Chapter No. 6  Data Analysis

Automobile vehicle is divided into five major parts namely

- Chassis Components
- Engine Components
- Body parts
- Electrical and Electronics
- Other components

The distribution of Case studies:

Chassis Components : Bosch Chassis, ALF Engineering, Badve Engineering, Kalyani Lehmerz limited, Total 4

Engine Components :, Eaton, Radheya Machining Limited, Kalyani Forge, Suyog Autocast, Total 4

Body parts: Wadhokar Group of Industries, Gange Pressing, Autoline Industries, Total 3

Electrical and Electronics:  Flash Electronics, Lucas TVS, Total 2

Other Components : Victor Gaskets, Saint Gobain Sekuritat, Continental Group, Total 3

16 case studies are prepared considering the vehicle structure. The component variety is also considered while selecting a sample and preparing the case.

<table>
<thead>
<tr>
<th>Company</th>
<th>Components Manufactured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bosch Chassis</td>
<td>Vehicle Braking Systems</td>
</tr>
<tr>
<td>ALF Engineering</td>
<td>Chassis Fabrication</td>
</tr>
<tr>
<td>Badve Engineering</td>
<td>Chassis and Exhaust Systems</td>
</tr>
<tr>
<td>Kalyani Lehmerz</td>
<td>Wheel Rim</td>
</tr>
</tbody>
</table>
Interview and observation technique is used to collect primary data about the crisis perceived and crisis management approach used by these companies.

**Categories of Companies**

**Product companies:** Lucas TVS, Bosch Chassis, Eaton, and Continental are global companies and they have dedicated product development infrastructure. These companies supply their products to automobile companies and these products are adopted in the final vehicle design by various manufacturers.

**Special Products OEM suppliers:** Victor Gaskets, Kalyani Lehmerz, Flash Electronics and Saint Gobain, they produce a specific customized products as per the design given by various automotive companies. These companies have a peculiar production setup of large varieties and small batches for various customers.
**Dedicated suppliers:** ALF Engineering, Badve Engineering, Wadhokar Companies, Gange pressing, and Autoline Companies are the dedicated suppliers for mass production automobile companies such as Bajaj Auto, Tata Motors, and Mahindra etc. Only one customer contributes a major share of turnover and may be as high as 90 percent to 95 percent.

**Opportunistic Manufacturers:** Suyog Auto cast, Radheya Machining limited, Kalyani Forge, are companies giving services to all type of customers and variety of related products. They have long-term relations with some of dedicated customers but they have larger customer base than dedicated suppliers. These companies require inbuilt flexibility and manufacturing capability to handle large variety of products.

**6.1 Crisis Management Approach of Companies:**

Interviews of MD / CFOs/ Plant Heads of various organizations are conducted. Open-ended questions were used for interview. Interview was focused on, how these leaders perceive crisis, what crises they have faced and how they have managed the crisis. Various crises perceived by these companies are generalized and various crisis management approaches for specific functional areas are clubbed together for better understanding of the subject.

<table>
<thead>
<tr>
<th>Functional Area</th>
<th>No. Of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Business Operations</td>
<td>3</td>
</tr>
<tr>
<td>2. Business Strategy</td>
<td>4</td>
</tr>
<tr>
<td>3. Customer Relations</td>
<td>4</td>
</tr>
<tr>
<td>4. Human Resource</td>
<td>8</td>
</tr>
<tr>
<td>5. Technology</td>
<td>4</td>
</tr>
<tr>
<td>6. Investments</td>
<td>2</td>
</tr>
<tr>
<td>7. Finance</td>
<td>5</td>
</tr>
<tr>
<td>8. Marketing</td>
<td>4</td>
</tr>
</tbody>
</table>
9. Quality of Product 5
10. Production and deliveries 9
11. Environment and safety 1

The crises perceived by companies are:

![No. Of Companies chart]

6.1.1 Crises related to Business Operations:

1. Overdependence on one customer is threat to long-term sustenance.

2. Lost business opportunity is sowing a seed for stagnation.

3. Negligence for growth opportunities.

4. Failure to develop interdependence with customers.

**Approach:** The respondents perceive business in different perspective. Three respondents specifically perceived crisis related with business operations. Frankly speaking, all crises are
interlinked and are interrelated with business operations. These respondents feel specific crisis to be managed for long-term growth and sustenance of the business.

1. Creating a new market by adding more customers and increasing product portfolio is a proven approach for handling Business Operations related crisis.

2. Companies working as dedicated vendors and OEM suppliers followed a “Wagon Development Strategy” a phrase coined by these companies, an approach to start new manufacturing units as per the requirement of customer, nearer to customer’s plant at different locations. This strategy helped to create more guaranteed long-term business and automatic expansion of the group.

6.1.2 Crises related to Business Strategy:

1. Failure to acknowledge our own potential

2. Failure to understand the value of “Now”

3. Failure in Speed

4. Under performance of growth rate as compared to industry expectations

5. Market is unlimited, failure is to capture opportunities

6. Obsolescence of products and investments arising out of new product development and technologies available in market.

7. Political interference in factory operations.

**Approach:** Strategic decisions are required for appropriate crisis management to generate long-term benefits. Some of the respondents feel that, failure to develop strategy considering own capabilities also leads to crisis in the company. These crisis expressed by respondents are closer to business development but there is a thin line as expressed by respondents. Strategic approach is a primary consideration for developing appropriate strategy. Respondents believe that they have to use their full potential and act “Now” to grab the “Market Potential”. They also feel market potential is always unlimited and our own potential decides achievements in terms of business growth.
One may have a difference of opinion regarding “Obsolescence of technology or products and handling of political interference”, as crises related to business strategy but respondents considered it as a strategy failure and they managed them by improving their own strategic solutions.

6.1.3 Crises related to Customer Relations

1. Failure to understand customer requirements

2. Failure to connect customers

3. Negligence towards customer requirements

4. Failure in developing long-term relation in aftermarket

**Approach:** Global companies have niche products and most of the time customer depends on these companies. Dedicated vendors do not have any problem of customer relations.

Customer retention and customer relations are always important for every company. Companies manufacturing special products and opportunistic manufacturers face a major crisis if they fail to connect customers. These companies require a special customer relations management team. Approach adopted by the respondents is also same and they have developed a Customer Relations Management (CRM) team. This team consists of various functional experts who contribute from the stage of product conceptualization to final product delivery. For special component manufacturers, Customer interaction plays a major role in business growth. These companies have an approach to work as a partner and solution provider for customer. The team works closely with customer from the stage of inception of product idea. This close association helps both customer and company to improve product features and quality from design stage itself. Both teams work jointly to offer better product to customer and create a win-win situation for them.

6.1.4 Crises related to Human Resource:
1. Permanent employees and union create Industrial Relations problem.

2. Labour unions are hurdles for individual and company growth.

3. Employees are assets and crisis is failure to create net worth out of it.

4. Recruitment and Retention of skilled employees

5. Higher labour turnover

6. Developing a work culture

7. Integration of people to global group policies

8. Recruitment of employees for heavy duty jobs.

Approach: Human resource always is a concern for all the companies. The nature of problems will be different depending upon the type of company. Global companies are system driven companies and they face a crisis of developing a work culture and aligning people to global group policies. Alignment is a continuous activity and a fixed time frame is not possible for perfect alignment. Global companies follow stringent recruitment norms and work on continuous training for employees. Training needs are identified and skill inventories are measured, monitored and updated regularly.

Victor Gasket, Anand Group Company follows group strategy for human resource development. Anand Group strongly believes an approach for crisis management through human resource development. They consistently work on innovations, team building and developing an Organization DNA.

Companies, those who adapted a “Wagon Development” strategy, faced a severe Human Resource crisis to capture the projected growth offered by customers. Green field projects started by these companies were underperforming in initial phases. A planned investment was done but production levels were not achieved. These company adopted higher wages than prevailing wage rates in same industrial belt to attract employees and fulfill the commitment. They offered incentives, bonus and financial support to retain the employees.
Lucas TVS has a specific focus on Women Employment and they recruit women employees from rural area nearer to industrial belt. They provide on the job training to enhance operating skills to match product quality requirement. Women employee’s safety, Doctor on Call, Transportation facility are additional facilities provided by company. Women supervisors are recruited to ensure smooth functioning of team and eliminate communication problems.

Opportunistic manufacturers face s peculiar problem of shortfall of multiskill operators, who can operate various types of machine tools. To avoid Industrial Relations problems and production interruptions created by union, these companies avoid permanent employees and work with contract labour. Opportunistic manufacturers, provide permanent employment for operators, especially who are multiskilled and are required for critical processes and operations.

6.1.5 Crises related to Technology:

1. Failure to provide ‘End to End’ solution to customers
2. Shorter product development cycles

Approach: Today all automobile manufacturers have offloaded majority of components required for final assembly of the product. During the initial phases of development of outsourcing, some of the operations and processes were off-loaded and suppliers were called as subcontractors. Today outsourcing concept is changed and majority of automobile manufacturers expect complete component ready to use in final assembly. This has changed perception from subcontractor to OEM supplier and added a special status for manufacturers.

Global companies are leaders in technology and they change a perception of customers. The companies working as dedicated vendors or special products manufacturer face this crisis related to technology. It becomes a compulsion to provide ‘End to End’ solution to customer. These companies have invested in technology, installed machine design software and are recruiting qualified engineers in design department. They have established a product and process design department to tackle technical problems and provide better solutions to customer. This approach has helped to add extra competency and edge over other competitors. This approach also helps to reduce cost of manufacture and develops flexibility in operations. Through put time from product
development to actual production is also reduced. Decisions are fast and effective which generate cost savings for company.

6.1.6 Crises related to Investments

1. Avoiding timely investments in technology, leads to productivity crisis.

2. Failure to achieve required capacity expansion and return on investments.

**Approach:** Understanding customer requirements and planning for future growth is a area of focus for majority of companies. The desired growth is achieved by doing investments in capacity expansion to satisfy increased product demand. Kalyani Lehmerz looks investment in assets as a cost reduction approach and solution to avoid union problems. Automation of manual work reduces workforce requirement and unskilled jobs can be easily performed by contract labour. Investment crisis is major concern for special product manufacturing companies and Opportunistic Manufacturer. They have to invest for flexible production capabilities to handle variety of components.

Global product companies started their activities in India with a strong business plan, niche products, technology and systems. These companies have investment plans for long-term perspective in Indian market. They do not have any crisis related with investments in terms of capacity building and source of finance.

Dedicated OEM suppliers follow a ‘Wagon Development’ strategy and they do not have option other than investment. These companies do invest for expansion considering assured business from customers.

6.1.7 Crises related to Finance:

1. Negligence on cost reduction opportunities is losing a cost competitive advantage

2. Simple and low technology jobs have low profit margins. Attaining a desired level of profit is always a concern
3. Manufacturing costs are increasing every year because of inflation but the margins are not increased in same proportion. There is always a pressure on cost reduction to achieve desired profits.

4. Lower margins cannot absorb cost of financing and debt finance is costly affair. Low cost source of finance is a major concern.

5. Rising costs erode profits.

6. Control on labour cost is a major concern.

7. Financial management in limited resources is a crisis.

8. Shortfall working capital.

9. Return on investments.

10. Debt servicing.

**Approach:** Finance is most important aspect of any business. Financial management is a key performance area for long-term profitability of the organization. Cost reduction, Working capital management and source of finance are major concerns for organization.

Kalyani Lehmerz has policy for cost reduction and efforts are made to offset inflation by proportional cost reduction. This approach helps to maintain cost leadership in market. Reduction in manufacturing cost is associated with investment in technology and robotics to enhance capacity utilization.

An investment from internal accruals is a most used approach to reduce cost raising the capital. It restricts the growth options but ensures lower pressures on fund performance.

Dedicated vendors working for Tata Motors face financial crisis as compared to others because of investments in ‘Wagon Development Strategic’ Plant. They are successful with the financial support provided by Tata Management from time to time. These companies have to adjust their operating cycle and cash management in line with expected cash flow from Tata Motors. Sometimes this becomes a tricky situations for them but a timely financial supports from Tata Motors help them to overcome the financial crisis.
Gange pressing has converted” With Material components’ to Labour jobs to manage working capital crisis. This approach created pressures on net profitability but debt servicing is improved and working capital requirement is reduced drastically. Gange pressing also use a financial model to generate interest cost saving, by utilizing a time lag between Letter of credit and discounting of bills to reduce cost of capital. Conversion of own assets into operating lease assets is another approach practiced by companies. Operating lease provides multiple benefits and improves various balance sheet ratios such as fixed asset turnover ratio and debt service coverage ratio. It also helps to fetch lower cost of financing for working capital finance and project finance.

6.1.8 Crises related to Marketing:

1. Introduction of niche products in OEM market.
2. Introduction of patented products in OEM market.
3. Servicing aftermarkets, secondary markets Product sales
6. Market is unlimited, our potential is limited

Approach: Eaton and Continental introduced the patented and niche products in India. Initially they faced a crisis to create a market. Approach used was creating a technical sales rather than a product sell. Companies used their technological advancements and product features with manufacturing technology as a product features to create a sales and customer base. The global standing of these groups created easy market penetration in Indian Auto Component Industry.

Bosch is a system driven company and they have predefined methodological approach for market development. Bosch group companies in India perform joint exercise to get a feel of market and group market strategy is developed. This team approach gives multiple inputs and market views to develop correct insight of the market.
Dedicated OEM Manufacturers do not face a market creation crisis. Their growth and market share is proportional to market share of their large customers. There is no need of after sales servicing and aftersales market.

Companies manufacturing special products need, hard-work to create a market. They face a problem of large varieties and small offtakes in batches.

6.1.9 Crises related to Quality:

1. Negligence in quality systems
2. Increased quality standards and performance expectations
3. Implementation of quality systems
4. Quality of products for critical assemblies
5. Qualifying customer quality verification system and audits

Approach: Quality of products and services play a major role today for all companies. Badve engineering is practicing TPM, (Total Productive Maintenance) to enhance product quality. They have internal TPM competition and performers are recognized with some intangible benefits. Top management is highly committed to quality and organization is self-certified supplier for Bajaj Auto Ltd.

Kalyani forge has introduced a concept of value stream manager to improve quality of products. ALF engineering is a part of Mahindra Quality Drive and performs quality system audit as per Mahindra system requirements. ALF has installed in-process inspection and automatic gauging systems to ensure quality of production. Morning meetings are conducted regularly to discuss quality issues and initiate corrective actions.

Lucas TVS and Flash electronics believe on women employees for quality of jobs. Women employees are more committed and quality conscious. They have special preference for women for quality and precise jobs.

6.1.10 Crises related to production and delivery schedules:
1 Large varieties and small batches of production
2 Reduction of order processing time for after sales market
3 Reduction in throughput time for production
4 Improving operating efficiency to international benchmarks
5 Customer should be satisfied even though there is breakdown in supply chain
6 Customer is in hurry, Crisis is delay in creating customer support initiatives.
7 Right product at first time, every time
8 Establishing production targets with product quality.

Approach: As compared to global companies, Indian companies face more crises related to production and inventory management. The reason is difference between the systems and technology procurement capacity and availability of resources. Global companies start their projects with technology transfer and from day one they use latest technologies for production.

Indian auto component manufacturing companies are also doing investment in technology and there is a change in perception about use and investment in technology.

Kalyani Lehmerz and Saint Gobain manufacture to stock and normally a stock of one-week consumption for key customers is maintained. Saint Gobain has drastically improved manufacturing processes and achieved production rate of one glass per minute. Companies are also increasing use of robots in critical operations and heavy duty machining processes.

Victor Gasket has developed a mobile application for reduction in throughput time for order processing of aftermarket. The customer can place order through mobile and required products are delivered within 10 working days. Victor gasket welcomes any product and any quantity demanded by customer. Company has developed manufacturing process and a drastic reduction in operating cycle from 52 working days to 12 working days is achieved. Innovation culture adopted in Victor Gasket has improved operating efficiency from 48 percent to international benchmark of 90 percent.
Lucas TVS has developed manufacturing excellence model to produce right product at first time and every time.

6.1.11 Crises related with Health and safety:

Only Saint Gobain Seckuritat perceived health and safety related crisis. The nature of product, i.e. Glass for automotive vehicles demands higher priority for health and safety of employees as well as environment. Company has derived all policies related to EHS – Environment, Health and Safety.

**Approach:** Company has systematic approach, every accident is reported globally, company conducts safety audit and is a key performance area for all managers. Environment protection is policy of company. Company gives emphasis on saving of natural resources and reduction in wastages.

6.2.0 Crises Management – Multidisciplinary Approach

During interviews, respondents have discussed their views and the crisis perceived by them related to various functional areas. Actually, the crisis related with one functional area has impact on other function also. The crisis management approach requires broader approach rather than function specific approach. Even though during discussions and interviews, specific crisis is highlighted, the solutions provided are multidimensional and reflect overall strategy of the business. These crises management approaches are interdisciplinary and have integration with all business areas. These approaches are for business development and for future long-term growth of company. The overall crises management approach of these companies can be summarized as follows.

6.2.1 Kalyani Lehmarz:

Company is doing continuous Investment in technology and automation by using internal accruals. Benefits expected are expansion of product and customer portfolio, cost reduction to offset inflation effect, reduction in manpower and maintaining cost competitive edge.

6.2.2 Continental:
Concentrate on niche and highly technical products to create acceptance in market. Project company as low cost producer and substitute for expensive technology driven products. Benefits expected are penetration in market and creating a platform for introduction of other global products in Indian Markets.

6.2.3 Eaton:

Focus on Eaton business systems, company policies and business ethics. Work for critical engine components and promote patented products for Indian Automobile Markets. Benefits expected are long-term business with premiums by creating specialization in critical and highly technology driven components. Take complete advantage of entry barriers in industry segment.

6.2.4: Autoline Companies:

Adopt ‘Wagon Development Strategy’ and create dependence for customer. 1200 component varieties for Tata Motors, for all variants of automobiles manufactured by Tata Motors. Investment in heavy-duty presses as specific customer requirement. Benefits expected are long term business, customer loyalty and priority vendor for new product developments.

6.2.5 Badve Engineering Limited:

Act ‘Now’, work with speed and deliver quality. Badve Engineering believes in Speed and they take decisions very fast. “Now” is nothing but immediate response to situation to avoid further complications and grab the opportunity which available. The benefits expected are confidence development in corporate team for projected growth, Strong message of being proactive rather than reactive and develop decision-making skills and ability to understand risk. Create fastest growing company with stability and a priority vendor for new developments.

6.2.6 Saint Gobain Seckuritat:

Company has focus on EHS, Environment, Health and Safety of employees. Every small accident is also reported globally. Inclusion of EHS in Annual performance appraisal is unique approach. Benefits expected are minimum accidents, improved handling of glass and glass manufacturing processes, enhanced team functions and team building and safety awareness. Minimum breakdowns in systems and smooth flow of production.
6.2.7 Suyog Auto Cast Pvt Ltd

Company realized the overdependence on one customer as a threat for survival and accepted a challenge of creating a change. Change management initiatives were taken to increase the manufacturing capabilities and diversification in services and products. Company has done efforts to develop manufacturing capability to cater the requirements of various industry segments ranging from ship building to automobiles, pumps to earth moving equipments in all more than 400 component varieties. Benefits expected are driving force for growth, creating dynamic team, minimum business cycles shocks and long-term sustenance with exponential growth. Today company has demonstrated capability to manufacture complicated gearbox assemblies.

6.2.8 Victor Gaskets:

Company trusts employees and their innovation skills to contribute in top-line and bottom-line growth of the organization. Company adopted crisis management approach through human resource development and created a culture of innovative thinking. ‘Orbit Shifting Innovation’ Technique is practiced. Company learned inventory management techniques from retail industry to handle large varieties and learned from media to capture live data from different parts of country to satisfy aftermarket requirements. Benefits expected are change in attitude of employees, change in their thinking pattern, inventory management and efficiency improvement to international benchmark.

6.2.9 Wadhokar Group of Companies:

Management is completely aware of their strengths and weakness and the approach they should adopt for business development. Company has focused on simple and low technology press components required for Tata Motors in various products. These products have low margins but are in bulk requirement. The volumes handled by company crates an extra edge for competitors. Company has a policy of zero debt and compliance to all statutory requirements. Benefits expected are guaranteed returns from lower investments in resources, minimum disturbances
from outside agencies and slow but steady growth. Company avoids duplication of production facility and component are manufactured only at one unit and supplied to all locations.

6.2.10 Kalyani Forge Limited:

Continuous investment to upgrade manufacturing and services facilities. Company has added manufacturing division to provide complete solution to customer. In-house design facility for rapid prototyping as demanded by customer. Implementation of value stream concept to exercise better management control systems. Benefits expected are identification of responsibility centers, recognition for performance and system transparency. Design solutions provide confidence as reliable product company rather than Component Company.

6.2.11 Ganage Group of Companies:

Adopt ‘Wagon Development Strategy’ to supply components at various locations. Focus on finance management to improve different ratios such as ROCE (Return on Capital Employed) DSCR (Debt servicing coverage Ratio) Fixed asset turnover ratio, Working capital management and cost of capital. Benefits expected are improved financial management and control, reduction in cost of financing, improved credit rating and better fixed assets turnover ratio. Improvement in financial ratios helps to generate funds at lower interest rates and lower cost of capital.

6.2.12 Radheya Machining Limited:

Management has a focus on critical machining components and always looks for difficult jobs for manufacturing. Company has a focus on handling the difficulties of customer, and provides better product solutions. Radheya has a philosophy “No Boughtouts” in organization. Company believes in complete solution to customers and have a capability of end to end solution starting from raw material stage to dispatch through own supply chain mechanism. Benefits expected are development of multilayer business organization, fast track growth and development of DNA of organization. Better market potential with record of accomplishment of competency in critical components, close tolerance and high process control components. Business development opportunity in all industry sectors, which use critical components for various products.
6.2.13 Flash Electronics

Focus on high volume, low cost electronic components required by two wheeler-manufacturing companies. Research and development focus for new product development, identification of neglected product segments, long-term relations with international customers, accepting risky businesses. Benefits expected are better optimization of resources, higher margins and consistent business. International relations will help to develop global products and risky business options generate higher profit margins.

6.2.14 Lucas TVS

Focus on niche segment of auto electrical such as engine starter motors, wiper motors, electric sensors, etc. Quality ensured products and technical products, system development and women empowerment. Use of manufacturing excellence model, and dedicated vendor development program. Benefits expected are higher production efficiencies with quality, minimal rejections, better inventory management and cost control. Women empowerment, a fulfillment of social obligation and contribution for development of society. Committed work force and easy to train for higher responsibilities. Minimum absenteeism and internal politics.

6.2.15 Bosch Chassis Systems:

Part of global company and is system driven company. Focus on Bosch best practices and internal audits as per EFQM model requirements. Major thrust is on implementing the systems initiated by global headquarters. Company has a focus on realignment of employees to global systems. Benefits expected are well trained and system oriented workforce, which will deliver the results as per expectations. Minimum system deviations and better management control systems are ensured. There will be a global transparency in performance evaluation and entire group will work for common goal.

6.2.16 ALF Engineering Pvt. Ltd.

Company has invested in a green field project at Chakan in Mahindra Cluster. Company has installed hydroforming equipments to develop specialty in heavy-duty fabrication process.
Company has developed single piece flow concept to ensure product quality and timely rectification of errors in productions and quality related issues. Company has a quality approach with team activity and continuous communication with employees who are involved in related activities. Benefits expected are fulfillment of customer requirement and higher productivity with in-process quality assurance for customer. In-process automatic gauging ensures foolproof quality production and minimize deviations from designed performance.

6.3.0 Comparative Analysis of Global Companies and Indian Companies.

Following table gives information about various factors which have a direct impact on crisis management approach used by global and Indian companies. These factors also explain the difference between the business environment for global and Indian companies. The customers are same for both companies but there is vast difference, the way these companies operate, function and perform to satisfy customer requirements.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Indian Companies</th>
<th>Global Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Portfolio</td>
<td>Manufacture components or products designed by customer</td>
<td>Manufacture own products and product related systems</td>
</tr>
<tr>
<td>Customer Portfolio</td>
<td>Mostly dedicated to one customer having a contribution in revenue of 80 percent to 90 percent</td>
<td>All automobile manufacturers using variants of same product.</td>
</tr>
<tr>
<td>Source of Finance</td>
<td>Own finance or finance from internal accruals</td>
<td>Global Headquarters provide complete financial support</td>
</tr>
<tr>
<td>Driving force</td>
<td>People driven organizations controlled by very few key persons</td>
<td>System driven organizations controlled by hierarchy of people</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Human resource approach</td>
<td>Recruitment, training, skill development and retention of skills</td>
<td>Recruitment, training and development for systems and retention</td>
</tr>
<tr>
<td>Level of competition</td>
<td>Normally business profile is fixed so threat from competition is not severe</td>
<td>Global players compete with each other in same market segment.</td>
</tr>
<tr>
<td>Design capabilities</td>
<td>Limited to process developments and tools required for manufacturing process</td>
<td>Innovative products and continuous up-gradation of existing product range.</td>
</tr>
<tr>
<td>Production capacities</td>
<td>Investment in technology only as demanded by customer or product characteristics</td>
<td>High-tech machines and equipments, Flexible manufacturing systems</td>
</tr>
<tr>
<td>Quality Systems</td>
<td>Focus on Small steps like 5S, Kaizen, ISO and TS certifications</td>
<td>Focus on International quality standards, EFQM model etc.</td>
</tr>
<tr>
<td>Organization Structure</td>
<td>Normally Flat or one or two layer of hierarchy</td>
<td>Normally multilayered functional hierarchy</td>
</tr>
<tr>
<td>Crisis Perceived</td>
<td>Crises related to Financial Management, Production schedules and quality of products</td>
<td>Crises related with up gradation of technology, Market penetration and introduction of new products</td>
</tr>
<tr>
<td>Crisis management approach</td>
<td>Need based solutions and for shorter duration of 2 to 3 years</td>
<td>Strategic approach with a focus on long-term solutions</td>
</tr>
</tbody>
</table>

**6.4.0 Current trends observed in Auto component Manufacturing Companies.**

1. Indian companies are learning new techniques and approach for crises management. They are becoming aggressive in business expansion and ready to start business units at different parts of country.

2. Indian companies are developing their new strategies and crises management approach. They are learning from their experiences and ready to take a risk.

3. There is a positive trend in advance machines and world class equipments for productivity improvement.

4. There is a positive trend that these companies are showing inclination for business diversification, export promotion and foreign collaborations for better growth opportunities.

5. Majority of the manufacturers have process and product design capabilities.

6. Companies do give thrust on quality aspect of product and they are trying to practice the concepts like TPM, 5S, Kaizen, Single piece flow etc.

7. Companies are trying to match the speed of development and adapt to dynamic market conditions in Indian Automobile Segment.

8. Global companies are having all resources but they require more time to tune employees for their global systems.
9. Niche products are introduced by global companies in Indian Market which has direct effect on upgradation of product quality of Indian automobiles.

6.5.0 Testing of Hypotheses:

Categorical statement of proper hypotheses related with decisions and crisis management in auto ancillary units is as follows viz.

**H1:** There are certain external or internal reasons, which may have impact on business performance of auto units leading to crisis

**H2:** With the help of ‘crisis management decision making strategies’, crisis can be managed effectively.

Being nature of research empirical and diagnostic; and nature of data is not purely quantitative, statistical tools are not used for data analysis. Statistical methods cannot be applied for hypothesis testing. The logical reasoning approach is used and relevant evidence is collected through case studies.

**Hypothesis H1:**

In crisis management theory Chapter 2, Section 2.3.1 Business Environment explains the various factors which can create a crisis situation for any business organization. External factors are out of control of organization and needs better crisis management approach. During various interviews conducted with MD / CFO / Plant heads of various auto component companies, they expressed external business environment and existing economic conditions in India are major factors / problems for them.

Section 2.3.2 of chapter 2, Crisis Management Approach for External Environment has discussed in detail about various external forces acting on business and how to handle the crises related to these external forces. While discussing about Crisis Management approach Harvard and ICFAI focused on the fact that basically external factors are responsible for crisis in the organization.

This chapter has a series of discussion on eight-step crisis management approach. The first step ‘Taking Stock of Potential Perils’ projects external and internal environment as major concerns for management for effective crisis management. Potential perils are nothing but the probable
events occurring out of sudden change in business environment. The issue addressed by Harvard Business School and ICFAI are economic and market forces creating pressures on internal and external business environment. These forces are complex in nature and create multiple effects on business. Identifying potential crisis is a systematic process of scanning internal business environment and operating deficiencies, which may lead to crisis.

Section 2.3.3, has a discussion on Crisis Management Framework suggested by William Candell. This framework has a major thrust on in-depth study of internal and external landscape related to a company. This landscape survey provides wide spectrum of various factors having direct or indirect relation with crisis for an organization.

Chapter four has a presentation of various case studies related with automobile companies.

Honda Company is known for quality products and is one of the leading companies in automobile industry. Company has best quality systems but it faced a crisis because of defective brake system assembled on CBR 250R bikes. 11,500 vehicles were called back for repairs. This crisis is an outcome of failure in internal systems and a factor related to internal business environment.

Nissan car a quality product company, faced a crisis again related to internal business environment. Over 22,000 cars were called back because of faulty braking system assembled on Small car Micra and Sedan Sunny.

Toyota Manufacturing Systems are benchmarks in a manufacturing and other companies try to achieve the excellence demonstrated by Toyota Systems. In January 2010, Toyota was forced for recall of millions of cars for replacement of faulty braking systems, floor mats and accelerator pedals assembled in vehicles. Because over standardization, same components were used in variety of products and it created a cascading effect for Toyota. Experts contribute this problem to overconfidence on internal business systems.

Chapter five represents a true picture about current situation in Pune automotive component manufacturing companies. All sixteen cases prepared from various companies give us a detailed prescription about the business environment, crises faced by them and factors leading to business crises. We can observe all shades of colours of crises faced by these companies. This picture is
more interesting to study because of overlapping shades of these different colours. As an observer, it becomes very difficult to identify the thin line between these shades and demark a specific functional or environmental factor related crisis.

All sixteen companies are operating in same business environment but at micro level, there is identifiable difference between the factors leading to crisis in these industries. Following are prominent factors identified by these companies, and are correlated with crises faced by them.

All sixteen automobile component manufacturing companies have faced some or the other crises in business. These case studies elaborate in detail the challenges created by external and internal business environment factors.

Case 1 Kalyani Hayes Lemmerz:

External Factors:

- Over dependence on one-customer and high volumes with low profit margins created obstacles for growth.
- Rising Inflation created pressure on profitability

Internal factors:

- Strike by permanent employees for wage agreement
- Shortfall of technically qualified people for design services
- Speed of new product development for new customers.

Impact on performance:

1. Because of overdependence on one customer, during 2003 recession cycle, company faced problem of generating expected revenues and bottom line as well as top line were hampered. Profit margins were very low and capacity was underutilized.
2. The strike by permanent operators created a problem for production deliveries for new customers of car plant.

Case 2 Continental Auto Components:

External Factors:
• Portfolio taken from Siemens was failure in market.

Internal factors:

• Capacity utilization of new installed project for new product line.

Impact on performance:

Continental has to close the existing portfolio and start a new product line. Achieving break even for new product line became top priority.

Case 3 Eaton:

External Factors:

• Promoting Eaton as Quality Brand for critical engine components
• Creating market for patented transmission system products in India.

Internal factors:

• Rebuilding of merged companies for improving product quality
• Successful completion of new project for transmission division

Impact on performance:

Company created focused brand development strategy to promote as experts in critical engine component manufacturing and leader in engine transmission systems.

Case 4 Autoline Industries Limited:

External Factors:

• Providing end to end solutions to customer.
• Expansion and investment as per requirement of Tata Motors
• Compulsion to follow Tata global sourcing policy.

Internal factors:

• Managing growth and investments in technologies
• Developing capabilities for product design and process design requirements for new products.

Impact on performance:

Company has to develop complete component solution capabilities. It was mandatory to add tool engineering and process design capabilities.

**Case 5 Badve Engineering Limited:**

External Factors:

• Accepting growth opportunities provided by Bajaj Auto
• Expansion and investment as per requirement of Bajaj Auto

Internal factors:

• Establishing quality standards for mass volume requirements of Bajaj Auto
• Fast prototyping and mass production of new components offered by Bajaj Auto.

Impact on performance:

As a result of delay in analysis of proposal and acceptance turnout as a cancelled proposal from Bajaj Auto and company lost opportunity for long term business for new products.

**Case 6 Saint Gobain Sekuritat:**

External Factors:

• Managing inventories for key customers, large varieties and unpredictable offtakes.
• Creating long-term customer relation for continuous business.

Internal factors:

• Health and safety related issues, immersing out of glass manufacturing.
• Improving production efficiency for effective inventory management and to satisfy customer requirement.

Impact on performance:
To increase production efficiency and reduce inventory levels, company invested in CNC profile cutting machines and computer aided design facilities.

Case 7 Suyog Auto Cast Pvt limited:

External Factors:

- Complete dependence on Bajaj Auto.
- Matching requirements for versatile products manufactured for various industry sectors.

Internal factors:

- Creating a ‘Change’ to become highly diversified manufacturing company.
- Managing investments made in developing manufacturing capabilities to offer all type of component manufacturing services to as per industry requirements.
- Development of strategic business units

Impact on performance:

Company came out with turnaround strategy for business development and decided to create a change to reduce complete dependence on Bajaj Auto. It created a diversified portfolio in terms of industry sectors and customers.

Case 8 Victor Gaskets:

External Factors:

- Servicing aftersales market.
- Inventory management for nearly 4000 product varieties

Internal factors:

- Reducing throughput time for aftersales market
- Achieving international benchmark for operating efficiency.
- Lower operating efficiencies

Impact on performance:
Company faced difficulties in production planning of large varieties and maintain delivery schedules for these orders

**Case 9 Wadhokar Group of Industries:**

External Factors:

- Adopting Wagon development Strategy.
- Pressures on controlling material cost

Internal factors:

- Retention of employees
- Reducing cost of capital.
- Finance management

Impact on performance:

Material cost control is always a pressure. Managing financial resources and retaining people is crucial part of the business.

**Case 10 Kalyani Forge limited:**

External Factors:

- Rising cost of manufacturing
- Customer expectations of complete component solutions

Internal factors:

- Continuous investment in technology and return on investment
- Development of technical and designing capabilities for complete component solutions.
- Establishing Value Stream Management concept.

Impact on performance:

Company made continuous investments in up-gradation of technologies and product design solutions.
Case 11 Ganage Group of Industries:

External Factors:

- Adopting Wagon development Strategy.
- Pressures on controlling material cost
- Investment in new plants

Internal factors:

- Managing sources of finance
- Improvement of debt servicing rating and higher fixed asset turnover ratio.

Impact on performance:

Increased production requires more working capital and company made arrangements for working capital loan. New investments and loans created financial pressure for company. Debt service ratio became crucial.

Case 12 Radheya Machining limited:

External Factors:

- Complete machining solutions expected by customers.

Internal factors:

- Development of technical staff for critical machining.
- Forward and backward integration for low cost solutions.

Impact on performance:

Company invested in backward integration and introduced forging manufacturing. With forward integration a supply chain company with own transportation fleet was started to improve deliveries.

Case 13 Flash Electronics:

External Factors:
• Fulfilment of high volume and multiple component requirements given by Bajaj Auto.
• Matching speed of growth expected by Bajaj Auto.

Internal factors:

• Development of technical staff for critical electronic component assemblies.
• Rapid development of new components offered by other automobile manufacturing companies.

Impact on performance:

Company has to recruit people at higher costs and pay additional incentives for development of products. Company implemented TQM to improve quality of product. Employee development drive was a must to achieve higher efficiencies.

Case 14 Lucas TVS:

External Factors:

• Fulfilment of high volume and multiple product varieties for various customers.
• Product servicing of aftersales market.

Internal factors:

• High quality standards and defect free assembly for each product.
• Rapid development of new components offered by other automobile manufacturing companies.

Impact on performance:

It was important for company to have focused recruitment considering critical assembly requirements of products. Recruitment of technically qualified women was a problem and company adapted on the job training program for these employees. It was necessary to establish quality standards and Kaizen concept is practiced by company. Company developed manufacturing excellence model to achieve higher efficiency.

Case 15 Bosch Chassis:
External Factors:

- Market fluctuations arising out of market demand.
- Obsolescence of products and technology

Internal factors:

- Alignment of employees with Bosch Systems
- Managing technical skill inventory.

Impact on performance:

Company is still in the transformation phase of developing work culture matching with global expectations. Training and development efforts are continuous activities. Company is doing lot of expenditure to establish Bosh best practices.

**Case 16 ALF Engineering Ltd.:**

External Factors:

- Political interference in business operations.
- Product quality requirements as per Mahindra Supplier Evaluation System.

Internal factors:

- Achieving production targets and quality improvements.
- Recruitment and retention of employees for heavy duty fabrication work.

Impact on performance:

Company transferred temporary operators from Nashik to Pune to match delivery schedules as per Mahindra expectations. Company paid incentives to operators to work on heavy duty fabrication jobs.

The series of discussions running through all chapters describe that crises perceived are in various functional areas are outcomes of various internal and external business environment. Business environment engulf business crises and management needs to understand complicated
and interwoven structure of business environment. This fact is strongly projected during all discussions in entire thesis. On the basis on detailed discussions and illustrations presented in Chapter Two, Chapter four and Chapter five containing detailed presentation in each live case prepared from companies, we can say that Hypothesis No i.e. H1, “There are certain external or internal reasons which may have impact on business performance of auto units leading to crisis” is proved.

**Hypothesis H2:**

Crisis management is ongoing process and effective crisis management is a function of appropriate decisions. Understanding crisis management and finally deriving a solution is a series of decisions taken by management.

Application of decision patterns and methods required for external and internal business environment are different in nature. Selection of strategic decision making models depends upon the type of crisis and origin of crisis.

Automobile industry has witnessed major changes in managing the crises and they are continuous improvements and innovations in crisis management. Chapter 2 highlights this fact and takes us through a short journey of various developments and new approaches used by industries for effective crisis management.

Industry has witnessed three major phases of development in automobile industry. These phases are discussed in chapter No. 2 and section 2.4. This section enlightens readers about crises management approach used by various companies for internal environment related crises.

Section 2.4.1 has detailed discussion about Japanese Quality Movement and contribution by four Quality Gurus namely, Deming, Juran, Corsby and Ishikawa. These gurus have given everlasting quality methodologies and simple but powerful tools to manage internal crisis. These tools train us for effective decisions and best solutions. These tools are roadmaps for successful crises management and most admired decision support systems for quality decisions.
World class manufacturing systems developed by Toyota Corporation are included in Section 2.4. Toyota 4P Model, Toyota Production System and Toyota Problem Solving Methodology are three manufacturing excellence models developed by Toyota. These models itself are theories and contribute in development of decision science for creating a benchmark for world-class performance. 4P model is philosophy developed by Toyota for developing long-term solutions for internal crisis related to quality and production systems. This model is used extensively for creating a work culture and applied as human resource development decision support system. 4P model is used for corporate decisions and creating strategy for excellence. Toyota production system is decision making model used at senior level management team and practiced for developing strong dedicated team. This model is projected as a house of Decisions and every member of organization is involved to construct the house. This house enhances decision making approach and commitment for excellence. Toyota Problem solving Methodology is step by step decision process and all employees are trained to use it. This methodology develops an attitude to solve problems at the functional levels. This model improves quality of decisions drastically and eliminates the problem at the source itself.

Section 2.4.3 has discussions on current trends in crises management through effective decisions. Today organizations have more emphasis on Human resource development for quality decisions. Today organizations practice innovations. Expert from industry use innovative methodology and new learning systems to develop culture of innovation. Idea clock and Orbit Shifting innovation Framework transform people and create higher level of performance. All these modern techniques are used to improve decision-making capability of entire organization.

Chapter 3, Decision, section 3.1, Peter Drucker’s View on decision is well discussed. He has explained need and importance of right decision for right problems. Various elements of decision-making create a background for better decision. Understanding of various subsystems improves decision-making approach for interrelated problems.

Section 3.2 gives insight about various strategic decision making models. These models are used for in-depth analysis of crisis and arriving at the best solution from different alternatives. In industry, it is very difficult to derive best solution by using single model. Companies use multiple decision models for better alternatives.
Chapter 4 has three published cases namely on Leyland Truck, MG Car company and Skoda. Leyland Truck has used continuous improvement “Kaizen”. Kaizen is a philosophy where attempts are made to identify and eliminate wastage at source. This requires analytical and decision making ability for effective implementation of Kaizen.

MG Car Company immerged out of crises and has taken strategic decisions related with product portfolio, brand promotion and product positing. These decisions have created a rebirth of MG Car Company in 1995.

Case study on Skoda describes how strategic decision making model ‘SWOT’ is used to create a competitive advantage and brand in the market. It helped company to improve acceptance as a valued brand and happiness for owners. It also helped company to identify areas for improvement.

Chapter 5, Case studies of various Auto Component companies, explains the crises management approach adopted by these companies. Various strategic decisions are taken and implemented by these companies to manage various crises in functional areas as described in first section of this chapter. Section 2 of this chapter gives us consolidated approach for various crises faced by these auto component-manufacturing companies.

All sixteen automobile component manufacturing companies have faced some or the other crises in business. These companies always believe that better decisions always help to reduce the impact of crisis and create a foundation for future growth. These companies have shown their expertise in understanding and handling the crisis and ensured business growth in tough times. These decisions have created a shock absorbing mechanism for projected future growth.

Various decisions taken by these automobile companies are as follows.

**Case 1 Kalyani Hayes Lemmerz:**

- Investment through internal accrual for growth.
- Increase in customer portfolio from 20 to 40 and reduction of over dependence on Tata Motors from 70 percent to 50 percent, increase in product portfolio from 40 to 80 varieties.
• Conversion of manual work into automatic robots and simple unskilled jobs through contract labour.
• Offsetting inflation by proportionate cost reduction to maintain cost competitiveness.

Effectiveness of Decisions:
Company’s top line is growing every year. Company is successful to maintain cost of manufacturing at same level for last three years. Customer and product portfolio is increased. New car plant is fully operational. Permanent employees are reduced.

Case 2 Continental Auto Components:
• Shut down business portfolio taken over from Siemens
• Promote fuel pump and systems as technical sales.
• Promote company as low cost solution provider with focus on import substitution.

Effectiveness of Decisions:
New project for fuel pump and systems is fully operational. Company has achieved breakeven point and created a brand as low cost and quality supplier. Company has achieved a turnover of more than Rs 100 crore within a short span of four years.

Case 3 Eaton:
• Focus on critical engine components such as valves and valve systems.
• Establish Eaton business system in all business units.
• Concentrate on promotion of patented transmission system for various automobiles in India.
• Grow with mergers and acquisition and wait for valuations of firms for merger.
• Conformance to group global business ethics and performance standards.

Effectiveness of Decisions:
Cancellation of EOU status of company has helped to generate better market potential in Indian Automobile Companies. New company started at Ranjangaon has a focus on engine transmission products and Eaton is successful to create a market for patented products.
Case 4 Autoline Industries Limited:

- Promote company as ‘Art to Part ’ solution provider
- Focus on creating interdependence with Tata Motors.
- Investment in Heavy Duty Press Machines as a unique capability for heavy duty body parts required for automobiles.
- Create to active cells, product engineering cell and manufacturing cell

Effectiveness of Decisions:
Company is successful to establish “ Art to Part” service provider for key customers.
Interdependence with Tata Motors is creating growth.

Case 5 Badve Engineering Limited:

- Understand Value of “Now”
- Create quality culture in organization and implement TPM. Recognize employees for quality improvement contribution and for achieving excellence in Quality
- Offer permanent employment to promote healthy atmosphere in company.
- Strong focus on fast decisions
- Promote women employees as CSR (Corporate Social Responsibility) initiatives.

Effectiveness of Decisions:
Understanding the value of “Now” provided exponential growth for the company. Company is now self certified and prime supplier for Bajaj Auto.

Case 6 Saint Gobain Sekuritat:

- Promote employee health and safety as a major concern for Company.
- Inclusion of Safety audits as KPA (Key Performance Appraisal) assessment point.
- Focus on identification and elimination of waste.
- Investment in CNC profile cutting machine to improve production efficiency

Effectiveness of Decisions:
Company’s investment in CNC machine has helped to reduce manufacturing time and inventory management is under control. There is reduction in total rejection during manufacturing process.

**Case 7 Suyog Auto Cast Pvt limited:**

- Minimize dependence on Bajaj Auto
- Develop multiskilled manufacturing capabilities
- Initiate change for better future.
- Invest for technology and system improvements
- Create and ensure performance of SBUs (Strategic Business Units)
- Search opportunities out of automobile industry sector for diversification and growth.
- Invest for product development capabilities.

Effectiveness of Decisions:
Initiating a change has drastically changed life at Suyog. Dependence on Bajaj Auto Components is reduced from 100 percent to 30 percent of turnover. Company has added other product lines and is successful to project multi product multi facility service provider.

**Case 8 Victor Gaskets:**

- Focus on employee development to enhance their performance
- Develop innovation culture to manage crisis and generate innovative solutions.
- Induce learning and learn from other industries.
- Focus on customer
- Cost optimization with elimination of waste and non value adding activities.
- Practice ‘MOST’ technique for standardization.
- Focus on problem rather than person.

Effectiveness of Decisions:
Company has achieved operating efficiency to international bench mark. Through put time is reduced from 52 days to 12 days. Mobile application for aftersales market has helped to provide service effectively to various automobile component dealers and garages.
Case 9 Wadhokar Group of Industries:

- Minimize cost of financing
- Use accruals for business expansions
- Ensure compliance to all statutory requirements to minimize external disturbance in regular production
- Focus on low technology and simple jobs.
- Provide facilities for employees and timely wage revisions for retention.
- Optimize material cost and material usage.

Effectiveness of Decisions:
Tri-party agreement for material purchased has helped company to reduce cost of material. Company is debt free and employee retention rate is improved.

Case 10 Kalyani Forge limited:

- Focus on manufacturing of complex and critical profile forgings.
- Development of strategic business units.
- Creation of responsibility centers with individual value stream managers for each product line.
- Continuous and planned investment to enhance production facilities.
- Work as a partner with customer for product development
- In-house die design center for process and product improvements
- Use of expert services for cost reduction, Industrial Relations problems
- Profit sharing group incentives to improve production efficiency and utilization of resources.

Effectiveness of Decisions:
Company has achieved continuous growth from Rs 54 Crore to Rs 280 Crore in a span of 11 Years. Value stream manger concept has helped to reduce rejections and improve production efficiencies. Design capabilities has helped to increase customer and product portfolio.
Case 11 Ganage Group of Industries:

- Dematerialization of components to reduce working capital requirement
- Use of financial models to reduce cost of finance.
- Utilization of Hundi and LC (Letter of Credit) to reduce cost of working capital.
- Tri Party agreement with material suppliers for flexible raw material supply and payment terms.
- Use of contract labour to avoid union related problems.

Effectiveness of Decisions:
Tri-party agreement for material purchased has helped company to reduce cost of material. Dematerialization has reduced working capital requirement by Rs 25 Crore but there is effect on bottom line. Company’s debt service coverage ratio is improving.

Case 12 Radheya Machining limited:

- Develop complete solution with forward and backward integration for customer satisfaction.
- Focus on difficult components as challenge for production.
- Focus for similar components used in other industrial sectors also.
- Develop own ERP system for fast adaptation.
- Own transportation flit and Supply Chain Company for cost effective solutions to customers.
- No bought-out, develop own DNA for company growth.
- Provide in the job training and develop technical skills.
- Annual increments for every employee
- No Union activity in company.

Effectiveness of Decisions:
“No boughtout” policy has created forward and backward integration. Technical capabilities and search for critical machining components has provided business growth and company is looking forward for exponential growth from Rs 110 Crore to Rs 1000 Crore in next 5 years.

**Case 13 Flash Electronics:**

- Focus on quality of product at each stage of manufacturing process.
- Focus on innovations
- Tap untapped market segments
- Strategic focus for international tie-ups.
- Accept risky business for learning.
- Higher salary during initial phase of recruitment during development of plant.
- Recruitment of Women employee for quality of products.

**Effectiveness of Decisions:**
Initial high cost paid to employees has generated returns. Company’s product lines and quality systems are established. Care for small customer is adding volumes for company and customer base is increasing.

**Case 14 Lucas TVS:**

- Use manufacturing excellence model to ensure product quality.
- Promote women employment for critical component assembly.
- Work with suppliers for quality of products. Focus on dedicated vendors.
- Ensure safety for women employees.
- Ensure Kaizen activities in company.
- Focus on waste elimination.

**Effectiveness of Decisions:**
Focus on dedicated vendors and technical support to vendors has helped to reduce inventory and inventory levels are within limits, Aftersales market servicing is improved. Women employment has reduced rejections during assembly. Manufacturing excellence model has helped to improve quality of products.
Case 15 Bosch Chassis:

- Use stringent norms for employee selection
- Compliance for EFQM model
- Practice Bosch best work practices
- Impart continuous training for alignment of employees with Bosch global systems.
- Measure and update skill inventory.
- Display skill inventory at all related workplaces.

Effectiveness of Decisions:
Skill inventory management has increased effective utilisation of employees and has created a transparency in decision making. Through continuous training, employees are aligning them with Bosch Global practices. Compliance to EFQM model has improved product quality.

Case 16 ALF Engineering Ltd.:

- Implement single piece flow system
- Have active participation MSES (Mahindra Supplier Evaluation System)
- Transparent communication with employees to improve quality of product.
- Inline automated gauging system to ensure quality of product.
- Incentives for workers to work on heavy duty fabrication.
- Regular training schedule for employees to upgrade their skills and improve product knowledge.

Effectiveness of Decisions:
Transfer of temporary employees from Nashik to Pune has helped to establish production processes and product deliveries as per Mahindra expectations. Participation in MSES and transparent communication has helped to create quality awareness company’s rating is improved.

Decision creates miracles in industry. Decisions can create rebirth of a company or can create a mind set for premature death of company. Survival or exit of a company is a matter of appropriate decision rather than gut fill of the organization.
The series of discussions running through all chapters describe that effective crises management is a function of decision-making. The decisions taken play a major role in organization and can ensure long-term positive result. This fact is strongly projected during all discussions in entire thesis. On the basis on detailed discussions and illustrations presented in Chapter two, Chapter Three, Chapter Four and Chapter five containing detailed presentation of live case prepared from companies, we can say that Hypothesis H2, “With The Help of Crisis Management Decision Making Strategies, Crisis Can Be Managed Effectively.” is proved.