Chapter 4: Organisational Profile
4. Organisational Profile of Software Companies in the Study

4.1 Introduction

Many organisational studies in the recent past have demonstrated the impact of information technology on organisations and vice-versa. The emergence of modern organisation as a result of these impacts is the focus of the present section. The current section discusses the organisation in the systems perspective and describes the structure and function of the technology based organisations. Also the interrelated and interdependent factors like age of the organisations, human resources and the financial turnovers of the organisations are examined.

Benjamin and Levinson (1993) emphasized that for IT-based change in organisations to be effective, technology, business processes, and organization need to be adapted to each other. Comparing the present information revolution with the Industrial Revolution, Malone and Rockart (1993) indicated that the latest changes in IT would lead to the evolution of new technology-intensive organizational structures. They project that the advances in IT would result in dramatic decline in the costs of "coordination" which would lead to new, coordination-intensive business structures. Rockart and Short (1989) suggest that IT would enable the firms to respond to the "new and pressing competitive forces" by providing "effective management of interdependence."

A systems approach to organizations begins with the postulate that organisations are open systems which, of necessity, engage in various modes of exchange with their environment (Katz and Kahn, 1966). The open systems approach to complex organizations emphasizes the consideration of the relationship between a system and its environment as
well as what goes on within the system (Hall, 1977). Baker (1973) notes that organizations undergo change in the course of interaction with and adjusting to their environment and also change that environment. Since environmental dependency inhibits the organization's ability to function autonomously, it must manage such dependency to survive as an independent entity (Kotter, 1979). Organizations typically manage environmental dependency by establishing and maintaining resource exchanges with other organizations (Levine and White, 1961).

Emery and Trist (1965) argued the need for the concept of "the causal texture of the environment" noting that the environmental contexts in which organizations exist are themselves changing under the impact of technological change - at an ever-increasing rate and towards increasing complexity. The modern software production organisations have been undergoing the process of change with technology and organisations developing and influencing each other. This is a spiral process with shortest possible technology and organisational (in terms of structure & functions) lifecycle.

4.2 Manufacturing and Software Companies

There has been a major paradigm shift taking place in the organisational structure and functions of organisations of manufacturing to software technology based organisations in India: This shift is essentially because of the transformation that has taken place in the information technology industry i.e., from IT as a production center to IT as a productivity tool.
4.3 Organizational Structure of Software Companies under study

As said earlier, the present study was carried out in 32 Software companies in Hyderabad. These companies too have erected organisation structures that suit their technology based organisations. When probed for their reflections on the emerging organisational profiles of software companies, the heads of these companies expressed some vital insights.

For instance, the difference between manufacturing and software companies has been highlighted by a senior vice-president of a big software company who has 32 years of experience (18 years in manufacturing and 14 years in software company):

"there is considerable difference between manufacturing and software companies. The manufacturing companies have fixed organisational structure and hierarchy, rigid functional units and processes that lasts long and it is not easy to change any of these things. Whereas in software companies the organisational structures keep changing in response to market demands and customer requirements. Even the departments and their functions keep changing. In my previous software company, the management has decided to shift focus from project services to product selling and the functions of the business development department has changed from marketing to sales."

Information technology in general and software technology in particular has caused significant changes in the modern technology-based organisational structure and functions.

4.3 Structural Changes

**Horizontal Organisational Structures**: Software organisations have few levels in their hierarchy and thus have, flat organisational structures. The nature of tasks demand effective communication among the people from top to bottom and thus they cannot afford to have too many layers in the organisational structure. When compared with non-software
organisations, such as typical industrial manufacturing units, the software organisations have
different organisational structure and the following table explains this phenomenon.

Table 4.1: Levels in the organisational structure of software and non-software organisations.

<table>
<thead>
<tr>
<th>Manufacturing Companies</th>
<th>Software Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainees</td>
<td>Trainee Programmer / Engineer</td>
</tr>
<tr>
<td>Junior Executive</td>
<td>Software Engineer / Programmer</td>
</tr>
<tr>
<td>Executive</td>
<td>Project Leader</td>
</tr>
<tr>
<td>Senior Executive</td>
<td>Project Manager</td>
</tr>
<tr>
<td>Asst. Manager</td>
<td>Vice President</td>
</tr>
<tr>
<td>Dy. Manager</td>
<td>CEO / Director</td>
</tr>
<tr>
<td>Manager</td>
<td>Chairman &amp; Managing Director</td>
</tr>
<tr>
<td>Senior Manager</td>
<td></td>
</tr>
<tr>
<td>Asst. General Manager</td>
<td></td>
</tr>
<tr>
<td>Dy. General Manger</td>
<td></td>
</tr>
<tr>
<td>General Manager</td>
<td></td>
</tr>
<tr>
<td>Asst. Vice President</td>
<td></td>
</tr>
<tr>
<td>Vice President</td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td></td>
</tr>
<tr>
<td>Managing Director</td>
<td></td>
</tr>
<tr>
<td>Chairman</td>
<td></td>
</tr>
</tbody>
</table>

**Dynamic Organisational Structures:** Some times the software organisations are compelled to evolve temporarily and dismantle some organisational structures based upon the situations. The following are some of the reasons for creating temporary organisational structures.

- For the purpose of execution of time bound large-scale projects
For the purpose of provision of customer services for specific periods of time in an year.

For specific overseas assignments for temporary duration when employees are deputed on special jobs.

For filling up the vacancies when people move up the ladder

**Special Organisational Units:** Software organisations are known for creating special organisational units or groups based upon the situation and market conditions. In the study, there are instances of special organisational units being created such as:

- For trouble shooting the critical applications, a medium software company (included in the study) has created a special division to cater to customer needs.

- An internet software company (included in the study) has created a new organisational division called Help Desk to cater to the personal needs and works of the employees.

- A big software services company (included in the study) has created a special division called Support Services for the purpose of offering infrastructural support services to the main stream organisation.

**Increased Span of Control:** The less the number of layers in the hierarchy the more will be the span of control. Software organisations are known for their effective span of control.

**Redefining of the Organisational Boundaries:** Software organisations have redefined the organisational boundaries and in most of the cases, they extend beyond the geographical boundaries. The multinational corporations engaged in design & development of huge
software projects are the examples of boundary less organisations. Essentially a software project has got many phases in the life cycle and thus passes through many divisions in an organisation spread across the globe. For example, a division of an organisation located in Unites States of America may generate the analysis and send it to India where it is actually converted into software by the software divisions in the Indian sub-continent, which might be spread across the country. But for the customer all these divisions spread across the world coalesce to have one identity as boundary less organisation. Also the nature of collaborations that the software companies enter into demand special organisational boundaries, combining both the collaborating organisations located at different places.

**Virtual Organisations:** Some software organisations have virtual organisations which are those with no physical structures, no people sitting at one place, and no office. There are some software organisations existing on world wide web with no physical office and people maintain from their lap-top computers.

The concept of virtual office has become more popular with software companies and it is further explained by a director –marketing of a medium software company in the study:

“as a growing company we can not have our business development offices in all major cities in India and thus we have virtual offices with only people (business development managers) working for us. What they have is a lap-top computer and a mobile phone. From corporate office we keep in touch with them (BDMs) through e-mails and phones for day-to-day business transactions, . . .”
4.4 Functional Changes

The functions of the companies also change based on technologies.

**High Division of Labour:** Software organisations have got very high division of labour with every person catering to a specialised kind of job which requires high degree of skill and expertise. Software development demands high degree of specialisation and thus requirement for higher level of co-ordination.

**Revised Functions:** In response to the changes in organisational structures there has been change in functions in terms of additional job responsibilities, job redesign, job enrichment, change in the positions, cross-functional responsibilities, core competency, job content, etc.

**Changing pattern of the communication:** Software organisations demand fast and effective communication system and more over the modern technology has facilitated this process by way of electronic mail. E-mail has changed the way people communicate within and outside organisations.

Changes at **Organisational** Level: The following broad changes can be observed in a software organisation when compared with an industrial manufacturing organisation:

- Personnel management changed to Human Resource management
- Continuous training needs to keep in pace with the changing technology
- Changes in the employment patterns like consulting on project specific employees, contractual employees etc.
- Changing work culture (job security, working hours, time consciousness, quality consciousness, etc)
- Change in line & staff functions
Chapter 4: Organisational Profile

- Decentralization of authority,
- Change in the decision making process and time
- Increased productivity, performance, and efficiency
- Dehumanization of work and the work culture

These changes are not only because of impact of technology but also due to some other influential factors at global level. This has been expressed by an entrepreneur (director) who owns a software company (included in the study) that deals with legacy-systems maintenance in European countries:

"there are some major changes happening across the globe that is influencing Indian software companies viz., free movement of capital making capital easily accessible; technology being no longer the preserve of a few companies; unrestricted flow of information making information available to all; globalization creating an all-important quality standard and the world economy increasingly becoming service-oriented"

Note: The respondents were asked to give ranking or priority to the responses to questions they have given in the interview. Though the respondents were asked to give five ranks / priorities, most of them could give maximum of three and thus top three ranks / priorities were taken into consideration for the purpose of analysis.

4.5 Nature of Business Activities:

Most of the American and European companies collaborate with Indian software companies primarily because of the strength of software development that the Indian companies possess. Another significant factor that attracts foreign collaborating companies is that in terms of the nature of business, the
Indian software companies are flexible enough to cater to their changing needs. This was emphasized by a knowledgeable person (who worked in USA for 5 years) of an offshore development company:

"I was told by many of my customers in the United Sates of America that they prefer Indian software companies when compared with other country companies primarily because of flexibility that they have in terms of changing the business nature & activities in response to their needs or their market needs."

The sample companies were asked to mention their priorities in terms of nature of business. Maximum number of companies (81.3%) have software development as their first priority, followed by outsourcing (15.6%) and only one company (3.2%) with software services as their first priority. In the second priority 40.6% companies have mentioned software services, 28.13% as outsourcing, 18.75% as software development, 6.25% as business development followed by one each (3.2%) in research & development and professional services. Where as in third priority maximum number of companies (43.8%) are involved in software services followed by professional services (37.5%), outsourcing (15.6%) and there is only one company (3.2%) in business development. (see Chart 4.1)
4.6 **Software Development Areas of the Companies in the Study**

Every software company has core competencies in terms of specific software development area and they take up projects only in those areas. These core competencies go along with the brand name of the company and the customers evaluate the software companies based upon the factors like - number of similar projects executed and number of people who have similar project experience. This core competency has two facets and was explained by a business development manager (BDM) of an ERP company in the study.

"our customers look for experience in the areas where they want us to develop the software. Past projects executed and the people who have worked in that area matters for our customers. Our concerns are - the reusable components available with us and the people who have worked in similar projects"
Software Areas are the technical segments in which the companies are offering technical services like: Enterprise-wide Solutions, Enterprise Resource Planning (ERP), Internet & Web based Solutions, E-commerce & E-business Solutions and Packaged Software Products. (This technical segmentation is followed by default by industry association like Nasscom & STPI as an industrial standard) (Nasscom, 2002).

The companies were asked to prioritise their technical service areas according to the above technical segments. Forty-seven percent of the companies have mentioned enterprise wide solutions as their first priority followed by 21.9% offering internet & web solutions, whereas the same internet & web solutions is expressed as second and third priorities by 34.4% and 37.5% of the companies respectively. Enterprise wide solutions were reported as second and third priorities by 25% and 12.5% of the companies respectively. Similarly, packaged software products was mentioned as first priority by 12.5% of the companies and as second and third priority by 18.8% and 12.5% of the companies. E-commerce and E-business solutions were the first priority in the case of 9.37% of the companies. (see Chart 4.2)
4.7 Vertical Market Segments

Vertical Areas are industry specific segments to which the software companies offer services. These areas are the nature of business of their customers. Like software development areas (known as horizontal segments), the industry specific segments also go with the company brand name. Nasscom (2000) has adopted common vertical market segments like - enterprise wide solutions; manufacturing; finance, banking & insurance; government & public sector under takings; service sector including - hospitality, entertainment, health, courier & cargo, media, transportation etc and other miscellaneous & minor segments. Every software company has its own vertical segments which it caters to and there are some factors that brand a company with a particular industry segment and some of them include - the functional and technical experience of the company; the number of projects executed in that segment; the number of functional consultants with
relevant industry experience; documented experience of the company about the relevant
government policies, legal & regulatory procedures, industry specific practices & standards.

The companies were asked to prioritise their target vertical market areas. The
majority of companies in the study reported that they cater to services market segment
which includes hospitality, entertainment, health, courier & cargo, media, transportation etc.
Among the 32 companies 11 (34.4%) have expressed series as their first priority, 10 (31.3%)
as second priority and 5 (15.6%) as their third priority. General enterprise market is
expressed as the first priority by 9 (28.13%) companies and by 11 (34.4%) companies each
as second and third priorities. Interestingly an equal number of companies 6 (18.8%) have
expressed finance, banking and insurance market segment as their first, second and third
priority. Very few companies have targeted other priority areas like govt., public sectors and
manufacturing. (see Chart 4.3)

Chart 4.3: Vertical market segments targeted by the software companies
4.8 Customer Destination

Most of the Indian software companies export software to other countries and they establish collaborations in those countries. Customer destination of software companies in Andhra Pradesh (total study area) during 2000-2001 were predominantly to the US and Canada, accounting for 69 percent of the total exports and the remaining 31 % software exports were made to countries like the UK, the Netherlands, Japan, Europe, Australia, Asian Countries, Middle East, etc (STPH, 2001). These figures almost match with that of Indian exports to US and Europe followed by other countries. When asked "why most of the Indian companies have their customers in USA, a senior vice-president of a software services company (that has maximum customers in USA) explained the reasons:

"the obvious reason being the foreign exchange value that we get from USA which is in multiple of 45. That is for every man-day that earn from an India customer, if spent for a US customer will fetch us 45 times more. There are some other reasons like - US being the biggest software market, customers are more professional with time & quality consciousness, and finally the trade between India & USA in software industry is well established. You know that is a beaten track with proven results."

Almost all companies in the sample export software to different countries across the globe and they have their collaborating companies in those countries to which they export the software. Twenty-six (81.25%) companies in the study have their customers in United States and Canada followed by 4 (12.5%) in Middle-East & Africa and 2 (6.25%) in Europe as their first customer destination. In the second customer destination 23 (71.9%) companies
have European countries, followed by 5 (15.6%) as United States & Canada (15.6%); 2 (6.25%) as Australia and Newzealand and 2 (6.25%) as Middle East & Africa. As the customer destination 22 (68.75%) companies have their customers in Asia Pacific & Japan followed by 5 (15.5%) in Europe and 3 (9.3%) in other countries. (see Chart 4.4 & 4.5)

Chart 4.4: Customer destination of the software companies
4.9 Age of the Companies

Age of the organisation is defined as the number of years the company has been in existence and was calculated from the difference in the years between 2001 (the base year for the present study) and the year of establishment of the organisation. The minimum age of the organisation in the sample is 1 year, maximum 14 years and the mean age of the sample is 5.4 years. The age of an organisation helps them to get more projects, attract more talented people, accumulate technical knowledge & experience, gain more understanding of vertical market segments and finally gain more stability. The same view was expressed by a promoter / director of a product development company:

"in the software industry our stakeholders, customers, employees, & investors value companies with long years of existence and track-record."

Chart 4.5: Customer destination and their priorities
The age of the organisations has been classified into four groups for the convenience of the present study. The first group consists of organisations with less than 2.5 years of age, second group from 2.6 to 5 years, third group 5.1 to 7.5 years and the fourth group consists of organisations with more than 7.6 years of age.

There are three (9.3%) companies in the first age group having less than 2.5 years of age; 15 (46.87%) companies in the second age group i.e., 2.6 to 5 years; 10 (31.25%) companies in the third age group i.e., 5.1 to 7.5 years and 4 (12.5%) companies in the fourth age group with more than 7.5 years of existence. (see Chart 4.6)

Chart 4.6: Age distribution of the software companies

4.10 Human Resources:

Human Resources are an important aspect of software organisations and it is the people who make or break the organisations. The present section describes the human
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resource profile of the software organisations which includes classification of employee
groups in to technical and managerial categories, growth of employees and proportionate
strength of technical and managerial employees.

Software industry has high value and regard for people and this can be established
from some of the statements made by HR managers of different software companies
included in the study:

"The strategic use of human resources will differentiate better-run firms
from the rest"

"Organizations that have world-class ambitions will need to nurture
knowledge workers"

"The only thing that distinguishes your company from another is the quality
of your people"

"Business today is built, and grows around human resources. So, people are
the key resource"

"It is the rising demand from customers that is making people increasingly
important"

"All corporate strengths are dependent on- and centred around - human
resources"

"Easy access to technology has made your people the differentiating factor
in today's environment"

"To reach new frontiers of knowledge, people of high caliber and
understanding are essential"

A multi-national corporation with its head-quarters in Hyderabad with more than
7000 employees across the globe has "Our people make the difference" as the punch line
along with the corporate brand name. In the recent past many companies have started
including human resource profiles in the company annual reports and this trend is significant
in the software industry only. The following details from the annual report of a multi-
national software services company demonstrates the value for human resources as reported
in the company’s annual report.

The employee strength at InfoTech as on March 31, 2000 is 1002 as compared to
951 as on March 31, 1999.

<table>
<thead>
<tr>
<th>Age Particulars</th>
<th>No. of Associates</th>
<th>% to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 and less</td>
<td>547</td>
<td>54.59</td>
</tr>
<tr>
<td>Between 25 and 29</td>
<td>378</td>
<td>37.72</td>
</tr>
<tr>
<td>Between 30 and 34</td>
<td>53</td>
<td>5.29</td>
</tr>
<tr>
<td>Between 35 and 39</td>
<td>10</td>
<td>1.00</td>
</tr>
<tr>
<td>40 and above</td>
<td>14</td>
<td>1.40</td>
</tr>
<tr>
<td>Total</td>
<td>1002</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The academic background profile of Associates as on March 31, 2000 is as follows:

<table>
<thead>
<tr>
<th>Academic Background</th>
<th>No. of Associates</th>
<th>% to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.Ds</td>
<td>6</td>
<td>0.60</td>
</tr>
<tr>
<td>Engineering / Sciences</td>
<td>924</td>
<td>92.22</td>
</tr>
<tr>
<td>Commerce</td>
<td>72</td>
<td>7.18</td>
</tr>
<tr>
<td>Total</td>
<td>1002</td>
<td>100.00</td>
</tr>
</tbody>
</table>


The number of employees employed by an organisation is classified and grouped in
to four different categories viz., less than 24 people, 25-99, 100-199 & more than 200
people. Among the companies in the sample, 17 (53.13%) companies employed 25-99
people at the time of study, followed by 8 (25%) companies that employed 100-199 people,
5 (15.6%) companies employed more than 200 people and only two (6.25%) companies had
less than 24 people at the time of study. Among the technical employees 12 (37.5%)
companies had less than 24 and 12 (37.5%) companies had 25-99 technical people followed
by 3 (15.6%) that had more than 200 technical people and 3 (9.37%) with 100-199 technical people at the time of study. (see Chart 4.7)

Chart 4.7: Employee groups

Total number of employees ranged from a minimum number of 20 to a maximum of 9300 employees. Similarly number of technical people ranged from 16 to a maximum of 7616 and the number of managerial people ranged from 4 to a maximum of 1684. The mean number of technical people is 378.88, the mean number of managerial people is 70.35 and the mean total number of people is 449.22. Thus the ratio of technical people to managerial people is 83:17.

Companies regularly recruit people as part of their growth plans. For the period 1999-2000 to 2000-01 the minimum growth among companies in the sample in terms of total employees is 10.61% and the maximum growth is 566.67% whereas in the case of technical people it ranged from minimum 11% to a maximum of 700% and for the managerial people it ranged from 9% to 300%. On the whole for the period from 1998-99
to 1999-2000 the average growth in terms of number of employees was 56.21% and for the period 1999-2000 to 2000-2001 the growth was 69.38% for the sample companies included in the study. (see Chart 4.8)

![Chart 4.8: Average Growth of People in the Year 2000 and 2001](image)

4.11 Turnover

The size of the company is defined based upon the total turnover of the company during the base year 2000-2001. The companies in the sample are classified into 3 groups based on their annual turnover viz., Small companies- that had less than 15 million Indian Rupees turnover, Medium size companies that had from 51 to 200 Million Indian Rupees turnover and Big companies that had more than 200 million Indian Rupees turnover during the base year 2000-2001. Out of the total 32 companies studied, 16 (50%) companies were small, 11 (34.4%) companies were medium and 5 (15.6%) companies were big at the time of the study. (see Chart 4.9)
The average turnover of small companies grew from Rs.5.73 million to Rs.11.22 million from 1998-1999 to 1999-2000 and to Rs. 16.3 million by 2001. The average growth rate in these periods of the small companies was 489.1% and 146.99% respectively. The average total turnover of the medium companies in the financial year 1998-99 was Rs.34 million and it grew to Rs.58.8 million by 1999-2000 and it reached Rs.91.9 million by 2000-2001. The medium companies had a growth rate of 423.77% from 1998-99 to 1999-2000 and the growth rate fell to 217% by 2000-2001. The average turnover of the big companies was Rs.999.06 million in 1988-89, Rs. 1620.36 million in 1999-2000 and Rs.2972.72 million in 2000-2001. The big companies had a growth rate of 153.07% for the period 1998-1999 to 1999-2000 and 167.45% for the period 1999-2000 to 2000-2001. (see Chart 4.10)
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Majority of the companies in the sample earned their maximum revenues from software exports which was as high as 100%. The average ratio of Domestic vs Exports turnover was around 21:79 i.e., on an average companies earn 79% of their earnings from software exports and only 21% is from domestic market. The minimum turnover is Rs.3.6 million and maximum is Rs.12467.1 million and the mean turnover is around Rs.504.31 million where as in the exports sector the minimum earnings are Rs.2 million, maximum Rs.11921.04 million and the average Rs.468.45 million. The domestic sector had minimum earnings of Rs.0 million, maximum Rs.546 million and the average of Rs.35.87 million.

4.12 Correlation Analysis:

While studying the organisations from the systems perspective it is pertinent to look at the relationships among the variables like age of the organisation, number of people and the turnover of the organisation. At the outset it is evident that there exists a correlation
between age, people and turnover and the following correlation matrix demonstrates the strength of correlation among these variables.

**Table 4.2: Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>People</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People</td>
<td>0.597641</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Turnover</td>
<td>0.53896</td>
<td>0.981546</td>
<td>1</td>
</tr>
</tbody>
</table>

It is clear from the Table No. 4.2 that the people and the turnover of an organisation are positively correlated with each other with strength of 0.982. This indicates that the more the number of people in general and technical in particular the more is the turnover and the corollary is that the turnover of an organisation is directly proportional to the number of people it employs. Interestingly there is no strong correlation between the turnover and the age of the organisation (the strength is only 0.539) which indicates the future of technology based organisations in the IT industry. This point is also proved from the sample organisations where companies with less age had more turnover when compared with companies with more age and less turnover. Similarly age and people are not very much correlated with a strength of 0.598, this again indicates another characteristic feature of software organisations where in people are the assets for the organisation and are not related to the age of the organisation. That means if an organisation is old enough it might have more number of people and conversely organisations with more number of people need not be old. Finally the same argument holds good for the relationship between age and turnover.
4.13 Age and Size of the Companies in the Study:

Chart 4.11: Age and Size of the Companies in the Study

The above table helps in strengthening our reasoning on correlation among age, and turnover. There are three small companies (9.3%), and no medium and big companies in the less than 2.5 years age group. In the 2.6 to 5 years age group there were 2 (6.25%) medium and 13 small (40.6%) companies. In the next group of 5.1 to 7.5 years there were 2 (6.25%) big and 8 (25%) medium companies and in the final group of more than 7.5 years age there were 3 (9.37%) big and 1 (3.13%) medium company. From this analysis it is clear that the more the age the bigger the company is and not the converse. (see Chart 4.11)
4.14 Age of the Companies and Human Resources

Table No 4.3: Age and People in the Companies

<table>
<thead>
<tr>
<th>Age of the Companies</th>
<th>&lt;24 People</th>
<th>25-99 People</th>
<th>100-199 People</th>
<th>&gt;200 People</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New (less than 2.5 yrs)</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Marginal (2.6-5 yrs)</td>
<td>0</td>
<td>14</td>
<td>1</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Middle Aged (5.1 - 7.5 yrs)</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Old (more than 7.5 yrs)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>17</td>
<td>8</td>
<td>5</td>
<td>32</td>
</tr>
</tbody>
</table>

Table No 4.3 illustrates the relationship between the age of the organisation and the total number of people employed. In the less than 2.5 years age group there were 2 (6.25%) companies with less than 24 employees and one (3.13%) company with 24-99 employee group. In the 2.6-5 years age group there were 14 (43.8%) companies with 24-99 age group and one (3.13%) company with 100-199 employee group. In the 5.1-7.5 years age group there were 2 companies (6.25%) with 24-99 employee group, 7 (21.9%) companies with 100-199 employee group and one (3.2%) company with more than 200 employee group. Finally in the more than 7.5 years age group all the 4 (12.5%) companies having more than 200 employee group. From this it is very clear that the age of the company and the number of people are positively correlated.
### Size of Companies and Human Resources

#### Table No 4.4: Size of the Company and Total Employee Groups

<table>
<thead>
<tr>
<th>Size of the Company</th>
<th>Total Employee Groups</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;24 people</td>
<td>25-99 people</td>
</tr>
<tr>
<td>Big</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medium</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Small</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>17</td>
</tr>
</tbody>
</table>

Note: A Small company is one that had turnover of less than 10 million Indian rupees and having less than 24 employees; a Medium company is one that had turnover ranging from 11 to 100 million Indian rupees and having employees between 25 to 99; and a Big company is one that had more than 101 million Indian rupees turnover and having more than 100 employees during the financial year 2000-01.

Table No 4.4 describes the relationship between the size of the company and number of people. In less than 24 employees group there were only 2 small companies (6.25%). In the 25-99 employee group there were 13 small companies (40.6%) and 4 medium companies (12.5%). In the 100-199 employee group there was one small company, 6 medium companies (18.8%) and one big company. In the more than 200 employee group, there was only one medium company and 4 big companies (12.5%). From this it is very clear that bigger the size of the company the more the number of people.
Size of the Companies and Employee Qualification Profile

There is a clear trend in the industry that medium and big companies attract talented and qualified people than the small companies. This trend can also be observed among the sample companies by analysing the following table.

Chart 4.12: Technical Employee Qualifications and Average Number of People

The qualification profile of the technical employees in the organisations ranges from general graduates to engineering graduates and MCAs (Master of Computer Applications). Average (number of people by number of companies) number of general graduates (includes - Bachelor of Science, Bachelor of Commerce & Bachelor of Arts) engineering graduates (all branches of engineering), MCAs (Master of Computer Applications), MBAs (Master of Business Administration), & others (includes - Charted Accountants & Doctorates) were calculated for big, medium & small companies. The average number of general graduates in small companies were 38.21 when compared with 19.32 in medium and 17.86 in big
companies. The average number of engineering graduates were 51.66 & 52.51 in big & medium companies respectively and was more when compared with small companies where the average was 38.36. But there was an exception to the average number of MCA graduates who were employed uniformly in all big - 17.47, medium - 23.19 and small - 21.77 companies. There were very few MBAs employed in these companies and also people with other qualifications. (see Chart 4.12)
Similarly, the qualification profile of the management employees is very simple with only general graduates (includes - Bachelor of Science, Bachelor of Commerce & Bachelor of Arts) and MBAs (Master of Business Administration). The average number of general graduates in big companies were 73.3 when compared with 62 in medium and 85.77 in small companies. The average number of MBAs employed in the small companies were 11.11 when compared with 31.79 in medium and 20.86 in big companies.

A clear trend emerges in the ratio of technical vs managerial employees employed in the software organisations. On an average big companies employ around 90% of the technical people and 10% managerial when compared with medium companies employing 80% technical and 20% managerial, small companies employing 77% technical and 23% managerial. (see Chart 4.13) This explains that big companies are managing with less managerial staff than medium and small companies. This is because the small and medium
companies would have to maintain certain minimum number of managerial positions regardless of the strength of technical team.

4.17 Summary of Findings

There is a contrast which can be observed in software organisations from that of manufacturing. Software organisations are distinct in the sense that they have few levels in their hierarchy and thus have flat organisational structures when compared with the industrial manufacturing organisations. The software organisations are compelled to evolve and disband temporary organisational structures based upon the situations. Software organisations are known for creating special organisational units or groups based upon the situation and market conditions. The organisational boundaries of software companies are redefined and in most cases, they extend beyond the geographical boundaries. Some software organisations can have virtual organisations which are those with no physical structures, no people sitting at one place, and no office. Software organisations have got very high division of labour with every person catering to a specialised kind of job which requires high degree of skill and expertise. In response to the changes in organisational structures mere has been change in functions in terms of additional job responsibilities, job redesign, job enrichment, change in the positions, cross-functional responsibilities, core competency, job content, etc.

With the new organisation structures, software companies in the study are found to have good progress which ultimately helps them in technology development. Majority of the software companies in the study cater to the US market (81.25%) offering enterprise-wide solutions (47.0%) targeted at the services (includes - hospitality, entertainment, health,
courier & cargo, media, transportation etc.) in vertical market (34.4%). The minimum age of the organisation in the sample is 1 year, maximum 14 years and the mean age of the sample is 5.4 years. Also majority (47%) of the companies in the study are in the 2.6 to 5 years age group.

Total number of employees ranged from a minimum number of 20 among the sample organisations and a maximum of 9300 employees. Similarly number of technical people ranged from 16 to a maximum of 7616 and the number of managerial people ranged from 4 to a maximum of 1684. The mean number of technical people is 378.88, the mean number of managerial people is 70.35 and the mean total number of people is 449.22. Thus the ratio of technical people to managerial people is 83:17.

There exists a correlation between age, people and turnover and the correlation analysis demonstrates the strength of correlation among these variables. People and the turnover of an organisation are positively correlated to each other with strength of 0.982. This indicates that the more the number of people in general and technical in specific the more is the turnover and the corollary is that the turnover of an organisation is directly proportional to the number of people it employs. Interestingly there is no strong correlation between the turnover and the age of the organisation (the strength is only 0.539) which indicates the future of the technology based organisations in the IT industry. This point is also proved from the sample organisations where companies with less age have more turnover when compared with companies with more age and less turnover. Similarly age and people are not very much correlated with a strength of 0.598, this again indicates another characteristic feature of software organisations where in people are the assets for the
organisation and are not related to the age of the organisation. That means if an organisation is old enough it might have more number of people and conversely organisations with more number of people need not be old. Finally the same argument holds good for the relationship between age and turnover.