CHAPTER 9:
CONCLUSION &
SUGGESTED
SOLUTIONS
INTERPRETATION AND CONCLUSION:

**Results of Hypotheses Testing:**

**Result 1:** More than 50% (majority) of the SME units utilize less than 70% of their established capacity

**Result 2:** More than 50% of the SMEs face the failure of production schedule in more than 10% cases

**Result 3:** More than 50% (majority) of the SME units depend on Intuition / Experience for Demand Forecasting

**Result 4:** More than 50% (majority) of the SME units have deviation more than 10% between actual and forecasted demand

**Result 5:** Less than 50% of the SME units employ BI tools for their routine processes (or majority of the units do not use BI tools for their decisions / data processing)
Overall Conclusion

Overall view develops on the basis of results derived, tells that majority of the SMEs are not alert to a necessary level as far as decision making is concerned. They avoid usage of statistical and analytical tools, software due to technical and financial infeasibility. Moreover, there seems a lack of interest in this regard, because of the availability of resources fit for their limited needs for a narrow scope. It further results in the untidy data management, unorganized information system, and weaker decision making.

There are three solutions proposed.

1. **FOCUS ON CRITICAL SUCCESS FACTOR (CSF).**

   **Information/data**

   The SME faces many of the same BI challenges as larger organizations, and some additional ones to boot. The smaller you are, the less data you are likely to have access to. In terms of internal data, a basic entry-level accounting program stores substantially less information than a higher-end enterprise resource planning (ERP) system. And externally, in the context of industry-specific or
competitor data, there’s not much out there on small businesses.

Most SMEs do manage supplementary key business data, frequently in the form of spreadsheets, contact manager databases, payroll systems and other home-grown databases. These can potentially be harnessed to provide the BI backbone, provided the data is reliable and accurate. In many cases, data outside the accounting or ERP system is not subject to the same controls and may provide more red herrings than pearls of wisdom.

**Technology**

BI software tools include scorecards, dashboards, analytics, data mining and reports with drill downs. The available software solutions delivering these toolsets used to be beyond the financial reach of the typical SME.

In recent years, however, there have been a number of alter-natives priced more aggressively, bringing the technology for a comprehensive BI implementation into the reach of the SME. Some of these tools are available online, using the software
as a service model. Others use the traditional licensing model.

Michael Burns, a CA and CA magazine columnist writes frequently about BI. He states that some mid-range ERP systems are adding dashboards that are configurable, with drill downs, frequently at little or no additional cost. Burns says he is seeing more affordable on-line query and browser-based tools emerging.

But is this being effectively communicated? If the perception among those in the IT industry is that the cost of technology is no longer a barrier to BI for the SME that view is not necessarily shared by end users. Beth Crawford, CMA, controller for Toppits Foods Ltd. in Vaughan, Ont., has been working on a project to implement a comprehensive BI solution for some time. “It’s hard to find a cost-effective platform that is affordable now, but that you can grow with,” she says.

And then, of course, there is the ubiquitous spreadsheet. Packages such as Excel are undoubtedly valuable and powerful tools, and many companies have mined their ERP and other data by
live-linking spreadsheets to data sources, using pivot tables, conditional formatting, graphs and charts, and other built-in analysis tools. But it is important to understand the limitations and the dangers. The flexibility of a spreadsheet is at the expense of controls, thus you can enter (or edit) any formula anywhere. We have all seen a complex spreadsheet with one incorrect (but unnoticed) formula or reference that materially alters the entire picture. Because of the absence of controls and structure, though, how would you know? And these spreadsheets are usually built and maintained by one person. If that person leaves the company, someone else will have to unravel the logic in order to maintain and update it. For key business analysis, a more structured software tool is simply more reliable and maintainable — and nowadays, affordable.

Intelligence

The single most important aspect of any BI project is the determination of what needs to be measured, and how to measure. A BI project has to begin with an organization accurately defining its CSFs, which is defined as “what the organization must do to be
successful.” For each CSF, the trick is to determine the metrics that are appropriate to measure how the organization is doing and alert the appropriate level of management and employees to exceptions or problem areas. Those metrics will then form the underpinning of the architecture of the BI solution: the elements that are measured and displayed on dashboards and analytics.

One might think the definition of CSFs and the consequent metrics are easier for the SME because:

- The entrepreneur knows the business inside out and therefore knows what’s important and
- There are fewer issues to worry about in a smaller business, so the SME can use a simpler set of metrics.

But dig a little deeper and it’s soon apparent that the opposite is true. Most entrepreneurs are experts in one aspect of the business, not all. The owner with a sales bent may carry pertinent sales and margin analysis data in his or her head, but would not necessarily be able to factor in cash-flow considerations. Conversely, the engineer who started a successful business will understand
what’s critical in the product design and production areas, but will he or she know what salespeople have to do really well to succeed?

And in some cases the SME faces the same problem as larger companies: too much data. Crawford says the amount of data available from the ERP system in the form of reports and data extracts sometimes makes it hard to avoid being overwhelmed with data, making it difficult to focus on what’s truly important. This highlights the importance of taking a strategic view in defining CSFs. Few entrepreneurs have been trained to think and plan in a truly strategic fashion, so this is a stretch for the average SME.

SMEs often have no one trained in financial matters, but they need someone with financial experience to ask the right questions. Entrepreneurs are not used to managing (or being managed) by metrics, unlike managers at larger companies.

Consequently, the typical SME needs outside help defining CSFs and the relevant metrics. Where do they turn? Frequently the vendor of their BI
solution (or ERP solution) is the first resource. The good news about this approach is that the vendor will know how its software works, will have experience doing this exercise with other customers and will likely know how to interact with the available data. This will only be helpful, however, where the vendor is experienced in the same industry as the SME, and even then only for CSFs and metrics that conform to best practices for the industry.

A safer option may be an experienced BI consultant who can draw relevant information out of the entrepreneur, employees, competitors, vendors and customers, and then document the requirements in an actionable format. Ideally this would be completed before any decision is made on the actual software tools, to avoid any bias in the intelligence phase based on limitations or features of already selected software. Of course, engaging an outside expert will add a layer of cost to the project, but this cost differential should be evaluated against the project’s success.

As per an opinion, “You would want to reduce the risks by starting with an understanding of the CSFs
of the organization and the metrics that measure whether or not CSFs are being achieved.”

**Implementation**

Implementing a BI solution should ultimately be the simplest part if the upfront work on intelligence and tool selection has been successfully carried out. Creating and or mapping the data store, dashboard design, report building, drill-down definition and software configuration are obvious steps in implementing a BI solution. The key step sometimes overlooked or sidestepped is the design and dissemination of a communications strategy.

“An element frequently missing is the communication piece, explaining to the users what the analytics mean, how to interpret them, and what actions to take, for example, when an indicator is red, yellow or green,” says some analyst. For the SME this becomes even more important, specifically in terms of documentation, because employees frequently wear multiple hats, and when someone leaves, their replacement needs to know those same things.
Over the next several years we will see an increasing number of SMEs adopt BI technology solutions with mixed results. Those that focus on the intelligence in BI will derive positive and measurable benefits. Those that don’t run the risk of making poor decisions based on accurate but inappropriate data.

2. OUTSOURCING OF DATA SERVICES – MANAGED DATA SERVICES

The SME sector is opting more for IT than ever before, in India. Their focus is on reducing cost, to increase efficiency and to improve employee productivity. And at national level the percentage is 40% of total 7.6 million SMEs.

But there are two primary challenges in the process of IT adoption.

1. Upgrading infrastructure (Financial and Technological Feasibility)

2. Finding skilled manpower at affordable cost

Here, simply adding a new application or technology in the organization only adds to the cost and the need for trained IT staff and security specialists to manage the IT infrastructure.
In this context, a solution manifests is Managed Data Services (MDS) (Sharma, 2010).

MDS consumption model offers operational expenditure (opex)-based flexible payment options that are very attractive to SMBs, as they struggle to overcome the very tight IT budgets.

Outsourcing trend has evolved and grown rapidly during past few years in Asian countries, including ours. A successful trend in the International markets that is gaining traction in the Indian Market is outsourcing services to telecom service providers. Telecom service providers, who have been mostly providing bandwidth to SMBs, have also begun to offer additional value-added services on their existing network infrastructure.

To address the unique needs of different SMBs cost effectively, service providers are increasingly offering bundled managed data services on an opex model.

MDS can address the changing market factors and tactical challenges, creating a deeply embedded relationship between SMBs and service providers, thus, driving down operating costs and increasing productivity and profitability.
MDS ensures smooth flow of information and thereby the effectiveness of timely decisions.

3. PLAZMATIX:

During the search for a solution, one more avenue turned out to be effective is to design a software application and to offer it to SMEs for decision-making. Plazmatix is the solution, i.e. software application designed for decision-making.

As the name suggests, Plazmatix does not assume a fixed shape. It offers a solution in the most customized way to the user.

SALIENT FEATURES

☑ Since the Solution is in Plasma (Semi Liquid state), it does not bind itself with any rigid boundary.
☑ It can take a shape an organization gives it.
☑ Still like any normal application, it has a very good scope for future enhancement and improvisation.
☑ It has a profound probability to develop as a complete ERP solution, with all the elements added in a customized way, and options for relating
Tables for different constraints can also enhance the functionality of the application.

✓ Since the back-end is Oracle, the data can spread across a network and is accessible to multiple users.

**DESCRIPTION**

**HOME SCREEN**

On starting the programme, the welcome screen appears describing the usage and features of *Plazmatix*. We call it ‘Home’ screen.

![Figure 9:1 - HOME SCREEN](image-url)
MODULE DESIGN

Second button or symbol takes us to the frame of module designing. Module, technically means, a cluster of tables. A module represents any business activity, like, Material Management, Demand Analysis, Receivables’ & Payables’ Management etc. In module design, there are two steps.

As shown in figure 9.2, ‘Module Design’ has two parts. In first, it displays all the modules designed, and on selecting any module, it displays tables defined in that module.

Figure 9:2 - MODULE DESIGN

FIRST STEP: DEFINING MODULE
Here we define the module by naming it, and writing an appropriate description as per the objective of the module.

![Figure 9:3 - DEFINING MODULE](image)

**SECOND STEP: DESIGN SCHEMA**

After naming the module, second step is to design correlated tables in the module for further analysis and process.
Here it is a crucial step to relate the tables residing in a module. This is important because while entering data and while presenting reports Plazmatix can arrange data accordingly and can impose constraints for data integrity, in order to prevent any sort of data corruption.

As shown in figure 9:5, it looks similar to ‘Module Design’.
We get the following frame when we click on ‘Set Relations’ button, which leads us further to set the relations among various tables of a module.
In this section, the user can design his report query, just by choosing the columns / fields from tables of a module, setting criteria and designating a title to it.

Figure 9:7 – REPORTS

Here there are four steps.

SELECT MODULE

As per the figure 9:7, first of all the user needs to select the module in order to select a cluster of tables, so that a report can be generated from a table or tables of that module.
Figure 9:8 - SELECT TABLE(S)

SELECT TABLE(S)

Here user gets all the tables available in the select module. He requires selecting the tables needed for the report.
SET CRITERIA

This is the main segment in designing of a report. Here from the select tables, user has to select the fields for the report. He would mention the title of the report in ‘Report Title’ box. Once the fields are selected, user can set conditions or criteria by choosing the fields from the dropdown box. When the user clicks ‘BUILD QUERY’ button a complete command for the report is generated, which appears in the ‘Query Design’ box at the bottom.
SHOW REPORT

This is the final step, where the report will originate from the defined query and will display here.

STATISTICAL ANALYSIS

Statistical Analysis requires a keen effort and more organized data. This module will be available for advance users. At this level it is kept disable, since a more brain storming at designing level and user level is anticipated.

ENTER DATA

In this frame user gets a place to enter data into the tables created. Plazmatix takes care of the data integrity according to the relations set.
This section truly explores a statistical technique – Decision Tree for programmed / non-programmed decision. As shown in the figure 9:12, by giving different choices available and by assigning probabilistic values, a tree is designed and on the click of ‘CALCULATE’ button, it selects the branch with highest expected value as a suggestive decision.¹

¹ No software can replace human brain; the decision displayed is just a suggestion.
PLAZMATIX - STATUS

It is a solution designed as an initial step towards a well-defined application. It has no fixed shape or structure and so it leads to some pit-falls at programming end, which can further be rectified at different stages of brain storming.

PLAZMATIX – FUTURE SCOPE

- At this stage Plazmatix majorly works on standalone machines. If the back-end Oracle is installed on a network, it works well on multiple nodes. Further, it can develop more net-compatible in front end too.
- Front-end (Visual Basic 6.0) and back-end (Oracle 8i) have a cost; in future Plazmatix can switch over on to
open source platforms like Java (Front-end) and MySQL (back-end).

- **Module Design** would be more user-friendly and more help would be available, to design the module and tables in a way that is more compatible with second level statistical analysis like Regression, Time Series, Interpolation-Extrapolation, Network Techniques etc.

- **Graphical Analysis** would be added as a new feature to analyze and compare details in more convenient way.

- ‘Decision’ module would work in congruence with the details entered, which works independently in the current version.

- In the due course of evaluation and usage, with emerging needs and suggestions it will keep on developing.