

THE IMPORTANCE OF PERFORMANCE MEASURES

What is the role of measurement in management?



THE IMPORTANCE OF MEASUREMENT

One of the basic element in the work of the manager is **measurement**.

The manager establishes targets and yardsticks—and few factors are as important to the performance of the organization and of every person in it.

He or she **sees to it that each person has measurements available that are focused on the performance of the whole organization and that, at the same time, focus on the work of the individual.**

The manager analyzes, appraises, and interprets **performance**.

As in all other areas of this work, **he or she communicates the meaning of the measurements** and their findings to subordinates, superiors, and colleagues.

Peter F. Drucker, Management, revised edition



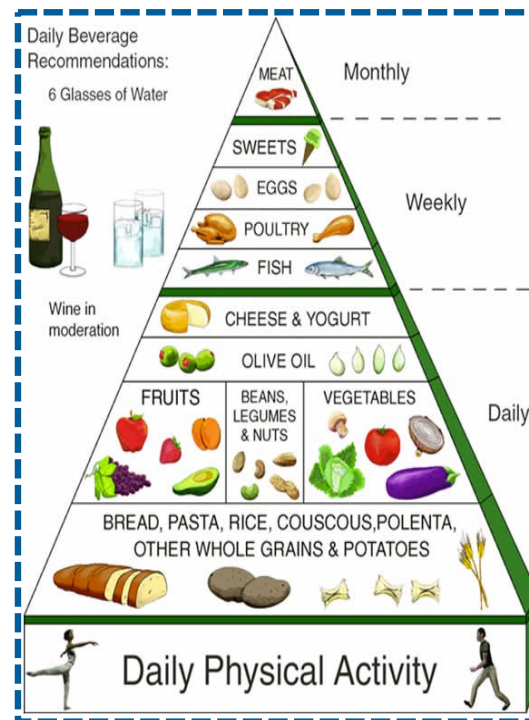
WHAT DOES A MANAGER DO?

1. He/She acquires information



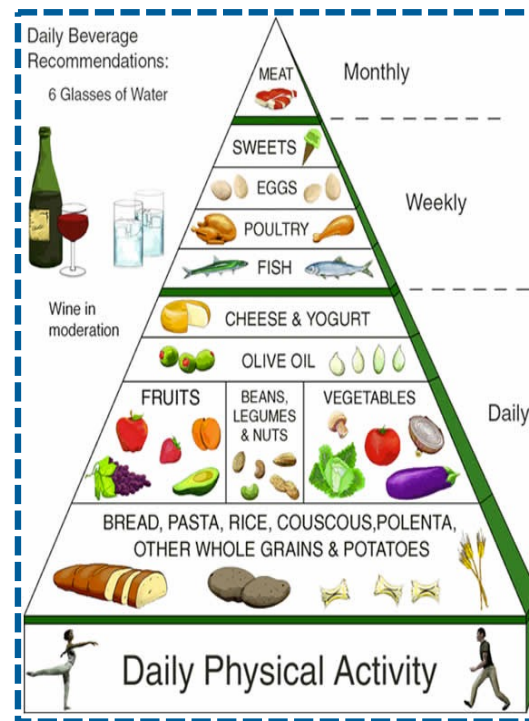
WHAT DOES A MANAGER DO?

2. He/She makes decisions



WHAT DOES A MANAGER DO?

3. He/She tries to put the decision taken in practice



COHERENCE BETWEEN INFORMATION AND DECISIONS



DECISION
MODELS

The information must be **RELEVANT** for the decisions that managers, operating in a particular business environment with a particular strategy, make.

THE FIRM AS A “BLACK BOX”



MENTAL MODELS

In 1971 Jay Wright Forrester defined mental models as follows:

“The image of the world around us, which we carry in our head, is just a model. Nobody in his head imagines all the world, government or country. He has only **selected concepts, and relationships between them, and uses those to represent the real system”**

Mental model is an explanation of someone's thought process about how something works in the real world. It is a representation of the surrounding world, the relationships between its various parts and a person's intuitive perception about his or her own acts and their consequences. Mental models can help shape behavior and set an approach to solving problems (similar to a personal algorithm) and doing tasks.

A mental model is a kind of internal symbol or representation of external reality, hypothesized to play a major role in cognition, reasoning and decision-making. Kenneth Craik suggested in 1943 that the mind constructs "small-scale models" of reality that it uses to anticipate events.

SOURCE: https://en.wikipedia.org/wiki/Mental_model



MENTAL MODELS

Abstract Model

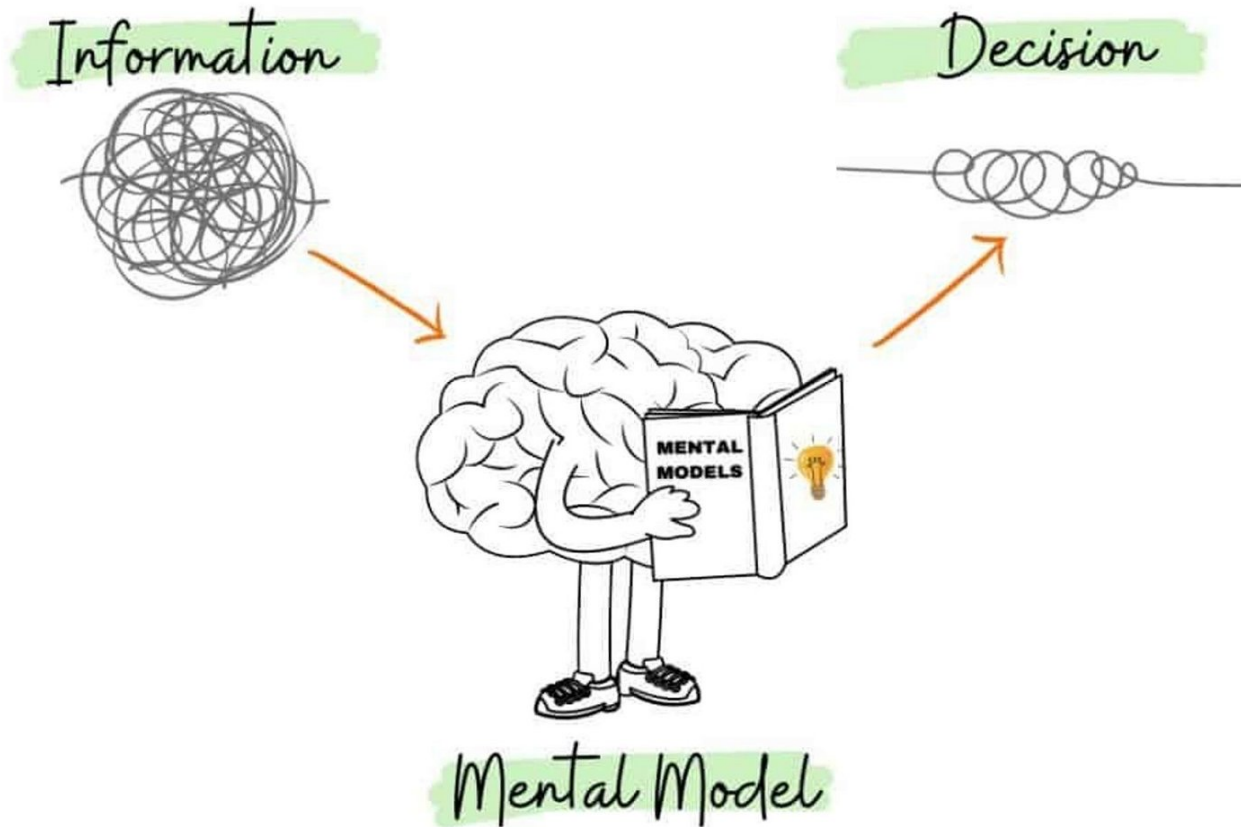


Complex Reality



A mental model is a simplified observation of a certain part of reality that you can keep in your head.

MENTAL MODELS



<https://thewizdomproject.com/mental-models-basics>

MENTAL MODELS

“One thing all managers know is that many of the best ideas never get put into practice. Brilliant strategies fail to get translated into action. Systemic insights never find their way into operating policies. A pilot experiment may prove to everyone's satisfaction that a new approach leads to better results, but widespread adoption of the approach never occurs.

We are coming increasingly to believe that this "slip 'twixt cup and lip" stems, not from weak intentions, wavering will, or even nonsystemic understanding, but from mental models. More specifically, **new insights fail to get put into practice because they conflict with deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting.** That is why the discipline of managing mental models—surfacing, testing, and improving our internal pictures of how the world works— “promises to be a major breakthrough for building learning organizations. **None of us can carry an organization in our minds—or a family, a community. What we carry in our heads are images, assumptions, and stories. [...]**

Our "mental models" determine not only how we make sense of the world, but how we take action.”

Excerpt From: Peter M Senge. “The Fifth Discipline: The Art and Practice of the Learning Organization: First Edition.” iBooks.



“COGNITIVE BIAS” AND BLINKERS



ENACTED ENVIRONMENT



WEICK: ENACTMENT & ENACTED ENVIRONMENT

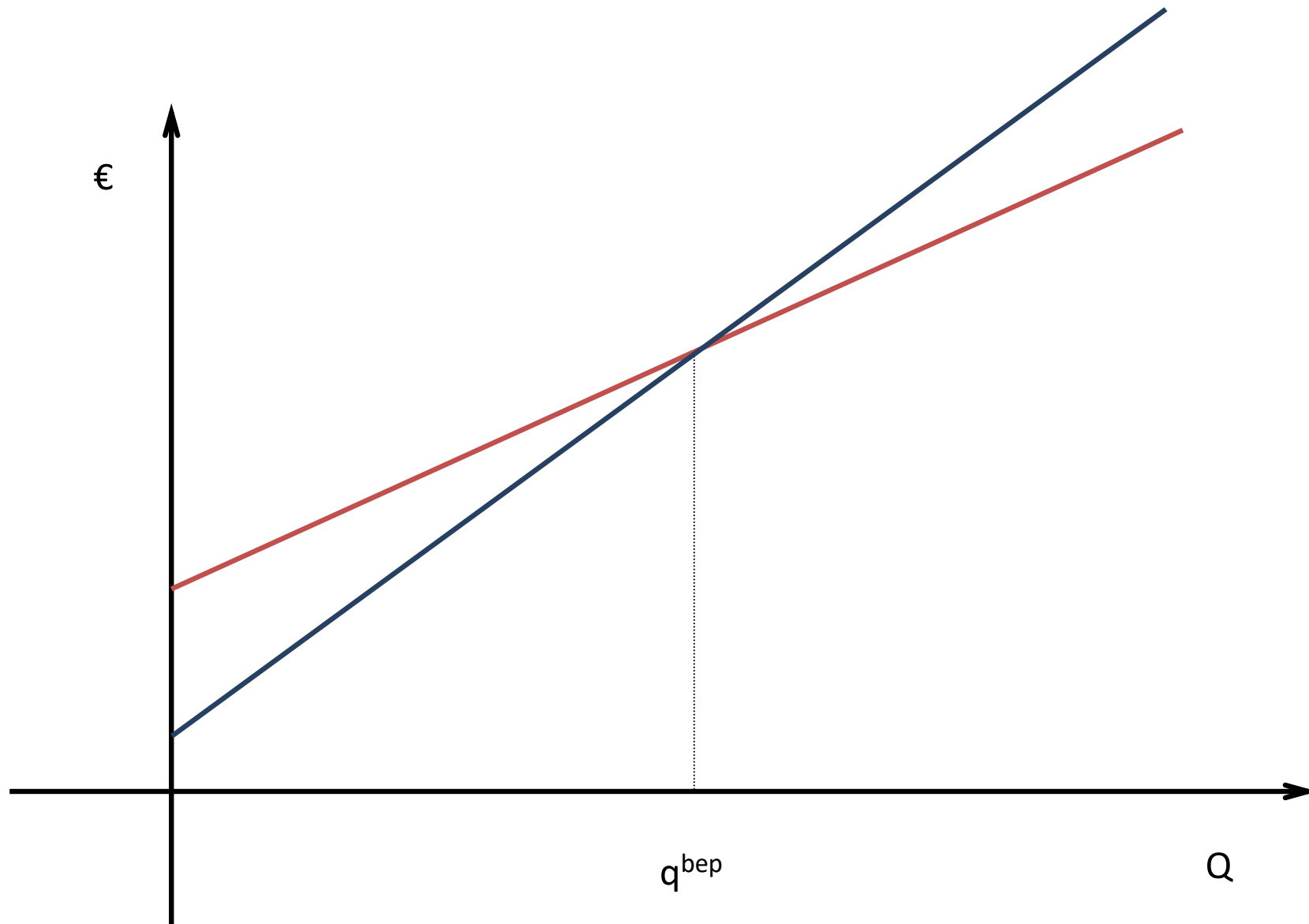
Weick (1988) describes the term **enactment** as representing the notion that **when people act, they bring structures and events into existence and set them in action.**

The process of enactment involves two steps. First, **preconceptions are used to set aside portions of the field of experience for further attention**, that is, perception is focused on predetermined stimuli. Second, **people act within the context of these portions of experience guided by preconceptions in such a way as to reinforce these preconceptions.** Hence, attention to certain stimuli will guide subsequent action so that those stimuli are confirmed as important.

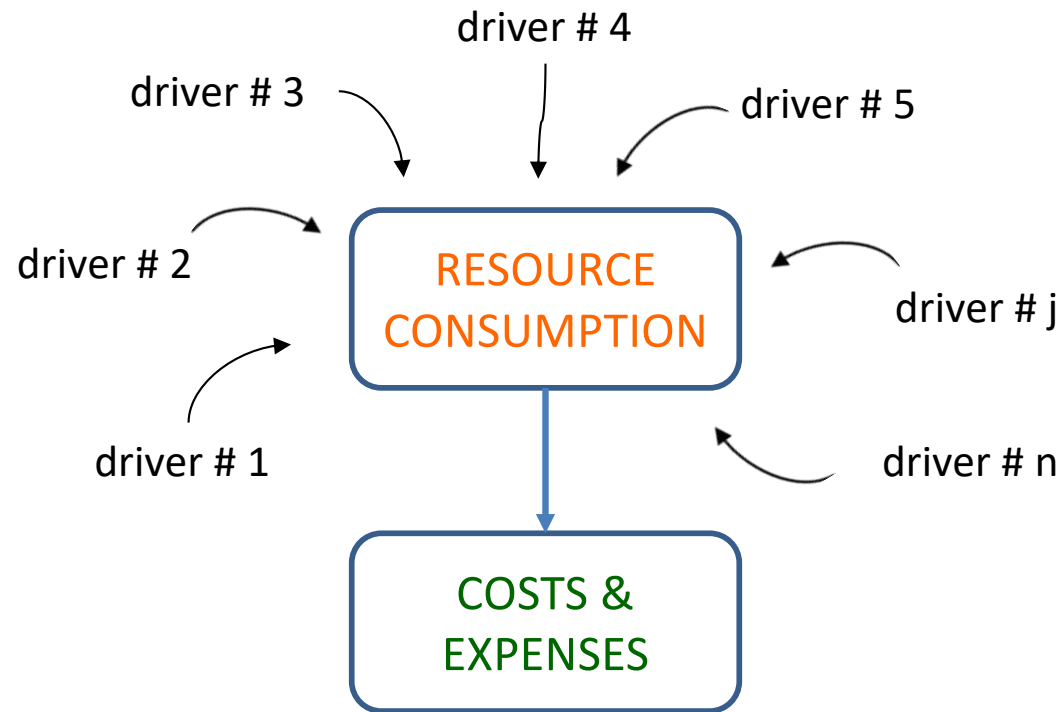
The result of the process of enactment is the **enacted environment.** This **enacted environment comprises "real" objects but the significance, meaning and content of these objects will vary.** These objects are not significant unless they are acted upon and incorporated into events, situations and explanations. In this way the **enacted environment is a direct result of the preconceptions held by the social actor.**



COST-VOLUME-PROFIT ANALYSIS



COSTS, RESOURCES AND DRIVERS

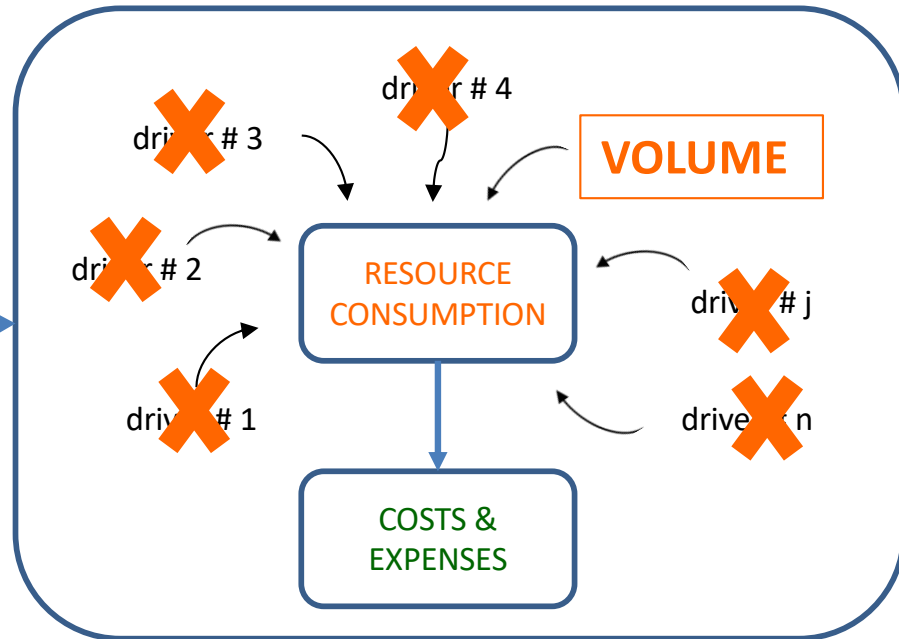


A **cost** is a sacrifice of resources. More precisely the cost (and therefore an expense) is **the monetary reflection** of the sacrifice of one or more resources that are used in order to perform business processes. The **usage** of a resource is determined by different kinds of causes (generally indicated in accounting as drivers)

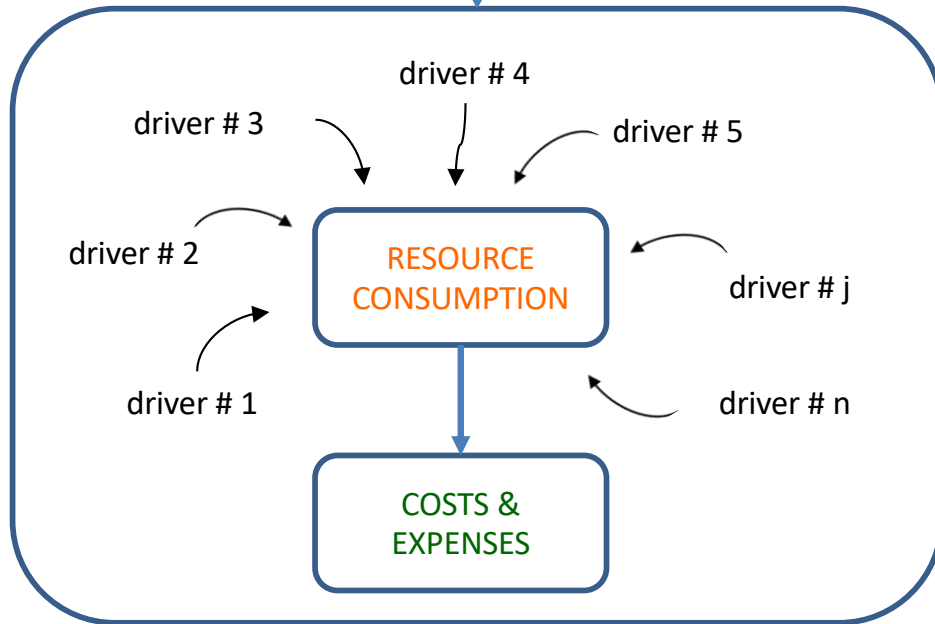
«The objective of managerial **costing** is to provide a **monetary reflection** of the **utilization** of business **resources** and related cause and effect insights».

COST-VOLUME-PROFIT MODEL

SELECTED CONCEPTS AND
SELECTED RELATIONSHIPS
BETWEEN THEM



DECISION MODEL

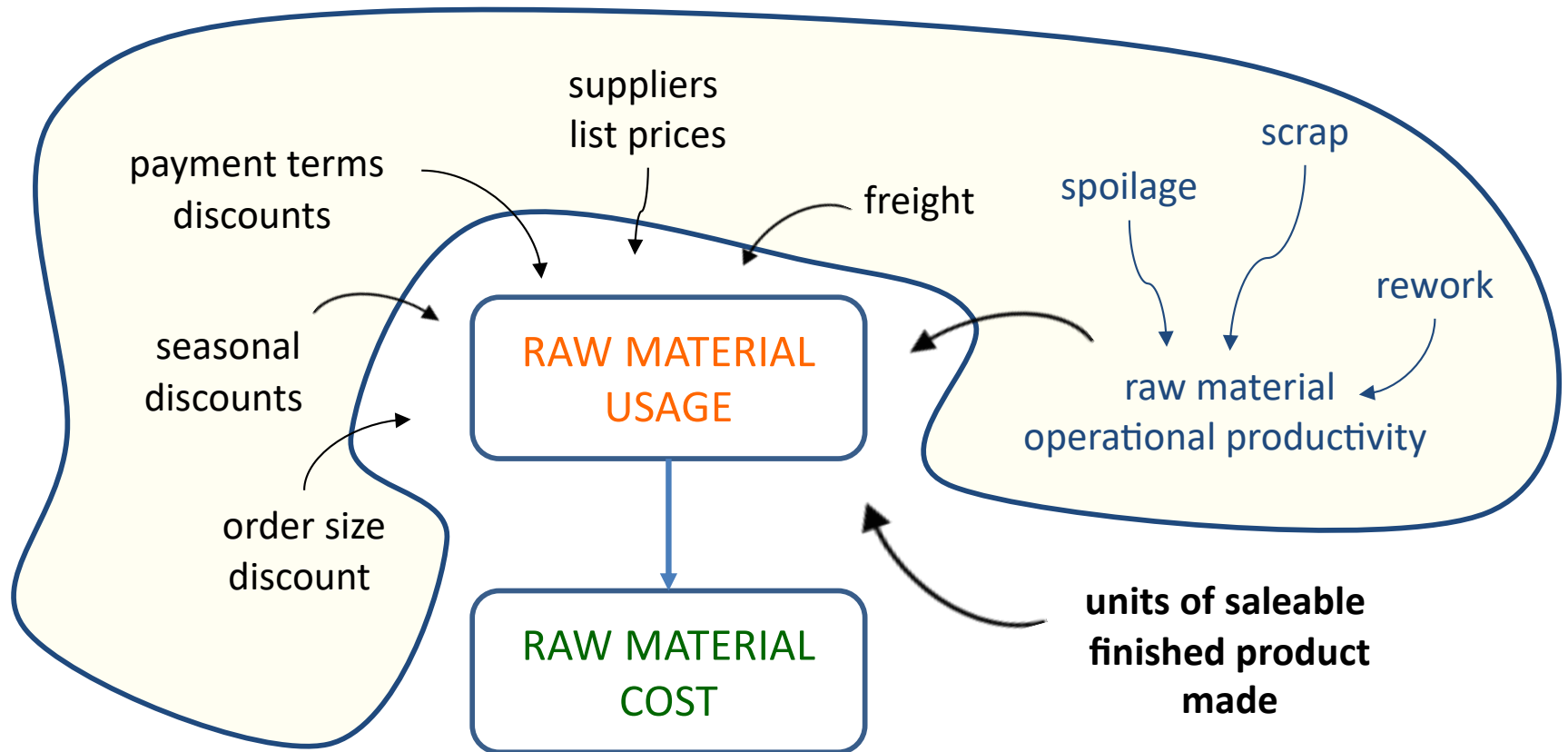


REALITY



COST OF RAW MATERIAL UTILISATION

raw material cost per unit



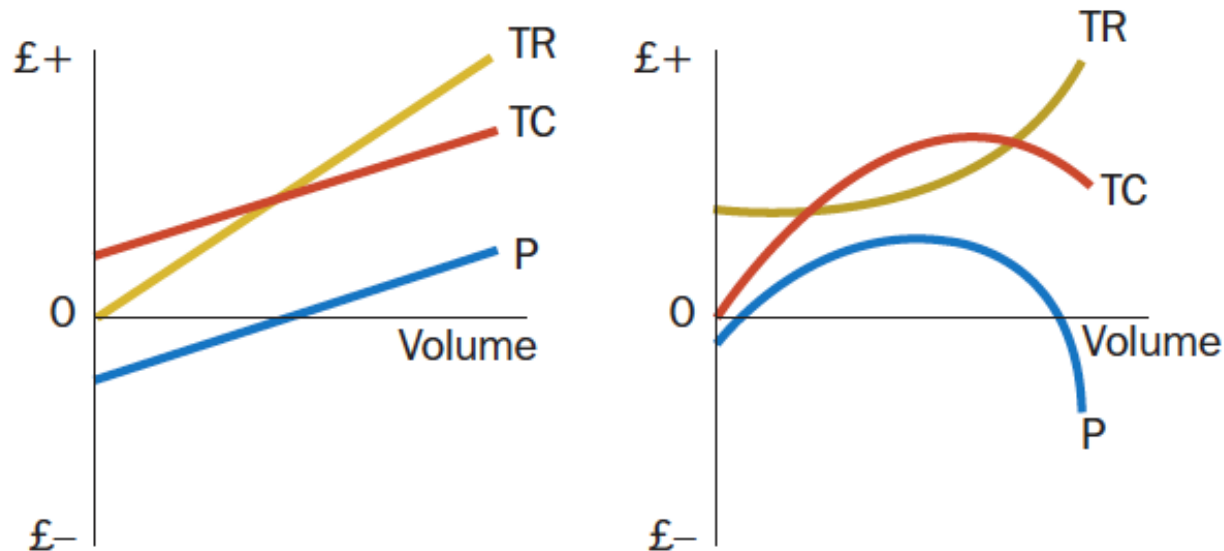
COMPARE

The graphs shown below show cost–volume– profit relationships as they are typically represented in

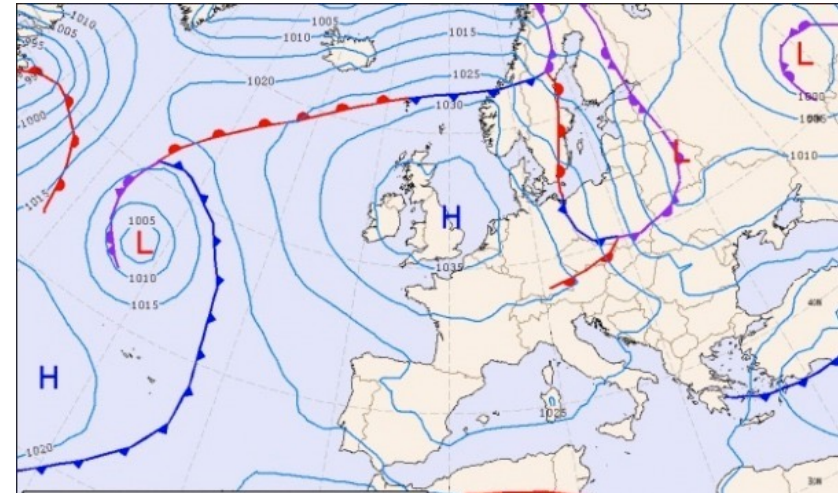
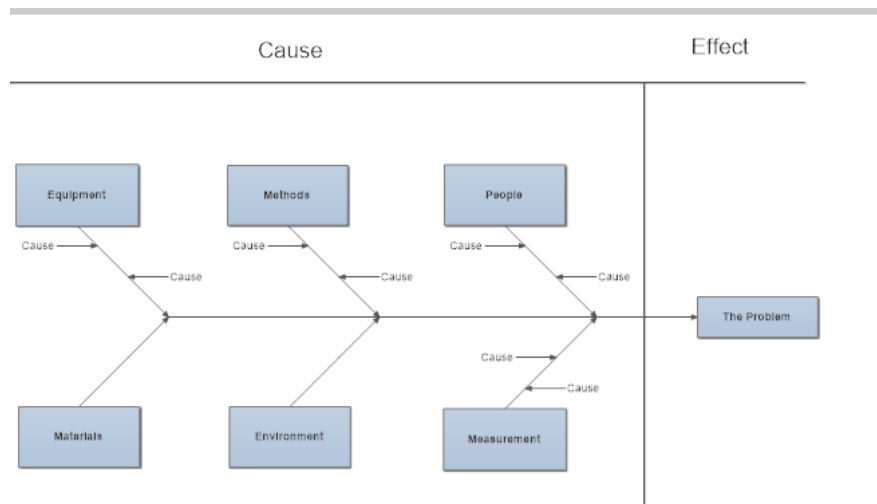
1. management accounting and
2. economic theory.

In each graph T = total revenue, TC = total cost, and P = profit.

You are required to compare these different representations of cost–volume– profit relationships, identifying, explaining and commenting on points of similarity and also differences.



A FORECAST BASED ON A CAUSE-AND-EFFECT MODEL



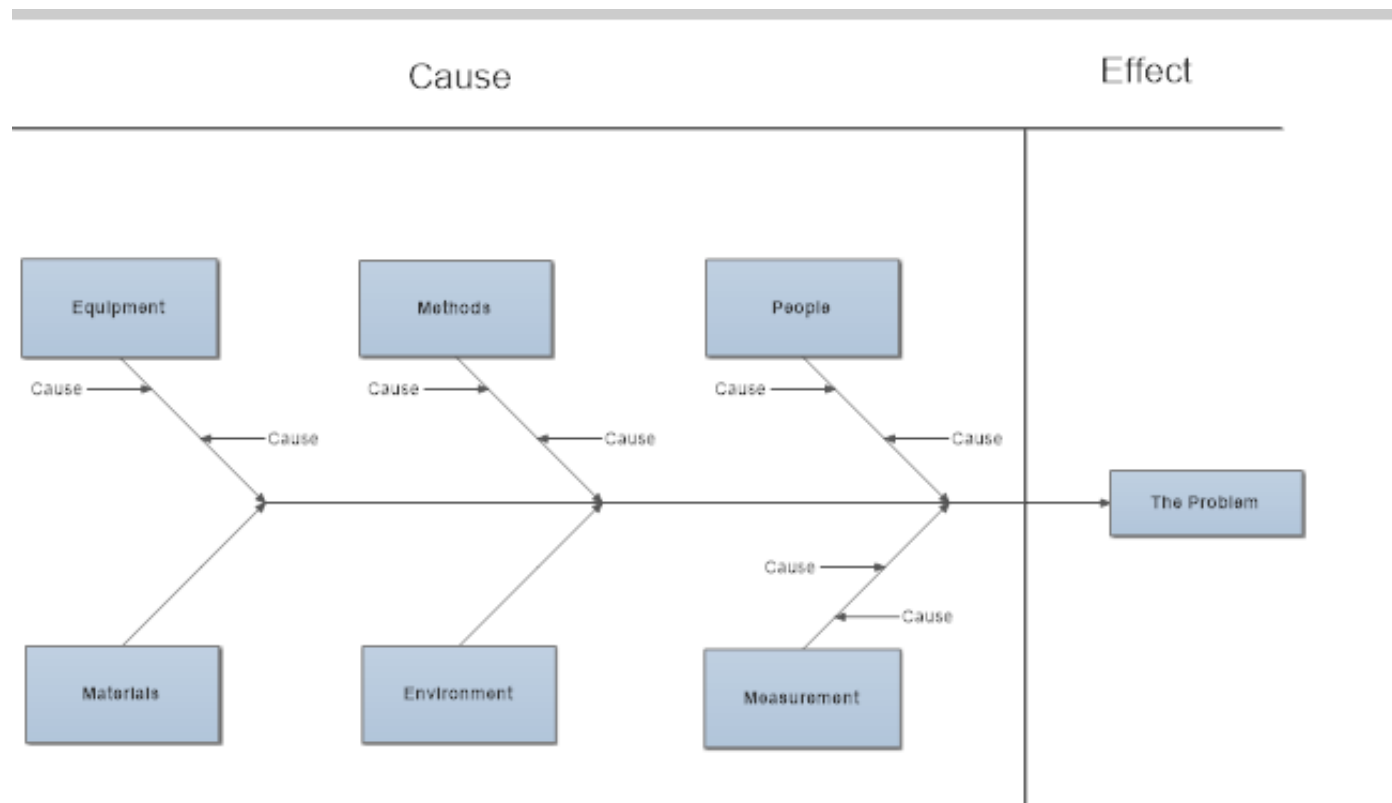
Causality

deals with **capturing and understanding quantitative cause and effect relationships.**

Analogy

could be defined as **the use of causal insights, to infer past or future causes or effects.**

CAUSES AND EFFECTS RELATIONSHIPS



If one really wants to manage a business, one must know the various cause-effect relationships that link inputs and outputs. One must make the black box transparent by reconstructing (on the basis of the measurement of analytical reasoning) which are the main relationships on which attention must be focused if the desired effects are to be produced. Managing requires a focus on causes so that effects can be produced.

CASUALITY AS THE GUIDING PRINCIPLE IN COST MODELING

Cost modeling provides a monetary representation of the organization's resources, processes, and products and services. [...].

The guiding principle for operations modeling (and, hence, cost modeling) is **causality**, the ability to reflect **cause-and-effect relationships**.

A useful cost model must efficiently guide a manager

(1) from a monetary effect to the operational cause and

(2) to clear and direct insight into the probable monetary effect of a particular operational action (or cause) being considered

Causality: The relation between a managerial objective's quantitative output and the input quantities consumed if the output is to be achieved

By applying the principle of causality and its associated concepts, **we can create a model that represents an organization's operations and explains the resulting financial results**. This establishes the baseline from which managers will seek to achieve strategy in an optimal manner.

Source: IMA (Institute of Management Accountants), "The Conceptual Framework for Managerial Costing," Statement on Management Accounting

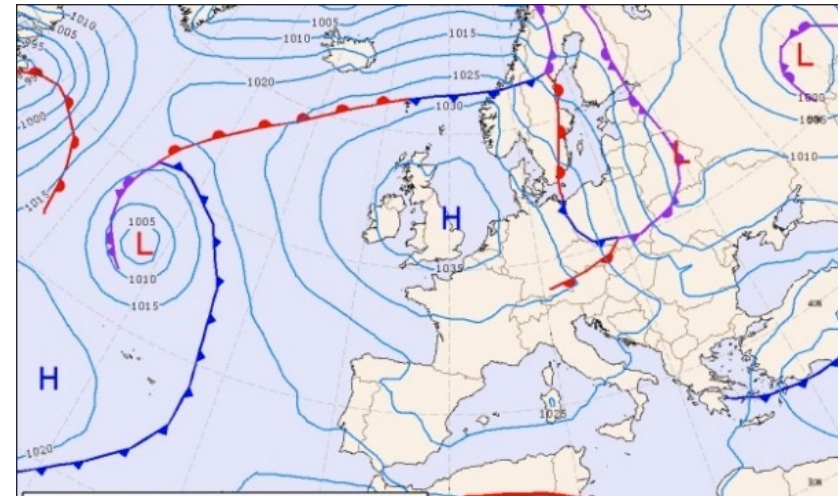
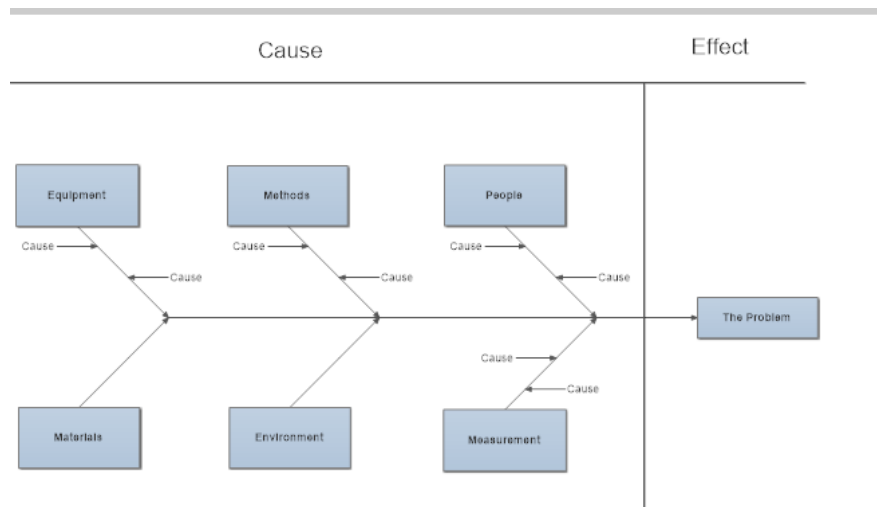


AN INPUT-PROCESS-OUTPUT MODEL OF THE FIRM



A well-designed cost model highlights the relationships that exist between the different **resources that are used**, the specific **activities that are carried out** as a result of the use of the different resources available, and the multiple **outputs (tangible or intangible) that are obtained** as a result of carrying out the activities that constitute the business process

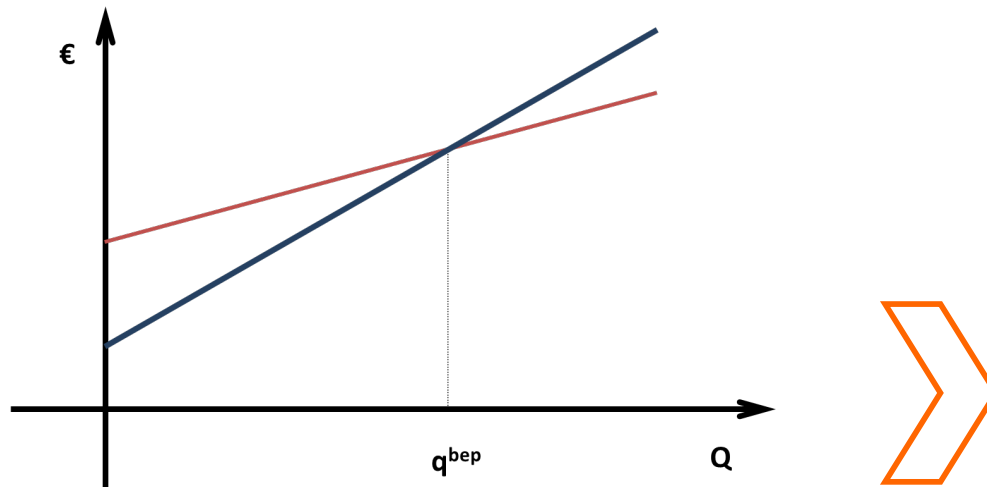
ANALOGY AS THE GUIDING PRINCIPLE FOR DECISION MAKING



The guiding principle for decision making is **analogy**—the **use of causal insights to infer past or future causes or effects**. Managers use cost information by **applying the principle of analogy to infer past or future causes or effects**. This results in learning from the past, making plans for the future, and supporting resource application decisions to achieve strategic objectives.

Source: IMA (Institute of Management Accountants), "The Conceptual Framework for Managerial Costing," Statement on Management Accounting

INFERRING THE FUTURE USING THE CURRENT INFORMATION

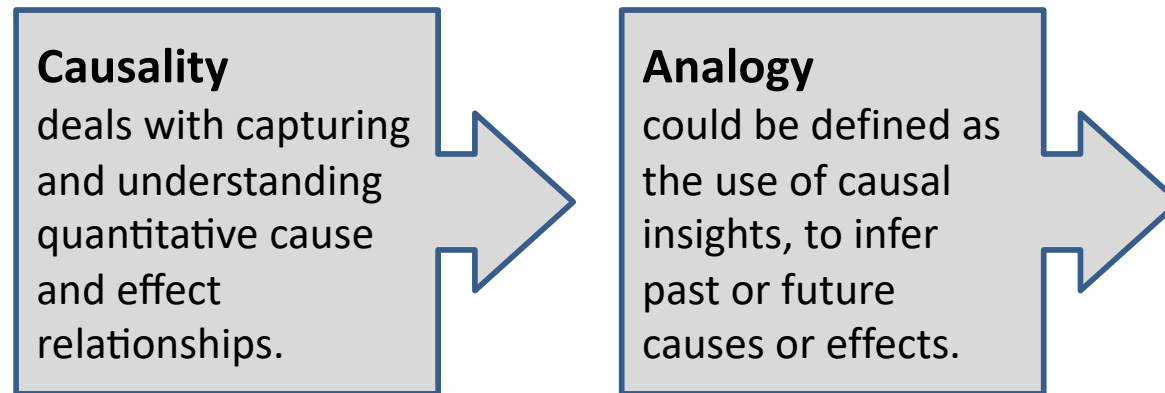


if the quantity sold were to increase by 20% and fixed costs were to rise by 10%, then the new break-even point would be 7,700 units and EBIT would rise by 36.47%.

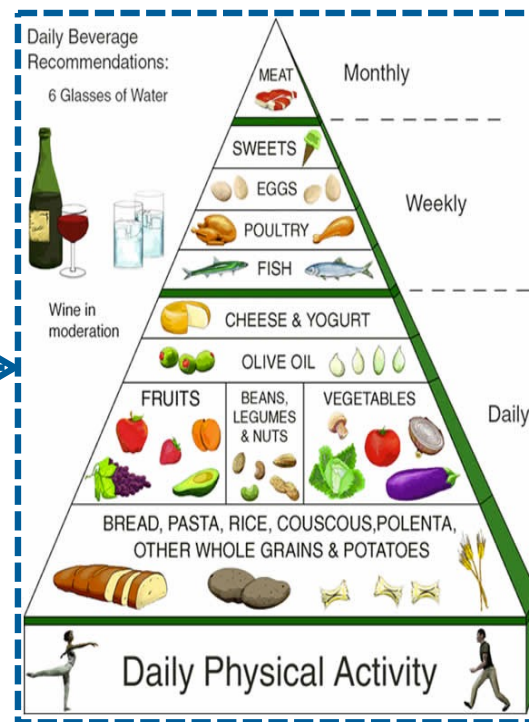
Contribution Margin per unit: \$ 375.00
Total Fixed Costs: \$ 2,625,000
Actual level of Sales: 11,250 units

PURPOSES OF MEASUREMENT

- To understand the **real causes** of the value creation process.



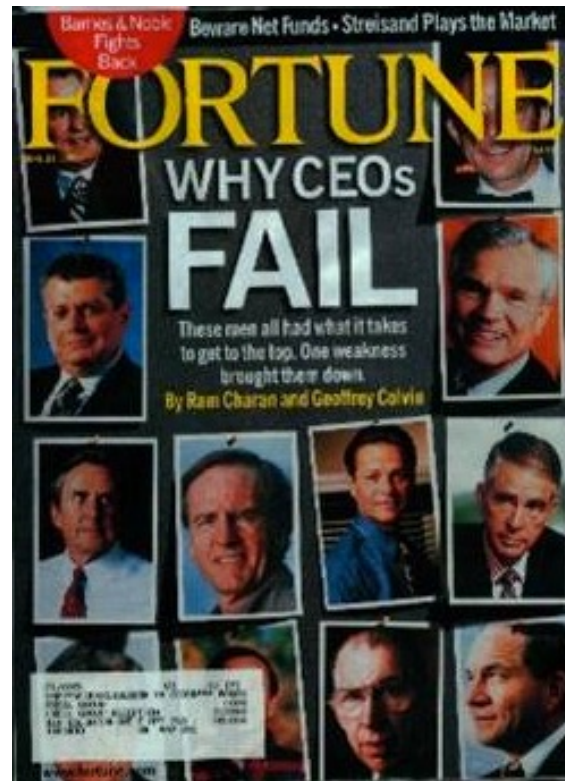
ABILITY TO INDUCE ORGANIZATIONAL BEHAVIOR



DECISION
MODELS

?

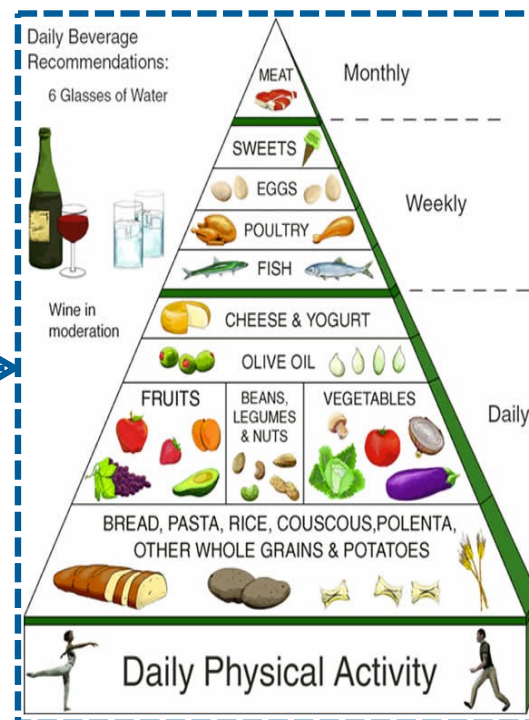
“WHY CEOs FAIL”



“It's bad execution. As simple as that: not getting things done, being indecisive, not delivering on commitments.

We base our conclusions on careful study of several dozen CEO failures we've observed over the decades--through our respective work as a consultant to major corporations and a journalist covering them. The results are beyond doubt”.

ABILITY TO INDUCE ORGANIZATIONAL BEHAVIOR



MANAGEMENT CONTROL

After strategies are set and plans are made, management's primary task is to **take steps to ensure that these plans are carried out**, or, if conditions warrant, that the plans are modified. This is the critical control function of management. And since **management involves directing the activities of others**, a major part of the control function is **making sure other people do what should be done**.

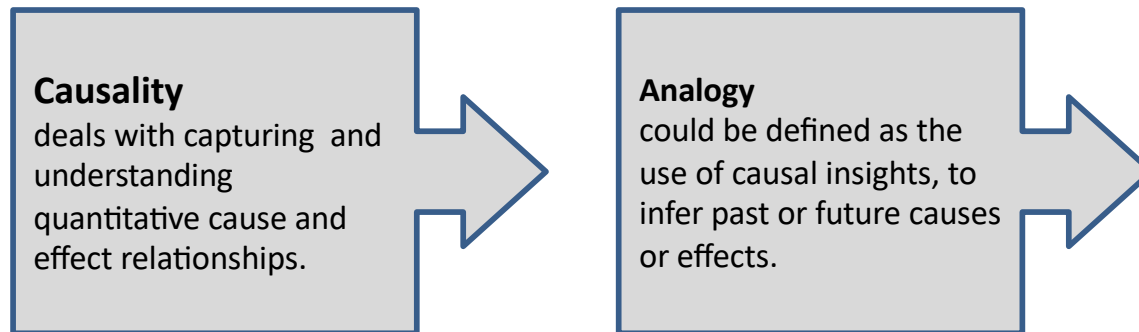
SOURCE: Kenneth A. Marchant, The control Function of Management, Sloan Management Review, Summer 82, pgg. 43-55



PURPOSES OF MEASUREMENT

What are the purposes of measurement applied to management?

- To understand the **real causes** of the value creation process.



- To influence **behavior**.

Human beings adjust behavior based on the metrics they're held against. Anything you measure will impel a person to optimize his score on that metric. What you measure is what you'll get. Period.

Dan Ariel

TOO MANY PURPOSES FOR JUST ONE TOOL?

The budget purposes

- Target
- Forecast
- Resource allocation

Same number — conflicting purposes



Source: Bjarte Bogsnes, Implementing Beyond Budgeting Unlocking the Performance Potential, Wiley, 2016.

WHAT IS A MEASURE?



WHAT IS A MEASURE?

Important advice:

In order to be able to save your life you must move yourself exactly **35,5 gnugni** northwards.



CHARACTERISTIC OF DIAGNOSTIC MEASURES

«Ideally, diagnostic control measures should be objective, complete, and responsive.

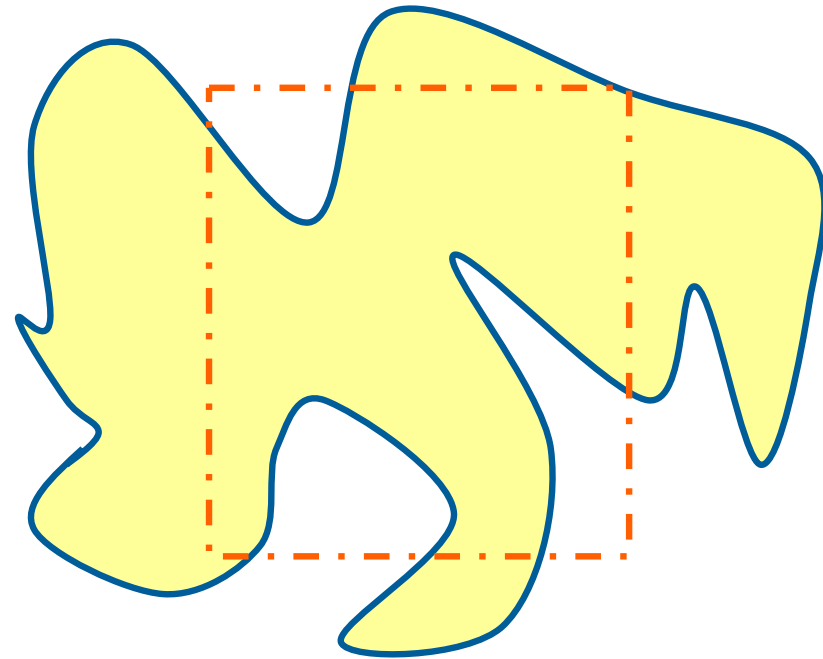
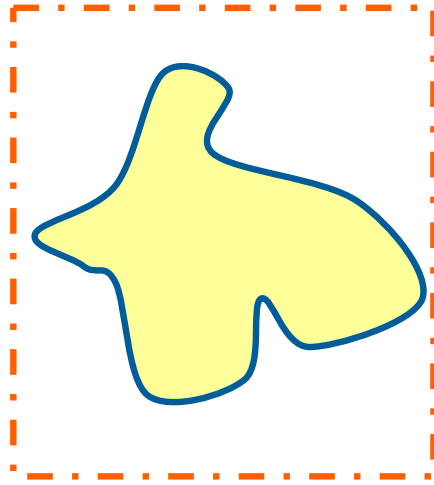
A measure is:

1. **objective** when it is independently verifiable;
2. **complete** when it captures all relevant actions or behaviors; and
3. **responsive** when it reflects the efforts or actions of the individual being measured.

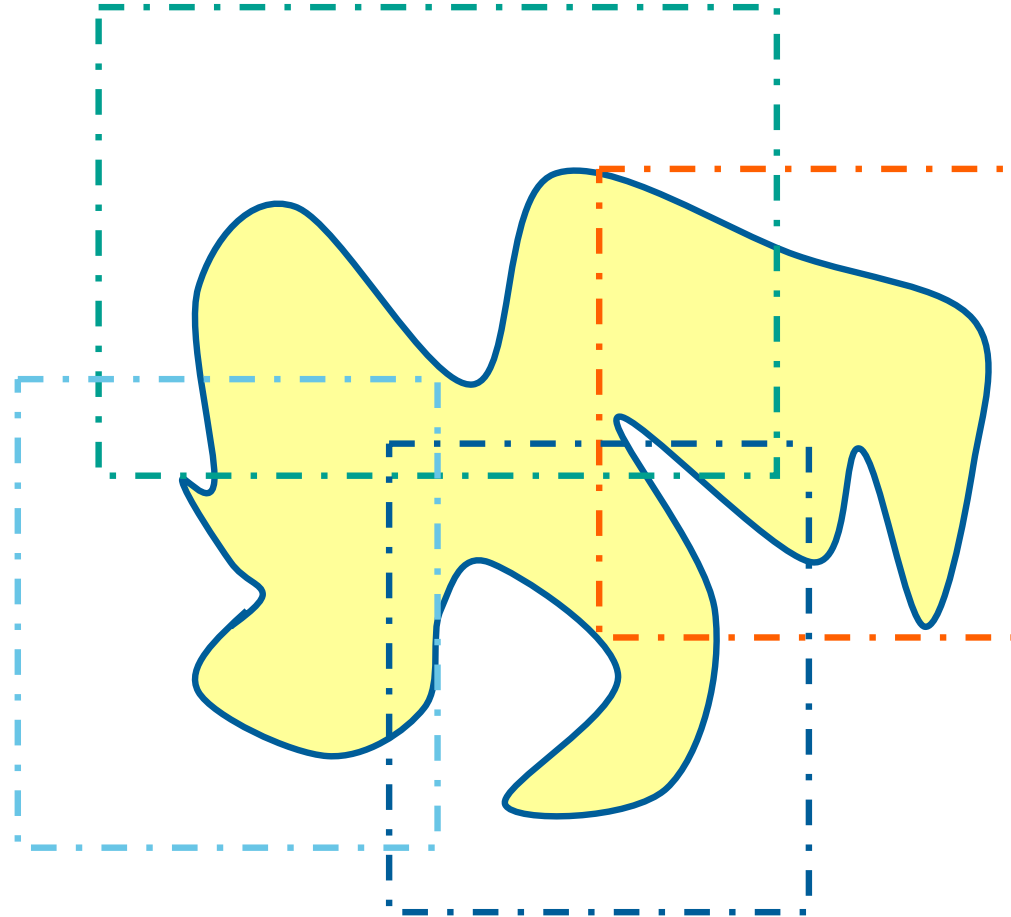
These ideal attributes are seldom achieved.»



COMPLETE AND INCOMPLETE MEASURES

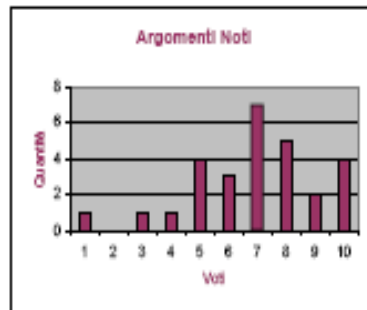


SYSTEMS OF MEASURES

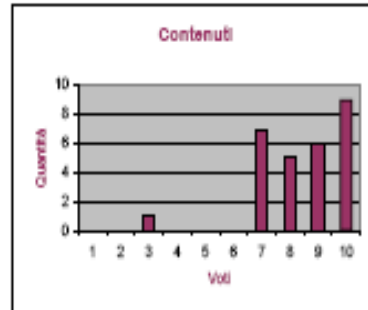


SYSTEMS OF MEASURES

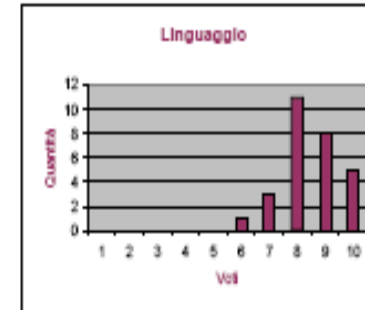
"Analisi di Bilancio. Metodologie, procedure e casi pratici"



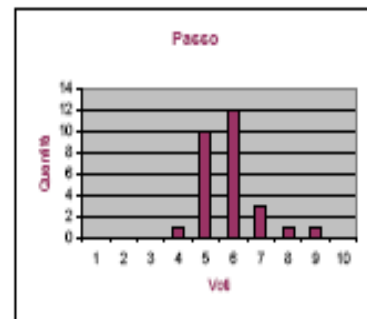
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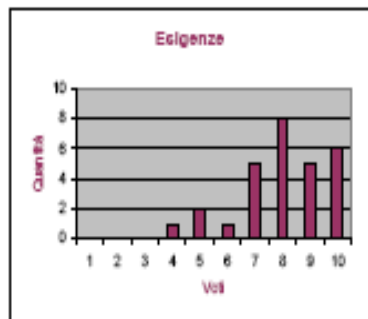
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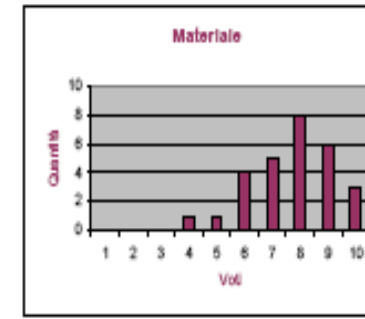
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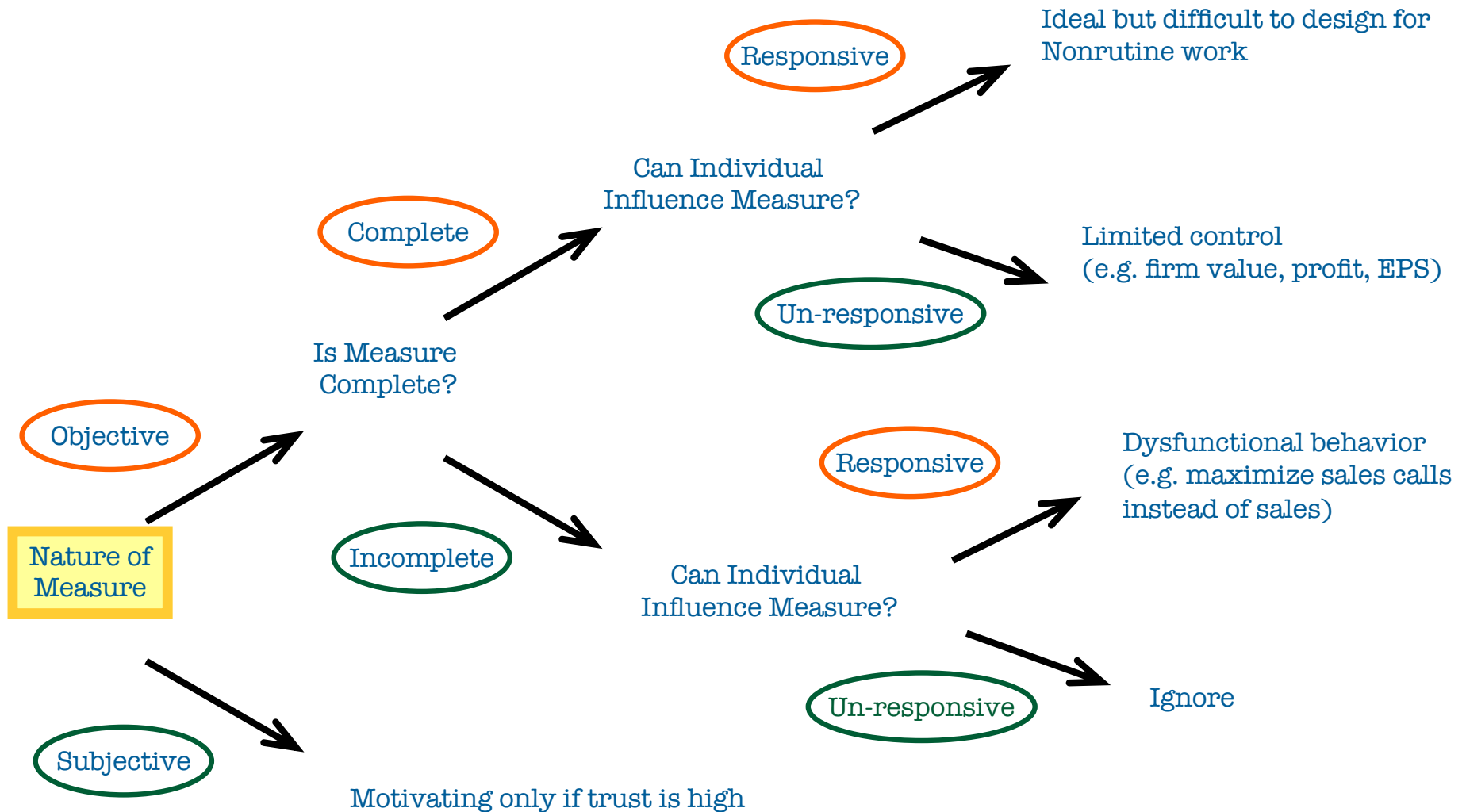


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CHARACTERISTIC OF MEASURES



INDICATORS TEND TO DIRECT YOUR ATTENTION

«As manager of the factory, you have a substantial staff and a lot of automated equipment. But to run your operation well, you will need a set of good indicators, or measurements. [...] **Just to get a fix on your output, you need a number of indicators; to get efficiency and high output, you need even more of them.** The number of possible indicators you can choose is virtually limitless, but for any set of them to be useful, you have to focus each indicator on a specific operational goal. [...]

Indicators measure factors essential to running your factory. If you look at them early every day, you will often be able to do something to correct a potential problem before it becomes a real one during the course of the day.

Indicators tend to direct your attention toward what they are monitoring. It is like riding a bicycle: you will probably steer it where you are looking».

Excerpt from: Andrew S. Grove. “High output management”



... THEREFORE, YOU SHOULD GUARD AGAINST OVERREACTING

«So, because indicators direct one's activities, you should guard against overreacting. This you can do by **pairing indicators**, so that together both **effect** and **counter-effect** are measured.

Examples of effective measures of administrative output are:

ADMINISTRATIVE FUNCTION	WORK OUTPUT INDICATOR
Accounts payable	# Vouchers processed
Custodial	# Square feet cleaned
Customer service	# Sales orders entered
Data entry	# Transactions processed
Employment	# People hired (by type of hire)
Inventory control	# Items managed in inventory”

Because those listed here are all quantity or output indicators, their paired counterparts should stress the quality of work. Thus, in accounts payable, the number of vouchers processed should be paired with the number of errors found either by auditing or by our suppliers. For another example, the number of square feet cleaned by a custodial group should be paired with a partially objective/partially subjective rating of the quality of work as assessed by a senior manager with an office in that building».

Excerpt from: Andrew S. Grove. “High output management”

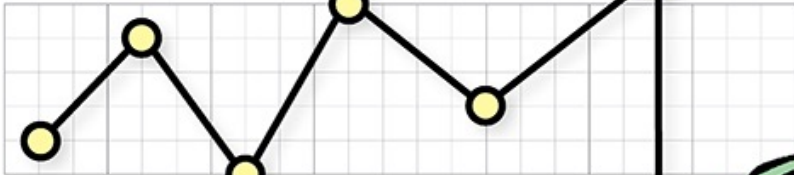


A POSSIBLE PROBLEM

Harvard Business Review

44 How Dual-Career Couples Make It Work
70 Put Purpose at the Core of Your Strategy
140 Learning to Work with Intelligent Machines


HBRORG
September-October
2019



Are METRICS Undermining Your Business?

Too many leaders confuse numbers with strategy.

62



THE RELATION BETWEEN STRATEGY AND METRICS

«Tying performance metrics to strategy has become an accepted best practice over the past few decades. Strategy is abstract by definition, but metrics give strategy form, allowing our minds to grasp it more readily.

If strategy is the blueprint for building an organization, metrics are the concrete, wood, drywall, and bricks.

But there's a hidden trap in this organizational architecture: A company can easily lose sight of its strategy and instead focus strictly on the metrics that are meant to represent it.

For an extreme example of this problem, look to Wells Fargo, where employees opened 3.5 million deposit and credit card accounts without customers' consent in an effort to implement its now-infamous “cross-selling” strategy.».



THE SURROGATION SNARE

«Every day, across almost every organization, strategy is being hijacked by numbers. It turns out that **the tendency to mentally replace strategy with metrics** —called **surrogation**— is quite pervasive. And it can destroy company value.

Of course, we all know that **metrics are inherently imperfect at some level**. In business the intent behind metrics is usually to capture some underlying intangible goal—and they almost always fail to do this as well as we would like. Your **performance management system is full of metrics that are flawed proxies for what you care about**.

Surrogation is especially harmful when the metric and the strategy are poorly aligned. The greater the mismatch, the larger the **potential damage**».

SOURCE: Michael Harris and Bill Tayler, “Don’t Let Metrics Undermine Your Business”, HBR, 8 September–October 2019



GUARDING AGAINST SURROGATION

«To prevent surrogation, we must first understand how it happens.

Two recent studies on surrogation suggest that **surrogation is a common subconscious bias: Whenever metrics are present, people tend to surrogate.**

Nobel prize winner Daniel Kahneman and Yale professor Shane Frederick postulate that **three conditions are necessary** to produce the type of substitution we see with surrogation:

- The **objective or strategy is fairly abstract.**
- The **metric of the strategy is concrete and conspicuous.**
- The **employee accepts, at least subconsciously, the substitution of the metric for the strategy».**

Multiple research studies have helped demonstrate how these conditions combine to produce surrogation. Knowledge of them supplies us with the means to combat the problem ».

SOURCE: Michael Harris and Bill Tayler, “Don’t Let Metrics Undermine Your Business”, HBR, 8 September–October 2019



HOW TO DO THAT

Get the people responsible for implementing strategy to help formulate it.

This helps reduce surrogation because those involved in executing the strategy will then be better able to grasp it, despite its abstract nature –and to avoid replacing it with metrics. It's particularly crucial to bring the executives and senior managers who are charged with communicating strategy into this process.

Loosen the link between metrics and incentives.

Tying compensation to a metric-based target tends to increase surrogation—an unfortunate side effect of pay for performance. Besides tapping into any monetary motivations people might have, this approach makes the metric much more visible, which means employees are more likely to focus on it at the expense of the strategy.

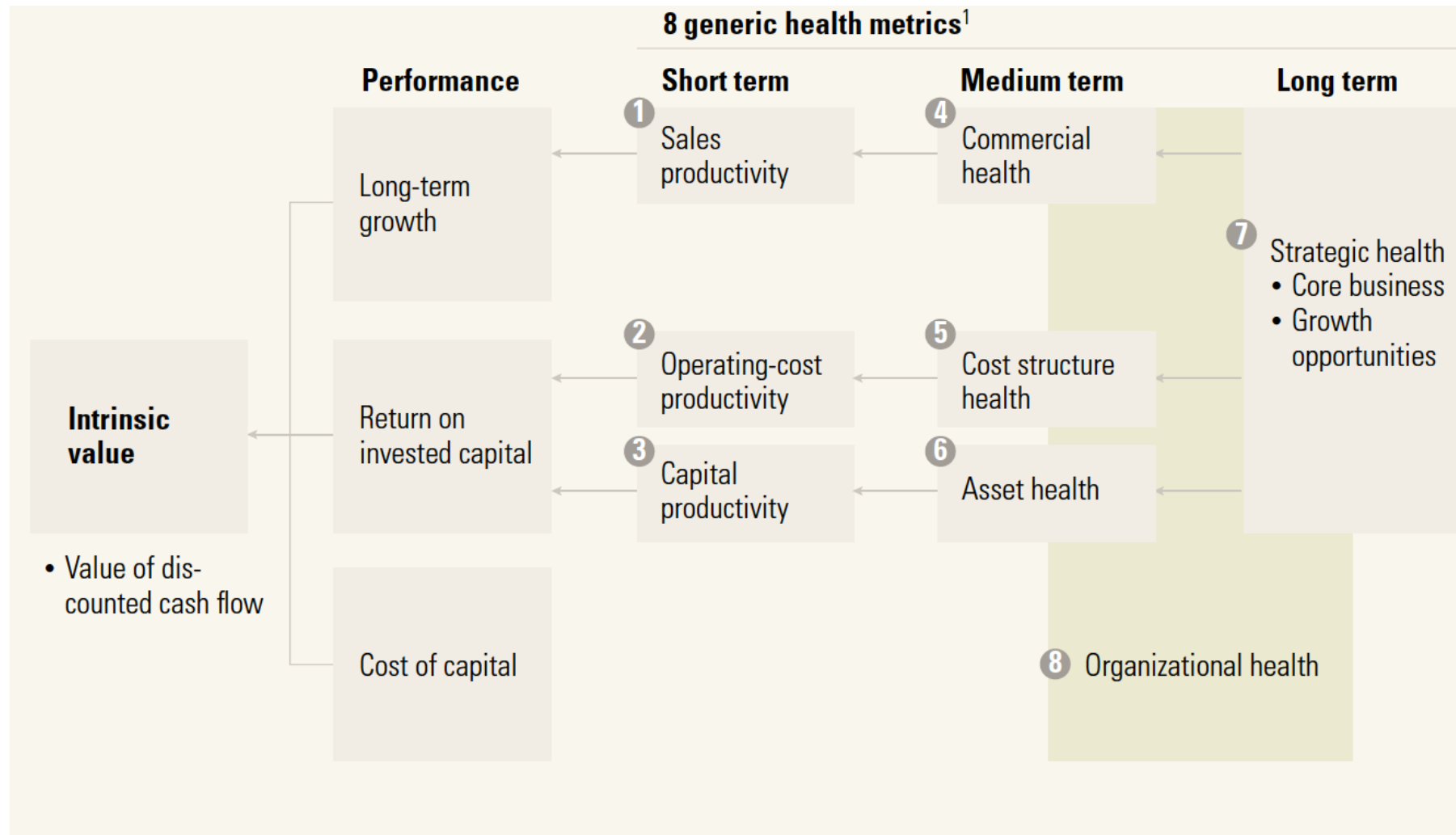
Use multiple metrics.

Another study shows that people surrogate less when they're compensated for meeting targets on multiple metrics of a strategy rather than just one. This approach highlights the fact that no single metric completely captures the strategy, which makes people more likely to consciously reject substituting it for the strategy.

SOURCE: Michael Harris and Bill Tayler, "Don't Let Metrics Undermine Your Business", HBR, 8 September–October 2019



“PERFORMANCE VERSUS HEALTH”



SHORT-TERM HEALTH METRICS

- Sales productivity metrics explore the factors underlying recent sales growth. For retailers, these metrics include market share, a retailer's ability to charge higher prices than its peers, the pace of store openings, and same-store sales increases.
- Operating-cost productivity metrics explore the factors underlying unit costs, such as the cost of building a car or delivering a package.
- Capital productivity metrics show how well a company uses its working capital (inventories, receivables, and payables) and its property, plant, and equipment. Dell revolutionized the personal-computer business by building products to order and thus minimizing inventories. Because the company keeps the so low and has few receivables to boot, it can operate with negative working capital.

MEDIUM-TERM HEALTH METRICS

- Commercial-health metrics, indicating whether a company can sustain or improve its current revenue growth, include the metrics for its product pipeline (the talent and technology to market new products over the medium term), brand strength (investments in brand building), regulatory risk, and customer satisfaction. Metrics for medium-term commercial health vary widely by industry.
- Cost structure health metrics gauge a company's ability, as compared with that of its competitors, to manage its costs over three to five years. These metrics might include assessments of programs like Six Sigma, which companies such as General Electric use to reduce their costs continually and to maintain a cost advantage relative to their competitors across most of their businesses.
- Asset health metrics show how well a company maintains and develops its assets. For a hotel or restaurant chain, to give one example, the average time between remodelings may be an important driver of health.

LONG-TERM HEALTH METRICS

- Metrics of long-term strategic health show the ability of an enterprise to sustain its current operating activities and to identify and exploit new areas of growth. A company must periodically assess and measure the threats—including new technologies, changes in public opinion and in the preferences of customers, and new ways of serving them—that could make its current business less attractive. In assessing a company's long-term strategic health, specific metrics are sometimes hard to identify, so more qualitative milestones, such as progress in selecting partners for mergers or for entering a market, are needed.
- Metrics are also needed to determine whether a company has the people, the skills, and the culture to sustain and improve its performance. Diagnostics of organizational health typically measure the skills and capabilities of a company, its ability to retain its employees and keep them satisfied, its culture and values, and the depth of its management talent. Again, what's important varies by industry.



PERSPECTIVES ON THE LONG-TERM

In a speech delivered back in 1969, when the Net was in its infancy, the social scientist and future Nobel laureate Herbert Simon posited that a glut of information would produce a dearth of attention. Since then, psychologists and neuroscientists have learned a great deal about how our brains respond to distractions, interruptions, and incessant multitasking. What they've discovered proves how right Simon was—and underscores why we should be worried about the new digital environment we've created for ourselves. When it comes to thinking, we're trading depth for breadth. We're so focused on the immediate that we're losing the ability to think more deeply about the long-term implications of complex problems.

