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MEASUREMENT

10 Rules for Building a Measurement System

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It is no surprise that people are respectfully nervous about the issue of performance measurement. The analogy with sports scorecards is generally accepted: people need feedback on their performance in order to be helped to do even better (or to be replaced by someone who can do better). In most sports, at least, the method of scoring is widely understood before the game and there are even quasi-judicial bodies to referee disputes.

In the business world it is usually not completely clear what should be measured. In fact, the American Productivity & Quality Center has a habit of responding "it depends" when asked what and how to measure.

My purpose here is to narrow down the "it depends" at least somewhat. Following are 10 rules that if considered carefully in the context of your organization should let you develop (or extend) a comprehensive and effective performance measurement system without unacceptable pain or cost.

There are six rules for *planning* a measurement system and four rules for *installing and managing* a measurement system, although in the spirit of continuous improvement, once installed, a measurement system may be adjusted quite frequently and the two categories begin to merge.

Rules for Planning a Measurement System

1 Clearly identify your purposes for measuring.

Most people will say we measure to improve; we certainly don't measure just to have numbers around. People often group measures into two categories: reporting measures and control measures. Reporting measures cover something that someone above you in the organization needs to know; for example, the chairman needs the return on investment figure to report to shareholders. Control measures address things that need to be monitored or contained; for instance, you may need to monitor water usage to make sure the pipes have not sprung a leak.

But most improvement comes through employee motivation. Therefore, feedback on performance is another crucial use of measures, and the organization that fails to use measures this way is missing a major opportunity.

Measures can be used to motivate whether you work in an atmosphere of repressive control or of high employee participation and feedback.

Measures also give important business information that can lead to technical decisions around capacity expansion, product line expansion, staffing levels, customer perceptions, and cycle time.

2 Choose an appropriate balance between individual and group measures.

Yesterday's reward systems focus almost exclusively on individual capacity and performance. Key parameters are education, seniority, company training and experience, discipline, mentors, and personality.

Today's management experts focus on the creation of teamwork and group initiative and performance. Excellence depends on a culture of cross-company cooperation and identification with the purposes of the larger organization. Thus, tomorrow's measures of performance will be increasingly work group focused . . . but the individual still has to resolve to work in the group, so there is still room for individual measurement and motivation.

3 Measure all the key elements of performance: productivity, quality, timeliness, creativity, and many others . . . a family of measures.

It is rare that a single measure adequately describes good or bad performance. Salespeople certainly should sell! But they should also make calls in anticipation of future sales. They should generate accurate and timely documentation, solve customer problems on the already-sold products, work in appropriate communities to publicize their organization, train their trainees well, put special effort on new products or unusually profitable products, and so on.

Especially forgotten due to our outmoded accounting systems is measuring use of capital resources, equipment, and inventories.

The usual excuse for choosing only one measure is to keep things simple. ROI, for example, often becomes an all-purpose inclusive measure. The trouble is, it is so inclusive virtually no one can control or affect it through his or her daily work. The organization needs overall strategic measures such as ROI, but it also needs more local measures that can be directly affected by the people actually doing the work. We like to use the term "leverage points" when choosing measures—measure the things that are most important and most likely to improve once people start paying attention to them.

4 Be sure the measures adequately reflect the customer's point of view, whether the customer is external or internal.

It is relatively easy to develop measures of internal operations. Throughput, errors, cycle time, space occupied, sales calls, and lines of computer code can all be counted and inserted in internal ratios. What may be missing is what we are in business for: to satisfy a customer's needs! Are we meeting the customer's specifications, whether expressed or implied? Some of this can only be measured indirectly by returns, surveys, or ratings, but it is no less important to measure because of that.

For many staff groups, the user is internal, from another part of the same company. Measuring that internal customer's satisfaction is no less important. Some white collar groups understand that they have internal customers—MIS groups are often very aware of who their users are. A lot of other internal staff groups have a surprising amount of trouble identifying their customers. They are trained to do their specialized piece of the work and not to see the whole. It is important for staff groups to deliver the right things to their internal customers, and techniques such as customer surveys can work internally as well as externally.

5 Use care in generating competitive benchmarks.

It is relatively easy to measure internal performance. It would be marvelous to have comparable data for the main competitors or at least for other organizations! Many companies have virtually given up comprehensive internal measurement to focus on a few select competitive benchmarks. The likelihood of these measures being accurate is extremely small because no two companies operate in identical environments or do exactly the same things.

Besides, the continuous improvement philosophy says that improvement should be stressed everywhere in the organization, regardless of whether you are number one in the industry or number fourteen. Actually number *one* is the one that has to try harder to stay number one. In fact the "benchmarks" companies generate are rarely comparable enough to be the basis of key decisions; organizations just are not very alike at that level of detail.

6 Give some time to tedious technical adjustments (garbage in, garbage out).

Sorry, there is no free lunch in measurement either! Alfred North Whitehead said: "Seek simplicity . . . distrust it." The second half of that gets forgotten too often.

There are a few technical things to watch for. Any measure denominated in dollars (or another currency) cannot generally be used in trend comparisons without removing specific inflation effects. Cost per unit of service does not have to actually fall for there to be a productivity improvement. If there has been large price inflation for one of your inputs, a slight worsening in unit cost may actually represent good performance because you've offset that inflation.

Also watch for mix shift. Number of widgets per employee might go up just because the mix of widgets is shifting to easier-to-make widgets. Weighting systems are needed in such situations.

Finally, organizations get confused where there is a "farm-out" situation. Sometimes parts are made/processed by a contractor, sometimes all inhouse. They are counted the same in output counting, but they use significantly different amounts of specific inputs.

Installing and Managing a Measurement System

7 Develop (or modify) the system as participatively as possible.

People are more likely to be motivated by a measure they have had some part in selecting. At the least they should have some training in what the measure means—and doesn't mean. A participative approach to measures development can also help overcome natural resistance to measurement by people who are probably accustomed to measurement being used for disciplinary purposes.

On the other hand, do not carry participation to extremes. The ultimate in participation—everyone go measure whatever you want—may be fun but it won't improve business decision making. Furthermore, people may be highly motivated to do the wrong thing! Measures should be related to business goals. The Nominal Group Technique* is an effective tool for developing families of measures in organizational groups.

8 Cost/benefit analysis applies to data availability also.

Clearly an organization should use already-available data wherever it can. Creating a whole data-gathering system for one minor measure should be resisted. But do not select measures just from available measures. If a "leverage point" for the organization is identified and there are no measures surrounding it, it is about time measures were created. It is also possible to use indirect or surrogate measures for more subjective evaluations. Universities have used publication count as a measure for the scholarliness and/or creativity of professors for generations.

9 If strategies change, measures can change too.

Measures need to reflect the major improvements that are expected by the organization. If the signals change, the measures need to change in direct proportion. If the sales force signal goes from sheer volume to market share targets, the salesperson measures need to reflect that change. If the organization launches a major quality/customer satisfaction program, it is not sufficient to stick with ROI and current earnings as corporate measures. By the time the direct effects of a long term program of this sort hit the bottom line, it is too late to do much about it either way.

*The Nominal Group Technique is described in detail in *Productivity Brief 51*, "Using Nominal Group Technique to Establish a White Collar Productivity Measurement System" by Carl Thor. American Productivity Center, February 1986.

Sometimes you can "exhaust" a measure (though this rarely applies to issues such as quality and on-time delivery, which are worth measuring forever). If you've driven the direct labor input of one product to virtually zero, it's probably not worth measuring direct labor on that line any longer. Having eight years' worth of good data may appeal to some with a statistical bent, but if the measure covers work no longer done in the organization, what's the use?

10 Performance improvement is a long-term process; top management patience is needed toward newly measured results.

There is no more dangerous weapon than newly available results in the hands of an "activist" top manager. The urge to do something about it coupled with unquestioned faith in computer print-out material will almost always result in premature action followed by data disguise and smoothing by middle managers to keep it from happening again. Measures that are intended for grass-roots feedback (which is how most measures should be intended) should be kept at the grass roots level . . . they are not intended for reporting.

Now you know on what the proper measurement direction depends! Think through these 10 issues in the context of your firm. Perhaps these 10 admonitions will lead to quicker and more dependable improvement than Moses' 10.

About the Author

Carl Thor became President of the American Productivity and Quality Center in November 1987. Previous to this, he was responsible for developing and presenting the Center's productivity measurement and gain sharing seminars and in-house programs. Thor has also led several industry studies and statistical research projects and has worked with a wide variety of individual organizations to create and improve productivity management, measurement, and reward systems.

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Manager's Notebook

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