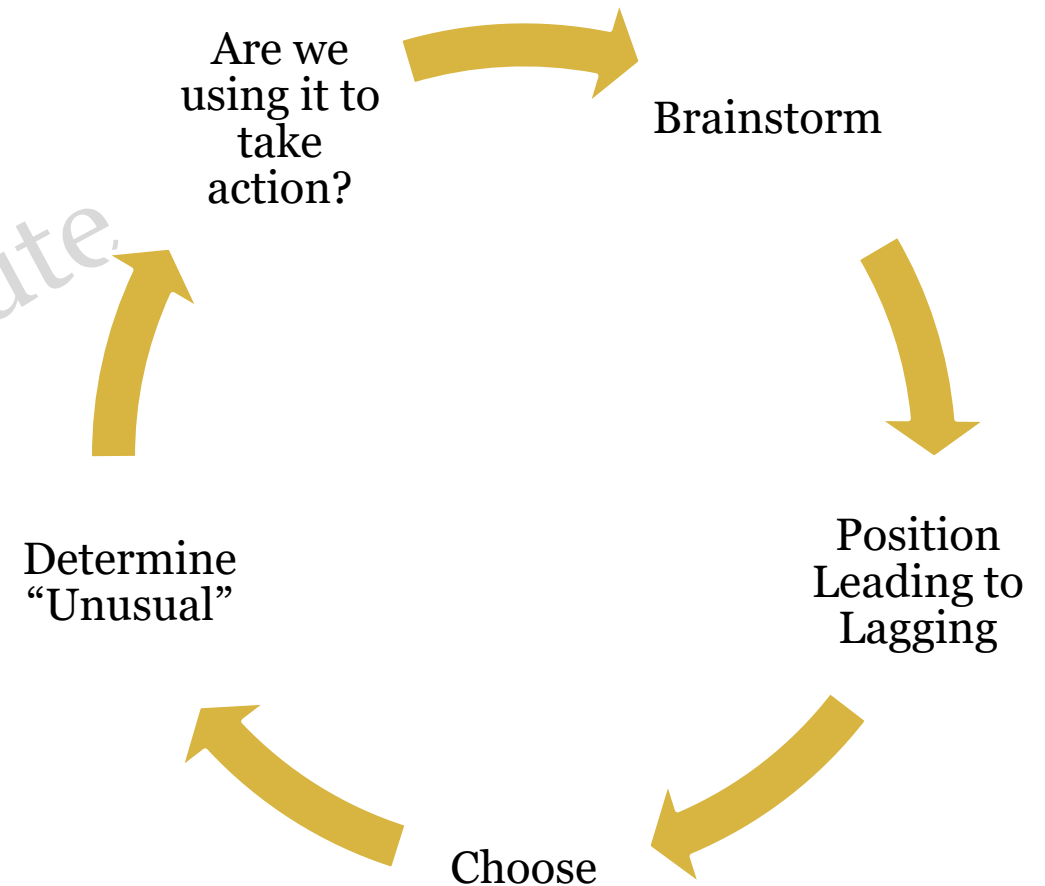
From Dimensions to Leading Conditions Measures (1/3)

1. For each Dimension, Brainstorm what is currently / can / could be measured



From Dimensions to Leading Conditions Measures (2/3)

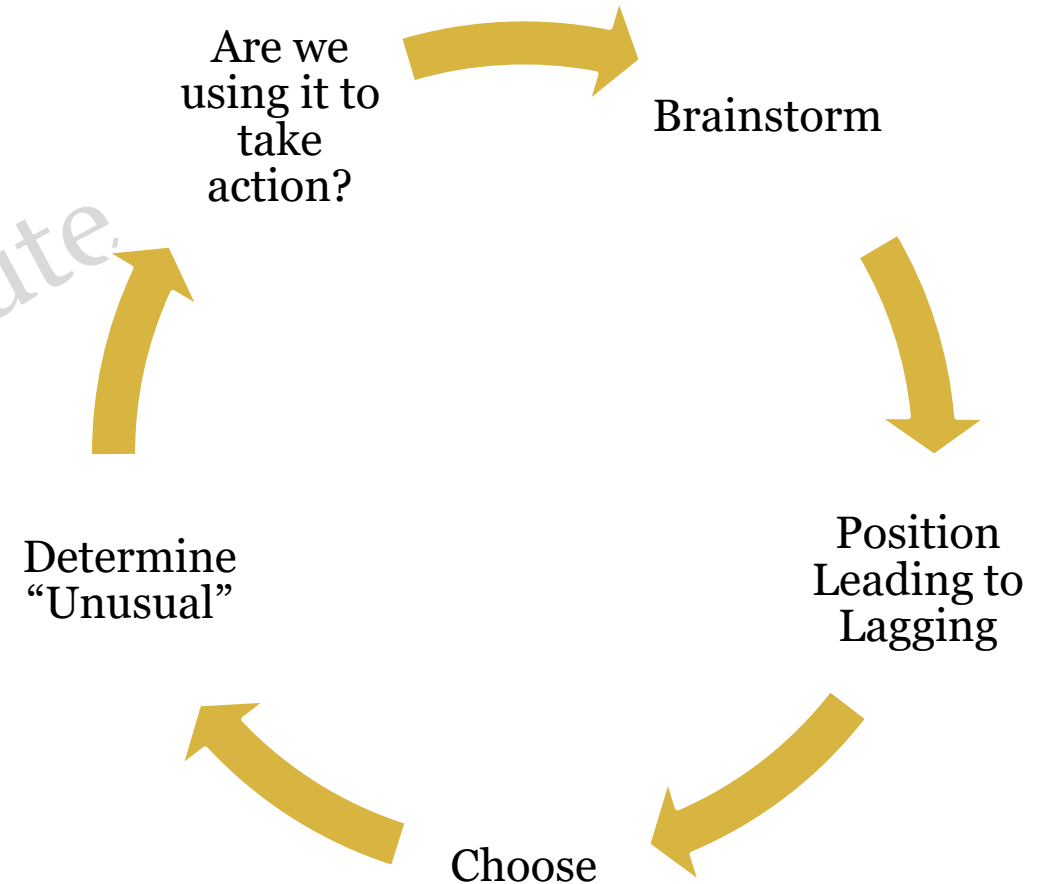
2. Sort leading to the left, lagging to the right,
 - Has an event occurred ALREADY, correlated to this dimension? **Lagging**
 - Have we seen incidences of an event occurring in the past cause this dimension to change? **Leading**



From Dimensions to Leading Conditions Measures (3/3)

3. Choose the measure that:

- You can get at a **reasonable cost / effort**
- That is the **most correlated** with the lagging (typically not the leftmost option)

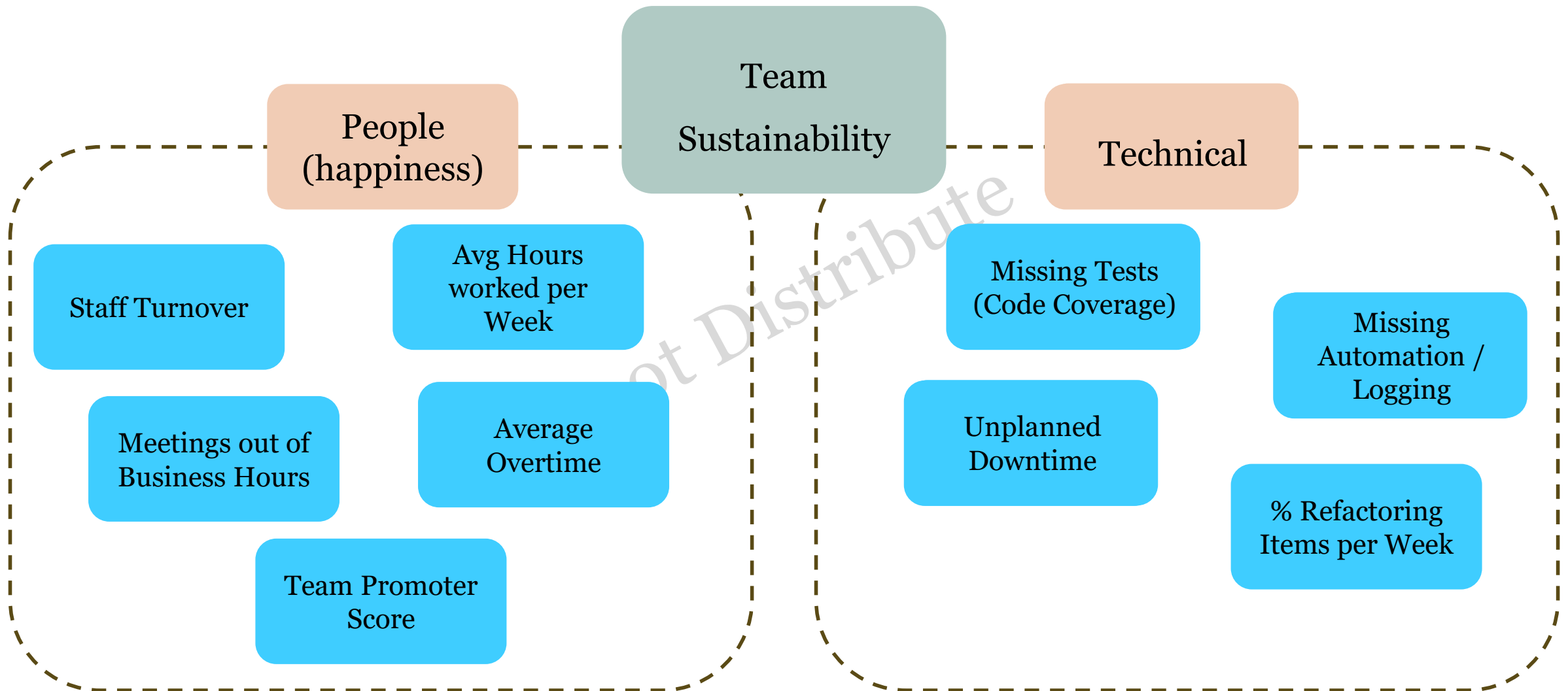


Example: Delivery Sustainability - Brainstorm

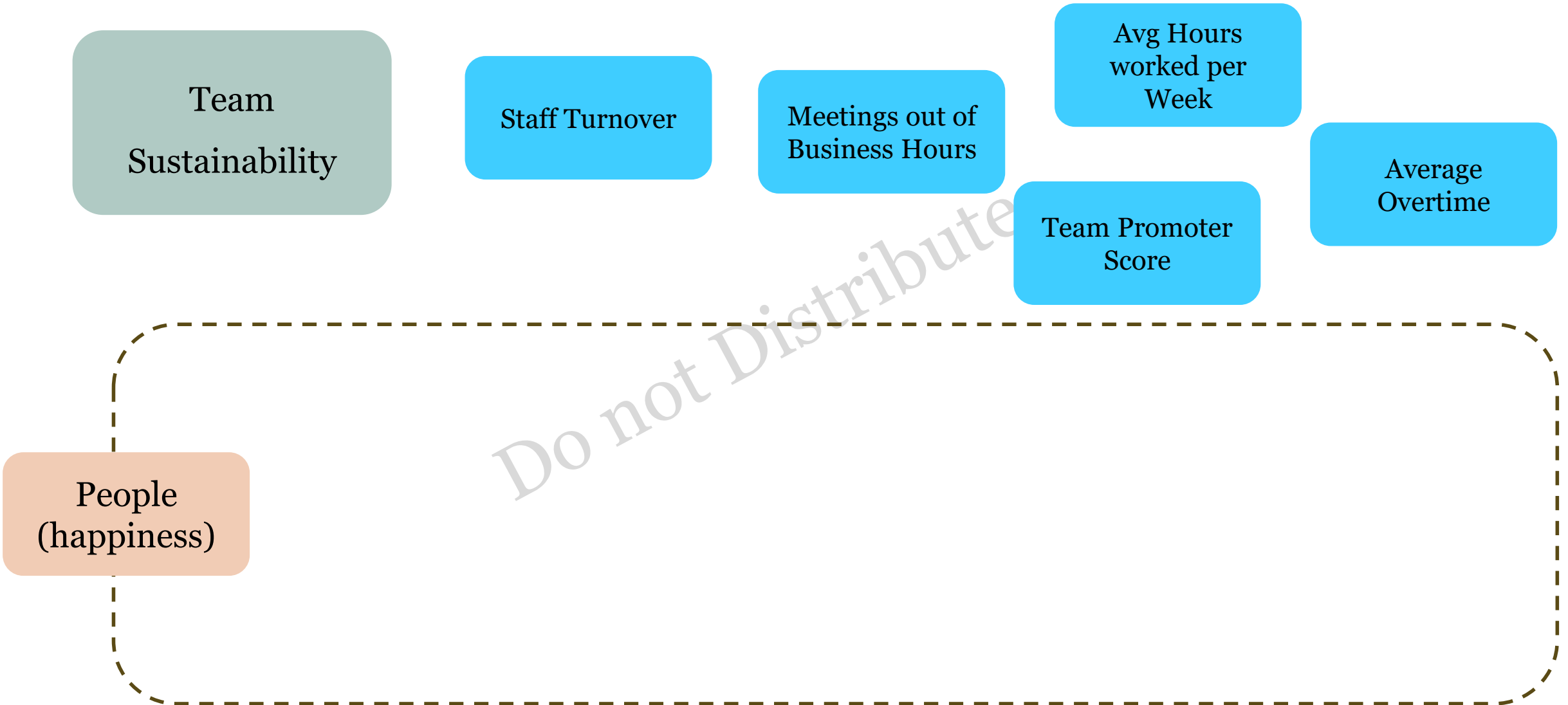
Dimension	Deliver long-term at the current performance level
Level	Team
Project / Product	PMIS and BI

Do not Dr

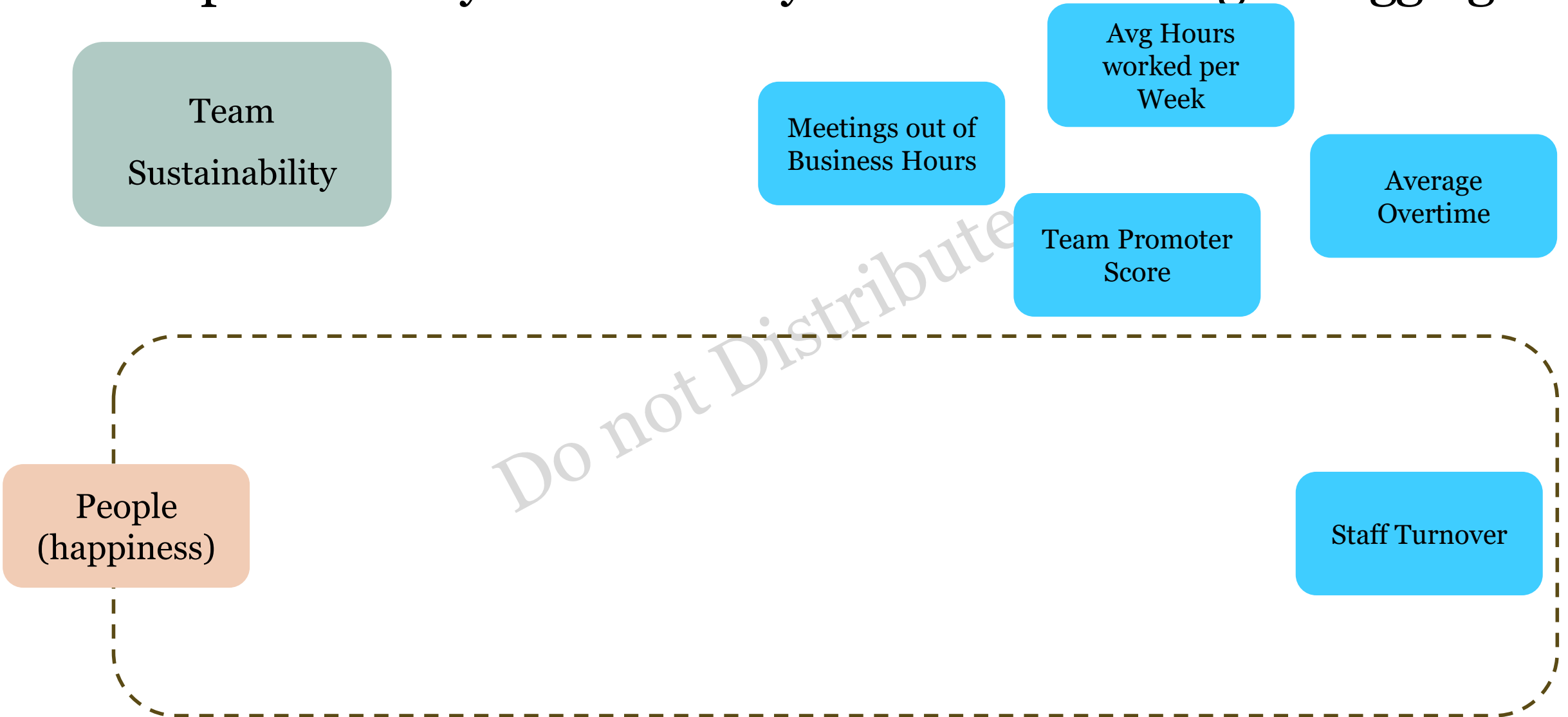
Example: Delivery Sustainability - Brainstorm



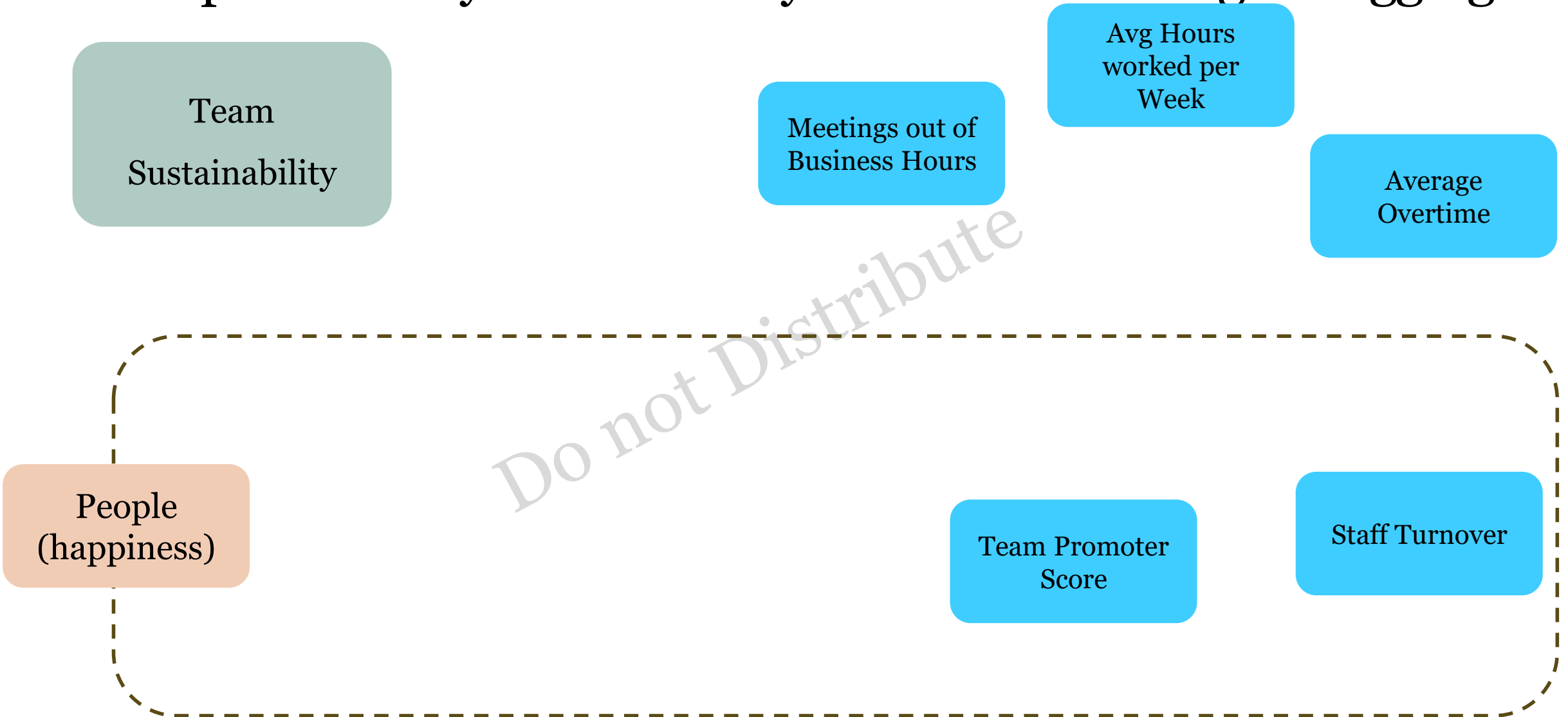
Example: Delivery Sustainability – Position Leading to Lagging



Example: Delivery Sustainability – Position Leading to Lagging



Example: Delivery Sustainability – Position Leading to Lagging



Example: Delivery Sustainability – Position Leading to Lagging

Team
Sustainability

People
(happiness)

Meetings out of
Business Hours

Avg Hours
worked per
Week

Average
Overtime

Team Promoter
Score

Staff Turnover

Example: Delivery Sustainability – Position Leading to Lagging

Team
Sustainability

Technical

% Refactoring
Items per Week

Missing Tests
(Code Coverage)

Missing
Automation /
Logging

Unplanned
Downtime

Example: Delivery Sustainability – Choose

Team
Sustainability

For Teams, **lagging** indicators might be OK.
Because teams can **make changes very quickly in isolation**

People
(happiness)

Meetings out of
Business Hours

Avg Hours
worked per
Week

Example: Delivery Sustainability – Choose

Organizational Sustainability

For Teams, **lagging** indicators might be OK.
Because teams can **make changes very quickly in isolation**

People
(happiness)

Meetings out of
Business Hours

Avg Hours
worked per
Week

Recap:

What is a “leading” measure?

A leading measure **correlates** to a change in a future (lagging) measure.

A lagging measure is an **evidence** that something **HAS** occurred.

Recap:

How do we get a “leading” measure?

Brainstorm the outcome (lagging) measures you want. Then ask:

“What would / could cause this measure to go up or down?”

Key Takeaways

1. The **first goal** is a measure in each dimension, not the best measure.
2. Most **common** measures are **post-output** or **outcome**.
3. Don't be in search of the **perfect** measure.
4. The job of the measure is **an earlier insight into a later consequence**.
5. The **more lagging** indicators you use, the more you are **too late**.
6. The **more leading** indicators you use, the more you are **placing a bet**.

Exercise:

List measures for a dimension

from the dimension “Speed” in your context, create
a leading -> lagging list of possible measures.

5) Balanced Performance Measures for Flow

Measure for “flow”?

- Spend a few moments and think of **what you currently measure for flow-based systems**

Do not Distribute

Measure for “flow”?

- Spend a few moments and think of [what you currently measure for flow-based systems](#)

Lead Time

Blocked Time

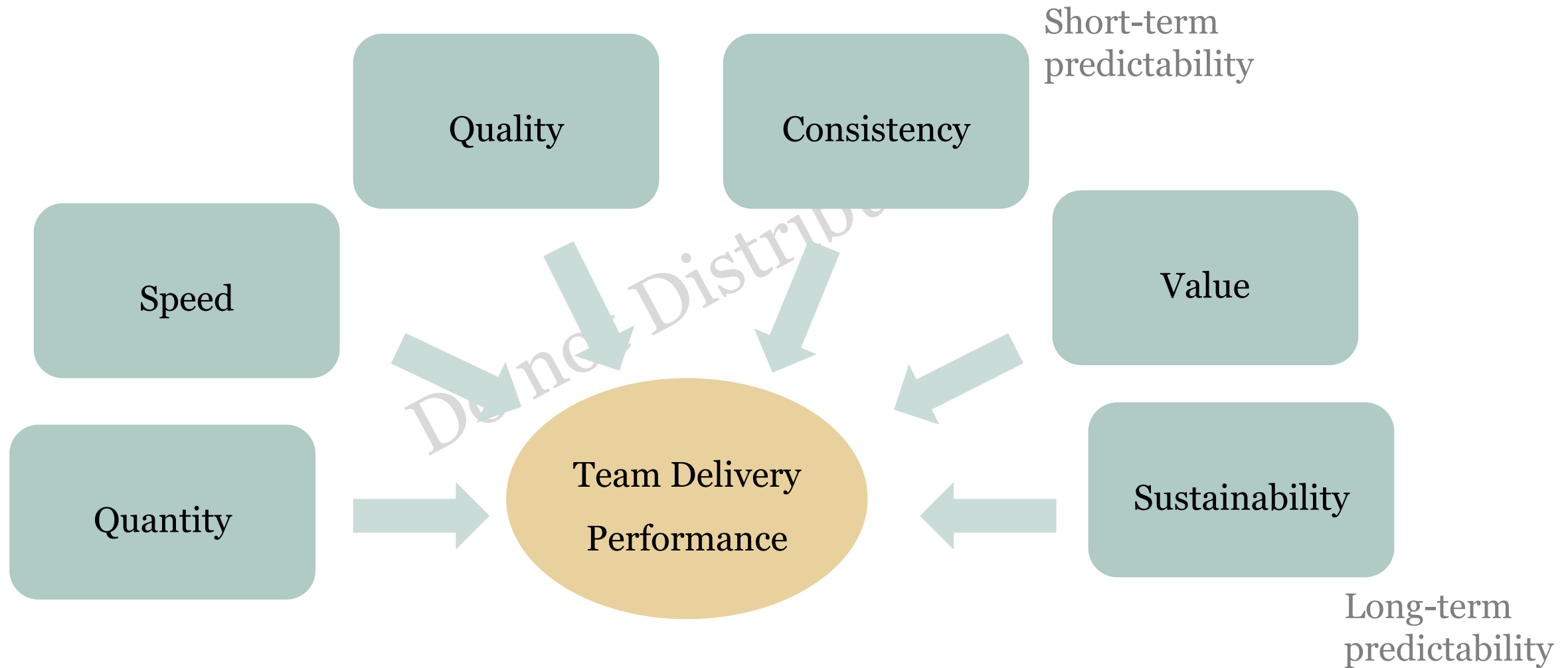
Throughput

Defects

What is a flow-based system?

1. Any system where something moves from “A” to “B”
2. It can be knowledge work or physical objects or people or ...
3. The key aspect of flow is **MOVEMENT**
 - from one form / state / place to another
4. In most organizations, there are many types of flow

Six Proposed Dimensions of Flow



Do I need all Six Dimensions?

1. Yes eventually. But don't rush the basics; so **Yes and No!**
2. Your first step is to get to “**stable**”,
and one dimension is currently holding you back

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Question:

What dimension should you start with in most cases?

Sustainability – NOT throughput, NOT lead-time...

Until the team is running in a sustainable way, the other metrics hold little value for future prediction.

Order of Flow Data-Driven Improvement

Sustainability

Is the team likely
to persist in
current capacity
and skillset?

Do not Distribute

Order of Flow Data-Driven Improvement

Sustainability

Is the team likely to persist in current capacity and skillset?

Stable Flow – WIP (Predictability)

Are we managing WIP?

Are we managing Blocked Work?

Is the age of that WIP stable or decreasing?

Order of Flow Data-Driven Improvement

Sustainability

Is the team likely to persist in current capacity and skillset?

Stable Flow – WIP (Predictability)

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Are we managing Blocked Work?

Is the age of that WIP stable or decreasing?

Quality

Are we shipping working product?

Are we investing enough in keeping it that way?

Order of Flow Data-Driven Improvement

Sustainability

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Are we shipping working product?

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Value

Are we shipping the work we want to ship?
Are we focused on the work we want to?

Order of Flow Data-Driven Improvement

Sustainability

Is the team likely to persist in current capacity and skillset?

Stable Flow – WIP (Predictability)

Are we managing WIP?

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Value

Are we shipping the work we want to ship?

Are we focused on the work we want to?

Speed & Pace

Throughput
Incremental
Improvements
Lead time
incremental

References

- Troy Magennis, “Data-Driven Improvement Course” on FlightLevels Academy
- Kaplan, Norton, “The Balanced Scorecard – Measures that drive performance”, Harvard Business Review, 1992
- Larry Maccehrone, “Impact of Agile Quantified”, 2011
- سایت متمم: «سیستم کنترل متوازن چیست؟»

Do not Distribute

An opportunity for wonder

The pleasure of finding things out

~ Richard Feynman