CHAPTER 6

HMT'S ANCILLARY DEVELOPMENT EFFORT

The machine tool factory of Hindustan Machine Tools (HMT) Ltd. in Bangalore is probably the first large enterprise - and certainly in the public sector - to consciously promote sub-contracting in India as early as the late fifties. A detailed examination of this pioneering effort would, therefore, have not only value in itself but also have a direct bearing on our study on Bangalore. Moreover, since the HMT experience is nearly three decade old, a careful assessment of it could prove to be insightful in understanding the growth of sub-contracting in Indian industry.

However, it needs to be stated at the outset that unlike in other case studies, information available for HMT is relatively limited as the management did not make available any written records. Therefore, most of the evidence presented here was gathered through extensive interviews, which could be conducted only after the prior permission of the general manager.¹

Section 1

The setting

Introduction to the firm:

Hindustan Machine Tools Ltd., a Central Government public undertaking was incorporated in 1953 under the Companies Act in Bangalore to manufacture machine tools. Barring some isolated attempts, the machine tool industry in the organised sector in India at that time was in its infancy.²

The firm entered into a technical - initially also financial - collaboration with

¹. Unlike other public sector undertakings HMT appears to be a very tightly controlled organisation extremely sensitive to the public image of the company. The management is very cautious in parting with information even for academic work.

². Hysore Kirloskar (Harihara), Cooper Engineering (Pune) and Praga Tools (Hyderabad) were known to be large scale machine tool manufacturers established before Independence.
Orlikon Machine Tool Works, Burhle and Company, Zurich. The Bangalore plant commenced production in 1956, rolling out the first batch of "H-22" high speed precision general purpose lathes. Unlike most other public enterprises in India HMT, within a short time, earned the reputation of being a quality conscious producer of machine tools. The firm also made profits from the very first year of commencement of production as there was a considerable domestic demand for its products secured by a near total protection from imports. HMT stepped up output ahead of its targets by introducing multiple shifts, emergency recruitment of additional workforce and provision of increased training facility. The capacity was further expanded by setting up a second factory in Bangalore designed to double the output [this is why the Bangalore plant is officially referred to as HMT (I&II)] financed entirely from its internal resources. As a result HMT achieved the Second Five Year Plan target three years ahead of schedule.

Meanwhile, other major "families" of machine tools were added to the firm's product range by entering into fresh technical collaboration agreements with a number of European manufacturers like Fritz Werner for milling machines, Herman Kolb of Kochin (both of West Germany) for drilling machines, and so on.

HMT made its first 'unrelated' diversification into manufacture of wrist watches in 1961, with an installed capacity of 3.6 lakh pieces, in technical collaboration with the Citizen Watch Company Ltd. of Japan. Keeping in view the projected demand for machine tools in the perspective plan, HMT had drawn up a large expansion programme of setting up three more machine tool factories in different locations. Chronologically the plants at Pinjore (Haryana), Kalamassery (Kerala) and Hyderabad were established between 1960 and 1965. Very interestingly the expansion also aimed to secure advantages of specialisation among the various plants. In other words, each...

3. In 1958 financial collaboration with Orlikons was terminated and the shares were transferred to the Government of India.

4. Relatively small size of firms and a high degree of specialisation is a characteristic feature of machine tool industry world over.

5. Internationally machine tool manufacturing is a highly specialised industry where each firm does not produce more than one or two family of machine tools. HMT apparently attempted to secure advantages of specialisation by putting up specialised plants.
plant was to specialise in one or two family of machine tools: Kalamassery in lathes, Pinjore in milling machines and Hyderabad in metal forming and special purpose machine tools. Although the Bangalore unit now manufactures large sized drilling machines, this plant appears to have been retained by the firm as its "nursery bed" for developing newer machine tools with the in-house R&D support.

Quite contrary to the projections, the firm was faced with a severe and unexpected demand recession around the mid-sixties. As this more or less coincided with the completion of the three new factories HMT was saddled with large unsold stocks and enormous excess capacity. Being a public enterprise it could not retrench workers to reduce its costs. Thus it appears, ironically, HMT had to pay a heavy price for its rapid technology absorption and foresight in laying a firm foundation for the growth of machine tool industry in the country. To quote HMT's annual report of 1965-66:

"...industrial growth suffered a serious recession which had a marked impact on the engineering industry. We in turn shared the adverse fate. Demand for machine tools remained greatly diminished and although there is now some sign of revival, it is too early to say that this trend will be sustained. An endeavour is being made to make a long term appraisal of the demand, but a realistic picture would emerge after a close study of the formulation of the Fourth Plan and the trends of implementation."

However, realising the risk of concentrating on a single product in a very uncertain market, HMT embarked, over the subsequent decade, on a pragmatic diversification into a wide range of machinery manufacturing in an attempt to insulate each plant against cyclical demand pattern in the machine tool industry. In a written reply to the Committee on Public Undertakings (COPU) HMT's management said:

"If we go back to the history of the company after 1966-69 recession, we had certain major units located at different geographical centres, that is, Bangalore, Pinjore, Kalamassery and Hyderabad. Instead of trying to insulate the whole company from the effects of variation in the demand, our effort was to make each geographical location as stable as possible. Accordingly we went in for diversification in the machine tool factory at Bangalore; at Pinjore we went in for tractors, at Kalamassery we went in for printing machines, and at Hyderabad we went in for lamps."[94th report, 1983-84 7th Lok Sabha.]

6. Very interestingly, in 1963-64 taking into consideration the projected demand in the Fourth Plan, HMT had envisaged setting up of five more factories which, however, did not materialise.

7. Given the strong domestic orientation of the firm, it probably did not seriously consider exports as a way out of the recession. However the firm promoted a subsidiary in the seventies, HMT International Ltd., to enter into the world market.
Though the strategy enabled the company to cope with the relative stagnation in the market for machine tools and safeguarded its profits, the fact that the performance of various newer lines of manufacture has been quite uneven, except for the watch division which is said to have been the main source of profits. As a result of the large scale diversification the company came to be known in the seventies as a multi-product, high technology public enterprise. To signify these developments the company's official name was changed in 1978 from "Hindustan Machine Tools" to "HMT Ltd." The firm's attempts at exporting machine tools were not particularly successful. As on 1983-84, HMT had seven factories making watches or watch components. The firm promoted a large number of small scale watch assembly units in various parts of the country. Using its financial, technical and managerial resources HMT revived some sick manufacturing firms in the seventies. For example, Machine Tool Corporation of India, Ajmer in Rajasthan was merged with HMT in 1975 and manufacture of "K-137" grinding machine was transferred there. Indo-Nippon Ball bearing Co Ltd, Hyderabad was also revived and later merged with HMT.

Table 6.1 (a): Plants of HMT Ltd.

<table>
<thead>
<tr>
<th>Plant</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMT (I&amp;II)</td>
<td>Bangalore</td>
</tr>
<tr>
<td>HMT III</td>
<td>Pinjore</td>
</tr>
<tr>
<td>HMT IV</td>
<td>Kalamassery</td>
</tr>
<tr>
<td>HMT V</td>
<td>Hyderabad</td>
</tr>
<tr>
<td>HMT VI</td>
<td>Ajmer</td>
</tr>
<tr>
<td>HMT Watch factory I &amp; II</td>
<td>Bangalore</td>
</tr>
<tr>
<td>WATCH Factory III</td>
<td>Srinagar</td>
</tr>
<tr>
<td>Watch factory IV</td>
<td>Tumkur</td>
</tr>
<tr>
<td>HMT Division</td>
<td>Bangalore</td>
</tr>
<tr>
<td>Dairy machinery plant</td>
<td>Aurangabad</td>
</tr>
</tbody>
</table>

Although HMT does not provide information on profitability of each product line, it is widely believed in the HMT management that bulk of the profits of the firm are on account of the watch division.
Table 6.1: Divisions of HMT Ltd.

<table>
<thead>
<tr>
<th>Division</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Tools</td>
<td>Bangalore</td>
</tr>
<tr>
<td>Machine Tools</td>
<td>Pinjore</td>
</tr>
<tr>
<td>Machine Tools</td>
<td>Kalamassery</td>
</tr>
<tr>
<td>Machine Tools</td>
<td>Hyderabad</td>
</tr>
<tr>
<td>Press division</td>
<td>Hyderabad</td>
</tr>
<tr>
<td>Machine tools</td>
<td>Ajmer</td>
</tr>
<tr>
<td>Die casting</td>
<td>Bangalore</td>
</tr>
<tr>
<td>Printing machines</td>
<td>Kalamassery</td>
</tr>
<tr>
<td>Horological machine division</td>
<td>Bangalore</td>
</tr>
<tr>
<td>Dairy Machinery</td>
<td>Aurangabad</td>
</tr>
<tr>
<td>Watch factory</td>
<td>Bangalore</td>
</tr>
<tr>
<td>Watch factory</td>
<td>Srinagar</td>
</tr>
<tr>
<td>Watch factory</td>
<td>Tumkur</td>
</tr>
<tr>
<td>Watch assembly</td>
<td>A number of locations</td>
</tr>
<tr>
<td>Tractor</td>
<td>Pinjore</td>
</tr>
<tr>
<td>Lamps</td>
<td>Hyderabad</td>
</tr>
</tbody>
</table>

Source: HMT, Ltd.

Table 6.2: Share of different products (and product groups) in the sales of HMT (in per cent)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Machine tools</td>
<td>58.2</td>
<td>58.0</td>
<td>36.2</td>
<td>42.7</td>
</tr>
<tr>
<td>2. Watches</td>
<td>12.4</td>
<td>28.0</td>
<td>35.0</td>
<td>32.0</td>
</tr>
<tr>
<td>3. Tractors</td>
<td>29.4</td>
<td>14.0</td>
<td>23.1</td>
<td>21.6</td>
</tr>
<tr>
<td>4. Lamps</td>
<td>-</td>
<td>-</td>
<td>5.2</td>
<td>3.4</td>
</tr>
<tr>
<td>5. Dairy machines</td>
<td>-</td>
<td>-</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: HMT, Ltd.

As a result of the large scale diversification the share of machine tools in its sales came down to about 40 per cent in 1983-84. [Table 6.1 (a), (b) and 6.2] HMT had a turnover of Rs 332 crores in 1983-84 with workforce of about 26,000 persons.

While HMT's growth can probably be considered noteworthy both in physical and financial terms in comparison with most other public enterprises in India, the performance of the machine tool plant at Bangalore appears to have been modest. Its output has increased in money terms, from over Rs. two crores in 1959 to about Rs 30 crores in 1981-82 and about Rs 37 crores in 1983-84. One does not know how much it amounts to in real terms.9 However as the value of the output and the price index

9. We have no idea of the profitability of the Bangalore plant as the company's annual report does not give any break up of plant level performance. None of the persons we interviewed were willing to discuss the financial health of the Bangalore plant.
for machine tools have risen by about the same magnitude, 196 per cent and 190 per cent respectively, there are reasons to believe that the growth in real terms between 1971-72 and 1981-82 was negligible.\textsuperscript{10}

There is no denying that the Bangalore plant being the 'mother' unit, has faced peculiar problems. As noted earlier, it has been retained as a incubator where a product line is initially developed before being transferred to one of the other plants. Continuous change in the product-mix of the Bangalore plant may have caused poor capacity utilisation (both of men and machines) - which are now quite obsolete. The problem appears to be getting accentuated with the introduction of latest technology that is currently underway.\textsuperscript{11}

Table 6.3 Employment in HMT (I&II)

\begin{tabular}{|c|c|c|c|}
\hline
Year & Workmen & Supervising and & Total \hline
1975 & 4207 & 1118 & 5325 \hline
1976 & 4339 & 1168 & 5507 \hline
1977 & 4375 & 1109 & 5484 \hline
1978 & 4411 & 1078 & 5489 \hline
1979 & 4240 & 1208 & 5448 \hline
1980 & 4261 & 988 & 5249 \hline
1981 & 4164 & 1008 & 5172 \hline
1982 & 4041 & 1065 & 5106 \hline
1983 & 3862 & 1122 & 4984 \hline
\hline
\end{tabular}

Source: HMT (I&II), Bangalore

The difficult situation faced by the Bangalore plant is reflected in the workforce. Employment in the plant which was steadily increasing up to 1968 or so, stagnated thereafter. Moreover, the number of persons employed has steadily come down from about 5500 employees in 1976 to a little less than 5000 employee in 1983. As the age profile is at present skewed in favour of older employees and the manage-

\textsuperscript{10} However, the "real" growth may have occurred in so far as the extent of value added has risen at a faster rate than gross output. The Bangalore plant has in fact been increasingly producing relatively sophisticated items with much greater value added content.

\textsuperscript{11} We saw the installation and operation of the latest 'CNC' plano-miller installed with an investment of Rs. two crores. This machine would replace 40 types of general purpose machines. Workers told us that with the introduction of this machine they had very little work.
ment policy is to avoid fresh recruitment (especially of workers) total employment in all likelihood would have further declined after 1983.

According to the management the plant has excess labour, in relation to the output, which it would like to reduce but cannot retrench them due to policy and legal constraints. Moreover, HMT's equipment is also old and obsolete which the management would like to discard. The proposed novel ancillary scheme WETAX, discussed later in this chapter, is an attempt to overcome the peculiar problem.

**Changing structure of machine tool industry:**

As the firm was operating in a totally protected market, it was able to quickly produce a wide range of machine tools. It enjoyed more or less a monopolistic position as the firm produced distinctly superior general purpose machine tools with foreign collaboration. That the machine tool industry faced a severe and prolonged recession around the mid-sixties is a well accepted proposition. (Ahluwalia, 1985). The recession is attributed mainly to major cut back in public investment after the mid-sixties, especially in railways. Moreover, demand for machines remained sluggish for the next decade or so.

However, during this period a number of other changes seem to have occurred in the industry. Competition in the industry, in the organised sector, increased and the growth of the small scale sector seems to have been fairly significant. Moreover, as a result of relatively liberal licencing and technology imports a number of firms in the private sector began to pose competition to HMT's market for high speed, precision general purpose machine tools. A conscious effort to promote small scale sector after the mid-sixties with fiscal and other incentives seem to have further contributed to the competition in the already relatively stagnant markets for machine tools. As the prices of private sector manufacturers were lower than

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12. Supply of technology for general purpose machines improved perhaps on account of changing international demand in favour of numerically controlled machine tools.

13. Very interestingly while the HMT's Hyderabad plant lay idle, licence was granted to TELCO to put up a captive machine tool plant for special purpose machines. Mr. Mathulla, Chief of HMT in the fifties, promoted a firm in private sector, Bharat Fritz Werner, in Bangalore to manufacture smaller sized milling machines.
HMT's (due to its higher wages and overheads) the firm steadily lost its premier position in the market segment for large volume standard machine tools.

HMT's diversification into sophisticated machine tools having higher value added and other lines of manufacture could partly be attributed to the changed market conditions. HMT's much publicised transfer of some of its well established products like "LT20" lathe to Quilon District Engineering Technicians Industrial [Workshop] Cooperative Society Limited and "LB17" lathe to Chamundi Machine Tools, Mysore (a Karnataka Government joint sector unit) were probably attempts at discarding relatively low profitable items in the face of growing competition.

Despite these changes in market condition HMT's share continued to be very substantial, ranging from 48 per cent in machine tool output in the organised sector in 1967 to 44 per cent in 1986 (Table 6.4). The real challenge for HMT, however, came after 1979 with import liberalisation in the face of increased demand for sophisticated items like the CNC's machine tools. The firm attempted to make these CNC machine and to improve the quality of its products by imports of technology and a large scale modernisation of its aging plants.

However, this time, unlike in the fifties, the firm faced not only external competition but also from technically sound domestic firms like Mysore Kirloskar, Bharat Fritz Warner etc, which have over the years upgraded their technical capabilities by import of technology and domestic R&D. Therefore, the changing market condition has compelled HMT to become increasingly cost conscious. Since the firm has to increasingly put in greater designing, engineering and after sales and service effort, manufacturing costs have to be under strict control to ensure profits.

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14. As detailed product-wise market shares is a highly confidential information it is not available to us. Although there have been a number of studies on the machine tool industry in India, none have discussed the changing domestic competitive structure of the industry.
### Table 6.4 Share of HMT in Indian machine tool industry

(Rs. in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total indigenous production (Group A+B)</th>
<th>HMT's production</th>
<th>HMT's share as percentage of total indigenous production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>1.06</td>
<td>nil</td>
<td>0</td>
</tr>
<tr>
<td>1957</td>
<td>2.34</td>
<td>0.50</td>
<td>21</td>
</tr>
<tr>
<td>1958</td>
<td>3.40</td>
<td>1.55</td>
<td>46</td>
</tr>
<tr>
<td>1959</td>
<td>4.16</td>
<td>2.00</td>
<td>48</td>
</tr>
<tr>
<td>1960</td>
<td>5.86</td>
<td>2.24</td>
<td>38</td>
</tr>
<tr>
<td>1961</td>
<td>8.52</td>
<td>3.29</td>
<td>39</td>
</tr>
<tr>
<td>1962</td>
<td>12.01</td>
<td>4.46</td>
<td>37</td>
</tr>
<tr>
<td>1963</td>
<td>16.78</td>
<td>6.70</td>
<td>40</td>
</tr>
<tr>
<td>1964</td>
<td>20.97</td>
<td>9.24</td>
<td>44</td>
</tr>
<tr>
<td>1965</td>
<td>25.46</td>
<td>10.43</td>
<td>41</td>
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<tr>
<td>1966</td>
<td>28.48</td>
<td>11.35</td>
<td>40</td>
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<tr>
<td>1967</td>
<td>25.47</td>
<td>12.24</td>
<td>48</td>
</tr>
<tr>
<td>1968</td>
<td>20.63</td>
<td>8.45</td>
<td>41</td>
</tr>
<tr>
<td>1969</td>
<td>26.67</td>
<td>10.99</td>
<td>41</td>
</tr>
<tr>
<td>1970</td>
<td>37.45</td>
<td>12.76</td>
<td>34</td>
</tr>
<tr>
<td>1971</td>
<td>50.32</td>
<td>16.34</td>
<td>32</td>
</tr>
<tr>
<td>1972</td>
<td>49.46</td>
<td>21.12</td>
<td>43</td>
</tr>
<tr>
<td>1973</td>
<td>62.26</td>
<td>20.84</td>
<td>33</td>
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<tr>
<td>1974</td>
<td>88.45</td>
<td>25.72</td>
<td>29</td>
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<tr>
<td>1975</td>
<td>104.03</td>
<td>33.30</td>
<td>32</td>
</tr>
<tr>
<td>1976</td>
<td>116.81</td>
<td>51.74</td>
<td>44</td>
</tr>
<tr>
<td>1977</td>
<td>109.60</td>
<td>53.68</td>
<td>49</td>
</tr>
<tr>
<td>1978</td>
<td>121.12</td>
<td>44.14</td>
<td>36</td>
</tr>
<tr>
<td>1979</td>
<td>156.00</td>
<td>54.90</td>
<td>35</td>
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<tr>
<td>1980</td>
<td>186.00</td>
<td>64.80</td>
<td>35</td>
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<tr>
<td>1981</td>
<td>234.00</td>
<td>62.34</td>
<td>27</td>
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<td>1982</td>
<td>267.00</td>
<td>96.69</td>
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<td>1983</td>
<td>275.00</td>
<td>112.37</td>
<td>41</td>
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<tr>
<td>1984</td>
<td>299.00</td>
<td>123.30</td>
<td>41</td>
</tr>
<tr>
<td>1985</td>
<td>303.00</td>
<td>140.22</td>
<td>46</td>
</tr>
<tr>
<td>1986</td>
<td>336.00</td>
<td>146.49</td>
<td>44</td>
</tr>
</tbody>
</table>

Source: Hani (1988)

Note: The data taken from DGTD source probably do not include the output of the small scale sector.
Section 2

Organisation of farming out of production in HMT

Ancillary Development Programme:

As noted in the previous chapter Bangalore did not have much of a base in metal working industries in the fifties. Like ITI, HMT was also faced with a choice between putting up a relatively more vertically integrated plant or relying more on imports for components and sub-assemblies. In his study of HMT, Mascarenhas (1982) has said:

"What are the options available to a machine tool manufacturer when the engineering infrastructure is either limited or is not up to the standard? The options are either to import large quantities of components and spare parts or to establish facilities for their manufacture. Adopting either of these courses means increasing costs. HMT's options were further limited as imports were restricted by the stringent foreign exchange regulations operating at that time (late fifties and sixties). This situation forced HMT to establish integrated units for the manufacture of machine tools, unlike their counterparts in the developed world. By adopting this pattern of vertical integration from foundry to the final machine tool with tools and components also manufactured under one roof, HMT encountered high costs of manufacture with low levels of specialisation." (P 37).

Realising the advantage of division of labour and specialisation in machine tool manufacturing HMT encouraged, as early as in 1958, three small enterprises - one non-ferrous foundry and two machine shops - promoted by its employees to take up sub-contract job. The success of this experiment found its fuller expression in HMT's decision to develop ancillaries on a large scale. In 1960, using its own resources, HMT constructed an exclusive ancillary industrial estate, adjacent to its own plant, with fifty sheds of three different sizes and with all the necessary infrastructure including a sub-contract office, stores, a canteen and a bank branch at an estimated cost of Rs 24 lakhs. Each shed was also furnished with a telephone linked to HMT's internal exchange.

National Small Industries Corporation (NSIC), the then recently constituted promotional corporation, financed the ancillaries up to 95 per cent of their fixed capital, with a loan repayable in 14 half-yearly installments. As this was a special

15. The scheme was implemented in a phased manner. In the first phase in 1960-61, 30 sheds - 18 of 'A' type and 12 of 'B' type - were constructed. In the second phase in 1962-63, administrative block, canteen etc were completed. In the last phase, 21 sheds - 10 of 'A' type, 6 of 'B' type and 5 of 'C' type - were completed by 1964.
scheme the interest rate on it was lower by half a per cent than the NSIC's normal lending rate.

The scheme apparently was met with an enthusiastic response. But HMT's foreign collaborators, Orlikons, apparently disapproved it on the ostensible ground that it would be economical to import (or make in-house) the items proposed to be manufactured by the ancillaries. It is widely believed that the opposition from Orlikons was more based on their concern about losing control over the technology through the ancillaries.

HMT selected only technically qualified persons with merit. However, HMT employees, especially the skilled workers and engineers, were encouraged to take up the ancillaries and about fifty per cent of the units were allotted to them. HMT apparently kept government officials out of the selection process and hence had a greater control in shaping the scheme. Although initially Small Industries Service Institute (SISI), Bangalore, was involved, later it was dropped as it caused considerable delays.

Unlike most other industrial estates programme sponsored by government promotional agencies, HMT opted to rent, rather than sell, the ancillary sheds. The entrepreneurs had to renew the lease annually by signing a contract, which certainly had given HMT a much greater control over the ancillaries. [See Appendix 6.1.]

The firm assigned the items to be manufactured by each ancillary, prepared project reports for them and supplied the necessary machinery. To ensure high and uniform quality of components the firm supplied, as far as possible, its own machine tools to the ancillaries. Care was also taken to build interdependency among them to economise on fixed costs. Since machine tool industry was in its infancy and the scheme was the first of its kind, HMT is said to have offered considerable material, technical and managerial help to the ancillaries.

As it had acquired the reputation of being a quality conscious producer, HMT had to make a considerable effort to ensure high quality work from its ancillaries. The

16. It is said that there were pressures from politicians and bureaucracy, but the Chief of HMT Mr. Mathulla was a strong personality and hence, could withstand most of the pressures. However, political pressure could not be kept out totally. For example, ex.Chief Minister K.C. Reddy's sons got two ancillaries.
entrepreneurs, we understand, were equally enthusiastic and co-operative since they were assured of the market on attractive terms.

The ancillaries were encouraged to form a co-operative to facilitate procurement of scarce raw materials like steel and commonly used consumable items. HMT helped them to procure scarce items. It also served as an informal association of ancillary entrepreneurs and a forum to sort out their common grievances with HMT.

The items assigned to be manufactured by the ancillaries can be classified in the following way.17

(a) 31 machine shops for manufacture of standard and special accessories and also manufacture of components as required by HMT.
(b) three automatic shops for manufacture of thread fasteners cylindrical and paper pins, washers and hydraulic connections.
(c) one tool shop for manufacture of jigs, fixtures and special tools.
(d) two fabrication shops to manufacture chip trays, coolant reservoirs, moulding boxes and fabricated components.
(e) four foundries for manufacture of ferrous and non-ferrous castings.
(f) three wood working units for patterns and packing/cases.
(g) two electrical shops for transformers, armature magnets, coolant pumps and machine lamps.
(h) one surface finishing shop for anodising, blacking, painting and manufacture of metal labels.
(i) two service units for heat treatment operations, reshaping of tools.
(j) one forging shop for gear blanks, main spindles, arbors etc.
(k) one laundry shop for washing of uniforms.

Accessories are necessary attachments to the main machine which form independent sub-assemblies. They are patented sub-assemblies for specific models of machines. For example, "tool holder" in a lathe is an accessory.

"Standard parts" are mainly nuts and bolts of various sizes and shapes used in machine tools. Normally, standard parts, as the name suggests, are "off the shelf" items made according to national and international standards. But in the fifties, HMT faced a peculiar situation as a response to which the ancillaries were developed to manufacture the standard parts. HMT adopted, following their foreign collaborator, the metric system of measurement. But the principal producer of quality standard parts at that time in India, Guest Keen Williams Ltd [GKW] of Calcutta, was continuing the British standards. GKW was unwilling to manufacture according to HMT's specifications, as the quantity needed was small and/or it was not interested given its

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17. As a matter of policy none of the components of the main machine are farmed out to the ancillaries.
monopoly. Although small scale manufacture of fasteners at that time was not efficient HMT persisted with it, as its requirement was also limited.

Administration of ancillaries:

On the basis of the annual sales forecast provided by the marketing division the production planning division of the HMT arrives at - presently, with the aid of a computer - a detailed estimate of materials, components and sub-assemblies needed to manufacture the output. As the items to be purchased from ancillaries are predetermined, the computer exercise provides the quantities of various items to be purchased from them. This, along with the information on the inventory position of components and sub-assemblies, is used to work out the yearly requirement from the ancillaries. The costing department works out the purchase price and value of purchase orders using the current raw material prices and index of wages (more about it later). The sub-contract office issues the purchase orders giving price, delivery schedule and (wherever necessary) drawings. Ancillaries are, by and large, price takers and have little role in its determination.

They deliver the manufactured components to the stores located in the estate, for HMT's inspectors undertake quality control checks. Inspection carried out in the estate is very convenient for the ancillaries as the materials can be brought back for reworking to meet the quality standards without much delay, and saving on costs of transport. However the bills are passed only after the items are finally approved in HMT's assembly shops.

As per the BDE guidelines the ancillaries are given priority in payment of bills over other suppliers, which usually takes 30 to 45 days from the date of acceptance of materials as compared to 60-90 days in the case of non-ancillary small scale units. HMT has organised a fairly simple and tight procedures to deal with the ancillaries. Purchase price is the only issue on which any discussion is entertained by the firm. However in HMT, quite contrary to what was observed in ITI, if

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18. On the average a machine tool has about 5000 components/sub-assemblies.

19. It is said that a few years ago payments to ancillaries used to be delayed to the same extent as in the case of small scale units. During the Janata regime in 1977-79, at the intervention of the then Union Minister for Industry, HMT changed its procedure.
the ancillary entrepreneur finds the purchase price unacceptable he is required to
provide justification. The Manager in-charge of sub-contracts, who is located in the
estate, usually settles the matter across the table and there are no formal proc-
edures for setting the disputes.

Pricing of products made by ancillaries is based on HMT's "standard cost" or the
market price, as the case may be. But HMT has kept the procedure for arriving at
the standard cost a closely guarded secret. However what the ancillaries have been
able to achieve in 1980, after years of protracted negotiations, is the price revis-
ion formula given below:

\[ P_1 = P_0 + (0.3 \frac{M_1}{M_0} + 0.5 \frac{L_1}{L_0} + 0.2) \]

Where \( P_1 \) = Revised price (of the current year)

\( P_0 \) = The existing price (of the previous year)

\( M_0 \) = Material prices - previous year

\( M_1 \) = Material prices - current year

\( L_0 \) = Labour rate - previous year

\( L_1 \) = Labour rate - current year

For raw materials the official prices of either the Steel Authority of India or the
Visweswarayya Iron and Steel Ltd are used. Wages are based on the cost of living
index for industrial workers as given by Labour Bureau, Simla. HMT has been quite
strict in dealing with the ancillaries. Neither the BPE nor the association of the
ancillaries appear to have not been able to influence the working of HMT in this
regard.

The firm, from its view point, faces a number of problems from the ancillaries.

Ownership and management of a number of ancillaries have changed, which renders

20. If need be, the dispute is settled by the intervention of the general manager.
A conscious effort is made to avoid taking it to the plant level committee which
consists of representatives of various government agencies.

21. The weights in the formula remain the same for all items; but \( M_1 \) and \( M_0 \) vary
according to the contents of raw materials.

22. For import substitute items price formula is [FOB + 15 per cent of FOB], kept
constant for two years.
their administration a difficult task. Moreover, a number of units have been 'sick' and their revival also is apparently a concern for HMT.

According to the management, the quality control in ancillaries is much below the desired level, which leads to a high rate of rejection at various stages of the production process. But at the same time HMT does not seem to have made any effort to introduce vendor rating system. Non-payment of electricity bills by the ancillaries is also one of its major concerns of HMT but it is, however, apprehensive of taking any serious action (like eviction) for it may lead to a public outcry.

Growth and decline of the HMT ancillaries:

As mentioned earlier, initially considerable managerial effort went into developing the ancillaries. It took nearly two years for them after the commencement of the programme in 1960 to come up to the desired level of quality and quantity of production. As most of them were first generation entrepreneurs and HMT's standards were fairly exacting the "learning time" appears to have been quite substantial. But the ancillaries were apparently prepared to put in the required effort as the profit margins were very favourable. Since HMT was then operating in a sellers' market, it was probably willing to share its profits with the ancillaries.

However, this boom came to an end in the mid-sixties. HMT was in no position to support the ancillaries by continuing to purchase their output as it was saddled with unsold stocks and little fresh orders. HMT informed the ancillaries about the changed market conditions and encouraged them to solicit orders from other engineering firms in the city. The firm claims to have assisted a number of its ancillaries to find suitable orders from other firms.

The recession appears to have coincided with the beginning of a fresh round of industrial investment in Bangalore city. As mentioned in Chapter 3, due to the availability of surplus power and large pool of skilled manpower many firms in metal manufacturing industry were attracted to Bangalore since the mid-sixties. After the initial difficulties were overcome, the ancillaries found substantial orders coming in.

23. Ideally it should be possible to quantitatively estimate the rejection rate. But HMT did not permit us to do such an exercise.

24. No data is available to support the view. But the view has been unanimously expressed by every one we interviewed.
their way since, by this time, they had earned a reputation for the quality of their work— a clear reflection of the diffusion of technical capability from HMT.

Although the recession of the mid-sixties was an important factor for the decline of the HMT-ancillaries relationship, it appears to be far from a complete explanation. A number of other reasons appear to have been at work, which are, however, underplayed, particularly by the parent firm.

Changes in the product-mix of the Bangalore plant is another very important reason for the decline of orders. As stated earlier, accessories are specific to each type of machine tool. When well established lines of manufacture for mass produced machine were shifted out ancillaries specialising in accessories completely lost their markets. Although the newer plants of HMT patronised the Bangalore ancillaries for some time, local manufacturers of the accessories gradually came up and demand for the Bangalore units came down. As the Bangalore plant of HMT was left with items like heavy duty drilling machines and special purpose machines, which are made in small batch sizes and/or are custom built, the scope for promoting ancillaries became limited. Moreover, these high-valued and low volume machines require sophisticated accessories which are probably uneconomical to be produced by the ancillaries.

Changes in the market structure for standard parts and introduction of newer technologies were probably other important factors. Unlike in the fifties and early sixties a number of newer manufacturers entered the markets for fasteners producing according to the metric system of measurement. Even Guest keen William which earlier manufactured standard parts according to the British system of measurement, with the changing demand, switched over to the metric system. With the introduction of

25. However, the ancillaries which had specialised in manufacture of specialised accessories exclusively for HMT were severely affected as they could not easily change over to other lines of manufacture.

26. By this time the metric system had become the Indian Standard, as per the Indian Standards Institution guidelines.
thread rolling technology for making fasteners small enterprises also entered the market adding to the growing competition. As a result of these changes in the market and technology price of fasteners declined dramatically, rendering the ancillaries producing standard parts obsolete. But it is said that HMT unknowingly persisted with the ancillaries for quite a few years and the latter took advantage of the situation by making trading profits. When HMT discovered this it promptly deleted these items from the reserved list of items for the ancillaries. Very surprisingly, none of them seem to have made any attempts to retain their market by introducing the newer machine which appear to be within the investment capabilities of the ancillaries. We did not get any satisfactory answer to this from the entrepreneurs.

With increasing metal manufacturing in Bangalore, competition grew in the small scale sector. Engineering skills which were scarce in the early sixties became more widely available in the seventies. Perceiving the opportunities offered by the changed conditions, HMT is said to have kept a close watch on the market prices which were effectively used to impart competition to the ancillaries. In this process a number of items, over a period of time, were shifted out of the reserved the ancillaries to open competition among small scale units. Thus the role of the ancillaries in HMT's operation steadily came down, which is evident from Table 6.5. Value of supplies from the ancillaries to HMT in current prices increased from Rs 74 lakhs in 1966-67 to Rs 97 lakh in 1981-82 and thereafter, it showed a decline. But value of supplies as a proportion of value of production of the Bangalore plant came down from 9.6 per cent 1967-68 to 3.2 per cent in 1981-82.

27. There are no studies on market structures for specific products like fasteners. Therefore, our observations are based on information obtained in the market. We have, however, cross checked the information with as many people as possible to ensure accuracy of our observations.

28. According to one very reliable source a particular variety of fasteners which was available in the open market for 8 paise per piece was supplied by ancillaries at Rs.1.05 per piece.

29. This may appear to be a casual remark or allegation without any evidence. Despite our best efforts, HMT officials refuse to provide any quantitative information on the magnitude of the shift from ancillaries to the non-ancillaries.
Table 6.5: Value of production of machine tools and purchase from the exclusive ancillaries in HMT (I & II), in current prices Rs. lakhs

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Purchase from ancillaries</th>
<th>% of purchased output</th>
<th>Index of machine tool price (base year 1978-79)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959-60</td>
<td>224.0</td>
<td></td>
<td></td>
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<td>1960-61</td>
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<td>1961-62</td>
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<td>1962-63</td>
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<tr>
<td>1963-64</td>
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<tr>
<td>1964-65</td>
<td>281.0</td>
<td>74.00</td>
<td>9.6</td>
<td></td>
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<tr>
<td>1965-66</td>
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<tr>
<td>1966-67</td>
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<td></td>
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<tr>
<td>1967-68</td>
<td>387.0</td>
<td>37.3</td>
<td>7.0</td>
<td></td>
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<tr>
<td>1968-69</td>
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<tr>
<td>1969-70</td>
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<tr>
<td>1970-71</td>
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<td></td>
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<tr>
<td>1971-72</td>
<td>1017.0</td>
<td>71.7</td>
<td>7.0</td>
<td>106.4</td>
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<tr>
<td>1972-73</td>
<td>714.0</td>
<td>53.3</td>
<td>7.5</td>
<td>118.0</td>
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<td>1973-74</td>
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<td>130.8</td>
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<td>1974-75</td>
<td>73.5</td>
<td>85.7</td>
<td>145.8</td>
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<td>1975-76</td>
<td></td>
<td></td>
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<td>191.4</td>
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<tr>
<td>1976-77</td>
<td>1902.0</td>
<td>72.2</td>
<td>3.8</td>
<td>212.8</td>
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<td>1977-78</td>
<td>1482.0</td>
<td>51.6</td>
<td>3.5</td>
<td>219.0</td>
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<tr>
<td>1978-79</td>
<td>61.3</td>
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<td></td>
<td>228.1</td>
</tr>
<tr>
<td>1979-80</td>
<td>86.4</td>
<td></td>
<td></td>
<td>254.6</td>
</tr>
<tr>
<td>1980-81</td>
<td>90.1</td>
<td></td>
<td></td>
<td>287.1</td>
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<td>1981-82</td>
<td>3010.0</td>
<td>97.1</td>
<td>3.2</td>
<td>308.8</td>
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<td>1982-83</td>
<td>90.1</td>
<td></td>
<td></td>
<td>335.0</td>
</tr>
<tr>
<td>1983-84</td>
<td>3503.0</td>
<td>85.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: HMT Ltd.

The decline of orders to the ancillaries from HMT should not, however, be interpreted as decline of purchased items and greater in-house manufacturing. What appears to have happened is that the growing small scale sector in Bangalore has replaced the once protected ancillaries, as the former were able to supply at competitive prices.

To fully substantiate this, one needs HMT's data on purchase from small scale suppliers. But the management is unwilling to provide the information. However, our discussions with the HMT officials support the view. There are also indications that HMT now farms out production of components of the main machines to small sub-

30. As no disaggregated data are available, one cannot say which category of ancillaries were affected most severely. Lack of quantitative information makes our proposition highly vulnerable. HMT is particularly cautious in providing this information as it could lead to a public outcry against the firm.
contractors which were earlier made within HMT. But its extent is constrained by the excess in-house man and machine capacity.

**A Survey of HMT ancillaries:**

As in the case of ITI, here too, we faced considerable difficulty in interviewing the ancillary entrepreneurs. Either they refused to be interviewed or they had little time to spare for us. One had to visit them several times before one could get to talk to them. However, we managed to survey ten of them—twenty per cent of the ancillaries. The president of the HMT ancillary association was also interviewed. We wished to survey a number of non-ancillary small scale sub-contractors of HMT, but it was very unwilling to provide even their addresses. However accidentally we managed to go to one such enterprise located close to HMT factory.

All the enterprises were set up during the early sixties. They are thus, over two decades old now and some of them are managed by the second generation of entrepreneurs. Eight of the ten units surveyed are machining or fabrication shops, one is a forge shop and another an electrical pump manufacturer. The ancillaries surveyed employ 5 to 20 workers with nearly two-thirds of them being operators. Capital employed by the units surveyed ranged from Rs.80,000 to Rs.10 lakhs. According to the entrepreneurs unskilled workers get Rs.250 to Rs.300 per month, operators between Rs.300 to Rs.500 and supervisors up to Rs.1000. 

Although the extent of the impact has been varying, all the ancillaries had the same story to tell about the decline of orders from HMT due to the recession, change in product-mix and increasing competition from non-ancillaries. The entrepreneurs were highly critical of HMT for not informing them about the changes in the product-mix. With the decline of orders, the ancillaries were compelled to solicit work from other firms in the city. However, most of them conceded that HMT’s technical assistance in the initial years enabled them to master the technology which enabled them to undertake job-work for other large firms like Bharat Earth Movers Ltd., Larsen and Toubro, Bharat Fritz Warner and Kirloskar Electric.

As a result of the diversification of clients the proportion of ancillaries output sold to HMT has come down significantly. In our survey it ranges from 5 to 40 per cent with an average of about 15 per cent. Some of the ancillaries continue to work for HMT solely to retain their ancillary licence which enables them to con-
tinue to function at the ancillary estate. Apparently in some cases the value of output supplied to HMT does not even cover the rent and the electricity charges.\textsuperscript{31} Hence the ancillaries are in effect no different from other small scale enterprises which undertake HMT's work.

Almost all the entrepreneurs interviewed had complaints about HMT's pricing. However they agreed that in the past, when they enjoyed protection from open competition, pricing was favourable. As it is more profitable and less cumbersome to do sub-contract work for large private sector firms compared to HMT, they have little interest in the ancillary relationship. But all the units surveyed agreed that HMT's terms of payment seem to be definitely better. The entrepreneurs confirmed that the improvement in payment was the result of the intervention by the former Union Industries Minister Mr. George Fernandes.

During the late seventies the HMT ancillary estate witnessed strike. Although it had a positive effect on wage rates the quantum of work in the estate apparently declined significantly as most of the ancillary entrepreneurs set up newer units outside the estate, in the surrounding area and/or increased the farming out of production. Therefore, a lot of work in the estate gets further sub-contracted to smaller units outside the estate. In fact, some of the workers in the estate themselves have set up "backyard" manufacturing units. A visible impact, as testified by HMT officials as well as ancillary entrepreneurs, is the rapid growth of small engineering workshops around HMT, mostly owned and operated by skilled workers. Another perceptible change seems to be the growth of contract labour in the estate. Some of the labour intensive operations are now farmed out to labour contractors who are themselves somewhat skilled workers.

Problem of sickness and change of ownership and management of ancillaries seem to be fairly widespread. According to our survey four out of ten had "changed hands". Such a trend not only causes poor utilisation of resources but is also a matter of concern for the ancillary administration. Our interviews suggest that the main reason for this is lack of orders from HMT. Some of the ancillaries which were

\textsuperscript{31} The ancillaries get power and water from HMT and are not permitted to have separate connections.
developed mainly to produce specialised accessories have found it difficult to diversify.

However, on the other hand, some of the ancillaries have successfully absorbed the technology and have grown phenomenally. For example Vishnu Forge, the only forge shop in the estate, set up by a first generation technocrat entrepreneur, has multiplied into three forge shops. In 1983 the entrepreneur promoted a medium size joint sector public limited company to supply forgings to almost all major machine tool and automotive manufacturers in South India. In our interview the entrepreneur attributed a major part of his success to the diffusion of technology from HMT in the initial years.

Another successful case is a manufacturer of accessories. This ancillary has not only grown over the years with three plants at the time of the survey, but also has been exporting accessories through HMT International. The unit supplies accessories not only to HMT but also to a number of other machine tool manufacturers in South India.

For a long time HMT ancillaries did not have a formal association since the cooperative was able to perform it role. Even after its formation in the seventies, however, it has remained quite weak, probably because the ancillaries have very little stake in their relationship with HMT. By this time the proportion of their output supplied to HMT has become so marginal that they have little interest in the ancillary relationship except to retain the rented premises in the estate.

Another reason for the association being weak could be that HMT has been a strong organisation with the clear corporate objective of making profits. The firm has maintained a strict control over every aspect of ancillary development to ensure that costs are reduced. In other words HMT has put itself in the driver's seat.

There is no doubt that, barring three units, most of the ancillary entrepreneurs have grown by setting up newer units. Apart from the threat of strike there is another very important reason for the ancillary units remaining small. Since electric supply is controlled by HMT, entrepreneurs find it difficult to get permission to expand their capacity.
Section 3
Towards an assessment

An appraisal:

HMT should be credited for its foresight and thoroughness in implementing the ancillary development. Right from the stage of selection of entrepreneurs the management retained a tight control over the ancillaries and ensured that the scheme did not make the company vulnerable to external pressures. HMT was also, to a large extent, able to maintain its independence from government officials and political personalities. It was able to do so, unlike in the case of ITI, probably because among others, the entire cost of ancillary development was borne by the firm.

The initial years of close collaboration between HMT and its ancillaries seems to have been quite fruitful as the former could get a number of components and sub-assemblies locally at reasonable price and the latter could acquire scarce skills in precision metal working. Moreover the ancillaries contributed to rapid import substitution.

However, if one goes by the quantum of orders placed on ancillaries by HMT the performance appears to be dismal. As recorded earlier the orders to ancillaries stagnated even in money terms and showed a sharp decline from over nine per cent to three per cent of the value of output of the Bangalore plant between 1967-68 and 1981-82. HMT took advantage of the growing small scale sector in Bangalore by steadily exposing the ancillaries to open competition.

HMT's policy can perhaps be justified since its own market was steadily getting competitive. Undue protection to the ancillaries for a very long period could have given rise to powerful vested interests. But to the extent changing product-mix and the use of Bangalore plant as a seed bed, HMT perhaps could be held responsible for the decline of the ancillary relationship.

Our observation of the HMT experience suggests that despite the grand vision of promoting the ancillaries, the scheme, in practice, seems to have been perceived by the management as a pragmatic move to overcome the short and medium term problems. We are inclined to infer that when, in the seventies, HMT could get most of its requirements at competitive rates from outside supplies, the company really did not care to help the ancillaries. Nor did it try to cooperate attitude get together
with them to sort out the problems, and more importantly, use the available capacities for manufacture of newer machines. The problem perhaps can be seen in a different perspective as well. Having invested material and management resources in promoting the ancillaries HMT did not appear to be interested in fully utilising their capabilities. Hypothetically one may argue that HMT could have farmed out production of certain machine tools and the firm could have concentrated on marketing function. Viewed in this perspective decline of ancillary relationship could perhaps be considered as lost opportunity for the firm.

Although HMT's terms of payment of bills to ancillaries are more or less in line with the BPE guidelines the non-ancillary small scale units seem to face a very difficult situation. Since 1982 BPE has issued orders to make payments to non-ancillary small scale units on the line of ancillaries but HMT has not been following it. In fact, the firm does not seem to even keep a separate record of supplies from small scale units.

Small entrepreneurs seem to face a number of administrative hurdles in doing business with HMT. While dealings in the private sector seems to be more based on trust; transaction with HMT tend not only to be competitive but also very procedural. Therefore many ancillaries prefer to work for sound private firms where the management "understands" their problems rather than waste their effort in attempting to get orders from HMT.

Considering the growing competition in the machine tool industry, changing technology and rigidities in internal organisation of HMT, the Bangalore plant was undoubtedly faced with very difficult situation. It has been trying to pass at least a part of its adjustment problems on to small firms. HMT would like to make greater use of this option but is constrained by its inability to retrench workers. Very interestingly, HMT is proposing to make a fresh attempt at farming out, by means of Wetax, discussed in the next section.

**Wetax Scheme:**

According to an analysis 80 per cent of the components of machine tools made in the Bangalore plant accounting for just about ten per cent of the value of the machine (excluding the material costs) can be produced by general purpose machine shops. Though these components can be farmed out to small machine shops, HMT conceived Wetax
Worker entrepreneur tiny ancillary complex - as a means of getting rid of used with excess labour.

es to construct a separate hangar to house the new ancillaries. 133 her with twice the number of workers - at the rate of two workers per to be moved out to manufacture 6,660 components by working two shifts a out of the machines would remain same as in HMT so as to enable un- n of material flow.

es to supply all the raw materials, tools, jigs and fixtures, and all consumables. The worker entrepreneur will pay a rent for the machine end of ten years he would own it. The worker entrepreneur will work on a job work basis. Payments will be made within three days after acceptance of the materials.

tes that at 70 per cent capacity utilisation the worker entrepreneur ven and at which level his income would be higher than the present per cent. Recovery of cost of machine from the worker entrepreneur d to his capacity utilisation. Above 70 per cent "normal charge" would HMT is said to have a contingency plan to take care of any "sickness". ot evident from the information provided how the cost of production n when the workers earnings are expected to go up. Without knowing the e computation it is perhaps premature to make a critical assessment of

rima facie it seems to be heavily loaded in favour of HMT. Wetax an attempt to take advantage of production under one roof without the costs of large scale employment - by calling each worker an entrep-over the machine proposed to be moved out to Wetax are over two and ld. On such machines HMT proposes to extract rent for ten more years; hopes that worker can continue to use the machine even afterwards. management appears to be hopeful of its success many others expressed ections. Senior workers who are being offered the scheme may not like

empting to bring to the work organisation widely practiced in powerloom: a large number of looms operate in one shed but under different legal
to take risk at this late stage in their lives. A perceptive labour officer in HMT observed that a good proportion of the allottees may end up pawning their machines to financiers who may effectively control Wetax. In such a case the concept of turning wage workers into self employed entrepreneurs would be vitiated.

We are of the view that behind the grand design the motivations of HMT appear, once again, to be very short term gains. If our study shows anything it is that HMT's commitment to ancillaries is limited by its narrow outlook of immediate advantage and not a long term vision of development of a sound, cost effective machine tool manufacturing firm.

**Conclusion**

Hindusthan Machine Tools Ltd (later, HMT Ltd) is a pioneer in developing ancillaries in India's public sector. A close examination of this attempt would be instructive for our study.

Incorporated in 1953 in Bangalore to manufacture machine tools in the public sector HMT had a dominant role accounting for over two-fifths of the output of the organised domestic industry. Starting with the manufacture of high speed general purpose precision lathe in the mid-fifties the firm steadily diversified to produce almost the entire range of machine tools required in the domestic market. Further, especially after the recessionary conditions of the mid-sixties, HMT further diversified into manufacture of a wide variety of machinery ranging from tractors to printing presses, essentially to hedge against the uncertainty in the machine tool market. Thus the firm came to be known as a multi-product, multi-plant enterprise with a sound financial performance record.

Perceiving the advantages of specialisation in machine tool manufacturing - especially in the context of its highly vertically integrated plant at Bangalore and severe foreign exchange constraint to import components - HMT made conscious attempts at fostering sub-contracting in the late fifties by promoting fifty exclusive ancillaries. HMT constructed an exclusive ancillary industrial estate out of its own resources adjacent to its plant. HMT offered considerable technical help to enable the ancillaries to learn the skills in precision engineering.
By the mid sixties when the ancillaries were fully developed the recession affected them as well as HMT very severely. This was followed by changes in product-mix of the Bangalore plant and wide diffusion of technology of manufacture of standard parts, all of which affected orders for the ancillaries from HMT. They were compelled to search new clients, which was not a particularly difficult task given the rapid growth of metal engineering industry after the mid-sixties.

In the mean time the market for general purpose machine tools - which formed the 'bread and butter' item for HMT - began to get competitive with the growth of the private sector manufacturers aided by imports of technology. The firm found it economical to get increasingly large number of items from non-ancillary small scale units on a competitive basis. This further led to decline of orders for the ancillaries. The situation at the time of our study was that the ancillaries were practically like any other small scale unit working for a large number of clients (mostly large firms in the city) except for the fact that the ancillaries are located in the estate owned and managed by HMT, supplying just about only 15 per cent of their output to the firms.

Despite some sick units, majority of the ancillaries have grown over the years essentially on the technical assistance initially provided by HMT. There has been a rapid diffusion of skills resulting in the growth of a large number of small workshops around the HMT plant.

Although HMT initiated the ancillary development with laudable objectives, in practice the firm appears to have been guided by limited objective of short term gains. Though HMT's behaviour could be partially justified on the increasing competitions in the machine tool industry, the firm could certainly have, in retrospect, secured considerable advantages if it had properly utilised the potential of the ancillaries.

Faced with growing import competition HMT is planning rationalise manufacturing by shedding labour and obsolete machinery. The firm has again come up with a new concept of ancillaries with doubtful viability called Wetax to suit the emerging situation.
Appendix 6.1

Licence Agreement Between HMT and the licensee

This Agreement made this................. day of ................. Nineteen Hundred Sixty ........ between Hindustan Machine Tools Limited, a Company incorporated registered under the Indian Companies Act, 1913, having its Registered Office at halli, Bangalore, India (hereinafter called 'HINDUSTAN' which expression shall e the context so admits include its successors and assigns) of the one part and ................. aged ................. son of ................. and permanently ding at ................. ................. .........


WHEREAS

the Licensee is desirous of setting up an Ancillary Unit (hereinafter called the 'UNIT') on Hindustan's premises to manufacture among other things the com­nts required by Hindustan for the machines under manufacture by Hindustan.

WHEREAS Hindustan has agreed to permit the Licensee to set up the Unit on Hin­an's premises on terms and conditions hereinafter stated:

THIS LICENCE WITNESSETH AS FOLLOWS:

1. In Consideration of the fee hereinafter reserved Hindustan hereby grants to the nsee the license to set up the Unit in Hindustan's premises more particularly ribed in the Schedule hereunder for a period of 5 years commencing from the date the year first above written paying therefor during the said period a fee of

260/- (in words)
160/- (in words)
400/- (in words)

per

payable on or before the 10th day of every calendar month for which it becomes

2. The Licensee hereby covenants with Hindustan in the manner following, that is

1) to maintain Hindustan's premises and fitting in good condition.

1) to vacate and hand over the said premises with fittings and fixtures in good ition at the expiration of the Licence period or on termination of the licence.

1) not to carry on or allow to be carried on any unlawful business in the premis-

to pay all charges in respect of electricity and water to be provided for by stan at rates to be agreed upon.

to permit Hindustan's agents, security Staff and workmen to enter the premises ny time to view the condition thereof.

not to make or permit any one to make any structural alterations in the premises but the previous written consent of Hindustan.

)not to do or permit to be done upon the said premises anything which in the ion of Hindustan may be a nuisance to Hindustan or interfere in any way with th working of Hindustan's factory and offices.

)not to assign or part with his rights in the said premises under these presents ny person, firm or corporation.

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is to insure and to keep insured the premises in the name of Hindustan against loss
or damage by fire and all other risk as Hindustan may require in the sum of Rs. ............. in an Insurance Company approved by Hindustan and shall deposit with
Hindustan all such Insurance Policy and receipt for payments of the premium in respect
of the same.

ix) to pay such increase in fee as may be determined by Hindustan for any addition or
alteration to the premises by Hindustan which would increase the utility and value
of the premises to the licensee.

x) to give the first priority for the manufacture of components required by Hindustan
for its products and not to do any outside jobs before completing the order or
orders placed by Hindustan.

xi) to keep all documents like drawings, operational layouts etc., given by Hindustan
for the processing of the products ordered confidential and in good order and
to return them to Hindustan on completion of the order. Such parties without the
written consent of Hindustan.

xii) to ensure the progress of the Unit to the satisfaction of Hindustan in matters
relating to quantity and quality of the goods manufactured by the Licensee and proper
and timely execution of the orders etc.

xiv) not to change or cause to be changed the Constitution of the Unit allotted to
him by entering into any partnership or by promotion of a company private or public
or by the formation of any registered or unregistered body or association.

provided always and it is hereby declared that if the said fee or any part thereof
shall be in arrears for the space of 15 days next after any of the dates whereon the
same shall have become due or if there shall be any breach or non-observance of the
Licensee’s covenants hereinbefore mentioned or in the event of any attachment or
insolvency proceedings against the Licensee or conviction of the licensee of any
offence involving moral turpitude, then in any of the said cases, it shall be lawful
for Hindustan to determine this licence without any notice and have recourse to such
measures as may be necessary through its Security Staff to evict the Licensee, his
workmen and his machinery and materials from the said premises, without prejudice to
any claim monetary or otherwise Hindustan may have against the Licensee.

3. Hindustan agrees with the Licensee in the manner following, that is to say:

i) to pay all Municipal taxes not assessment whatsoever for the premises, if
any;

ii) to order at its discretion components and accessories as required on the Licen-
see and to by the same subject to inspection and rejection of products not conforming
to Hindustan’s Standards and Specifications at prices to be mutually agreed upon.

iii) Hindustan shall guarantee a single shift load to the Licensee for one year from
the date of commissioning of the unit, such date of commissioning to be determined
from the date on which the Unit is equipped with part or full complement of planned
machines. In the case of licensees who are ex-employees of Hindustan, clearance
certificate from Hindustan regarding any financial obligations to Hindustan would be
an additional condition for the determination of the date of commissioning.

4. This Licence confers no leasehold interest in the premises to the Licensee but
only a licence which is revocable at the absolute discretion of Hindustan.

5. This Licence shall be for a period of Five Years from the date and the year
first above written expiring earlier if so determined by Hindustan.

6. Stamp Duty on this agreement shall be payable by the Licensee.

7. In case of any dispute arising between Hindustan and the Licensee in respect of
the interpretation, conduct or performance of any term of condition of this licence,
the small shall be referred to the General Manager of Hindustan whose decision there­
on shall be final and conclusive and not open to challenge or review.

Schedule to the licence agreement

PREMISES, namely ........................................ Work Shed Type ...... No
........ measuring ........................................ approximately which portion is
delineated in the plan attached hereto and coloured red thereon and bounded on the
West...............on the East ........................................,
on the South ..............................................................,
on the North ..............................................................

IN WITNESS WHEREOF the Parties hereto have caused these presents to be duly
executed the day and the year first above written.

For HINDUSTAN

In the presence of:
1..................................
2..................................

In the presence of:
1..................................
2..................................

LICENSEE
OFFICE MEMORANDUM

Subject: Growth and Development of Ancillary Industries by Public Sector Enterprises.

... The importance which the Government have been giving to the programme for growth of small-scale ancillary units in the country is already well known. It will be recalled that the BPE had issued comprehensive guidelines during Feb. 1971 to all the public sector enterprises spelling out the steps to be taken by them to accelerate the growth of ancillary industries to meet their requirements. Subsequently, in May 1974 additional guidelines were issued for earmarking areas/items of ancillarisation in new/expansion projects at DPR/licensing stage.

In spite of the fact that the Government policy in this regard has been amply clear, its implications and detailed implementation on the practical plane has revealed weaknesses, which have hampered the growth of ancillary industries. The complementary role played/to be played by small-scale units as ancillaries not only in the manufacturing but also in the public utility service enterprises has been emphasised in various enterprises have not been able to take adequate steps to implement the guidelines and they may therefore be entrusted with a specific responsibility to provide the much needed support to small-scale industries as ancillaries. In the meeting of the Chief Executives of Public Sector Enterprises held in Oct. 1976 and in the Development Commissioner (Small Scale Industries), in July 1977 consensus was reached on a number of points to ensure a healthy parent ancillary relationship. These included granting ancillary status to the existing small-scale suppliers, vacation of existing lines of production by public sector enterprises without creating difficulties regarding utilisation of available capacities, evolving time-bound inspection and testing procedures and facilities to be provided by the parent units at the factories of the ancillary units, ensuring timely payment of the bills of ancillary units etc.

To accelerate matters in PSEs, the task of co-ordinating and ensuring implementation of important facets of ancillarisation programme by the public sector enterprises has been entrusted to the Bureau of Public Enterprises. In this task, the Bureau of Public Enterprises would undoubtedly receive the support from the Development Commissioner (Small Scale Industries), Various Govt. Departments, Administrative Ministries.

In the light of the above decision and the experience available from the public sector enterprises on the implementation of the above programme after the issue of the first guidelines in Feb. 1971 it has become necessary to reconsider and recapitulate the directives and suggestions sent by the various Ministries/ organisations to the Bureau of Public Enterprises with a view to finalise and issue one set of guidelines so that the necessity of making back references to the earlier guidelines could be avoided. The Bureau of Public Enterprises in consultation with DC(SSI) have prepared the enclosed set of updated revised guidelines.

For the purpose of monitoring the progress of the growth and development of ancillary units the reporting format issued vide BPE's letter No. 34/MG/76-BPE(MM) dated 16th July 76 has also been slightly amended in accordance with the revised guidelines. The half yearly report may be submitted in the format showing position

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as on 31st March and 30th Sept. so as to reach BPE, office of DC (SSI), Administrative Ministry and SISI concerned by the 15th of April & 15th October every year.

All the Public Sector Enterprises are requested to take action according to the guidelines and send the half yearly progress reports to all concerned by due dates.

Sd/-

(BAZIE KARIM)
ADVISER (PRODUCTION)
T.No.40183

To

i) All the Ministries/Government Departments
ii) All the Public Enterprises.
GUIDELINES
For the Development and Accelerated Growth of Ancillary Industries under the Public Sector Enterprises.

<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Action by</th>
<th>Report to</th>
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<tbody>
<tr>
<td>1. For Public Sector Enterprises in Operation</td>
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<tr>
<td>1. A formal resolution should immediately be adopted by the Board of Directors in each Enterprise committing the enterprise to a programme of development of ancillaries in accordance with the guidelines laid down in the succeeding paragraphs. The resolution should also include the necessary modifications of the existing policies of the Enterprise in so far as these affect parent enterprise - ancillary industry relationship with regard to procurement methods, price fixation, marketing etc. to bring them in line with these guidelines.</td>
<td>Board of Directors of each PSE engaged in production/public utility services</td>
<td>Compliance report together with copy of Resolution to 1) Secretary of (Emergency meeting if necessary).</td>
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<td></td>
<td></td>
<td>ii) Director General B.P.E</td>
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<td></td>
<td>iii) Development Commissioner (SSI)</td>
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<td>A note on the progress of implementation of the programme indicating orders placed on ancillaries - number of ancillaries identified, cases of delayed payment beyond where inspection &amp; acceptance has taken more than 30 days etc. may be placed in the meeting of Board of Directors as a part of regular agenda, for discussion</td>
<td>Ancillary Development Officer/Plant Level Committee. &amp; minutes of the decision may be forwarded to: 1) Adm. Ministry 2) DCSSI 3) BPE 4) SISI 5) State Director of Industries</td>
<td></td>
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<td>2. All Public Sector Enterprises engaged in production should appoint a full-time Officer in the senior management level not below the rank of a Deputy General Manager as Ancillary Department Officer who should be primarily responsible for developing ancillary industries and for all related activities in this regard as detailed below.</td>
<td>PSEs who have not so far complied exactly to this requirement.</td>
<td>Compliance Report together with the name &amp; Designation of 1) Adm. Ministry ii) BPE iii) DCSSI iv) SISI v) State D.I</td>
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<tr>
<td>3. Techno-Economic Surveys &amp; identification of areas of ancillarisation.</td>
<td>Ancillary Development Officer of PSE to contact State SISI &amp; DCSSI to Director of Industries be informed of for arranging infra-structural facilities, after obtaining plant Level Committee's acceptance of the team's findings.</td>
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4. Registration of existing small units as Ancillaries

The existing small scale units supplying/proposing to supply items of recurring nature or identified as a result of techno-economic survey should be given ancillary status after ensuring that the SSI units supply/would supply quality products by scheduled delivery dates.

5. Dissemination of Information

The efforts of publicity and propaganda (both static and mobile) for disseminating information on various aspects bearing on ancillary development including availability of credit facilities, facilities and assistance available from State Directorate of Industry, Development Commissioner, small Scale Industries and the public Sector Enterprises, the display of products required by the Public Sector from ancillary industries, the sources of research and development assistance etc. need to be intensified jointly by small Industries Service Institutes and the Public Sector Enterprises concerned.

6. Ancillary Development Advisory Committee

(Plant Level Committee) should be formed under the chairmanship of the Chief Executive of the enterprise including a representative each from SISI, Directorate of Industries, SIDC, financial institution, and ancillary association, if any. The plant Level Committee should review the progress of the programme in periodical meetings (at least once a quarter) and also advise and assist the management on the following matters of policy and planning of anciliarisation in the undertaking -

i) Policy:
   a) Methodology of placement of orders
   b) Pricing System
   c) Long term relationship and mutual obligations of parent and ancillaries

ii) Planning:
   a) Identification of areas/items for ancillarisation
   b) Selection of existing or now enter-entrepreneurs and allotment of items.
      Other things being equal, local entrepreneurs could be given preference including such technically competent and entrepreneurally suitable employees of the enterprise itself.
   c) Technical, R&D and managerial support to ancillaries
   d) Supply of imported/scarce raw materials.

iii) Monitoring functions:
    To monitor periodically the implementation of ancillarisation programme with particular reference

Report to be sent to:

i) State Director of Industries for registration of selected ancillary units
ii) SISI
iii) BPE
to matters affecting the health of ancillary units like inadequate loading, changes in work orders, pricing of products, delays in inspection, delays in payment etc., & report to the concerned Ministry, State Level Ancillary Committee and DCSSI & BPE.

iv) To discuss and review specific cases of delays in payment exceeding 30 days, and other cases of the ancillary units relating to problems experienced by them with a view to finding out remedial measures.

v) To consider any other general issues regarding the progress of the programme and to suggest suitable measures.

7. Once decision has been taken on the basis of recommendation of the Ancillary Development Advisory Committee on the appointment of entrepreneurs for setting up the ancillary units, the State Director of Industries is required to arrange for the provision of infrastructure viz. - developed land, electric power, water and other services and where necessary completed factory premises on rent etc.

8. **Vacation of existing Lines:**
   - All PSEs should immediately review their production programmes with a view to vacate such area/items/services which can be off loaded to SSI units without creating difficulties regarding utilisation of available capacities etc.

9. The Public Sector Enterprise should take on the responsibility for providing technical know-how and managerial guidance on:
   - Production process/method equipment selection and layout,
   - Production aids like design, detailed manufacturing drawing, tooling jigs and fixtures, quality control procedure and equipment etc., man-power planning (number, skills and also training requirements), organisation and procedures for production and materials planning for inventory management, management aids like cost-accounting, industrial engineering, diversification of production, marketing etc., Sources of financing and procedure for obtaining them.

10. The Public Sector Enterprise should in addition, take on responsibility for providing: imported raw-material and components, scarce/critical indigenous raw-material drawings toolings and fixtures (to the extent these are outside the capability of the ancillary unit)
Process quality control equipment (to the extent these are outside the capability of the Small Industries Service Institutes) training facilities for the development of supervisory and artisan skills.

for the maintenance of equipment including supply of spares from its own capacity (keeping in view long-term possibility of developing centralised maintenance facilities depending on the progressive development of ancillary industries in the area)

machinery and plant on sale from its own factories to the extent possible (considering its own rational policy of disposal of surplus, long-term replacement and obsolescence)

inspection & testing facilities on a mutually agreed basis, at the factory (ancillary) premises with a view to minimise the rejections and to reduce the period of acceptance.

11. Purchase Contracts & Pricing Policy:

Ancillary Development Officer. A Status report may be submitted till fulfilment to 1) BPE ii) DCSSI iii) SISI

Suitable purchase contracts need to be drawn up between the Public Sector and the individual ancillary units, keeping in view the following: a guarantee of at least 50% off-take of the annual production of ancillary unit to be given by the Public Sector for a reasonable period to cover the development phase and beyond as mutually agreed upon.

long term purchase requirements should be incorporated (to provide a sense of security and also as encouragement for developing new items) along the following lines:

1) for proprietary items manufactured by the ancillary unit for the parent enterprise.

2) for standard items which are not proprietary and for which there are outside sources of supplies within the country.

3) for items to be substituted for imports

Prices to be fixed taking into account the various factors of appropriate cost and after allowing a reasonable margin of 10% to 20% before tax on capital employed.

Prices be compared on the basis of delivery ex-premises of parent enterprise. This will allow the ancillary unit the benefit of transport cost, while competing with other developed units located outside the region. In some cases preference in price ranging from 5 to 10% may also be considered for a short period of say two or three years

a) Ordinarily prices should be fixed mutually by the parties with the ceiling of the landed cost provided such prices would cover the cost of production and would allow a reasonable rate of return (from 12 to 15%) on capital employed.

b) If the prices within the ceiling of the landed cost would not cover the total cost of production and/or allow a reasonable rate of return referred
iv) The purchase price so fixed needs also to take into account the supplies made by the Public Sector to the ancillary unit directly for production purposes.

Adequate safeguards to ensure the supply of quality product by the schedule delivery dates by the ancillary units and the prompt payment by the Public Sector Enterprises for supplies received need to be incorporated into the contract.

12. Changes in product-lines for Proposals for expansions/diversifications:
Wherever the circumstances force PSEs to change/diversify their product-lines, necessitating modifications in design of ancillary items already allotted to an ancillary unit, adequate notice might be given to the unit. Wherever product development cost has not been recovered by ancillary units, suitable compensation to offset the loss might be given in subsequent orders wherever possible.

13. Earnest money/security deposit need not be taken from the ancillary units. The Public Enterprises before registering the small scale unit as ancillaries can satisfy themselves regarding their competency.

14. Tender sets may be given free of cost to the ancillary units in respect of items needed by public enterprises.

II. For New Enterprises/Expansion Projects

Action should be taken by the Project Authorities/Administrative Ministries before launching of new public sector units or undertaking the expansion of the existing ones on the following lines:

1. It should be ensured that the complete list of parts and components required in the manufacturing/maintenance/service activities of the proposed enterprise are scrutinised by competent technical experts with a view to determining on the basis of engineering economy analysis:
   i) items to be manufactured by the enterprise itself.
   ii) items that should be developed and manufactured by the ancillary units in the small, medium or large scale sectors.
   iii) items that should be sub-contracted or bought out, including fabrication, standard hardware and other consumable commercial items, and
   iv) items that have to be imported initially and for which steps should be taken for indigenous production on top priority.

2. The feasibility study (where possible), but invariably the detailed project report of new and expansion proposals in the public sector, must indicate the parts, components, etc. (out of the total manufacturing/maintenance/service requirements of parts and components) that could be made competently by small scale industries including ancillary industries and industrial estates. This aspect of the Study/Report would need to be cleared with the Development Commissioner, Small Scale Industries.

3. At the time of applying for grant of letters of intent and industrial licenses the project authorities should spell out the items which they propose to farm-out to the ancillary industries.
4. Public Sector Enterprises before finalising agreements with foreign collaborators or aiding countries should give consideration to the items which are proposed to be obtained from ancillary industries.

5. For the development of ancillary industries, concurrently with the establishment of its own project (new or expansion) the project authority is required to follow the same sequential steps as laid down for “PSEs in Operation” (Section-I).

6. All Detailed Project Reports prepared and approved for Public Enterprises should as a rule provide for setting up of ancillary units in small scale sector as part of the project scheme itself. It is, however, not the intention that the DPR would cover detailed schemes regarding ancillary industries. They would possibly indicate the items, annual requirements, number of ancillary units, any financial and managerial help required and rough indication of the physical problem and of cost. These units being small in scope, their project work could start on a much later date and yet be ready in time for serving the needs of the main production unit.

7. Licencing proposals for expansion or diversification of existing production capacities should be accompanied with commitments for farming out of components etc. through small scale industries/ancillary industries.

8. In the agreements with the foreign collaborators/aiding countries a provision be made for extension of technical know-how to ancillary units.

9. Where there is difficulty to secure land for setting up of ancillary units, a convenient portion in the land available with the public enterprise may be earmarked in consultation with the State Government for allotment to the selected entrepreneurs.