## **Engineers, Accountants And Mathematics V.S. Kumar**

ou may have heard the story of the IIT graduate who started business after completing his B Tech, and roped in his Chartered Accountant friend to 'look after the books'. Soon the friend had a problem: he could never balance the cash because the owner, who also had a key to the cash box, would take cash for expenses but never tell him what he took.

One day the accountant accosted the engineer and said "boss, take money when you have to, but put a slip into the box with the amount taken, so I can keep the books", and his friend agreed. The accountant heaved a sigh of relief. The relief did not last long, though. A week later when the accountant opened the cash box he found no cash and the slip from his friend read "I took all the cash that was there".

Prof. Henry Higgins in the film 'My Fair Lady' says "America and England are two countries divided by the same language (the language of English)". Likewise engineers and accountants are two professionals divided by the same subject – Mathematics, or to be precise, Arithmetic. Their understanding of the subject, their approach to it and the purpose they wish to fulfil from it are totally different.

This came home to me strongly when I studied with a large contingent of engineers for my Management diploma. Here they were comfortable with complicated curves, pies and long equations in Operations Research, but all at sea trying to match the liabilities and assets sides of the balance sheet. "I guess it's too simple for me" summed up an Aeronautical Engineer in my class. Actually he was right.

This mental block on the part of engineers about accountancy led to quite a bit of camaraderie between engineers and accountants, with mutual teaching and problem solving. But the differences between engineers and accountants on the subject are a major cause for strife in the business world. What is common between them here is only their scant regard for each other.

Ask any accountant and he'll tell you: "our CEO trying to understand the financial report? Don't make me laugh. He can't grapple with a simple cash flow, what can he get out of the balance sheet?" And the engineer CEO's response will be equally trenchant: "Till date I have run the business on

my own figures. Accountants either tell me something I already know or something so full of jargon that only they can understand."

There is a lot in what the engineer-CEO says, actually – and the criticism is too real to be laughed away. The lack of usefulness of an accountant's report often stems from his obsessive need for accuracy, which robs him of the capability to look at the big picture.

Accounting teams of many companies spend night after night, in the company of audit assistants, poring through a maze of schedules and ledgers trying to find an errant voucher or a small discrepancy in the totals. A friend of mine used to call the financials of his company 'masala dosa balance sheets' because he said they were made by people eating masala dosas while doing endless reconciliations.

"The French don't really mind what is said to them, as long as it's pronounced properly" is another classic quote of Prof. Higgins: and accountants are similar. They don't mind what the results are and whether they mean anything to the CEO as long as the figures are tallied to the last decimal – as in this case.

"Great, man!" shouted the Chief. "But why is the report in red ink? We are now in black. Go and get the report done in black ink." The accountant shifted uneasily and said "If we buy black ink we would go into red again".

For the first time after two years, the company had broken even that month, and the accountant rushed into the Chief's room excitedly and showed him the Profit & Loss account with a small profit for the month. "Great, man!" shouted the Chief. "But why is the report in red ink? We are



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now in black. Go and get the report done in black ink." The accountant shifted uneasily and said "If we buy black ink we would go into red again". You can understand the pique of the engineer.

Equally relevant, though, is the complaint of the accountant about the engineer's refusal to understand his reports. But here, it's not inability to follow as much as unwillingness. The engineer believes – and his ego wouldn't have it any other way – that he knows what he is doing, including the numbers. So when the accountant sends him a report with a markedly different set of figures, the engineer promptly sends it to the trash can and goes back to his make-believe report that is much nicer to him.

In real life I have often enacted this scene with my engineer colleagues across all functions – marketing, manufacturing, HR, CEO.... You name it. I would go into the Sales Conference and announce "the numbers for our new product launch are 30% lower than forecast." Back would come the weary answer from VP-Marketing "of course we are all aware of that. Give me the geography break-up". And when I take this to him, he would say "we know Maharashtra was behind and Tamil Nadu ahead. We need to look at it stockist-wise". And the merry-go-round would go on.

Only much later in my work life as an accountant did I catch on to why this always happened. It was the Engineer-turned Salesperson's way of saying: "look, number-cruncher. You cannot help me solve my problems with your arithmetic and your analysis. Our subject is complex and too deep for you to understand. Lay off".

This was one thing they taught differently in the business school I went to. Here was the Marketing professor for whom class participation (CP) was very important. And since Marketing and I were not exactly on friendly terms, I had resigned myself to an F for CP in his class.

That was until a fellow student showed me the way. He said "use numbers, pal. A lot of them – and you'll find him listening." I found him not just listening but absorbed when, in the next class, I went to the board and produced detailed break-even calculations purely based on assumptions and almost totally irrelevant to the case we were discussing. But the professor was thrilled – you could see he was

deciding between A and A- for my grade.

In business, the fun – if you can appreciate the joke – reaches a climax when both the professionals decide to do their own Math and challenge each other. I have been party to hilarious sessions, when the CEO is faced with two sets of figures, one from the accountant and the other from the engineer.

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There will be a bunch of branch managers with profitability reports of their individual branches, each outdoing the previous one in terms of the net profit his branch has earned for the year. And finally the accountant would present the figures for the company – which would show a loss, instead of a healthy total of all the branches' profits. Enough to send the CEO to a rehab centre.

And no branch manager would have fudged any figures to present a rosy picture. Every person in the room would swear by his figure. How could this have happened?

It's very simple, really – a case of convenient forgetfulness on the part of the branch manager. He would take for sales revenue the total billing figure, for instance, and happily forget that it includes sales tax and excise duty or service tax that has to be paid to the Government and cannot be retained. He would include in the revenue reimbursement of expenses by the customer, but not include it in costs. And so on.

The strife between business accountants and engineers, however, ends on a peaceful note, sometimes on a note of conversion, with the engineer embracing Finance as his

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profession or vice versa. Almost 40% of the class of Management I studied with are full-fledged Finance pros now, and it's great (and a little weird) to see an ex-Textile engineer talking casually about broker margins, treasury bills and so on. Similarly a great boss of mine, a Chartered Accountant, ran a product division of a major engineering firm comfortably, leaving his numbers and his balancing nights behind.

And when you think of it, it's no miracle. The inherent logic of arithmetic is common to both engineers and accountants who use the subject, albeit with their own tools and techniques. When you therefore see the beauty of the logic

and overlook the differential methods, you become capable of appreciating the other professional. Which is what these converts have done.

But then there is a downside too – the peace treaty has changed from appreciation to manipulation now, resulting from the unholy alliance between the two 'professionals'. Starting from Enron to the latest Satyam there have been a number of accounting scams, helped a lot by the two people burying their differences and working together – against the shareholder.

Does this imply that the healthy discord between them was a much better option?

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