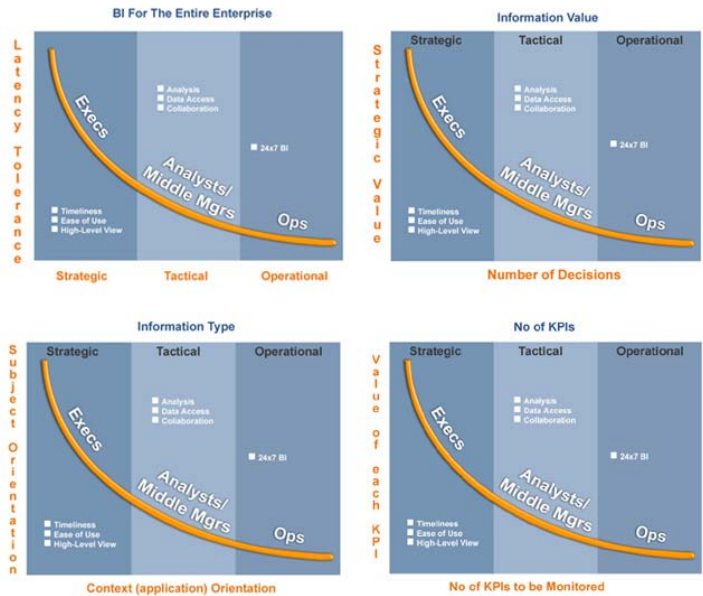


Business Intelligence For The Real Time Enterprise



“A key goal of the SQLServer 2005 business intelligence components is to support the development and use of business intelligence in enterprises of all sizes, and to all employees – not just management and analyst, but also operational and external constituents”

BI for the Real Time Enterprise

How does a project get to be a year late ... One day at a time

-- Frederick P Brooks

This white paper aims to address four issues:

1. How Real Time BI helps

- ❖ There are decision makers at every level of your organization
- ❖ Localized decisions are more immediate and more relevant
- ❖ You get rapid analysis instead of fixed reports
- ❖ Operations people need essentially real time BI

2. Who needs Real Time BI

- ❖ Operations people and executives benefit from real time BI

3. What should be monitored to benefit from Real Time BI

- ❖ The business context
- ❖ More and more KPIs

4. Security needed for Real Time BI

- ❖ User level security



What is BI?

Business Intelligence provides a holistic overview of your business:

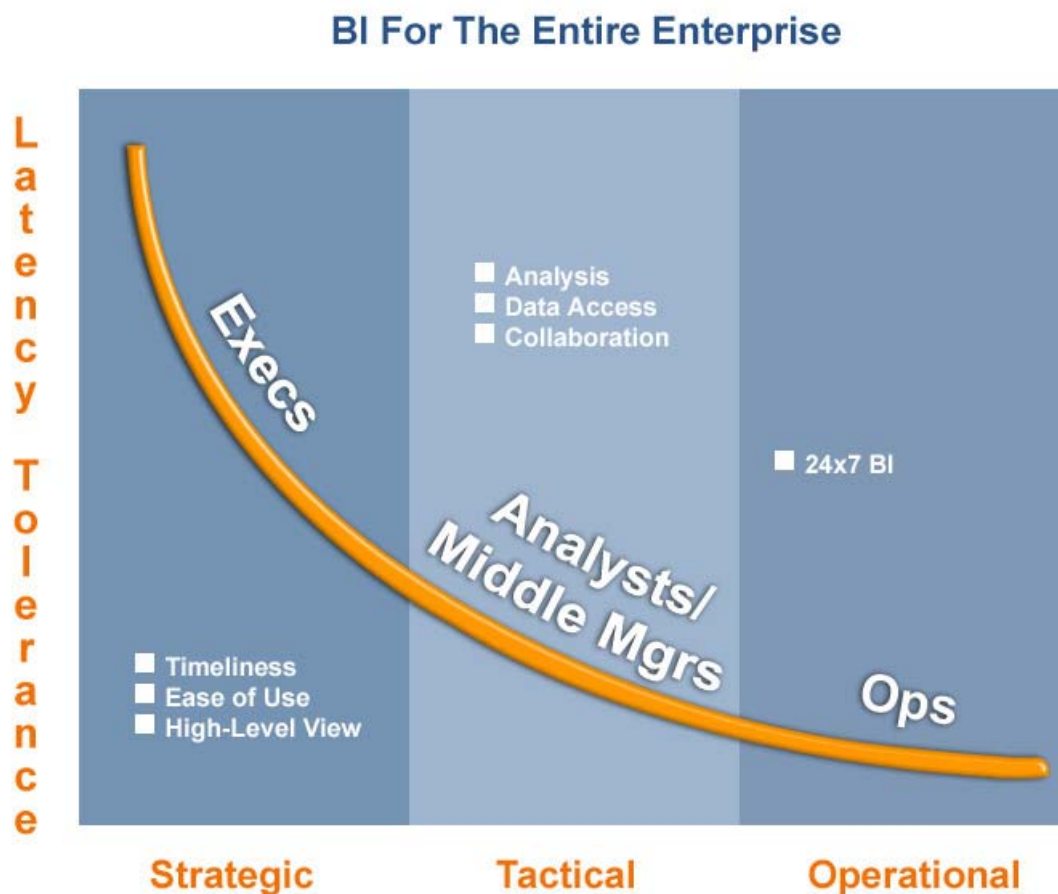
- ❖ It monitors and provides clarity about the financial and operational health of the organization
- ❖ It regulates the operations of the organization
- ❖ It allows the company to quickly identify trends and to be proactive and agile, outpacing the competition

Operational BI

The financial health of an organization depends on its operational health. There is always a lag between the operational health and financial health of an organization.

If you monitor only the financial health of the organization, it may be too late to recover. You need to monitor the operational health as well, to make sure the organization is financially sound. Thus, your focus should be greater on the requirements for monitoring the operational health of the organization, because this will be the basis for maintaining sound financial health.

Strategic Vs. Operational BI



The strategic needs are primarily the **Business Aspect** (or *perspective*) and the **Measures** associated with it. For strategic needs, the business context is not very relevant and the granularity requirement of data is of a higher level. For operations personnel, the context in which the decision is taken is very important. The business process in which you are working defines the business context.

The decision you take today will affect the results today. If these decisions are not taken today, by tomorrow you will have lost the opportunity. Strategic BI ensures that the opportunities will be encashable in the future — from the analysis of historical data. This closed loop mechanism of collecting data, analyzing it, and acting on the decision derived from the analysis needs regular feedback. The users can set generic rules and benchmarks but cannot define recommendations for each context of the business operations.

Here the empowerment of the team members will come into the picture. This empowerment should make BI available to the team members. Only the information available with the business context can help them take the specific decisions required for that business context.

The Y-axis in the above graph represents the latency tolerance and also the time required for the results to manifest after the decisions are taken. At the operational level, the results are immediate as compared to the strategic level.

Case Study

Let us assume the analysts need to take a decision about whether the company should run a discount sales promotion campaign this winter or not. For this they look at the trends from previous such campaigns to assess the additional sales achieved then.

Now consider a person running the promotion campaign. If the campaign is running for one week, he needs information about the sales **today**: the kind of people visiting the shop today, etc. If he observes that the overall turnout is good but the number of student visitors is not high, he may find after analysis that no advertisements have been placed about the sale in newspapers read by the student community. Since students constitute a sizeable part of the target customer group, based on this information he can decide to run a special advertisement aimed at students, and distribute leaflets to universities and colleges in the area.

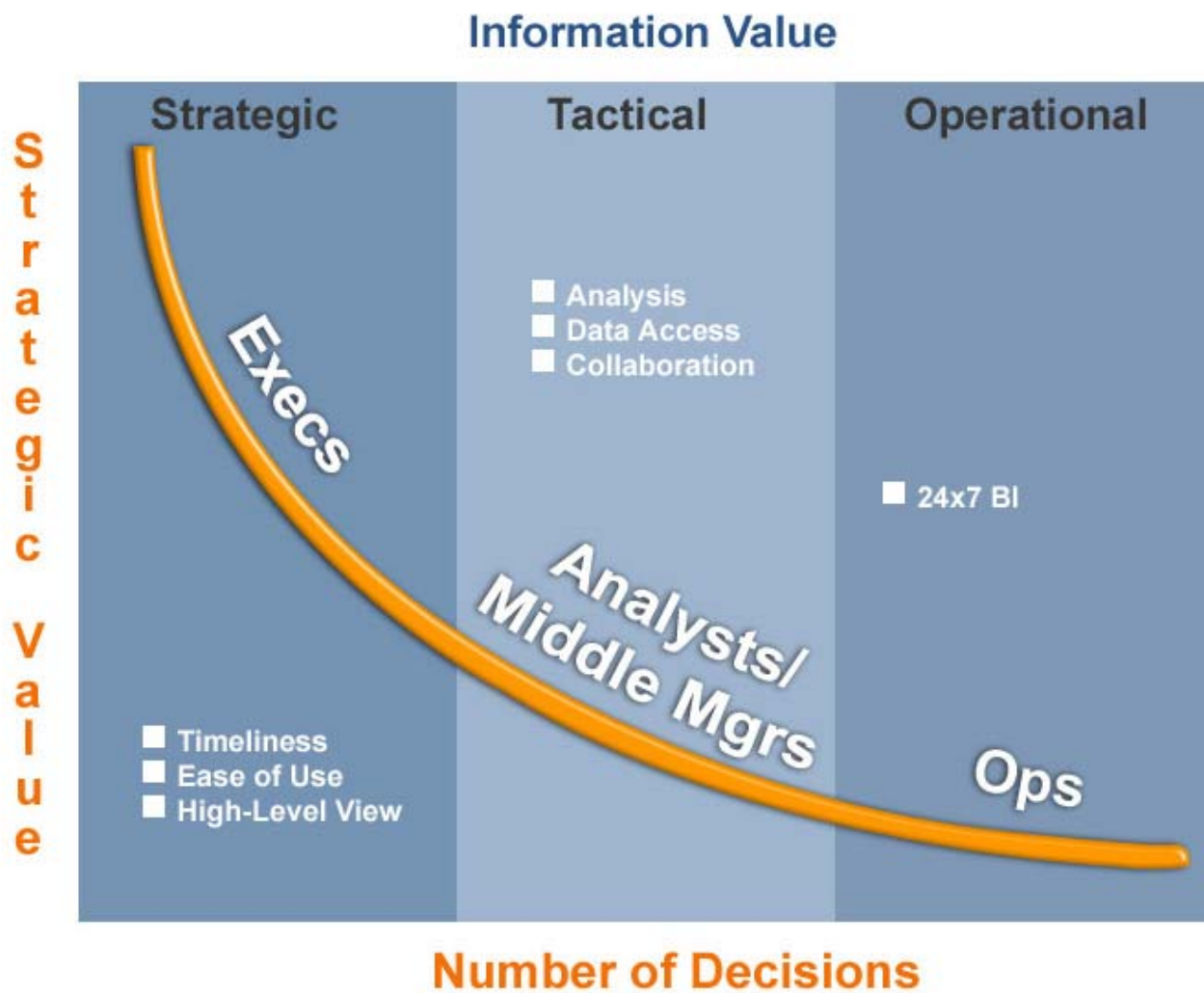
Now, if he receives this information after 3 days, it is no longer useful to him because by that time the campaign is nearing its end.

The information will then only be useful for the analysts to plan a proper advertisement campaign for the next winter promotion.

The conclusion is that Operations people need Real Time BI



The Value of Operational BI



The above graph illustrates that the strategic value of each decision taken at the operational level is very little compared to that of each decision taken at a strategic level.

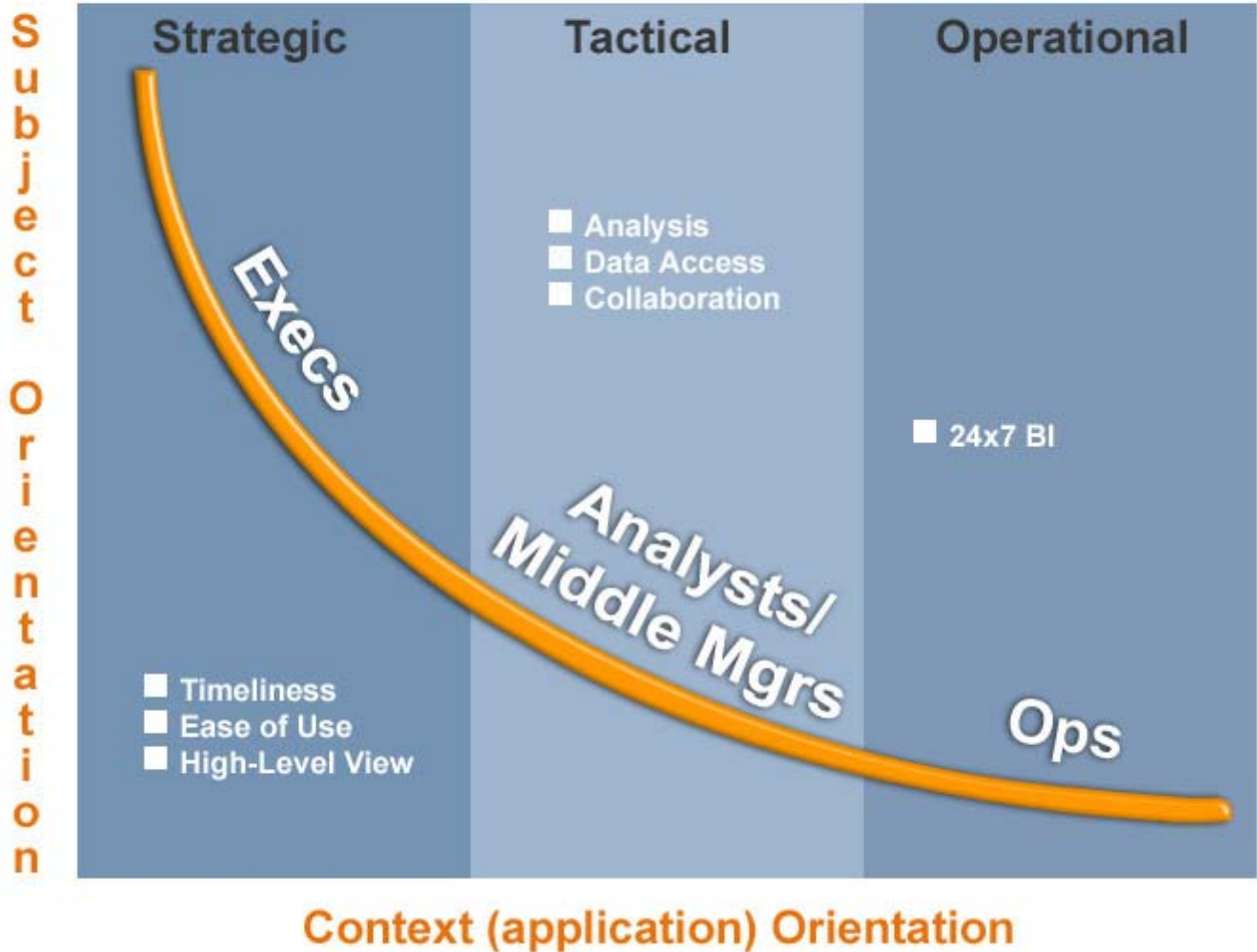
But if we look at the number of decisions taken (or supposed to be taken) at the operational level, the real cumulative value of these decisions may be comparable or even higher than that of the decisions taken at the strategic level. If more and more decisions are taken at operational level, the strategic-level people will find more and more time for actually developing strategies and will spend less time monitoring the operational efficiency and trying to fill the gaps in the latter.

Operational BI Needs Contextual Information

Sales, Profit, and Revenue are examples of subject areas in which strategic-level people need measures (KPIs) to take decisions. Operations people also need information in context, such as how sales are going on a particular day or week or in a certain campaign, etc. If a machine fails, the operations person needs to know how the machine was performing for, say, the past two hours before it failed. The middle manager needs to know the trends in M/c failures, and whether it needs replacement. Executives need to know the % of maintenance expenditure for the M/c output for a given period or the uptime (or availability) of the machine during the previous year to judge whether the machine needs to be replaced or not.



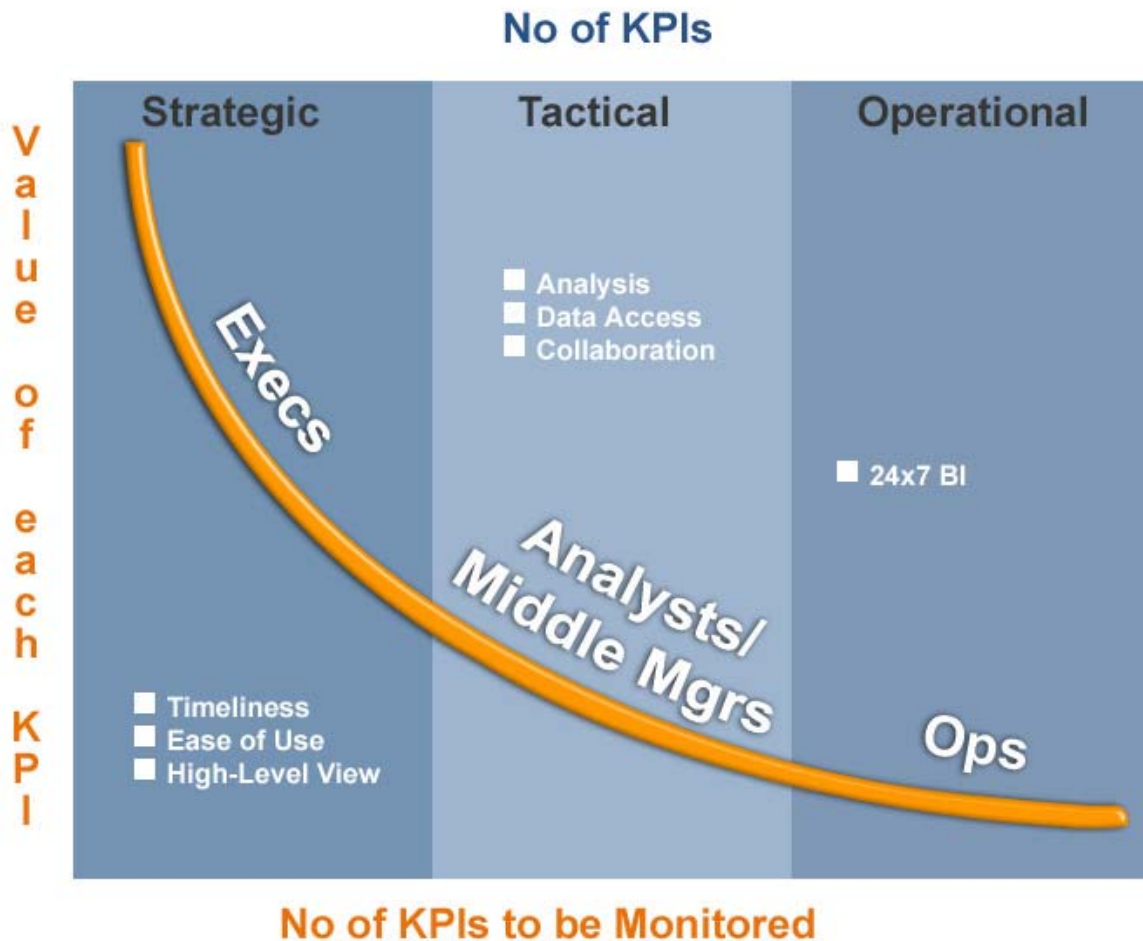
Information Type



Operational BI needs more KPIs to be Monitored

The operations people need to monitor more KPIs than strategic-level people. For example if the strategic-level person is looking at the profit analysis, the middle manager may be looking at the profitability of his product portfolio. The operations person needs to analyze the material consumption pattern for a given product to reduce waste. Obviously, the operations person needs to monitor more KPIs to discharge his/her work efficiently.





Operational BI Needs Cascading of KPIs From Strategic Level to Operational Level

If the entire organization needs to work towards the strategic results of the organization, the KPIs should be cascaded to the operational level from the strategic level. This ensures that all the people in the organization are working toward the same objectives and that no work is done that will not map into the strategic objectives of the organization.

Corporate level measures are very important, but they are not going to have much impact unless they are cascaded down to frontline employees. The case for cascading is simple: Do you want 10% of your employees working toward company objectives or 100%?

With some exceptions, such as market share, what you measure at the top is what must be measured at all levels. However, the specific measures will change with every process and organizational level because managers doing different jobs need different information to make different decisions.

The same methodologies used to develop measures at the corporate level can be used to cascade the measures down to frontline managers, supervisors, and employees. However, as you go down the organization chart, the focus is on operations or processes. Strategy is incorporated into operational measures by giving more weight to the measures that are strategically important. This communicates strategy to all employees by translating it into operational terms – a primary objective of the balanced scorecard.



Cascading Should Be on the Basis of Process

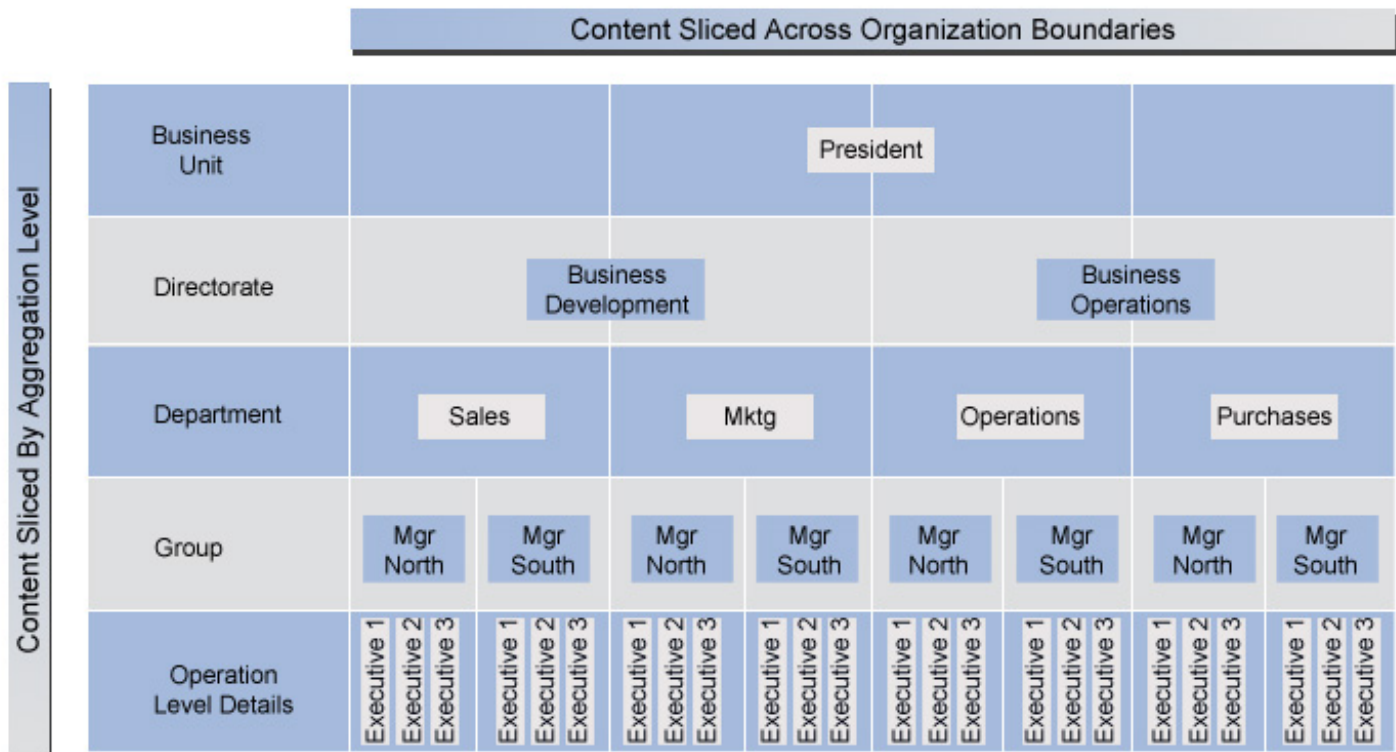
Cascading of KPIs should be on the basis of process rather than on the individual. The individuals working on a process may change but the process will continue. Also, the aim of the organization is to achieve the targets irrespective of the individuals working on the processes.

To know the performance of individuals, we can look at the KPIs achieved by them, but these KPI values are derived from the process KPIs.

For example, suppose one KPI of the organization is to achieve a sales target of \$100 million during the current financial year. Here, sales is the process and one individual may be responsible at the top level. If the organization aims to achieve these sales through \$30 million of domestic sales and \$70 million of international sales, different individuals may be responsible for these, but domestic sales and international sales are the processes. At any point of time more than one person may work on a process or the individuals working on a process may change, but theoretically this should not affect the KPI targets.

Thus, the KPIs should be cascaded into the processes and cascading to the individuals should be only a side effect of this.

Real Time BI Needs User-level Security



Role-based and group- or level-based security is not sufficient for real time BI.

Consider the above figure. At the group level, there are two managers (North and South) in the sales department. So a manager's role with a group level security will not allow for the security required for the n number of managers that work for the organization. The same applies to the executives who report to each manager.



In addition, dynamic security changes will be required at the operational level. One executive working with a specific process or customer may not work with the same process or customer the following week.

Now, at the operational level, you will need to have your security requirement at customer level or order level for every executive in the sales department. This security needs to be defined for every individual in the organization and again, this becomes a full-time job.

This kind of operational security for real time BI can be achieved only when the security is built into every process in the organization. Also, just one administrator cannot implement this kind of security.

Every process owner should define the security level for his team members. Or, the process should intelligently handle the security for all users. For example, if Executive1 enters order details he received from one of his customers into the system, he can have the privilege of reading (and also updating, depending on the company policies) it, and depending on the work flow in the organization, the corresponding manager should also have the rights on this order (again depending on the company policies), and so on. This method of **inbuilt security in the process can make it possible to achieve Real Time BI.**

Solution

The process and business context should be part of the BI.

For example, sales can be a process in an organization, but the individual activities required and planned to achieve these sales and their targets form the context of the business. Also financial measures may be an after-effect of some other measures. For example, the number of sales calls made, the campaigns conducted, and the number of educational leaflets prepared for the customers about the product may result in future sales figures but these measures need to be tracked **now** at operational level to achieve the future sales targets. So it is not just the financial measures that need to be tracked but a lot of other measures that all contribute toward the sales.

Am I on target today? If all the individuals in the organization can answer this in the affirmative at the end of the day, target achievement will be better at the higher level.

An organization's results
are driven by the quality of decisions
made by ALL of its employees

BI for the RTE - SQL Server 2005 provides KPI framework and Unified Dimensional modeling with proactive caching to make this possible

