

Metapraxix White Paper

Avoiding Profit Warnings



Corporate Radar

The idea of a large ocean-going vessel navigating without radar is today unthinkable. Powerful techniques to provide forward marine visibility have been available since the Second World War and the prospect of peering through the fog via a lookout up the mast is now a romantic relic from a bygone age.

The idea of a large multinational corporation navigating without radar ought to be equally unthinkable, because powerful techniques to provide forward business visibility have also been developed over the last few decades. However many companies are still unaware that these capabilities exist and they continue to run the business through the rear-view mirror of traditional management accounting reports. It is hardly surprising that this approach tends to increase the likelihood of a profit warning, which is the business equivalent of the lookout on the *Titanic*: too little and too late.

This White Paper sets out the principles involved in developing forward-looking information for those who occupy the bridge of the modern multinational. The techniques discussed are equally applicable to the Head Office management role, to divisional and operating subsidiary executives and also to customer, brand, product, channel and supply chain managers.

Although the core ideas involved have not changed fundamentally since we asked the question in our 2001 White Paper 'Are you driving your business with your eyes shut?', the risks of doing so have probably increased. Meanwhile the technology required to implement these capabilities is becoming more and more capable, enabling corporate data to be accessed rapidly and automatically.

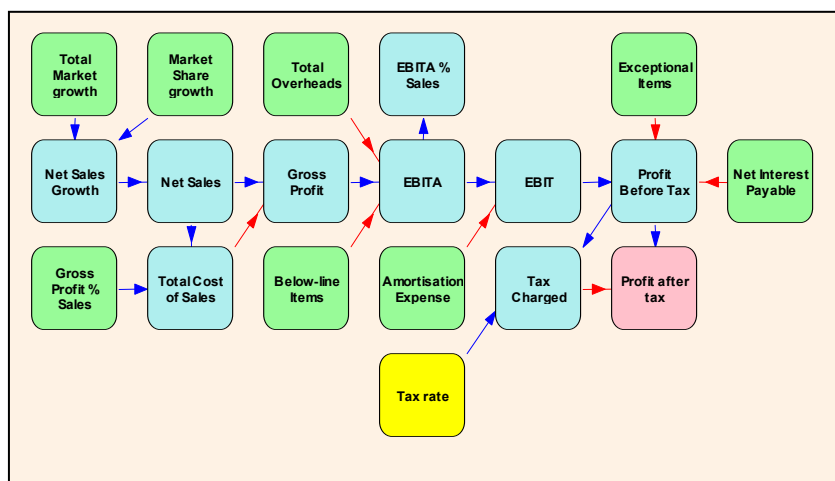
Focussing on leading indicators

Most of our business processes involve time lags. There is a lag between increasing our advertising and receiving new orders, a lag between booking these orders and the corresponding manufacture, a lag as manufactured products are distributed to the customer and yet another between sale and cash.

A powerful way of ensuring that everyone understands these lags is to create a Business Driver Diagram. In this example it is clear that 'profit after tax' is the net effect of a chain of preceding causes. The 'upstream' indicators are to the left of the diagram, so if we want to predict our downstream profit, we had better start with an upstream business driver such as total market growth, or growth of own market share.

Many corporations fail to monitor leading indicators across their subsidiaries, perhaps because of the lack of consistent definitions. The diagram shows that by tracking net sales growth we will pick up the danger signs much earlier than by simply monitoring profit. If we can also track market share or new orders received, so much the better.

Business Driver Diagrams encourage executives at every level to 'sing from the same hymn-sheet'.



They are an effective way of ensuring that general managers as well as financially qualified professionals follow every step of the discussion about business performance. Crucially, they also provide a coherent framework for the inclusion of non-financial key indicators into the company's management reporting.

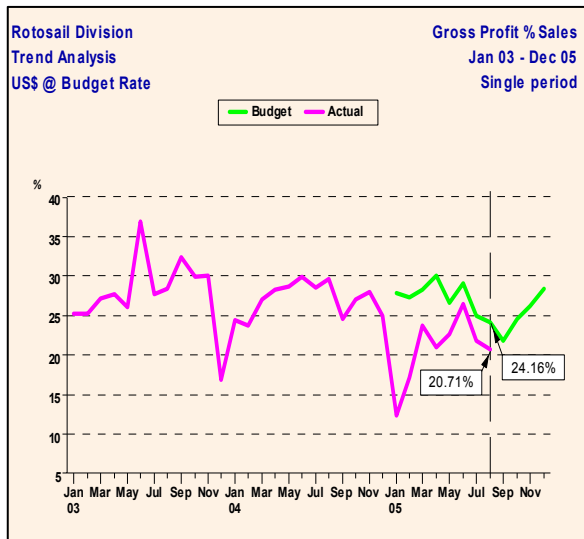
Visualising underlying trends

Management accounting traditions often cause business reports to be presented as numeric tables. However these ‘walls of numbers’ are a very inefficient way of communicating the underlying performance trends which are crucial in the detection of early warnings.

This example sets out the gross profit percentage on sales against budget since the start of the year. The company is apparently behind budget, but what does this really mean?

We can easily find out what it means by referring to a simple graph of the same information over a longer time period. In the accompanying graph the same data has been represented as a chart of monthly values over the last three years, together with the budget values for the current year.

Rotosail Division Trend Analysis US\$ @ Budget Rate		Gross Profit % Sales Jan 05 - Dec 05 Single period	
	Budget %	Actual %	
Jan 05	27.85	12.35	
Feb	27.30	17.10	
Mar	28.28	23.80	
Apr	30.07	20.99	
May	26.54	22.67	
Jun	29.10	26.48	
Jul	24.97	21.79	
Aug	24.16	20.71	
Sep	21.80	N/A	
Oct	24.48	N/A	
Nov	26.22	N/A	
Dec	28.39	N/A	



A glance at this chart enables us to see that actual performance has been haemorrhaging for three years and shows no sign of fundamental improvement.

Furthermore, the seasonal pattern of favourable spikes each June at half-year should make us suspicious in relation to the temporary uplift experienced two months ago. There seems to have been a short period of rallying performance last year which was used to justify an optimistic budget.

So if we are finding it difficult to make a profit today compared with two years ago we should hardly be surprised, since the chart tells us that average gross profit margin has reduced over the period by about 10 percentage points. By contrast, the conventional approach of using a financial schedule to display the month or year to date figure against budget completely misses the point.

Once one is looking at the underlying trends, this kind of diagnosis becomes so simple that it is surprising that most management reviews are not performed on a graphical basis. There are several reasons for this, one of which is that the production of interpretative graphics of this nature on demand is prohibitively time-consuming in the absence of specialised software. This is because there are so many permutations of corporate data involved. For example, a company with 100 subsidiaries, each with 10 key product lines containing 10 key performance indicators creates a ‘data space’ of 10,000 possible trends.

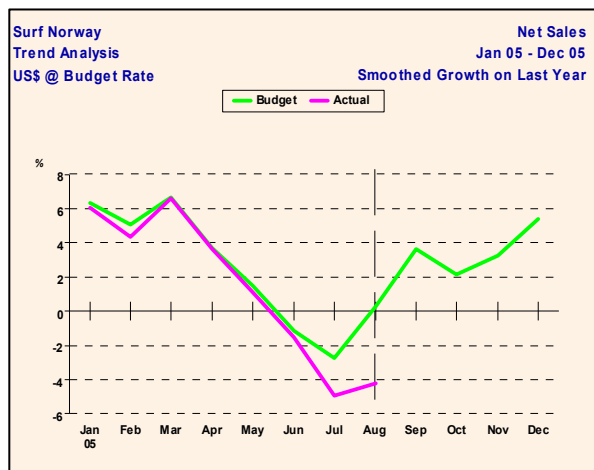
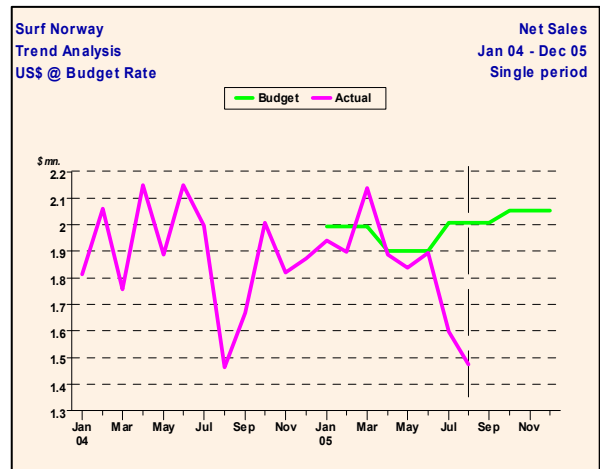
However none of this represents an insuperable obstacle for today’s technology. Techniques now exist which can read corporate data from popular consolidation systems and create these analyses automatically. The ability to select any subsidiary, any product line and any key performance indicator and to have the appropriate graph displayed instantly on the screen reduces the ‘marginal cost of curiosity’ to zero and greatly facilitates the visualisation of the underlying trends.

The same techniques are also capable of scanning every performance trend automatically and highlighting those that exhibit high future risk. This aspect is discussed in more depth on page 7.

Detecting early warnings

Imagine that you are a 'fly on the wall' at a business meeting in which this graph is being discussed. We have now switched from gross profit to sales, following the advice from the previous section that we should concentrate on leading indicators.

As revenues drop in August, we hear the sales manager explaining that there is really nothing to worry about - August is always a bad month because of the holiday season and things will pick up again soon. But supposing they do not?



Rather than showing sales values in \$ millions on the vertical axis, we simply calculate the percentage growth of the last twelve months compared with the twelve month period preceding this and graph that instead.

In this example we can see that the smoothed rate of sales growth has swung over an 8 month period from 6% positive growth to negative growth of over 4%. Whilst the budget anticipated some of this decline, it is now calling for a significant improvement to stem the tide, a level of activity that seems very demanding in relation to current achievement.

Managers looking at their data in this way are much more likely to take immediate steps to correct the performance of the business than if the presentation is via a 'wall of numbers', since it is now obvious that the anticipated return to growth in sales may be significantly delayed.

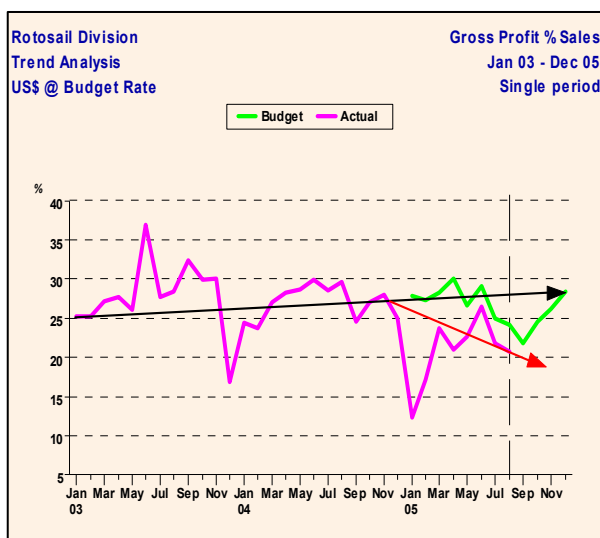
Monitoring sales growth rates is of fundamental importance to any company since so many other decisions depend on them. Staff recruitment levels, overhead commitments and fixed asset expenditure are three of the most obvious growth-driven decisions and these in turn drive many other costs. But curiously, very few conventional management reports are designed to warn executive teams about a sudden hiatus or reversal of growth.

Managers must be provided with the capability to find the early warning signs that are often hidden in the data. This means being able to switch instantly from straightforward charts of monthly data to growth rates, moving averages and comparable data visualisations. It means that operational problems such as 'Unfortunately we are below budget this month' need to be interpreted in strategic rather than tactical terms. The important questions do not relate only to the latest month: they concern issues such as 'Is this news indicative of a fundamental shift in our markets, or perhaps in our cost base?'

Outlawing naïve extrapolation

We can see how the budget in this example was prepared. In October or November of the year before, the previous trend was naïvely extrapolated to form the basis for next year's budget. This diagram depicts that as the black arrow, which carries forward the previous margin pattern (pink) into a budget for the following year (green).

However, if those who were preparing the budget had looked at the declining margin growth rates, warning bells would have sounded and one of two outcomes would have taken place instead. Either the lower recent margin growth rate would have been incorporated in a more modest budget (red), or alternatively a task force would have been assembled to see what could be done to reverse the worrying decline in margins.



In either case, corporate expectations would have been more realistic and management action would have been triggered far earlier than when a budget is based on blind extrapolation.

Preparing risk scenarios

Once we start thinking about forecasting under conditions of uncertainty or sudden change, it becomes clear that a single forecast value for each future time period is simply unrealistic. At such times it is obvious that any forecast we produce could be increased or decreased by 5%, 10% or more without flying in the face of common sense. In circumstances such as these it is statistical folly to issue single valued forecasts for each period. What we need instead is a range of forecast scenarios based on different assumptions, so that we can start to understand the resulting risk range.

This sounds more complicated than producing single forecasts, but in fact the process can be entirely automated. The trick is to base the production of the alternative scenarios on simple but robust management assumptions. In principle we can have as many such scenarios as we like and we can make our assumptions as complex as we wish. However, three or four scenarios are generally adequate for the task and we will also make our lives much less stressful if the explanation of the basis for the assumptions is as straightforward as possible.

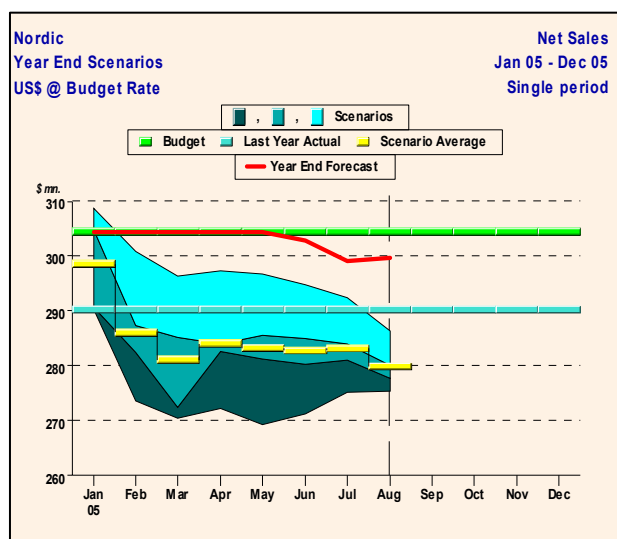
The following four simple scenarios have been applied to many different businesses and they can consequently be recommended as a robust starting point:

- The rest of the year will be on budget
- The year to date percentage shortfall or improvement on budget will continue for the rest of the year
- The rest of the year will be the same as it was last year
- The year to date percentage shortfall or improvement on last year will continue for the rest of the year

Amplifying your intuition

By applying these simple risk scenarios to the trend of incoming data we can take the emotion out of the process of challenging subsidiary forecasts and budgets. In any company there will be some subsidiaries or product groups which consistently under-perform, some which tend to come in on budget and some which consistently exceed their targets (perhaps via deft budget negotiation).

Some executives will have already formed a view about which subsidiaries belong in which of these categories because this is largely driven by the personalities and experiences of their general managers and financial controllers. Once a group's Finance Director has spent a few years becoming acquainted with these business colleagues, he or she will be able to compensate for their forecast bias via some form of central provision.



The difficulty here is in finding an objective way of explaining the Head Office viewpoint to the subsidiary concerned. This informal system also tends to collapse when business uncertainty increases or when a long-standing Finance Director leaves and the new incumbent lacks these intuitive antennae. At such times a multinational corporation becomes dangerously exposed to the risk of profit warnings.

If we want to find a way to amplify a seasoned Finance Director's intuitive understanding of subsidiary forecast bias, we therefore need not only to monitor the latest forecasts of each of our subsidiaries but also to find a way of visualising their own effectiveness as forecasters over a period of time.

That is the purpose of the 'Windsock' chart above. It tracks the evolution of a subsidiary's updated year-end forecasts throughout the whole year, while constantly comparing these with the evolving statistical risk range. This means that every point on each line on the chart is an alternative view of total year performance. Note that the horizontal timescale indicates the month in which the revised whole year forecast was made, not the month of the performance that is being described.

The green line is this full year's budget and the blue line is last year's result. The red line shows the revised year-end forecast from the subsidiary itself, plotted against the month in which its managers changed their forecast. The blue risk range corresponds to the four scenarios mentioned above and the yellow bars are simply the average of these scenarios.

Even with only one month reported, the Windsock chart is already warning us that the scenario average (yellow) is below the total year budget (green) and therefore the budget is potentially risky. This in itself should start to ring warning bells at Head Office. However, seasoned group Finance Directors don't rely too much on the data for the first month of the financial year because they know that the audit may introduce retrospective data corrections, so let's move on to February.

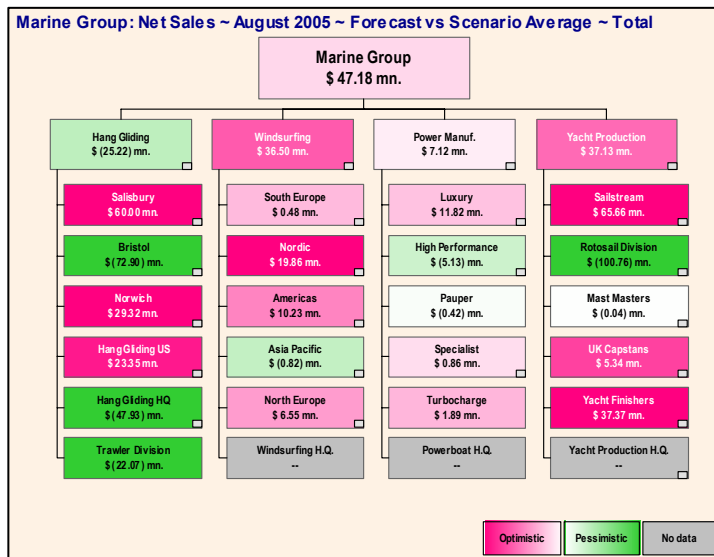
February's results confirm the risk categorisation and show that the downside risk is worsening: the yellow bar now suggests a statistically likely outcome for the year of \$286m against the budget of \$304m. It's time to e-mail the subsidiary with a copy of the analysis and ask its managers to think carefully about the forecast that they will be submitting next month. At the very least we'd also like to see some bullet points telling us how they are addressing the gap.

In the absence of this intervention, it is not until the June figures arrive that a revised local forecast is submitted (red line) which we can clearly see represents a case of 'too little, too late'. Consequently the group as a whole is exposed to the risk that the profit forecast of this subsidiary may not be met.

Company-wide diagnostics

In the Windssock diagram the gap between the red line (management forecast) and the yellow bar (scenario average) is an objective measure of the degree of risk associated with the achievement of that management forecast. It is a crucially important measure and so deserves its own name: we can call it the Forecast Risk Gap. Note that the existence of such a gap does not mean that the scenarios are right and the local managers are wrong: it simply means that their forecast carries a high degree of risk. In such circumstances we may well decide to focus the Head Office spotlight on this business.

So what is the overall Forecast Risk Gap for the business as a whole, and which of our subsidiaries are the main contributors to it?



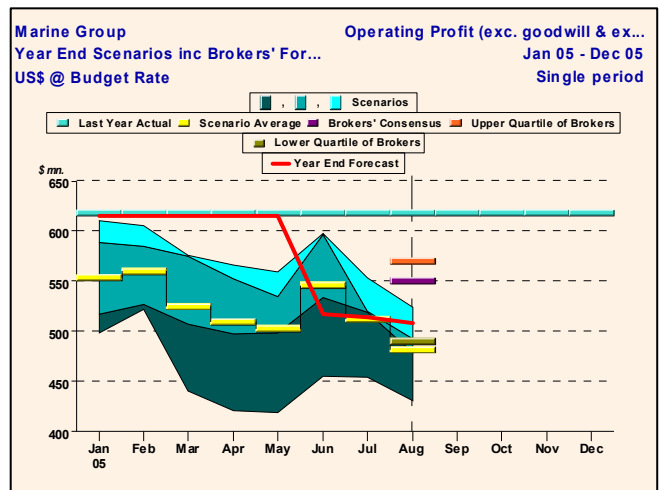
This organisation chart can be produced on demand for any level of the business and any key indicator. The colours show the degree of risk associated with the subsidiary's latest forecast. Pink warns us that the forecast may have been produced via rosy-coloured spectacles: the business may fail to achieve its year-end figures.

Green suggests instead that the business concerned can relax over a game of golf, secure in the knowledge that its targets are easy to achieve. Alternatively we may choose to re-examine the assumptions that went into setting its budget.

For the business as a whole it is now straightforward to consolidate these risk ranges so as to arrive at an overall view about the risk of having to issue a profit warning.

In this 'Windssock' chart of profit for the whole corporation, the horizontal bars against August denote the analysts' forecasts for the company's year-end result. The diagnosis enables the Board to see at a glance:

- If the company will meet its own forecast
- How this compares to market expectations



If there is a mismatch in either of these criteria (as above) then the Board must decide whether to implement internal corrective action and/or to issue a profit warning. In either case the techniques that have been described will generally provide the Board with considerably more advance notice than via the use of conventional management accounting schedules.

Track record

“The integrity and reliability of internal forecasting is essential to ensure effective external communication of market expectations. Forecasts are inherently uncertain and the Metapraxis techniques provide a powerful analytical tool to evaluate the likelihood of achievement.”



Ken Lever, Chief Financial Officer, Tomkins plc

“The first time I saw our numbers this way, I took my laptop home and explored the business in detail until the batteries ran down. I use the windsock chart virtually on a daily basis to assess our forecast risks.”

Keith Victory, Director of Finance, Willis North America



“This is outstanding. It enables a clear, graphic overview of business performance, and the ability to dig down to more detail. I am impressed with how it is integrated with our strategy.”

Ralph Kugler, Chairman, Unilever Home & Personal Care Europe

“As financially qualified people you can easily delude yourselves that your colleagues are equally comfortable with masses of financial data, but the reality is that you can't have effective operational control if you don't understand the fundamental trends. Graphical representation really wakes people up.”



David Davies, Chief Financial Officer, OMV Group



“As board members, we can explore performance trends, forecasts, brands, cash flow, working capital and customer information for ourselves without having to ask for special analyses.”

Alan Johnson, Senior Vice President Finance, Unilever Ice Cream and Frozen Food

“This is a very powerful way of incisively summing up the progress of a country - or the lack of it - rather than going out empty-handed and having to rely wholly on the local management perspective.”



David Jones, Head of Business Development, Syngenta

Next Steps

An initial feasibility study can usually be delivered within a few weeks of being commissioned. The first step is a short meeting to agree the scope of the work and to sign a strict non-disclosure agreement.

Once an initial review has created a shortlist of investigative priorities, arrangements can be made for the same techniques to be installed in-house for use on a continuous basis.



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