

Part 2.5

Data-Driven Improvement

An Introduction

Session Prerequisites

- None
- But it complements other topics, like EBM and Kanban

Do not Distribute

1) Why Do We Measure?

The **motivation** behind **measuring**
teams and organizations who
want to **improve**

Why Measure?

- Spend a few moments and think of **why** and **what** to **measure** in your systems.

Do not Distribute

Why Measure?

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To Observe

To Know when
to Panic!

To Inform and
Educate others about
something we know

To Improve

Definitions (1/2)

- Measure

Something that can be sensed objectively or subjectively

- Data or Indicator | شاخص

A quantification or categorization of data

Definitions (2/2)

- Chart

A visual representation of data

- Dashboard

A set of charts **read together** on or in one place for some shared purpose

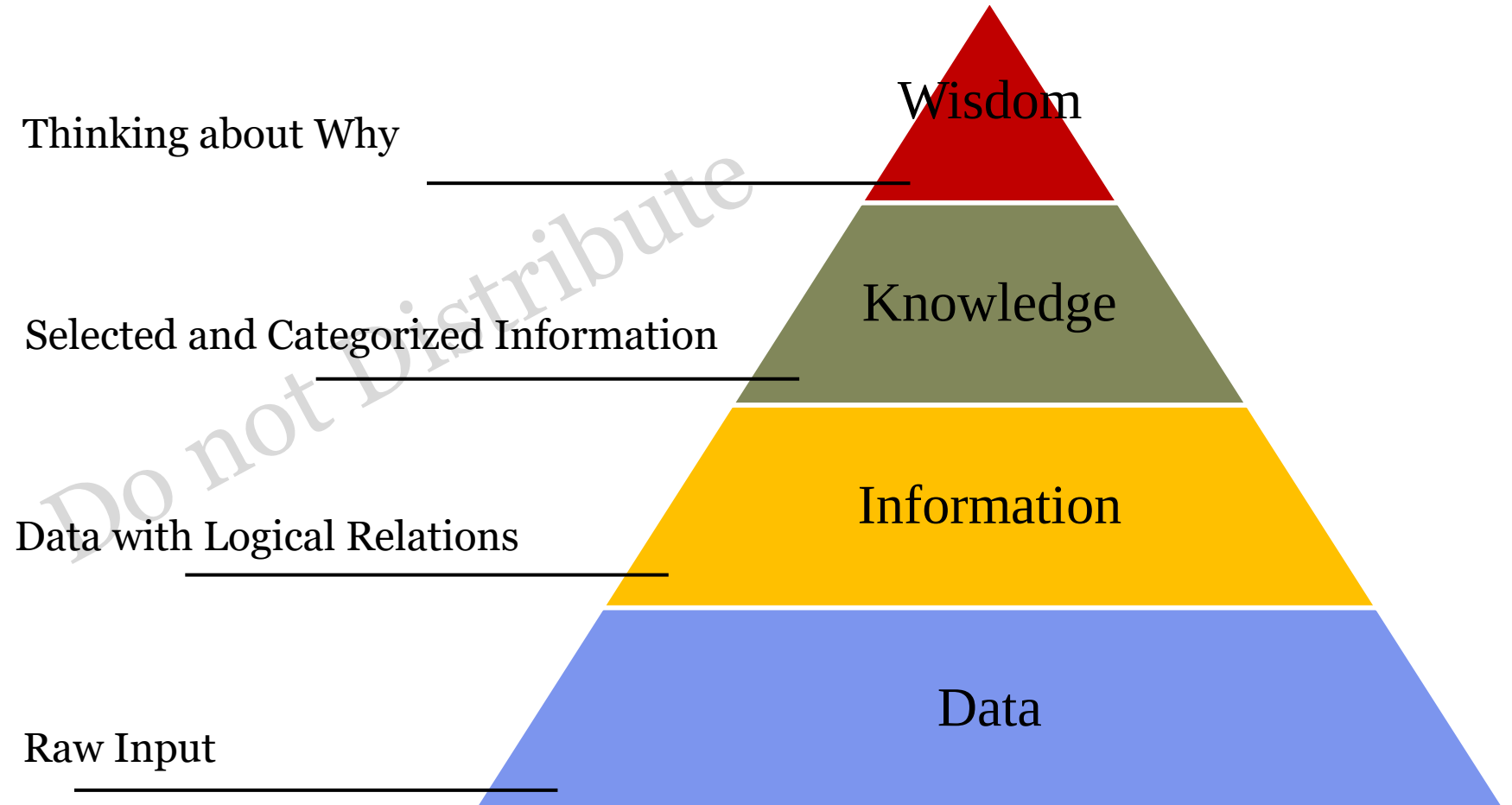
- Insight | بصیرت، بینش

An epiphany gained from a chart of dashboard

DIKW Pyramid



Russel L Ackoff
(1919-2009)



Reasons to Measure (1/3)

- 1) Processes and Systems have (and cause) measurable effects
- 2) If we don't measure these effects, they still occur ...
- 3) The real question is, **what happens if we don't measure?**

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Reasons to Measure (2/3)

- 1) Processes and Systems have (and cause) measurable effects
- 2) If we don't measure these effects, they still occur ...
- 3) The real question is, **what happens if we don't measure?**
 - Bad things happen, and nobody notices until it is too late
 - Some people know things others don't and do "stupid" things
 - Progress or improvement is opaque (intentionally or unintentionally)

Reasons to Measure (3/3)

4) Measurement (data) **informs** PEOPLE

to take **action** (make decisions)

that otherwise wouldn't be taken (as early)

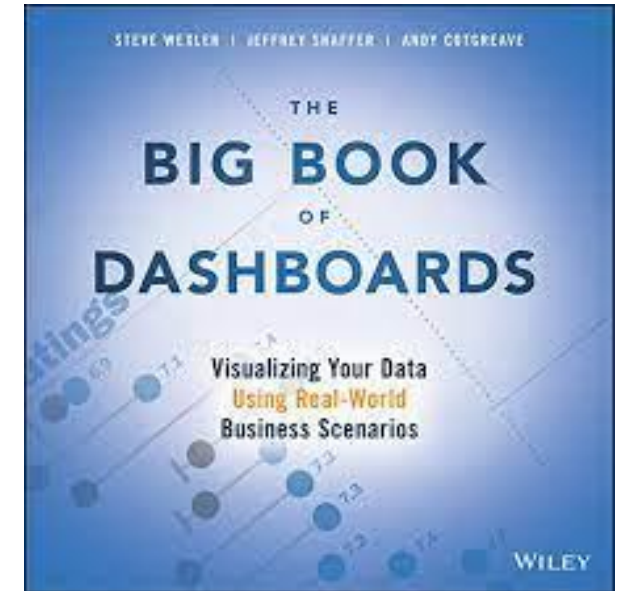
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Our Goal Showing Data

For the **largest** number of people,

Provide the **greatest** degree of understanding,

With the **least** effort.



Steve Wexler, et al,
“the Big Book of Dashboards”,
Wiley, 2017

Every chart needs to ...

Turn Data

Into Insights

Into Decisions

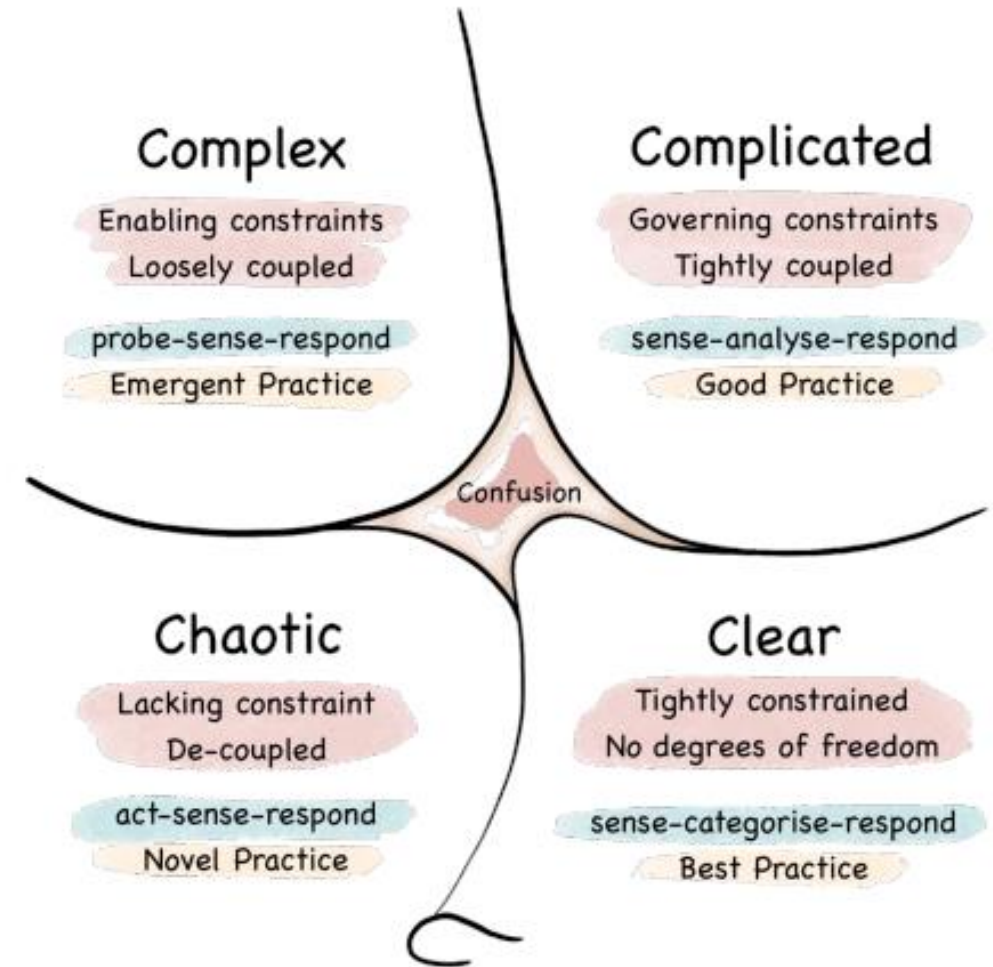
Into Actions

What -> So What -> Now What

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Making Sense Faster

1. People **need help** understanding the complex systems around them
2. Measurement shown visually helps them understand (sense) faster
3. Measurement is all about getting people to the Sense and Respond faster and more consistently
4. Without measurement, people sense at different times and urgency



Types of Information (and Charts)

1. Operational

Tells us what is happening now

2. Analytical

Tracks data to identify trends

3. Strategic

Tracks performance indicators

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Operational Information

- Tells us that is happening now
- See and React (obvious actions, reactions), Cynefin's Clear
- Time-Sensitive Insights ant cause informed action

Improve / Inform
What?

- What are we doing now?
- What is in our Way (Obstacles, Constraints, Limitations)

Analytical Information

- Tracks data to identify trends
- See and Discuss (multiple actions possible), Cynefin's Complicated/Complex
- See past & current values and "Speculate" future values

Improve / Inform
What?

- What we WILL do next
- What we ARE doing now and its obstacles

Strategic Information

- Tracks performance indicators
- See and Review (numerous interpretations cause/effect), Cynefin's Complex/Chaotic
- Communicate targets that we want to achieve and see progress

Improve / Inform
What?

- What we COULD do (choose better)
- What we PLAN to do (choose and align to outcomes)
- Did what we did have the IMPACT we anticipated

Question:

What are the **goals** of measurement?

Use data to **sense** and **respond** faster

Do not Distribute

Question:

What does every chart need to have?

A clearly defined What, So What, and Now What(s)

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2) Basic Rules of Using Data and Charts

If you can't guarantee these, **delete** the chart

What makes data harmful?

- Spend a few moments and think of why **data might do more harm than good.**

Do not Distribute

What makes data harmful?

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Data is Fake

Intention is to
mislead

Blame the
messenger

Drive adverse
behavior
(malicious
compliance)

Do not

Common Examples of Fake or Misleading Data

- Gaming the System
- Manipulating the System
- (See Indicator Dysfunctions section)

Do not Distribute

First, Do No Harm!

Do not Distribute

Question:

What happened if people **get embarrassed** by data?

They will **hide** data.

You won't have the insight to improve or react to failure.

Question:

What happens if you make decisions on **the most recent** data point?

You make bad decisions.

Without the prior measures, you delay seeing/reacting to values that will be adverse “soon”

Question:

What mistakes occur when setting “targets” or “limits”?

1. You might miss adverse measures of different types within the data. (E.g. Small watermelons are missed because data also contains oranges.)
2. Cause adverse behavior for no benefit.
(E.g. work might be split into smaller pieces that can't be delivered separately – just adding overhead.)

Question:

Is there **one** indicator or chart **to rule them all**?

NO!!!

Multiple competing dimensions of performance need to be considered and balanced in business and development performance.

Unbalanced Control Systems

- Our indicators aren't incorrect, but we might have chosen an unbalanced set of indicators!
 - We weigh some of them too much, so some aren't emphasized and are neglected.
 - Most of our indicators show the same thing
 - We can't see the full picture
 - ...

Over-focus

Under-focus

Indicator Types

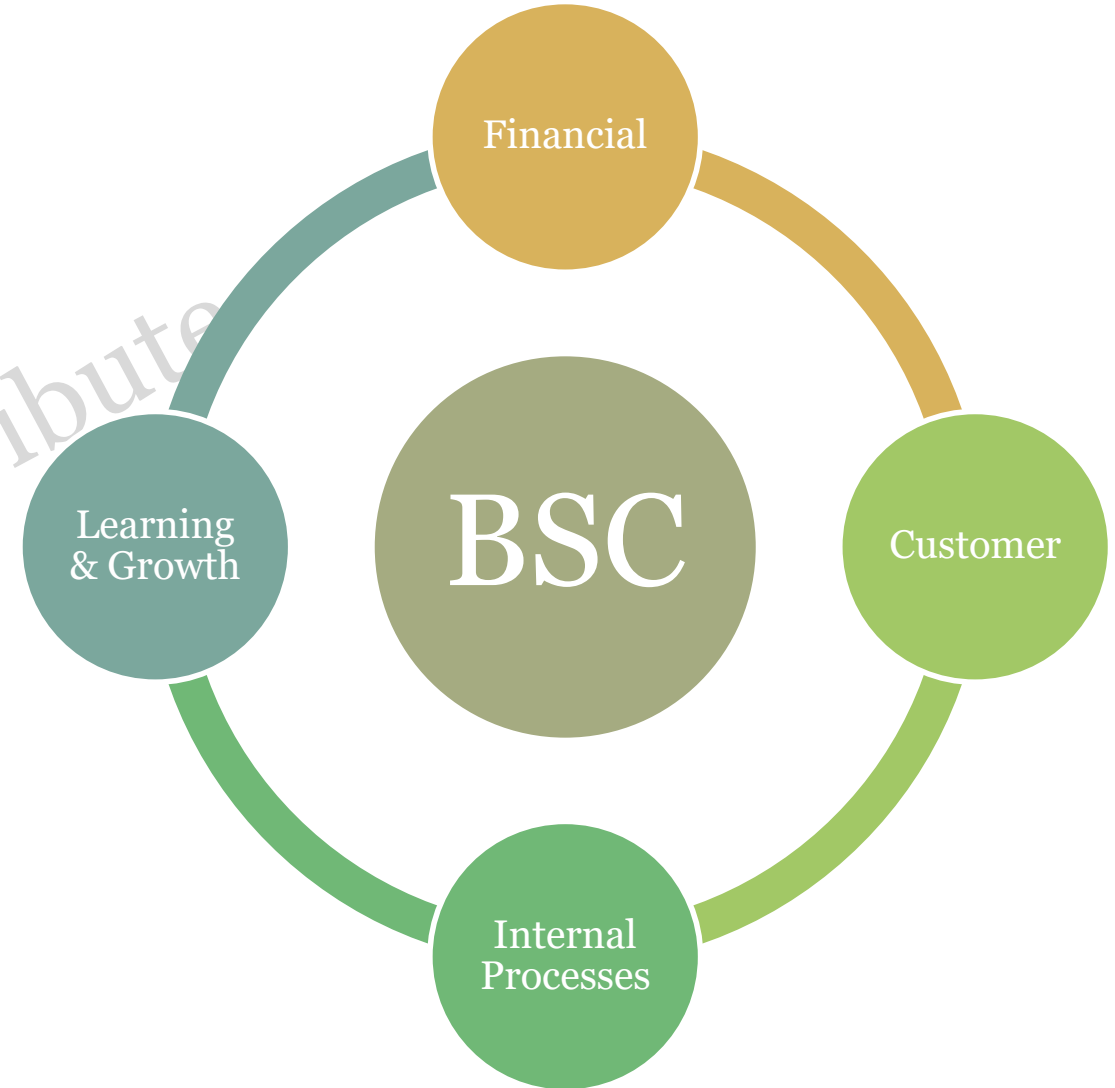
- Monetary vs Non-Monetary
- Internal vs. External
- Performance vs. Operational
- Leading vs. Lagging

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Balanced Scorecard (BSC)

کارت امتیازی متوازن (کام)

- Four dimensions
- Each dimensions contains several metrics
- A new definition for Strategy



Kaplan, Norton, “The Balanced Scorecard – Measures that drive performance”, Harvard Business Review, (1992)

3) Balanced Performance Dimensions

What **types of things** need measuring for performance monitoring / improvement?

What do you measure now?

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

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What do you measure now?

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

Cycle Time /
Lead Time

Defect Counts

Throughput /
Velocity

Team Happiness

Instead of data, first think of broader concepts

- Rather than think of **data** than can be captured, first think of **broader types**:
 - Dimensions help describe the **intent of a measure**, not just outputs
 - Dimensions help **discuss tradeoffs** between **competing** measures

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Distinguishing between Dimensions and Measures

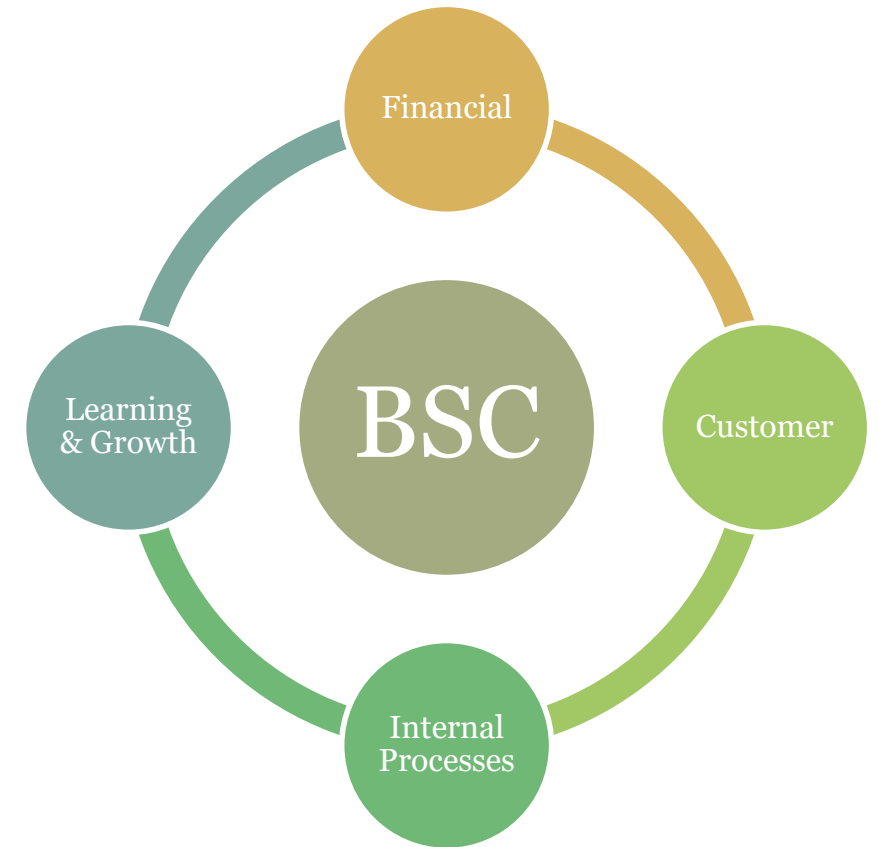
- How can you tell something is a dimension and not a measure?
 - Hard to specify what **unit of measure** it is. E.g. “A quality” sounds wrong!
 - There are **multiple possible measures** that **combined**, mean “better” or “worse”.
- For example:
 - Quantity
 - Quality
 - Speed

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Balanced Dimensions

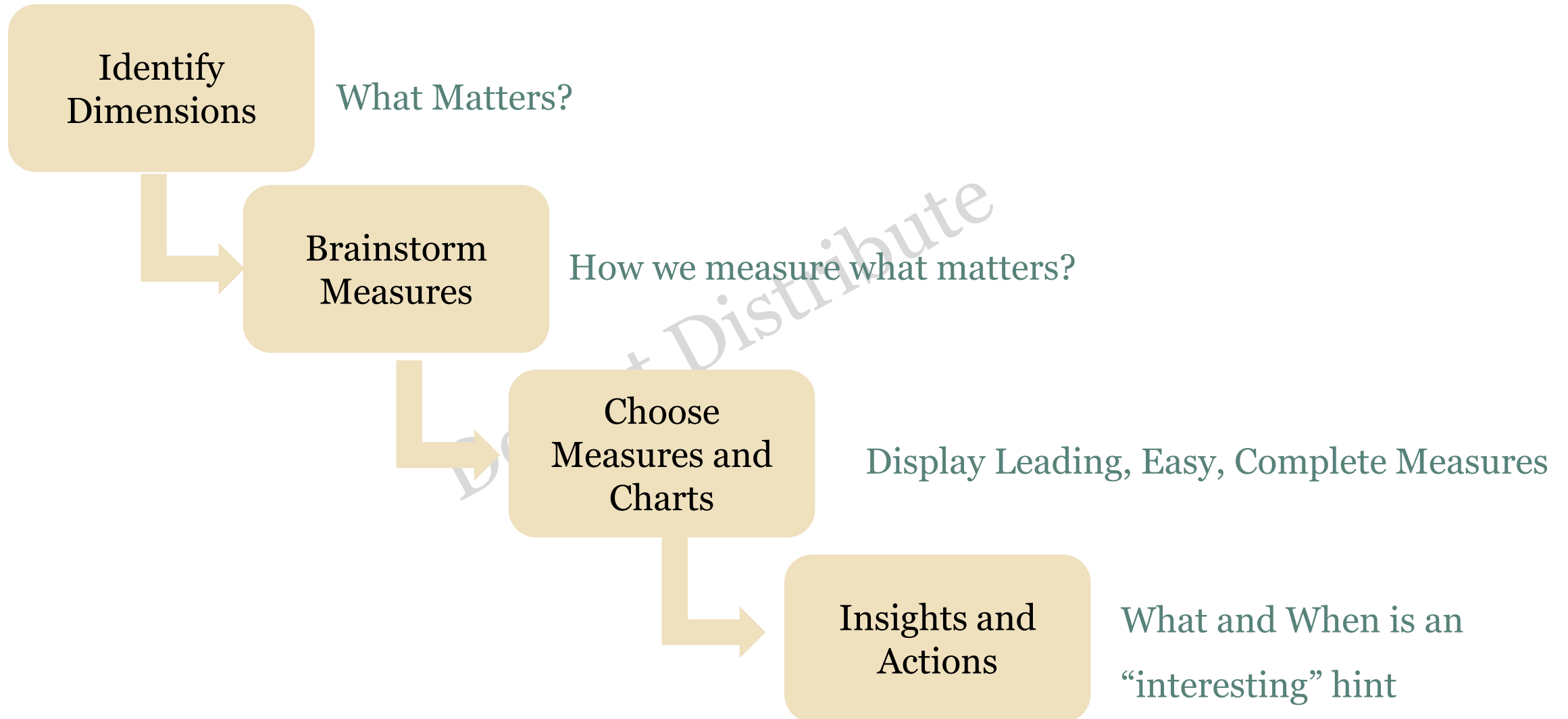
“A balanced scorecard is a strategy performance measurement tool – a well-structures report that managers can use to **keep track of the execution of activities** by the staff within their control and to **monitor the consequences** arising from these actions.”

Kaplan, Norton, “The Balanced Scorecard – Measures that drive performance”, Harvard Business Review, (1992)

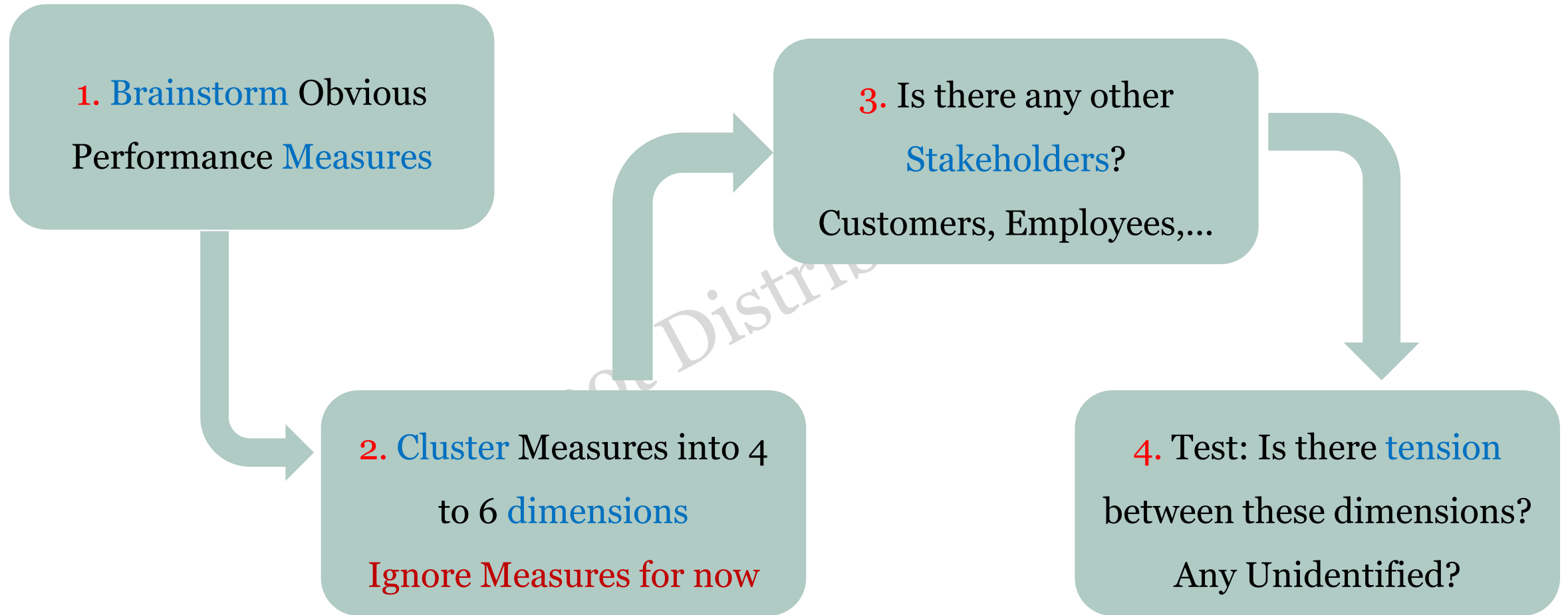


Optimizing one
impacts the others!

Getting a Balanced Set of Performance Data



Finding Dimensions



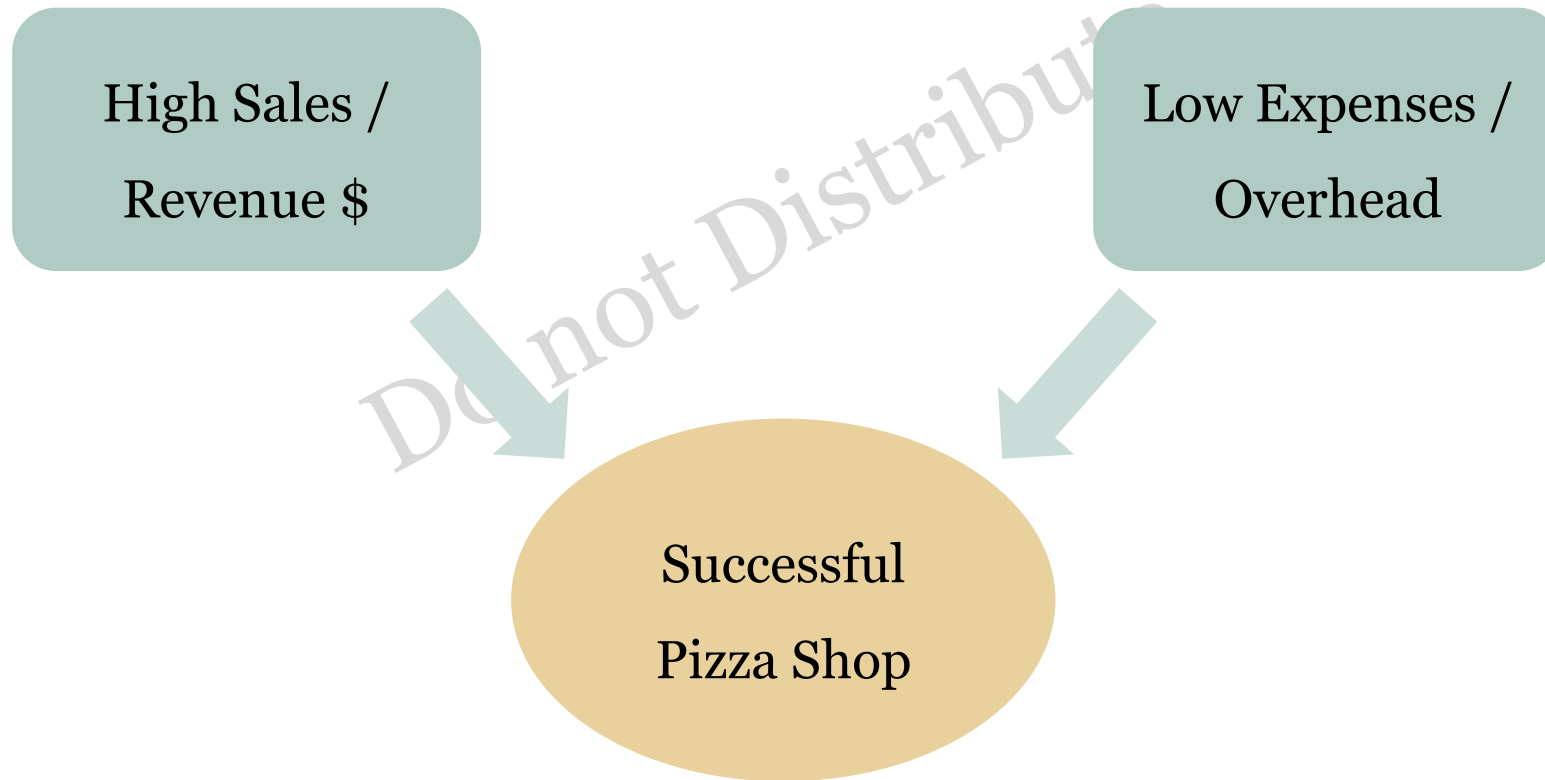
Example: Pizza Shop

Who are our
stakeholders?

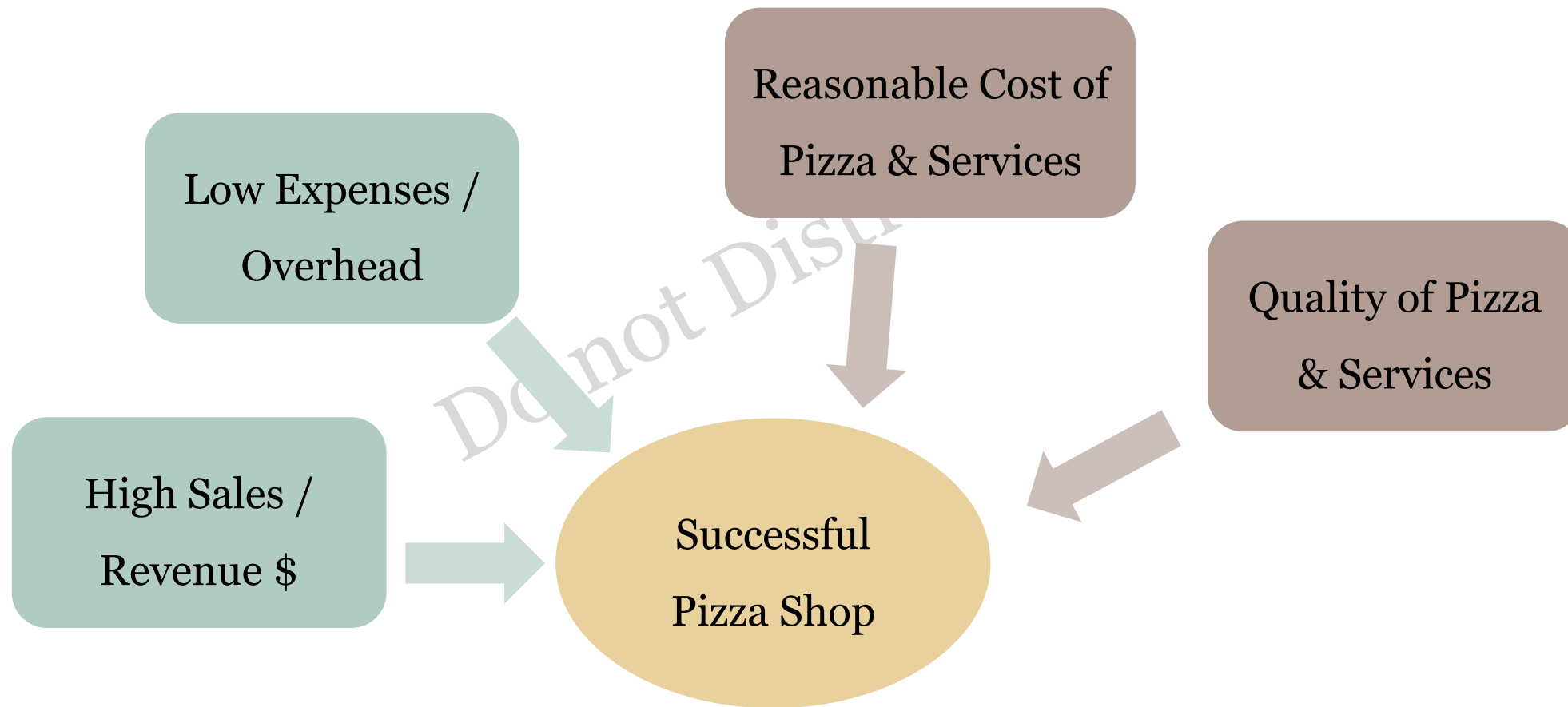
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Successful
Pizza Shop

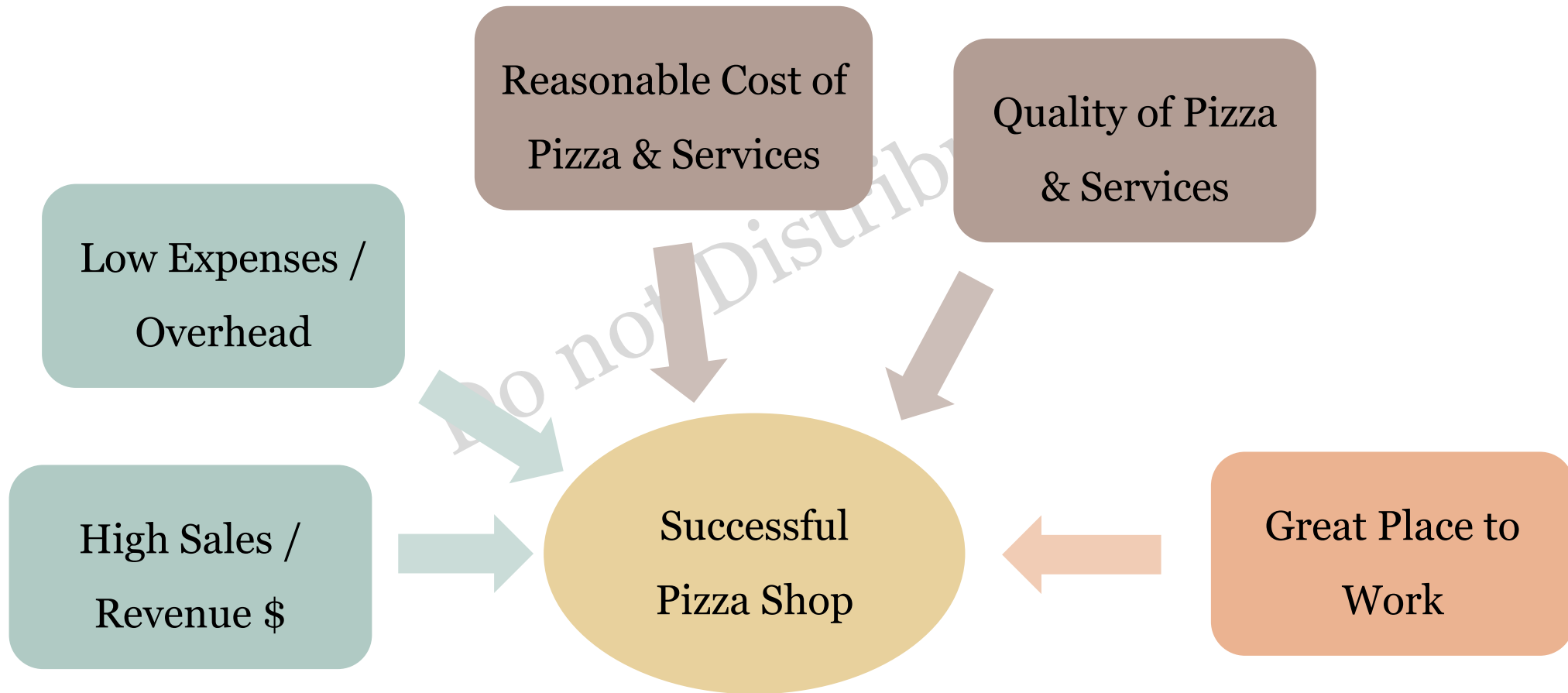
Example: Pizza Shop – Matters to the Owners



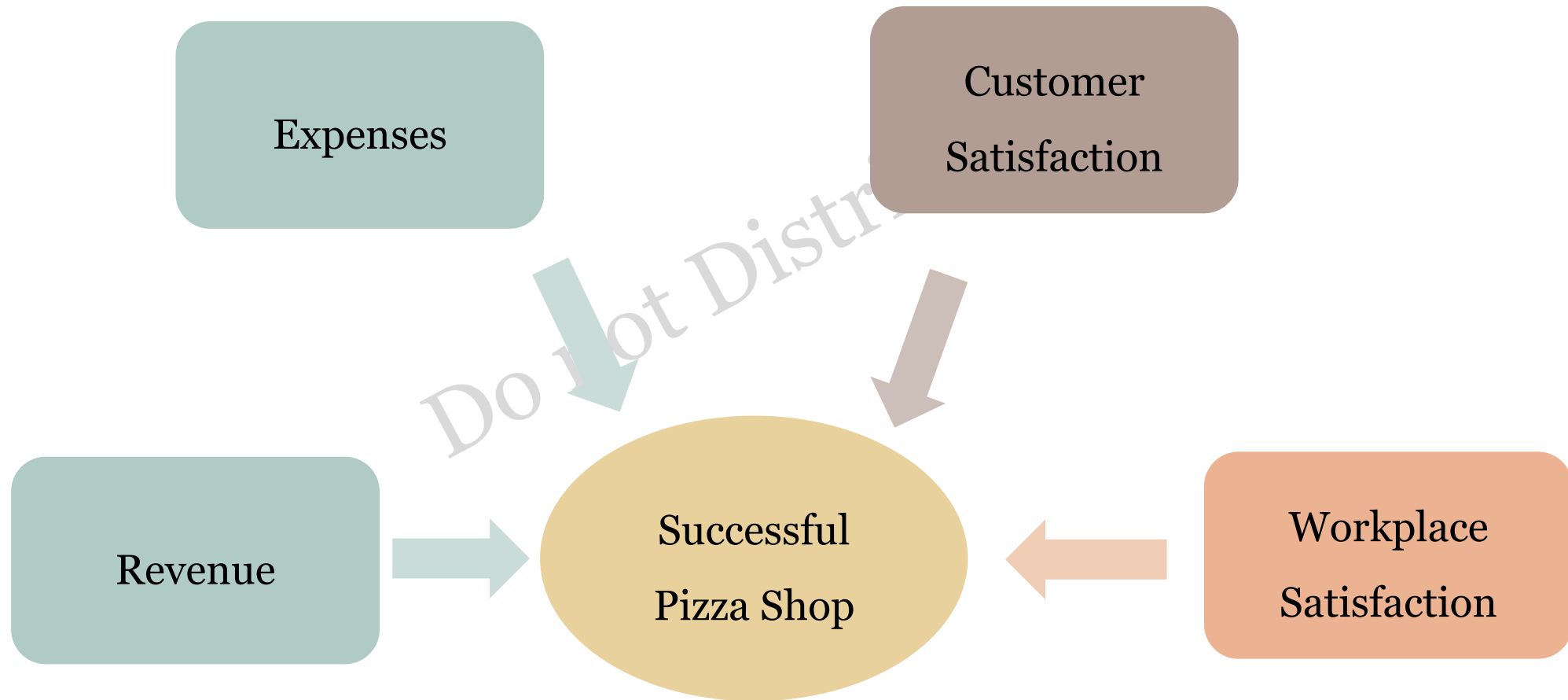
Example: Pizza Shop – Matters to the Customers



Example: Pizza Shop – Matters to the Employees

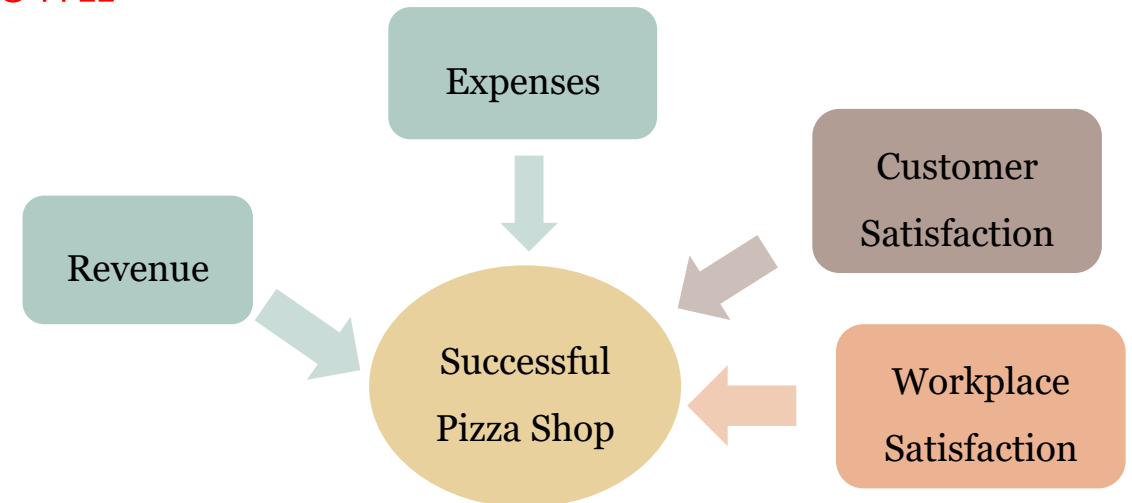


Example: Pizza Shop – Turn Measures into Dimensions



Done Well, there will be tension (trade-offs)

1. Cost of Pizza Ingredients **down**, Customer Satisfaction **down**
2. Cost of Pizza (revenue) **up**, Customer Satisfaction **down**
3. Cost of employee salary **down**, Workplace Satisfaction **down**
4. Cost of Ingredients **up** (inflation), profit **down**
5. What other trade-offs?



What are Good Performance Dimensions?

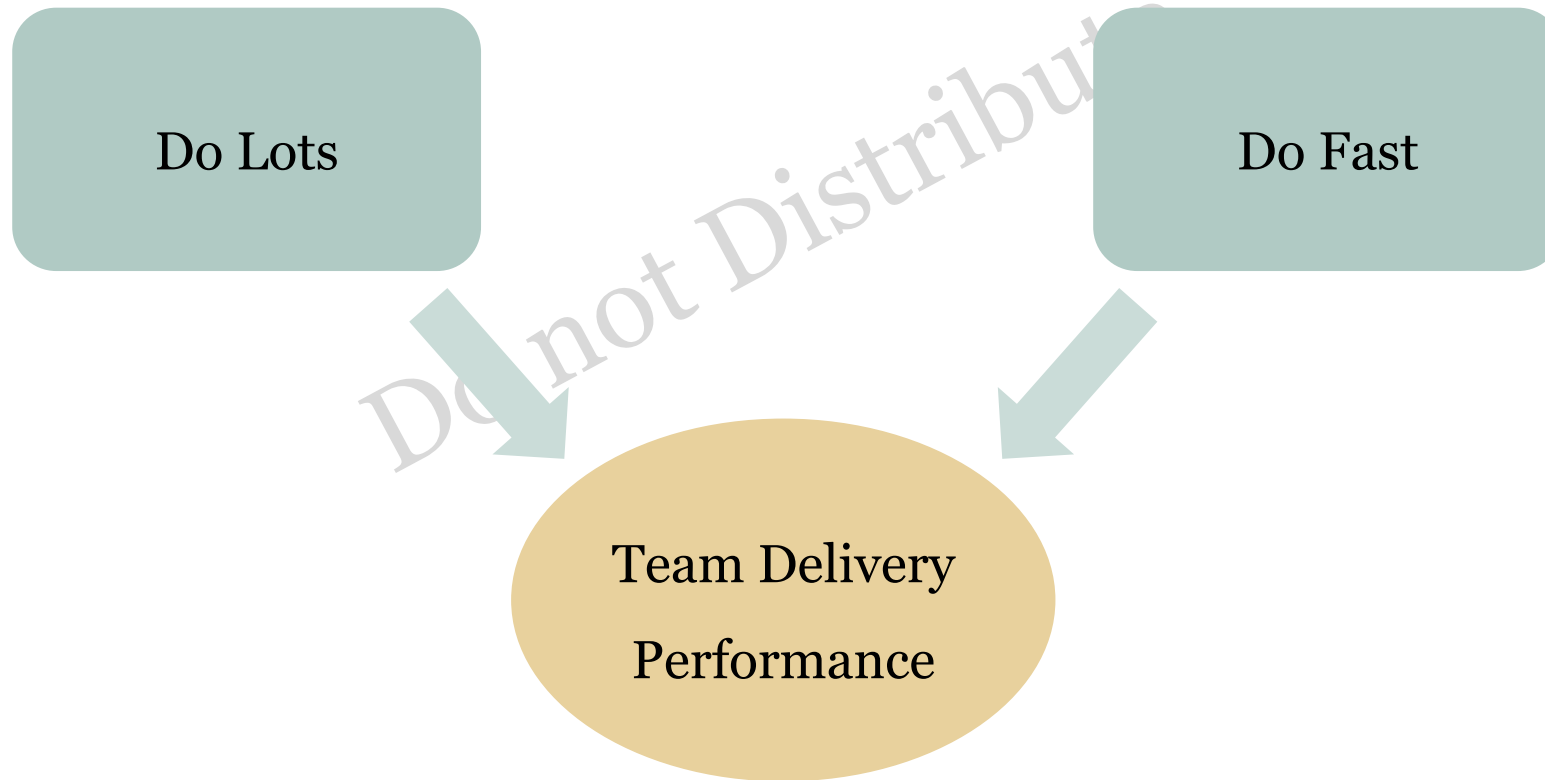
1. Start by asking, what are the most obvious measures of performance
 - Make lots of Money, Deliver lots of Stuff, Deliver Stuff fast
2. Then, if we JUST focused on these, what would/could happen?
 - Increased pizza prices
 - Too few drivers to deliver
 - ...
3. Cluster

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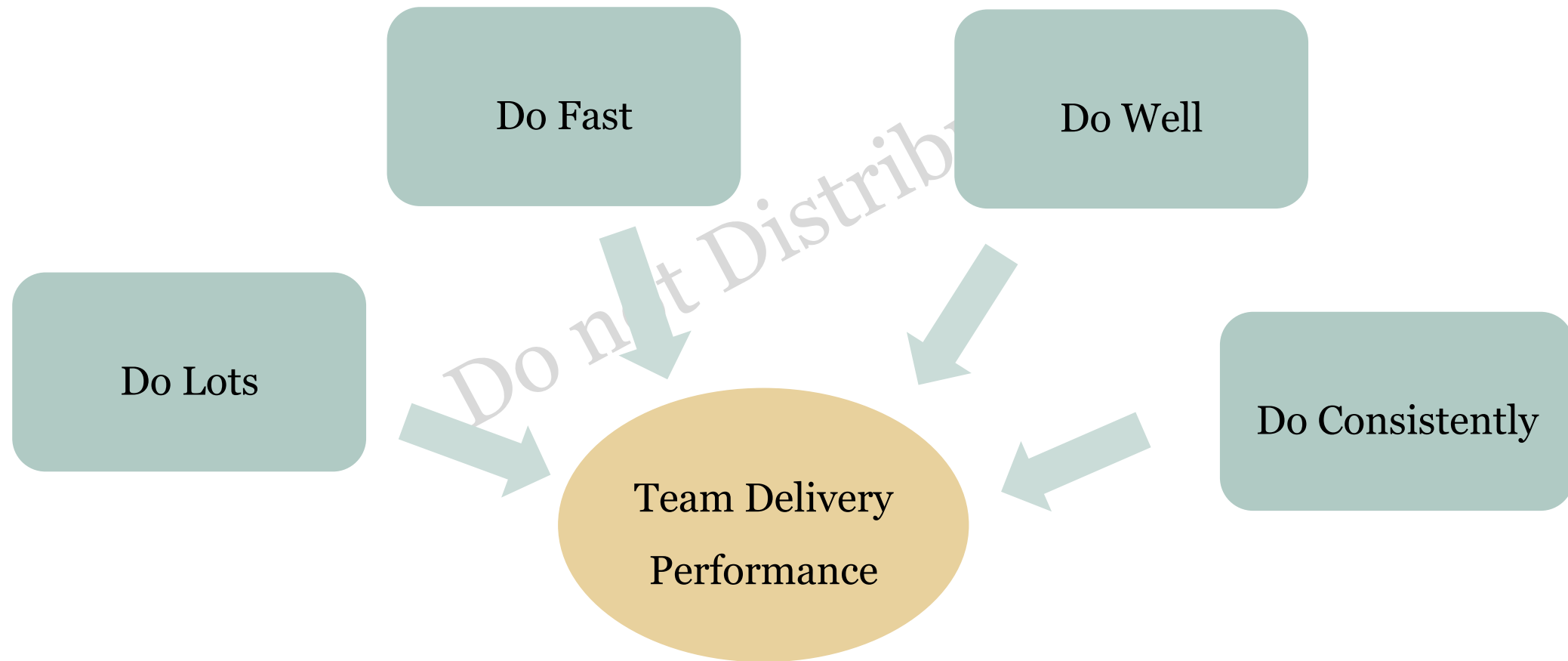
Exercise:

What are good dimensions in your work?

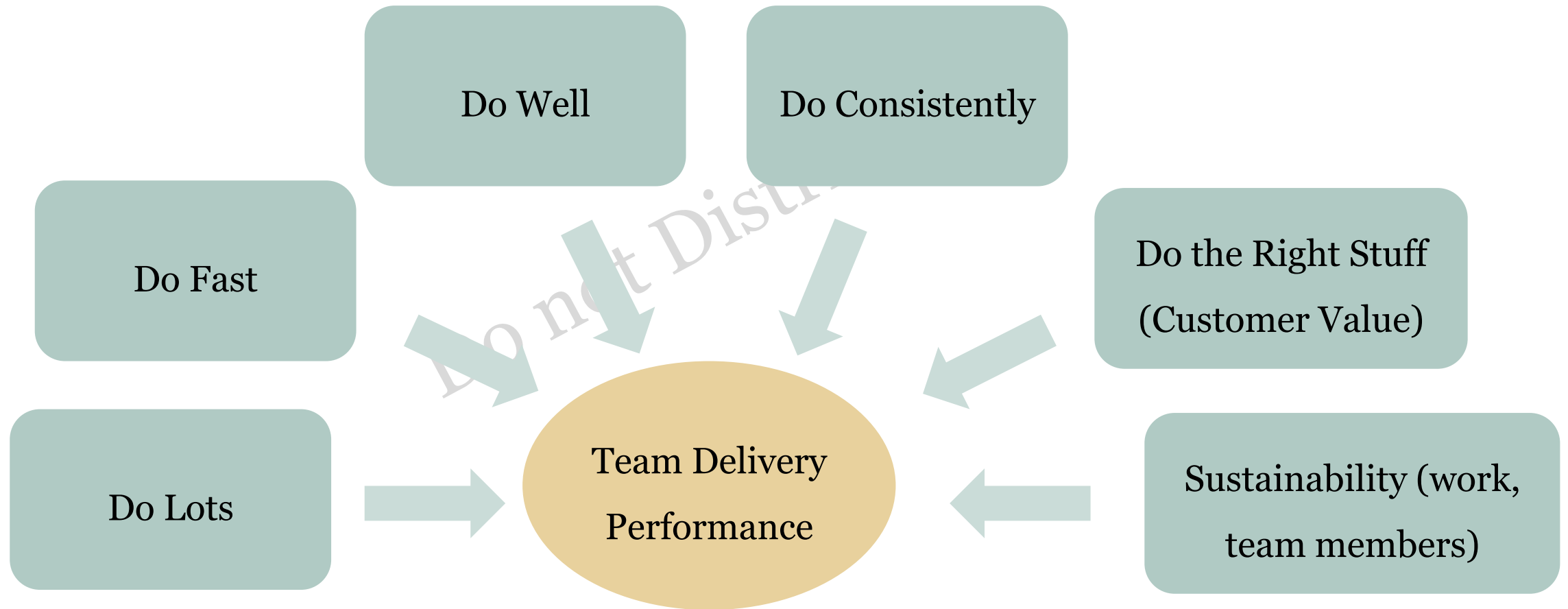
Obvious Measures of Team Performance...



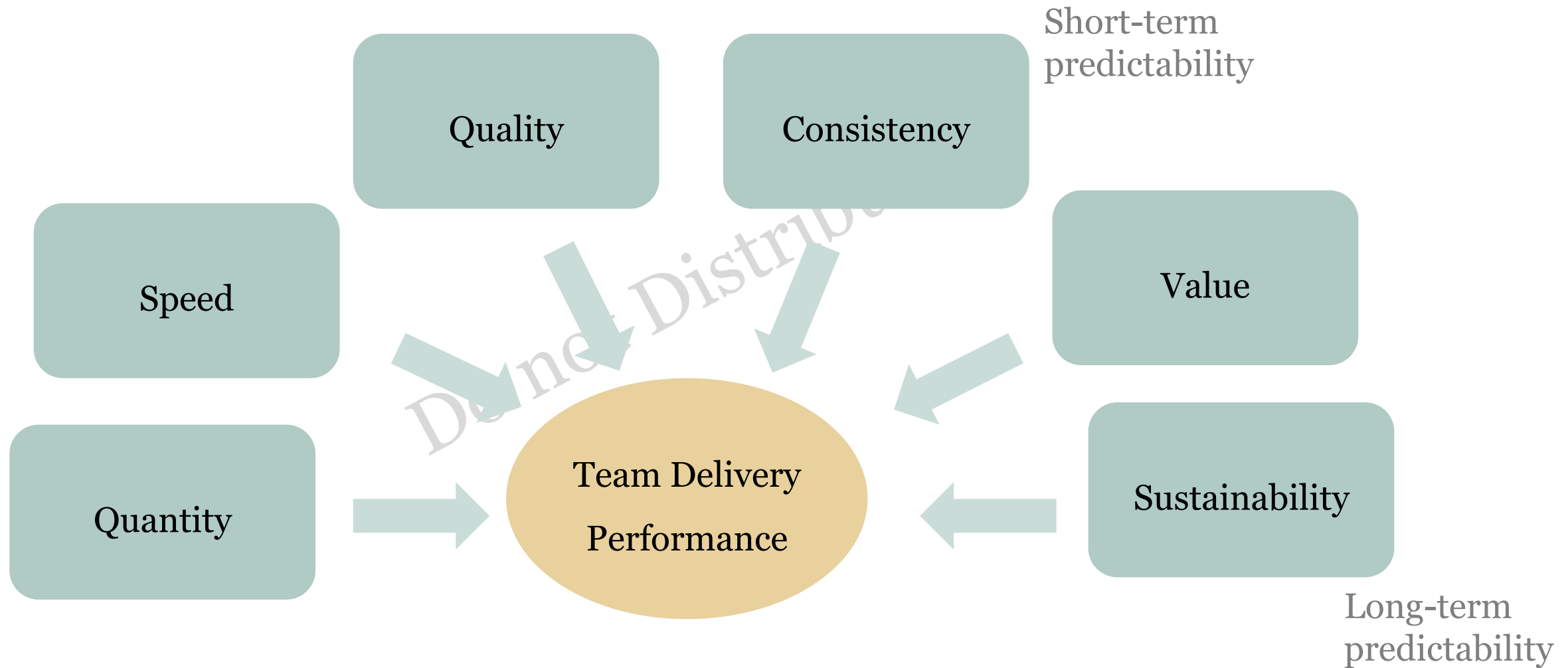
In Doing those, What else Matters...



What else matters to Others? (Customers, Team, ...)



Six Dimensions of Flow System



Different Organizational Levels

- Will the same measures be appropriate for all levels?
- No, but the same dimensions will.

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