



How to See the Underlying Trends in Performance Indicators

Summary

Owners and managers need to see the underlying trends in their business indicators.

But reports and charts based on raw data can obscure the trends because of the inherent randomness of most indicators.

The effects of seasons and cycles can also obscure the real state of the business.

If you own or manage a business in a highly volatile industry like the retail trades, hospitality, transportation, and foods, and you rely on the raw data in daily or monthly reports, you won't be able to spot the real trends in the indicators. This will make it impossible to use the indicators to detect opportunities and threats early.

Your goal is to be able to spot when trends of your indicators are changing: when growth has started to slow, or even to turn negative. That tells you that momentum has been lost, and you need to take action to reverse the trend.

When we've charted revenue data from customers in the retail trade, for example, we find that the values for hourly, daily, weekly, and even monthly sales cause the charts to zigzag violently. Trying to determine whether revenues are going up or down based on those numbers would be useless. If you acted based on the values of the last few measurements, you would be flip-flopping all the time.

Thus, the first thing to do is to "smoothen the curve" of the chart. There are various statistical techniques for doing this. Ensure that your decision-support system uses one. You can tell if it does, by graphing the report data. It should look reasonably smooth -- enough for you to have some idea of the trends when you view it.

Even after "smoothening", however, there is more to be done. If the business is seasonal, most indicators will also be greatly affected by the seasons. Think of the impact of the holiday shopping season on the retail trade. If you just compared monthly sales against the previous month, you would always be euphoric in December and totally despondent by February. Again, relying on the raw data and comparing one period against the preceding periods will not make sense.

The simple answer seems to be: compare each period against the same period a year ago. This is what all public companies do in their quarterly and yearly financial reports. However, this raises a problem: how do you detect a trend? And, how do you detect a change in the trend? If you compare one period's measurement against the previous month's and against the year-ago month's, you still have no idea of the trend.

Let's consider an example. If you were told that: "profits are up 5% vs. last month, and 10% vs. the same month a year ago", could you safely conclude that profits are trending up? Not really. What if the profits of the prior 6 months had been up 20% over their year-ago equivalents? If that were the case, profits are actually starting to trend down after a huge growth 6 months ago.



That example shows the need to have a continuous chart of smoothed, seasonally-adjusted values. You need to be sure that your reporting systems can do this.

Finally, the business indicators may also be highly cyclical. For example, retail stores and restaurants cycle within a weekly period. Sales tend to be consistently higher on some days than on others. This cycle has an effect similar to the seasons: the underlying trend is not apparent in the raw data.

In net, to spot the real trends in your business indicators, you need to ensure that your systems are removing the effects of irregularity, seasonality, and cyclicalities in your raw data.

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