

BI – The Litmus Test

Introduction

When I was in school we used to do experiments in our chemical lab. An experiment which I remember very well was the 'litmus' test. Put it in the liquid, if the paper changes the color it means something, if it does not change, it means something else. This has remained in my memory because it was such a simple test of true and false.

The BI environment, as it supports decision making, can be very complex. What can therefore be a simple test to decide whether a BI report / dashboard has been correctly designed ? I don't mean the arithmetic accuracy of a report. What I mean is correctness in terms of its ability to enable a decision.

Business Scenario

I was once discussing with a friend of mine who holds a very high rank in an MNC. I asked him how they go about monthly operating reviews. He said that such reviews are very hectic. Each SBU makes their presentations using Powerpoint slides. If there are details required for any number, they are asked for. If the SBU's are not able to give these, then notes are kept of that. The SBU's are supposed to get the details from their operating staff and send them to HO later on.

So I told him of the following two scenarios :

Company ABC : MD is discussing Expense Statement with Mr. Basu, SBU Head of SBU-A

MD : "Mr. Basu I remember having told you very clearly that we are under a cost control plan and each SBU is supposed to reduce its expenses by 20%, and I find that your expenses have actually increased by 5%. What is the reason ?"

Mr. Basu : "Sir, I have told all the functional heads about your instructions and they had promised that they will comply with their instructions. But Sir, I shall find out which departments expenses have increased and shall take corrective action. Give me a week time, I shall ask my CFO to give me the details of all expenses."

Now SBU A is a large SBU of Company ABC. Mr. Basu is aware that that three days later the MD will be going on a foreign visit of 15 days.

By the time the MD comes back, he has not forgotten about the discussion, but there are other fires to be put out. And the MD has some other tricks up his sleeve.

Three Months Later

MD : “Mr. Basu I remember that you were to give me a statement of expenses by department. You had mentioned that the expenses would be controlled. I still don’t see the expenses reducing. In fact they have now increased further. What is the reason ? Where is your statement ?”

Mr Basu : “Sir there was statutory audit, and then internal audit. Then the collaborators had asked for some details. My CFO did not get any time to make the statement. But sir, give me just 10 days, I shall definitely find out which department’s expenses are increasing, and shall take strict corrective action.”

MD : “No Mr. Basu just wait for a moment. “

The MD goes to his laptop and launches an BI report on expense analysis. He sets a filter to SBU A. he drags the department dimension to rows and instantly the report shows him department wise budget v/s actual statement. He tells Mr. Basu that he has a department wise summary of expenses ready with him in an interactive format. See Figure 1 below :

Microsoft Excel - fr_03_exps

File Edit View Insert Format Tools Data Window Help

Type a question for help

PivotTable

A48 CostCentre-185

Demo Company : Expense Analysis

Month (All) UTILISATION_T, WY BUD < ACT
Year (All) Group2 (All)
Group3 (All)
Divisions Div-12

Data

CostCentre	Group1	Account	CurrentMth	YTD	LastYearYTD
CostCentre-155			86	674	0
CostCentre-156			81	490	0
CostCentre-157			61	363	0
CostCentre-158			99	434	0
CostCentre-159			3	21	0
CostCentre-160			58	359	0
CostCentre-161			130	827	0
CostCentre-162			11	76	0
CostCentre-163			63	366	0
CostCentre-164			117	719	0
CostCentre-165			91	382	0
CostCentre-166			59	492	0
CostCentre-167			177	877	0
CostCentre-168			108	549	0
CostCentre-169			61	530	0
CostCentre-170			228	1,126	0
CostCentre-171			4	26	0
CostCentre-172			93	765	0
CostCentre-173			161	1,269	0
CostCentre-174			15	67	0
CostCentre-175			26	129	0
CostCentre-176			4	30	0
CostCentre-177			22	227	0
CostCentre-178			34	247	0
CostCentre-179			91	416	0
CostCentre-181			190	1,101	0
CostCentre-182			244	1,311	0

Pivot

Ready

MD : “Mr. Basu I find that your department and the marketing department have had the maximum cost increase. All other departments are under control.”

Mr. Basu is now facing the heat.

Mr. Basu : “Sir, just give me some time, I shall find out exactly in which account the expense increased. There were some expenses which just could not be reduced.”

MD: “Wait a minute Mr. Basu.”

MD drags the account head next to the department. Instantly the report shows department wise, account wise summary of expense and budget. See Figure 2 below.

The screenshot shows an Excel PivotTable with the following data:

CostCentre	Group1	Account	CurrentMth	YTD	LastYearYTD
CostCentre-173			161	1,269	0
CostCentre-174			15	67	0
CostCentre-175			26	129	0
CostCentre-176			4	30	0
CostCentre-177			22	227	0
CostCentre-178			34	247	0
CostCentre-179			91	416	0
CostCentre-181			190	1,101	0
CostCentre-182			244	1,311	0
CostCentre-184			0	5	0
CostCentre-185	A10101-CAR Expenses		20	163	344
	A10301-Communication Cost		8	49	75
	A10401-Courier		0	2	(0)
	A10601-Energy & Utility		0	16	0
	A11001-Marketing & Sales Promtion		0	7	8
	A11101-Office Staff & Welfare Expense		11	387	57
	A11201-Office Supplies/Stationary		3	16	0
	A11401-Professional Services & Consul		0	0	293
	A11501-Real Estate		30	179	0
	A11601-Salary		231	1,430	4,797
	A11701-Security Charges		0	143	0
	A11801-Site & Facility Management		129	173	0
	A12001-Travel Expenses		212	914	352
CostCentre-185 Total			644	3,480	5,924
CostCentre-186			105	503	0
CostCentre-187			168	584	0
CostCentre-188			0	10	0

MD : “Mr. Basu, all the expenses which were committed are not showing an increase. In fact some discretionary expenses are showing considerable increase. For example travel has shown almost 40% increase. Why is it so ?”

Mr. Basu is now sweating.

Mr. Basu : “Ah yes Sir. We are incurring more travelling expenses as we are meeting more customers to get new business. The recession has actually reduced our business, so I felt that travelling more and meeting more customers would lead to more business.”

MD drags the project dimension next to the account dimension. The report instantly shows the travelling expenses project wise.

MD : “Very good strategy Mr. Basu. But I see that that the travel has increased not for new projects but for existing projects. In fact travelling for new projects has in fact reduced. This has led to actually a reduction of new business. But I fail to understand why the travelling for existing projects has increased.”

Finally the facts come out.

Mr. Basu : “Sir actually we faced a lot of rejections from three customers due to manufacturing defects. We had to air lift spares and support to them many times. The support department had run out of budget, so I had to spend my budget for that purpose. Sorry about that Sir.”

Game, set, match !

A simple interactive report led to the above dialog. It immediately and without delay, identified the the root problem. Mr. Basu soon afterwards strengthened his manufacturing and quality control processes to get things right first time. And soon the expenses reduced. Happy ending !

I asked my friend whether this scenario actually occurs in board room review of operations. He looked at me as if I was a soothsayer. He said that it occurs all the time. Most of the time decisions are taken on perceptions. Details are not available in time, due to which decisions get postponed or not taken at all. And all this leads to disastrous results when the year end performances are seen.

The Litmus Test

So I would say that if a report has an ability to lead the decision maker to the root cause of a problem without having to call for further supporting evidence, then the report passes the litmus test. If the decision maker at any point of time has to call for more details, then the report has not been correctly designed.

I find the combination of a dashboard and a supporting analytical report very powerful. The dashboard gives me a big picture. The analytical report however permits a deep dive and immediate identification of the root cause.

Business scenarios, organisation structures, decision requirements etc keep changing. The decision makers and the BI professionals as well as the IT should constantly review the BI reporting to ensure that it is aligned with the needs of the decision maker. The whole process has to be driven by the end-users. They know where the shoe-pinches and should immediately trigger the corrective action.

Design Principle

End-users should permit BI professionals to attend , at regular intervals, review meetings and find out how the decision makers read the reports and take decisions. At any point of time if the BI professional feels that the report is not giving the correct level of granularity he should make notes. Later he should discuss with the decision make his observations and make the appropriate changes in the BI report.

A seasoned politician was once asked that if he was to make a speech of two hours, how much time he would take to prepare for it. He replied that it would take just 10 minutes to prepare the speech. Then he was told that if he was given just 10 minutes for the speech, then how much time he would take to prepare. He said that in that case it would take him four hours to prepare the speech. He said that it was very difficult to make a short speech. The moral of the story is that it is very difficult to keep things simple.

The BI professional should remember that he is making a report for the decision maker, who probably has a thousand things to attend to. The report should be very simple and yet extremely effective. The BI professional should also remember that it is not the tool, but the way it is designed that really matters.

All the above examples have been designed using very simple but very effective design principles. You would notice that the tool used in MS-Excel. But this simple tool also can become very powerful if you know how to use it. Remember David and Goliath ?