CHAPTER 5
A CASE STUDY : PHARMACEUTICAL SECTOR

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CHAPTER 5
A CASE STUDY: PHARMACEUTICAL SECTOR

Section A

5.1. INTRODUCTION

It is often argued that due to vast differences between the environment surrounding private and public enterprises, there cannot be a meaningful comparison between the two. Hence, in this chapter like the earlier one, researcher proposes to compare the working of two PEs, from the same industry showing opposite financial results.

Choice Of PEs

Period under consideration for the choice of PEs is between 1987/88 to 1991/92. During this period, Hindustan Antibiotics Ltd. (HAL) had been showing profits while Indian Drugs & Pharmaceuticals Ltd. (IDPL) has incurred losses. Subsequently, IDPL was declared as a sick industry and referred to the 'Board Of Industrial And Financial Reconstruction (BIFR) in 1992. Apparently, the only difference between the two is regarding their financial performance; therefore a comparative study of this nature will help one to find out possible reasons for this difference.

Inclusion of private company from the pharmaceutical field could have enabled one to judge whether a profit-making PE compares well with a private company. It would have given better idea about the relative levels of professionalism in these two sectors. With the same view in mind, the researcher identified Alembic Chemical Works Company Ltd. as the most suitable candidate.

But in spite of repeated appeals to the concerned officials for the co-operation, they preferred to ignore the applications and the questionnaires. In the absence of sources of information other than the enterprise itself the researcher had to give up the idea. (cf. Appendix 1.3)

Experience with HAL and IDPL has been exactly the same in this regard. In spite of all efforts at the top as well as subsequent hierarchical levels, official information was denied orally, denying even a written denial. Therefore, the researcher had to base her conclusions on the available secondary data. However, some of the officials and ex-officials gave valuable informal information of non-confidential nature, which was useful for better understanding of the problem.
IDPL has been covered by the COPU four times and HAL for two times. The items covered in every report are not the same. Hence, item wise comparison for the same PE over the years or two PEs is rendered difficult.

Obvious conclusion from this experience is as follows:

**Conclusion 5.1.** In spite of a talk of transparency, PE managements have a natural aversion for sharing even factual information with the public. This fact suggests that (a) either there are serious irregularities or the managements do not have confidence in themselves, (b) PE-managements do not have confidence that even impartial researchers would defend their case.

Therefore, the researcher recommends:

**Recommendation 5.1.** If reliable analysis of the working of PEs is to be assured, there should be a standard format for presentation of COPU report at least within the industry.

**Recommendation 5.2.** Department of Public Enterprise should make arrangement to ensure access to the information for the researchers.

### 5.2. PURPOSE OF THE CASE-STUDY

- To establish relationship between the management-practices and financial results.
- To identify the factors determining financial results.
- To check whether the observations/conclusions drawn in Chapter 3 are substantiated by the PEs under consideration.
- To test the hypotheses mentioned in the chapter 1.

### 5.3. HISTORICAL BACKGROUND

Various committees appointed by the Government stressed the importance of indigenous production of life-saving drugs in India even before the Independence. The Government decided that the production of important drugs would be undertaken in the public sector in the post-Independence period. The objectives were:

- To make life-saving drugs available at a reasonable price to the masses.
- To achieve self-sufficiency in the field of drugs.
- To make better use of indigenous raw-materials for drug-manufacturing.

It was necessary to manufacture drugs in the public sector because:

I. The industry was capital-intensive.
II. Private capital was not forthcoming.
III. Being the sophisticated industry, India faced the problem of non-availability of technical know-how. This problem could have been solved by obtaining foreign collaboration. Government was in a better position to sign such agreements.

IV. The then-existing Indian companies were inexperienced and there was a threat of monopoly.

V. The Government could not rely on the then-existing multi-nationals or even Indian private companies for sale of life-saving drugs at reasonable prices.

VI. PEs could have assumed the role of price-setters.

According to the survey conducted by the Russian team (1956), specially invited by the Government of India, the conditions prevailing at that time were not encouraging. They noted following peculiarities:

⇒ There were over 1600 pharmaceutical enterprises out of which 1550 were small-scale units employing less than 10 workers.
⇒ Majority of Indian pharmaceutical factories were, engaged in processing of drugs.
⇒ Most of the life-saving drugs and the drugs used in the treatment of common diseases in India were not available in the required quantities. Even for that available limited volume, Indian depended on imports.
⇒ Rich natural resources of India were not put to use in drug-making.
⇒ Bigger Indian companies directly depended on the foreign firms.
⇒ Ratio of imported and indigenous raw-materials used in the drug-manufacturing was 7:1, which indicated dependence of the pharmaceutical industry on imports.

A systematic and co-ordinated effort necessary to change this situation could have been undertaken only by the central Government. Hence the Government went in for pharmaceutical production in the public sector and reserved production of certain antibiotics for this sector. Some existing private pharmaceutical companies were subsequently taken over by the Government. Amongst them, these PEs were expected to attain the commanding heights in the drugs field and specially in the antibiotic field.

5.4. FACTUAL DATA

Table T 5.1. Factual data on HAL and IDPL (1991/92) (Rs. in crores.)

<table>
<thead>
<tr>
<th>Details</th>
<th>HAL</th>
<th>IDPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorised capital</td>
<td>45.0</td>
<td>120.00</td>
</tr>
<tr>
<td>Paid-up capital</td>
<td>40.34</td>
<td>113.08</td>
</tr>
<tr>
<td>Loans from the Government</td>
<td>55.10</td>
<td>119.25</td>
</tr>
<tr>
<td>Employment</td>
<td>2713 persons</td>
<td>11384 persons</td>
</tr>
<tr>
<td>Net sales</td>
<td>136.71</td>
<td>154.80</td>
</tr>
<tr>
<td>Net profits</td>
<td>1.94</td>
<td>(-) 112.38</td>
</tr>
<tr>
<td>Accumulated deficit</td>
<td>29.42</td>
<td>546.61</td>
</tr>
</tbody>
</table>

Source: BPE Report 1991/92
Table T 5.2. Financial results for 5 consecutive years. (Rs. in crores).

<table>
<thead>
<tr>
<th>Year</th>
<th>HAL (Net-profit)</th>
<th>IDPL (Net-loss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987/88</td>
<td>1.64</td>
<td>(-) 30.22</td>
</tr>
<tr>
<td>1988/89</td>
<td>2.80</td>
<td>(-) 46.42</td>
</tr>
<tr>
<td>1989/90</td>
<td>2.25</td>
<td>(-) 42.74</td>
</tr>
<tr>
<td>1990/91</td>
<td>0.79</td>
<td>(-) 88.26</td>
</tr>
<tr>
<td>1991/92</td>
<td>1.54</td>
<td>(-) 112.38</td>
</tr>
</tbody>
</table>

Source: BPE report 1988 to 1992

It is obvious from the data in table T 5.1 that though IDPL is much larger than HAL in terms of paid-up-capital, loans, employment etc. there is not proportionate difference in the volume of net sales. HAL’s figures for paid-up-capital, Government loan and employment are 35.7%, 46.2%, 23.8% of the similar figures of the IDPL. Figure for net sales is as high as 88.3% and accumulated losses are 5.4%. going by the financial results (table T 5.2.) HAL appears to be in a better shape than the IDPL. There is a continuous deterioration in IDPL’s financial results while there is no definite trend in the volume of profits by HAL.

Since both these PEs are engaged in the same activity for quite a long time, there have to be some significant points of difference in their working which will account for difference in the financial performance (Appendix 5.1.)

5.5. POINTS OF SIMILARITY

Points of similarity can be enumerated thus:

* Both are engaged in the production of penicillin, streptomycin and other bulk drugs and formulations.
* Both are subjected to the same amount of autonomy and same controlling, monitoring systems since both are under the same Ministry.
* Both are equally affected by the pricing policy of the Government.
* Both enjoy same concessions in respect of a price-preference by the public institutions and are under the same obligations to adhere to the Government-procedures, rules and guidelines.
* Both the enterprises were set up with the foreign collaboration in respect of capital and technical know-how. Both have purchased new strains and technology whenever necessary.

5.6. POINTS OF DIFFERENCE

Prime facie points of difference are:

1. HAL collaborated with the international organisations or private firms from USA, while IDPL sought collaboration from the Russian producers.
II. HAL and its unit are situated in a single locality while five units of IDPL are situated in different states of India.

III. HAL is operating in a single field of activity while IDPL deals also in surgical instruments along with pharmaceuticals.

IV. Before 1982/83, HAL's major share of sales was to the public institutions while IDPL made some haphazard efforts to enter trade.

These points of difference might have affected IDPL's performance to some extent. Choice of collaborator was made by the Government on the basis 'other than technical.' IDPL faced the problem of non-acceptability of surgical instruments designed by Russian standards due to lack of familiarity on the part of users.

**Observation 5.1** The technology offered by the Russians was not among the best of the world, which posed the problems of inherent deficiencies and obsolescence.

Multi-regional location has resulted in lack of co-ordination.

**Observation 5.2.** IDPL was unable to take advantage of certain centralised services meant to reduce overhead costs. Neither could IDPL take advantage of better delegation of power at unit-level arising out of sheer necessity due to regional seclusion.

In the absence of effective co-ordination multi-activity business leads to dilution of efforts and expertise. Existing concern is expected to do better in other lines of business, provided experiences gained in one line of business are transferred to diversification programmes.

**Observation 5.3.** Since diversification was neither progressive nor gradual, arising out of company's corporate plan; IDPL could not get that benefit; projects funded with the Russian loan were entrusted to a single management that had no experience in either field.

HAL never stepped out of their own field and their diversification emerged as per their corporate plan. Since HAL had established contacts and had already covered about 7000 Government institutions, IDPL had to enter trade. In 1972/73, 19.4% of IDPL's sales were to the non-institutional customers.

**Observation 5.4.** IDPL could not compete with private pharmaceutical companies and demand from institutional sources could not increase as per expectations due to non-materialisation of proposed public-health schemes.

**Conclusion 5.2.** All the other decisions except the one regarding the choice of customers, were taken at the Ministerial level for which management cannot be held responsible.
(The choice of customers was also imposed on the IDPL by the circumstances.) One can argue that the management could have overcome these inherent handicaps and imposed entry in the competitive market could have helped the concern to make their position more formidable.

5.7. INITIAL PROJECTS PROPOSALS

In case of HAL the period taken for arriving at a decision to set up a plant and to enter into collaboration-contract was 6 years. In case of IDPL, corresponding period is 5 years. (Appendix 5.2.)

Though time taken for arriving at the preliminary decision was one year less in case of IDPL, two points went against IDPL which need attention. They are:

I. In case of IDPL no demand survey or economic feasibility survey was undertaken prior to the final approval which had two important repercussions.

First, time taken for the preparation of DPRs delayed the implementation.

Second, decision to seek collaboration from USSR could not be revoked even when economic feasibility of various projects suggested against the continuation.

II. At the time of project formulation of IDPL, the inflationary pressures had started building up because of the ambitious second plan. Hence this period between 1956-61 was more dynamic in nature with the result that old estimates/cost considerations lost their significance within a short period. This was also the beginning of an era of bottlenecks in the economy due to large scale autonomous investments and explosion of pent-up demand.

*Observation 5.5. Time taken for project-formulation proved to be more costly in case of IDPL due to inflationary pressures.*

5.8. DETAILED PROJECT REPORTS

At the time of establishment of HAL, systematic procedures were not laid down by the Government. Hence, there was no official FR/DPR though something akin to it was already undertaken by a team of experts in 1948, before signing the agreement. A statutory committee implemented the project and all the rights were transferred to HAL in June 1954. The construction was undertaken by the central P.W.D. and the phase of erection lasted for 33 months. Plant was commissioned in Dec. 1954. In the absence of any information about project-estimates, time-schedules and their possible revisions, one cannot comment upon the cost-over-runs and time-over-runs. However, there is a passing reference to delay in construction due to shortage of steel and delay in imports of machinery in the 1st annual report of HAL.
In case of IDPL, DPRs were criticised by COPU for all sorts of deficiencies and inadequacies. Main items like time-schedule of construction, cost-estimates etc. were missing in DPRs. These were furnished by the collaborators only after a written request by IDPL in 1961 when it came into existence. Those estimates were thoroughly unrealistic and IDPL constituted their own committee whose estimates were 58% higher than those of the collaborators. Even these estimates were extremely incorrect due to non-inclusion of experts like cost accountant in the said committee. The COPU questioned propriety of accepting Russian technology without paying attention to Kane Committees’ opinion, on the basis of mere assumptions that the western technology might not be available at a reasonable payment.

Conclusion 5.3. Thus there is strong ground to say that initial decisions regarding technology selection, economic feasibility etc. were far from optimum but their everlasting adverse effect on the performance cannot be quantified. Though management cannot be held responsible for this, their own expertise in project-planning and cost-estimation was much below the required level.

5.9 Time-Overruns:

Construction of three projects of IDPL started in 1962, but till 1964, time-schedule was not prepared. Schedules drawn by IDPL had to be revised twice and yet could not be adhered to.

Table T 5.3.

<table>
<thead>
<tr>
<th>Project</th>
<th>Time-taken</th>
<th>Year of commencement</th>
<th>Year of completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotics P.</td>
<td>5 1/2 years</td>
<td>1962</td>
<td>1967/68</td>
</tr>
<tr>
<td>Synthetic Drugs</td>
<td>5 1/2 years</td>
<td>1962</td>
<td>1967/68</td>
</tr>
<tr>
<td>Surgical Instruments</td>
<td>3 1/2 years</td>
<td>1962</td>
<td>1965/66</td>
</tr>
</tbody>
</table>

T 5.4. Time-Overruns (Rishi)

<table>
<thead>
<tr>
<th>Product</th>
<th>Initial date</th>
<th>Actual date</th>
<th>Overrun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetracycline</td>
<td>December 1967</td>
<td>January 1969</td>
<td>13 months.</td>
</tr>
<tr>
<td>Mystatin</td>
<td>February 1968</td>
<td>December 1969</td>
<td>22 months.</td>
</tr>
<tr>
<td>Di-hydro-strept</td>
<td>May 1968</td>
<td>July 1968</td>
<td>2 months.</td>
</tr>
<tr>
<td>Sulphate</td>
<td>October 1968</td>
<td>Discontinued in 1968</td>
<td>-</td>
</tr>
<tr>
<td>Chlortetracycline</td>
<td>April 1968</td>
<td>Discontinued in 1971</td>
<td>-</td>
</tr>
</tbody>
</table>

Dates for Hyderabad and Madras plants are not available. But it is reported in the COPU that a number of modifications had to be made in order to installed capacity. Six new schemes costing Rs. 48.57 lakhs were necessary and hence time-schedule could neither be laid down nor be adhered to. And in case of the Madras plant, product-mix had to be changed with resultant modifications in the plant and equipment while in the process of erection. Hence reliable information about time-overruns cannot be worked out.

Apart from the usual factors like shortage of construction materials and delay in the import of equipment, the collaborators kept on making frequent modifications in the plant-design. But due to faulty agreements, there was no provision for claiming compensation for the delays and changes.
Capital-cost-overrun: Estimates of the 3 projects of IDPL were revised upwards 5 times in 8 years.

<table>
<thead>
<tr>
<th>Name</th>
<th>Initial cost</th>
<th>Actual cost</th>
<th>Overrun %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotics P.</td>
<td>15.70</td>
<td>26.32</td>
<td>67%</td>
</tr>
<tr>
<td>Synthetic drugs</td>
<td>14.25</td>
<td>22.93</td>
<td>61%</td>
</tr>
<tr>
<td>Surgical Instruments</td>
<td>3.65</td>
<td>4.65</td>
<td>27%</td>
</tr>
</tbody>
</table>

Capital block for the production of 130 tonnes of penicillin was Rs. 8 crores in HAL. IDPL management admitted that even after considering the price-index, corresponding figure for IDPL should have been below Rs. 22 crores instead of 24 crores.

Conclusion 5.4. Thus, due to rise in the price index, time-overruns and technological differences, capital block of IDPL for penicillin plant for the same capacity worked out to be 3 times larger. This was bound to affect the profitability of IDPL, even if the operational efficiency of both the PEs would have been exactly the same.

5.10. LOCATION

Not only are the three plants of IDPL geographically secluded from each other, but in case of the Rishikesh plant, local atmospheric conditions were unfavourable for the production of antibiotics and techno-economic consideration alone would have suggested the factory establishment to be elsewhere.

5.11. PROJECT-PLANNING AND IMPLEMENTATION

Projects launched in subsequent years would give better idea about the quality of project planning and implementation in two PEs. A running concern can hope to flourish, if the management is able to come forward with well-defined long-term expansion and diversification schemes and is able to implement the same in a judicious manner. In case of PEs, all schemes requiring capital investment need prior approval from the Government which acts as an inherent handicap. It becomes impossible to separate elements of inefficiency attributable to the Governmental procedures and managerial inadequacies.

In case of HAL one comes across three distinct stages. (Till 1982/83). In the 1st phase, HAL formulated a project for the production of streptomycin and its expansion (1958 to 65) along with the three-stage expansion of the penicillin plant (1960/61 to 1969/70). Streptomycin plant was solely funded with the internal resources and penicillin expansions were partially financed by the Government. Details about cost-estimates, time-schedules etc. are not available to compare with the actuals. Absence of information does not rule out the possibility of overruns.
It took about 6 years from the date of agreement to complete streptomycin plant and its expansion could be completed in 1965 as against the expected year 1962.

The second phase (1967/68 to 1974/75): HAL introduced a number of drugs through moderate projects. This period is marked with failures which gave HAL a financial and a psychological set-back. (Appendix 5-3).

Third phase (1973/74 to 1981/82): Out of 9 schemes submitted in 1973, 5 were approved and pursued. Time-schedules were revised in all the cases which could not be maintained. There were delays ranging between 19 to 22 months. This resulted into total cost overrun of about 7.09 crores over the initial estimate of Rs. 30 crores. Following table would give full idea about cost and time overruns.

**T 5. 6. Time & cost overruns** *(Rs. in lakhs)*

<table>
<thead>
<tr>
<th>Name of scheme</th>
<th>Time-overrun</th>
<th>Cost-overrun</th>
<th>% increase in cost over initial estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin Exp.</td>
<td>22 months</td>
<td>92.30</td>
<td>45.4%</td>
</tr>
<tr>
<td>Streptomycin Exp.</td>
<td>22 months</td>
<td>335.96</td>
<td>115.4%</td>
</tr>
<tr>
<td>Semi Synthetic</td>
<td>19 months</td>
<td>146.44</td>
<td>87.9%</td>
</tr>
<tr>
<td>Formulations 2</td>
<td>20 months</td>
<td>55.94</td>
<td>18.1%</td>
</tr>
<tr>
<td>Gentamycin</td>
<td>2 months</td>
<td>79.02</td>
<td>31.1%</td>
</tr>
</tbody>
</table>

Source: Pg. 10 COPU 67th R, 7th L.S.

Apparently, there seems to be no improvement in the project implementation in spite of experience gained over the years. Project report for expansion scheme was sent back to HAL because it did not contain some vital items like ‘payment for technology.’ There were some unrealistic assumptions also.

**Observation 5.6.** This is a clear indication of poor planning. The only improvement one finds is the absence of aborted projects.

Next sets of project-proposals were being submitted by HAL in 1979/80 and 1986/87 for ‘Renewal & Revamping’ and ‘expansion and technology-upgradation’ respectively. (Appendix 5.4). There is no information about either implementation or formulation.

Organisational arrangement: ‘Corporate Long Range Planning Cell’ was set up in HAL around 1979/80. At present, HAL claims to have a well integrated Corporate Department called ‘Project Division’ which offers expertise in design engineering and construction services ‘from concept to commissioning’ in the pharmaceutical field.

Points in favour of HAL’s projects:

- HAL tried to experiment with indigenous technology and the products developed by the R&D division of HAL.
- HAL-management seems to have learnt from their experience because one does not come across aborted projects after 1975.
• HAL's decision not to take-over sick J.B. Glass Works and Rishikesh unit of IDPL indicates prudence and self-estimation. Their decision to set-up joint-sector units was also based on the need to utilise bulk-products for captive consumption and to reduce cost of transport in the distribution system. (Appendix 5).

• HAL has developed enough expertise in project-planning and implementation so as to offer consultancy services to other concerns. HAL could set up 4 joint-sector units on their own.

Points against HAL:

• During 1968 to 1975, HAL launched half-cooked projects. Over-enthusiasm, complaisance uncoupled with meticulous planning and awareness about economic viability were the major causes.

• Cost and time-overruns due to a variety of factors (not necessarily under the control of HAL-management) were responsible for the unsatisfactory project-implementation.

IDPL: Scale of production at the Rishikesh unit was much larger than that of HAL. Yet, expansion schemes for Rishikesh and Hyderabad plants were approved in 1975/76. In addition, 2 new plants for the production of Nicotinamide (Muzaffarpur, Bihar) and formulations (Gurgaon, Punjab) were sanctioned.

IDPL was allowed to sign joint-ventures with the state government of Punjab, U.P., Bihar and Rajasthan during the same period. In addition to the responsibility of managing a taken-over sick unit. Capacity-expansion schemes for 11 drugs were approved in the existing plants. One does not get much information about the quality of project-planning.

Judging by the results, one can conclude that project-planning was not of required quality. Because almost all the schemes failed to achieve projected results. (Appendix 6) COPU could not help commenting that "it was a clear case of bad planning and mismanagement of resources."^{10}

Problem of time-overruns continued to exist. Time-overrun of 26 months and 57 months in case of Rishikesh (Expansion) and Hyderabad (Expansion) schemes is being recorded. Gurgaon and Muzaffarpur projects were completed within 3 to 9 months from the prescribed date. Joint-ventures were delayed by about 9 months.

Organisational arrangements: IDPL did not have a regular corporate planning cell or a corporate plan for more than 27 years of its life. First corporate plan was expected to be finalised by 1987. One does not know whether or not such a plan was prepared.

Points in favour of IDPL-projects:

• Four schemes with the Italian firm were completed as per the schedule.
♦ A project of Hyderabad unit which included production of 36 bulk drugs and 5 drug-intermediates was completed in time.

Points against the IDPL-projects:
♦ There was no corporate plan till 1986/87.
♦ There are a number of aborted and unsuccessful projects.
♦ IDPL has not shown any indication to learn from their experiences and failures.
♦ Very propriety of letting IDPL go on expanding before existing plant-capacities were fully utilised can be questioned. The Government and the management are jointly and equally to be blamed for this imprudence.

Conclusion 5.5.
♦ In spite of a lengthy and elaborate decision making process at the Ministerial level, the projects approved can not be justified on the grounds of propriety.
♦ Government - monitoring and controlling system has not been an effective check. It has become instrumental in retarding the pace of project-planning / implementation.
♦ Project-implementation (and probably planning also) has remained equally inefficient in spite of experience gained.
♦ HAL has shown inclination and capacity to learn from the past experience, but the same cannot be said about IDPL.

5.12. OBJECTIVES

A corporate body cannot function properly in the absence of clearly defined objectives. HAL prepared statements of micro-objectives and macro-objectives in 1979, and submitted those to the Government. Statement of objectives contained figurative phrases which does not convey exact meaning.

COPU was not sure about the connotation of the phrase 'to attain commanding heights.' There was a lot of argument about its meaning and whether or not HAL has fulfilled this aim. COPU observed that HAL accounted for only 22.3% and 7.2% of total production of bulk drugs and formulations respectively in 1981/82. They manufactured only 4 drugs out of 16 antibiotics in common use. Hence HAL could not claim that this particular objective was fulfilled by it.

The Government argued that this objective was meant to be a combined objective before the public sector pharmaceutical companies and this has been fulfilled. But, even that is not corroborated by the facts. Share of production of public sector pharmaceutical companies was 24.5% and 5.7% in bulk drugs and formulations respectively in 1978/79 which was expected to
go up to 32.3% and 13.5% in 1983/84. Total domestic production has not been sufficient to
cater to increasing demand gap between the domestic production/production by PEs and
demand has widened and even today 50% bulk antibiotics are imported. (Appendix57).

Researcher's concern is not only about the non-fulfilment of objective but more about the
ambiguity of the statement itself. An ambiguous statement of objectives is as bad as its
absence. The very purpose of setting objectives is defeated by such an exercise.

IDPL showed more reluctance and apathy towards implementation the guidelines. Circulated by
BPE (1970) about the desirability of formulating objectives. It was only after reiterations by
CORD that a statement of macro-objectives was prepared in 1974 and of micro-objectives in
1984 by the management. “They (the management) did not feel it necessary to remind the
Ministry” 12 and for 10 years it was lying with the Ministry. After receiving a question from CAG
in 1984, IDPL referred the matter to the Ministry which approved it in 1987.

Observation 5.6. Therefore, even the Ministry cannot be absolved of their responsibility.

CORD commented “The committee are of the opinion that dismal performance of IDPL...........
is the result of several factors, one important being its clear failure to frame macro and micro
objectives and the corporate plan even after 27 years of its being set up.” 13

Conclusion 5.6. Thus in this respect also HAL stands above IDPL in that they
had at least formulated objectives in time, though the statement suffered from
ambiguity.

Due to unavailability of statement of objectives of both the PEs, the researcher is left with the
only choice of regarding initial objectives of setting up drug companies in the public sector as a
yardstick to judge performance. 14 First objective was to make life-saving drugs available at a
reasonable price.

Conclusion 5.7. After HAL’s entry into the production of penicillin,
Streptomycin and Gentamycin, not only were the prices held at a given level but
actually brought down. IDPL products have similar effect on the market-prices.

This is the reason why no committee can recommend liquidation or privatisation of IDPL in
spite of long-lived industrial sickness.

Second objective of self-sufficiency has not been fulfilled by HAL and IDPL. According to the
then secretary, Ministry of Chemicals and Petrochemicals (1986) even if IDPL and HAL are
allowed to expand up to their sanctioned capacities and are able to utilise the capacity fully,
they will not be able to bridge the gap between demand and domestic supply. 15 (Appendix57)
Had PEs shown better financial results, the Government could have thought of increasing sanctioned capacity. But, the Government had no choice but to grant licence to the private parties.

**Conclusion 5.8.** Between the two, HAL is less to be blamed for two reasons:

- HAL's share in the total capacity is less.
- Barring a few years HAL has been utilising the installed capacity fully. IDPL was expected to share more responsibility but has not stood up to the expectations mainly because of poor capacity utilisation.

Third objective regarding better use of indigenous raw materials has been fulfilled by both the PEs. They have been able to substitute majority of raw-materials but not without compromising on quality and cost.

**5.13. ORGANISATIONAL STRUCTURE / DELEGATION OF POWERS**

Organisational structure determines the levels of management which in turn decide the time taken for arriving at decisions. Usually, a horizontal structure reduces the tiers of management and it is considered to be conducive to speedy decision-making and vice-versa. The researcher tried

- to compare the organisational structures of HAL and IDPL,
- to see whether there has been any change in the structure as a response to the changing market-requirements and gradual liberalisation.

In case of HAL organisational structure shows a definite and deliberate change in favour of a horizontal form. After HAL's decision to produce drugs outside the scope of Drug Price Control Order (DPCO), there were organisational improvements of all sorts. Formally there were only three heads who used to report to MD directly (in addition to director, Finance). Broadly the structure was as follows:

![Organisational Structure Diagram]

At present there are more than 10 heads directly reporting to the M.D. (Appendix 8). In case of IDPL, the organisation structure has remained the same over all these years. (Appendix 8)

**Conclusion 5.9.** Since horizontal organisational structure is more suitable for free economy, HAL's efforts to adapt its structure to changing environment put it in a different category than that of IDPL. It indicates more flexibility in
managerial policies which is an important and a reliable criterion of good management.

5.14. PRODUCT-MIX

HAL started with penicillin and later entered into the production of streptomycin. In 1970's they tried and dropped a number of products completely or partially due to absence/inadequacy of demand or problems of standardisation of drugs (Appendix 3). HAL is the only manufacturer of Gentamycin in India. By 1981/82, HAL was producing 4 bulk antibiotics out of 16 drugs in common use.

A production planning cell was created in 1979/80 and after that HAL systematically diversified its product-range so as to include 3 and 4 category drugs which have a high mark-up. IDPL (R) initially planned to produce 8 drugs. But demand projections for almost all the drugs were found to be incorrect. However, the collaborators refused to change the production-programme while in the stage of erection.

Hyderabad unit was to produce 7 drugs including vitamins and intermediates. IDPL faced the problems of market constraints. 5 items were dropped out of 16 initially envisaged.

Madras unit has been a typical example of ill-conceived product-mix. Around 600 surgical instruments were in common use among the Indian surgeons. IDPL was to manufacture only 166 types of simple instruments from the list. A committee of surgeons was consulted before finalising the products. They had recommended 120 prototype instruments, change in the designs of 9 instruments and modifications in 23 instruments.

Subsequently, it was found that these instruments did not have customer-acceptability. Only 25% of the original product-mix was acceptable. IDPL could not get sufficient lead-time for planning production with the resultant production shortfalls. Production-plans for 97 instruments were drawn till 1974, of which 68 were newly developed. Change in the product-mix had two immediate repercussions.

- Due to more sophisticated nature of newly designed/modified instruments, capacity had to be derated to 1 million pieces from the initial 2.5 million.
- Some machines were rendered surplus, but they could not be disposed off.

Due to market constraints actual production was even below this derated capacity. Among many factors responsible for low demand was the duplication of efforts. Instruments manufactured in the small-scale sector were also manufactured by IDPL at a higher price. IDPL claimed that the quality was superior, but customers preferred low-price inferior goods.
Conclusion 5.10. Hence, due to defective product-mix policy, problem of under-utilisation and redundant labour continued to infect the Madras unit with the resultant financial burden. 

The issue of product-mix can be viewed from three different angles in a pharmaceutical industry.

⇒ First, as in any other industry, a wide range of product ensures flexibility in production in response to market conditions and better capacity utilisation. An enterprise having a wide product-range is better placed.

⇒ Second, profit-margin is much higher in case of formulation than in bulk drugs. An enterprise consuming a large share of its own bulk drugs for captive use in a better position to earn profits. Within formulations, if an enterprise offers variety of dosage forms (e.g. tablets, capsules, injectables etc.) it stands better chance of customer-response and profits.

⇒ Third, drugs were classified in 4 categories by the Drug Price Control Order (1979). Drugs under I, II, and III category were brought under price-control with varying mark-ups of 40%, 60% and 80% respectively. Category IV was not brought under price-control. Therefore, any pharmaceutical company to be in a sound financial position should diversify its product-range so as to cover category III, IV drugs.

In case of all the PEs, it was observed by COPU that major share of their output consisted of bulk drugs. Formulation capacity was often under-utilised and bulk drugs were sold to the private formulators. Thus, PEs suffered because of their choice of less lucrative lines of production on one hand and under-utilisation of formulation capacity on the other.

Hathi Committee (1975) recommended a sound policy of using minimum 60% of bulk drugs for captive consumption. It was never obligatory for the PEs to supply bulk drugs to private formulators. But PEs claimed that they took upon themselves the responsibility of supplying bulk drugs to formulators because imports were reduced to the extent of indigenous production by the PEs. In reality, it was convenient for them to restrict their captive consumption their own detriment because of their inability to sell formulations and shortage of vials, empty capsules etc.

HAL’s captive consumption varied between 16% to 18% for penicillin and between 48% to 62% for streptomycin before 1977 around 43% for both the drugs in 1977. By 1983/84 HAL’s captive consumption was expected to go to 60% with the setting up of subsidiaries this was to go up to 70%.

In case of IDPL, mismatching of capacities of production and formulation was witnessed. In the Hyderabad plant formulation capacity was initially 50% excess of requirements which necessitated imports of bulk drugs in order to achieve full utilisation of formulation capacity. Demand constraints restricted the utilisation of formulation capacity further.
In the Rishikesh unit a large portion of antibiotics had to be sold in bulk for the want of formulation capacity. IDPL had set up an expert committee which opined that rigid limits need not be laid down regarding the captive consumption. Company preferred to decide upon the quantities to be consumed according to demand for the formulations. This resulted into low level of captive consumption. In 1972/73, out of total production of IDPL only 37.6% consisted of formulations, leaving 62.4% as bulk drugs. There is not a slightest indication in any of the authentic publications to suggest that this situation has ever undergone a change.

Diversification to category III, IV

HAL frankly admitted that the question of viability was of a later origin. For a long period, PEs were expected to act as instruments of Government policy and fulfil social obligations. On the recommendation of the Ministry, HAL planned to diversify their product-mix with 60 new drugs. Yet, even today, share of category III, IV drugs is very meagre which was 16% in 1981/82.

Conclusion 5.11. HAL could adopt flexible policy as regards product-mix than the IDPL. But in case of Surgical Instruments Unit, IDPL management cannot be held responsible for defective initial product-mix. IDPL should be given due credit for showing promptness and ability to change the product-mix according to market condition, though customer response was inadequate.

SECTION B
PRODUCTION PERFORMANCE

While considering production performance, one has to take into account capacity-utilisation and factors affecting it, operational efficiency and cost of production.

5.15. CAPACITY-UTILISATION

Volume of production depends upon capacity utilisation, nature of technology used and the quality of strain introduced. Generally, the term ‘capacity utilisation’ means a ratio of actual production and the installed capacity, where installed capacity refers to the maximum level of production that a company can theoretically achieve, presuming all ideal conditions with a given set of equipment. The term ‘rated capacity’ means the attainable level of production taking into consideration practical constraints.

Capacity utilisation depends upon:
- Regularity and certainty in the supply of quality raw-materials.
- Regularity in and adequacy of supply of utilities like water, power and transport.
- Adequacy of supply of internal services like chilled wafer, compressed air, steam etc.
Incidence of breakdowns, strikes etc.
Incidence of contamination..
Balance in the capacities of different sections/equipment
Demand in the market.

HAL: Capacity utilisation for the period 1963/64 to 1975/76 varied annually between 71% to 106.33% (Penicillin) and between 76% to 104.0% (Streptomycin). In 1978, except for ampicillin formulations (19%) it was more than the installed capacity for all other drugs. 

Table T 5.7. Capacity utilisation of HAL.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Penicillin</td>
<td>77%</td>
<td>109%</td>
<td>109%</td>
<td>107%</td>
<td>91%</td>
<td>82%</td>
</tr>
<tr>
<td>Streptomycin</td>
<td>66%</td>
<td>50%</td>
<td>53%</td>
<td>72%</td>
<td>77%</td>
<td>88%</td>
</tr>
<tr>
<td>Vials</td>
<td>-</td>
<td>59%</td>
<td>68%</td>
<td>81%</td>
<td>57%</td>
<td>62%</td>
</tr>
<tr>
<td>Tablets</td>
<td>-</td>
<td>112%</td>
<td>182%</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Capsules</td>
<td>-</td>
<td>61%</td>
<td>71%</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Source: BPE Reports 1986/87, 1991/92

IDPL: Under-utilisation of capacity has been a chronic problem with IDPL right from the beginning. Installed capacity was higher than the production-estimates initially made by the Russians. Estimates by the Indian experts were lesser than that by 19%. Actual production has been still less.

Table T 5.8. Capacity utilisation of IDPL.

<table>
<thead>
<tr>
<th>Original plant capacity</th>
<th>Russian estimates</th>
<th>Indian Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,70,250 mirds P.A.</td>
<td>3,15,800 mirds P.A.</td>
<td>25,50,000 mirds P.A.</td>
</tr>
</tbody>
</table>

On the recommendation of the Russian experts, additional facilities with the estimated outlay of Rs. 108.77 lakhs were introduced with a view to attain rated capacity. Even then, the production remained 54% of the anticipated output which could touch the 80% figure in 1975/76. Rishikesh plant was expected to reach the rated capacity within 3 years of commissioning (in 1970) but actual capacity-utilisation has been very low.

In 1972, Rishikesh plant accounted for 44.5%, 34.4% and 88.8% of country’s licensed capacity for penicillin, streptomycin and tetracycline respectively while the actual production was only 19.8%, 12.8% and 27.1% respectively. In 1978 it was 68%.

In the Hyderabad plant rated capacity was revised downwards and still there had been a shortfall ranging between 4% to 32%. In 1978 capacity-utilisation was 73%.

But, in spite of IDPL’s failure to achieve expected capacity-utilisation and stabilise production in the existing plant, they were allowed to expand their capacities. Performance continued to be unsatisfactory for both the units (below 70% till 1985/86). Situation has deteriorated in later years. (Table T 5.8).

In case of the Madras plant, no attempt was made to determine the capacity till 1972, due to frequent changes in the product-mix. Initial rated capacity was brought down from 2.5 million
pieces to 1 million pieces per annum. The management refused to call it a downward revision because of the more sophisticated nature of the new products. Capacity utilisation has been far from satisfactory throughout its lifetime, though at times orders were kept pending due to a small size of the orders. In 1978 capacity-utilisation was 61%. Situation deteriorated every year and it was 20.9% and 17.8% in 1980/81 and 1983/84 respectively. Table T-5.8 will give details about recent trends.

Table T 5.8 Capacity-utilisation

<table>
<thead>
<tr>
<th>IDPL - Rishikesh</th>
<th>Products</th>
<th>1984/85</th>
<th>1985/86</th>
<th>1986/87</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk</td>
<td>53</td>
<td>59</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>21</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>56</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Vials</td>
<td>42</td>
<td>31</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Tablets</td>
<td>93</td>
<td>61</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Capsules</td>
<td>70</td>
<td>54</td>
<td>23</td>
<td></td>
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<tbody>
<tr>
<td>Bulk</td>
<td>51</td>
<td>49</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Tablets</td>
<td>69</td>
<td>25</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Capsules</td>
<td>48</td>
<td>77</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Liquids</td>
<td>27</td>
<td>22</td>
<td>18</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>IDPL - Gurgaon</th>
<th>Products</th>
<th>1984/85</th>
<th>1985/86</th>
<th>1986/87</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tablets</td>
<td>44</td>
<td>54</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Capsules</td>
<td>28</td>
<td>27</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Syrups</td>
<td>32</td>
<td>36</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Powders</td>
<td>26</td>
<td>11</td>
<td>7</td>
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<tbody>
<tr>
<td>Tablets</td>
<td>66</td>
<td>81</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Capsules</td>
<td>101</td>
<td>92</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>Surgical instruments</td>
<td>69</td>
<td>49</td>
<td>61</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Bulk drugs</td>
<td>36</td>
<td>28</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Acetic Acid</td>
<td>-</td>
<td>9</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

Source: BPE Report 1986/87

An attempt is made to see and compare how HAL and IDPL have handled the problems of factors affecting capacity utilisation.

Raw-materials: Both HAL and IDPL have substituted imported raw-materials by the indigenous ones. Till 1973/74, IDPL had substituted 11 items out of 30, their relative share in the total raw-material consumption is however is not known. HAL could bring down share of imported raw-materials from 25.2% in 1968/69 to 6.2% in 1974/75. Both the PEs faced
problems of shortage of raw-materials of assured quality. It took a long time to identify reliable sources and at times due to country-wide scarcity some raw-materials were canalised by the Government. Substitution has resulted into low productivity in certain cases.

**Power and Water Supply** : Discontinuity and fluctuations in the power-supply. Inadequate power and water supply were very common problems faced by both the PEs. Both have modified water-systems to ensure proper water supply but water/power problems continued to affect capacity-utilisation. HAL has set-up generators in the vital sections for emergency so as to minimise the losses.

**Internal Services** : Essential services like chilled water, compressed air, steam etc. were not satisfactory and adequate though capacities created for the same were adequate in both the PEs till 1973/74. But HAL identified bottlenecks and took corrective measures. In case of IDPL, conditions were equally bad. In addition, excess consumption of all items was registered in Rishikesh plant. Extra cost due to excess consumption of electricity, steam and venting of compressed air amounted to Rs. 0.68 lakhs to Rs. 6.5 lakhs (1968/69 to 1973/74), Rs. 11.91 lakhs, and Rs. 27.84 lakhs during 1968/69 to 1973/74.

**Break downs** : Problem of breakdowns was serious in both the PEs. In case of HAL one comes across serious efforts to rectify the mistakes. HAL’s Engineering Department was not up to the mark. Hence the Board appointed a sub-committee to go into the matter of frequent breakdowns; which suggested a disciplinary action and training for supervisory staff in preventive maintenance. In 1971, after 16 years of its establishment, a system of preventive maintenance was introduced and special training was imparted. Maintenance schedules were introduced in a phased manner. Incidence of break-downs was brought down.

**Contamination** : Both the PEs faced the problem of contamination. But in HAL the incidence was always below the prescribed norms. (of 7.5%, 5% batches drained to batches harvested for streptomycin, penicillin respectively). These norms were further brought down to 2.5% and 3% in 1977. In IDPL, no norms were fixed for ‘batches drained’ till 1973 and no attempt was made to assess loss on this account. HAL conducted short courses in contamination-control-information technology (134 courses between 1979 to 1983.)

**Imbalance between relative capacities** : In case of HAL there was a temporary imbalance between extracting and fermenting capacity which was allowed to prolong. Differences in efficiencies of different sections also posed problems.

**Vialling/ Formulation capacity** : In HAL, capacity utilisation ranged between 56% to 69% (1966/67 to 1974/75). Actual shifts were much less than the prescribed 2430 shifts for many reasons. Hence, capacity was revised downwards from 48000 vials to 36,000 vials and norm was fixed at 25,000 vials. By streamlining to the procedures, imparting in-house training to the
concerned employees and replacing/modifying the filling/sending machines HAL could overcome the problem. By introducing continuous running of filling machines by giving staggering breaks to the operators efficiency was further increased. Installed capacity was increased to 1368 lakh vials (1986/87). Capacity utilisation was 104.1% in 1981/82 and 67.8% in 1986/87. (Table 5.7). IDPL also faced the problem mainly due to shortage of vials, packing materials and empty capsules.

5.16. FORMULATIONS

HAL : Only 58% of the available capacity for tableting/capsulation was put to effective use due to lack of ancillary machinery. Due to an imbalance in relative capacities of drying, granulation and punching machines fuller capacity-utilisation was not possible. Scarcity of vials and marketing constraints were additional causes. In 1976/77 a sub-committee was appointed which identified hold-ups which were subsequently removed.

Formulation capacity of both the PEs was augmented after 1980. HAL’s joint-sector formulators were expected to help HAL in consuming 70% of bulk drugs for captive consumption.

IDPL : There was imbalance between the production capacity and formulation capacity in Rishikesh and Hyderabad plants. In Rishikesh plant though the capacity was inadequate, that limited capacity was not fully utilised. Between 1968/69 and 1973/74 it ranged between 16.7% and 61.9%. Yet IDPL was allowed to increase formulation capacity which could never be fully utilised. Gurgaon plant had 22 million ampuling capacity which could not be utilised till 1984, after which decision was taken to sell of the equipment.

Formulation capacity of the Hyderabad plant was 50% excess of the available bulk drugs from the plant itself. Tableting capacity was revised downwards from the initial 3051 million tablets in 1970 to 2000 million in 1973. Actual formulation was still less.

IDPL’s own subsidiaries, joint ventures with the State Governments proved as competitors. Therefore, IDPL’s formulation capacity was under-utilised while subsidiaries were allowed to formulate drugs.

Conclusion 5. 12. Better capacity utilisation in bulk production and formulation by HAL is a result of conscious efforts to overcome hurdles on the part of the management. No information is available for IDPL either capacity utilisation or remedial measures for later years.
5.17. TECHNOLOGY AND STRAIN

HAL has two new strains at their credit, viz., Hamycin and Aereofungin. They could increase production under the given imported strain by technology-improvement in case of penicillin and streptomycin. During 1972 to 1975 productivity improved from 2000 u/ml to 10,000 u/ml. After substituting initial technology by Japanese one, yield increased by 50% to 100% after the first phase and to 30,000 u/ml under 216 hours. HAL could increase it further to 40,000 u/ml under 200 hours. Cycle and later to 50,000 u/ml. For streptomycin, HAL purchased strain from Merc & Co. and Glaxo and achieved anticipated yield. In 1991, Japanese technology was replaced by Panlab technology of USA which brought about 26% increase in the production of penicillin. For Gentamycin, strain and technology was obtained from Hungarian firm M/s Medipex Chemicals And Pharmaceutical Works.

IDPL has been complaining about the quality of strain and technology selected for and adopted by IDPL. It was considered to be the most important factor adversely affecting their production. But even after implementing an ambitious plan to introduce latest technology and strains from the Italian collaborators, M/s Formafin (1978/79) at the cost of Rs. 25 crores IDPL could not improve productivity. All the new sections were closed down. There is no reference to new strains developed/discovered or new technology developed by the R&D division of IDPL.

Conclusion 5.13. HAL developed two new strains, IDPL does not have any new strain to its credit. HAL could not absorb purchased technology, IDPL could not do it. HAL could improve technology under the given strain. Hence HAL's performance on this criterion is definitely better than that of IDPL. But absolutely speaking, one would have liked HAL 1) to develop/discover original strains/drugs on a bigger scale instead of being satisfied with mere technology absorption. 2) to launch commercial production of new drugs more effectively.

5.18. OPERATIONAL EFFICIENCY

Operational efficiency can further be judged by operational practices and their results. Norms and standards can work as an effective control. But both the PEs had not fixed norms and standards for the processes involved for quite a long time. It was argued that proper norms could not be fixed because of s the fast-improving technologies, time taken for stabilisation of production under the existing technology and phased augmentation of capacity. Standards had been evolved on the basis of experience. An independent cell has been created in HAL (before 1978) to review the standards regularly.
In IDPL, norms were fixed for number of batches drained, volume of fermented broth and filtered broth, filtration efficiency, average activity, fermentation cycle, total time-cycle before 1975. But protocol norms were never achieved.

**Material Consumption / Services**: HAL fixed norms for standard consumption of raw-materials and revised those frequently. There had been wide deviation from the norms over the years which did not suggest a set pattern. Since 1970, monthly records of deviations are being kept. But, no corrective action was being taken which indicated casualness of approach and laxity on the part of management. In IDPL, excess consumption of all the raw materials was observed during 1968/69 to 1973/74 which cost Rs. 54.67 lakh. Corrective measures were taken which resulted into substantial reduction in consumption. For the consumption of services no yardsticks were prescribed for a long time. There was no scientific procedure for recording consumption. There were no measuring instruments in either PE, setting of which would have called for the additional investment. Matters were attached in a phased manner in 1977/78.

Installed capacity for the provision of services had not been fully utilised and that was due to mechanical failures. These were rectified by preventive maintenance. Incidence of failures was brought down from 22% to 3.7% (1972/73 to 1974/75) for refrigeration. Consumption of compressed air was brought down by 20% during 1970/71 to 1976/77. Till 1972/73 IDPL had not fixed norms of consumption. Later IDPL recorded over consumption of all services but was brought down during 1974 by remedial measures.

**Complaints / Rejections**: After the failure to launch Hymacin successfully, HAL created an independent cell for the Quality Control Audit. No norms had been fixed for rejection of various stages. Special Technical Committee was appointed. Average loss on account of spillage/overages was brought down from drugs worth Rs. 8 lakhs (during 1966/67 to 1971/72) to Rs. 3 lakhs (during 1971/72 to 1974/75). Since 1972/73 there was a declining trend of rejections due to the long-term and short-term measures adopted.

Quality Control Division in HAL, tests all products from raw-materials to finished products. Samples of every batch are retained and in the event of loss of stability before the expiry period, the batches are withdrawn from the market.

In IDPL percentage of rejection was much above the prescribed norms which ranged between 10% to 57% during 1968 to 1973. Resultant excess cost worked out to be Rs. 18 crores. There was a Quality Control Division but COPU (56th R, 5th L.S.) referred to a case where bulk drugs passed by this Division were returned to the company.

HAL had set up 'Quality Assurance Cell' for the benefit of the customers. In 1991 HAL was awarded 'Quality Excellence Award'. 'Medical Services Department' deals with the customer complaint and educates medical practitioner in the use of penicillin. It was confirmed that the complaints used to be on account of improper storage or handling of drugs at the consuming
points. The tests in all such cases indicated that the concerned products conformed to the prescribed standards.

5.19. COST OF PRODUCTION

HAL: Cost of production and price of penicillin was progressively reduced during 1958/59 to 1961/62 but cost more than doubled during 1966/67 and 1973/74 mainly due to increase in the prices of inputs. HAL was successful in bringing down cost since 1974/75 by using better strain and technology, better capacity-utilisation, reduction in wastage and reduction in the material-consumption.

IDPL: Actual cost of production was more than the initially estimated cost due to capital cost escalation, price-escalation of raw-materials and utilities. It was expected that IDPL would get an advantage of large-scale production but in reality IDPL cost was not comparable with that of HAL and much higher than the standard cost. There was however, a considerable reduction in cost during 1970.

Synthetic drugs: Cost of estimates were unrealistic. Hence all products were produced at a loss. Even after 4 revisions of cost of production, it was higher than the estimated cost.

Surgical instruments: Cost has always been higher than the price. Some measures were reported to have taken for cost-reduction. There was a reference that the Government was thinking of preparing a standard of good manufacturing practices and give statutory status to it. (1985/86) This is an indication that there was much to be desired in the operational practices of IDPL.

Conclusion 5.14. Both the PEs had similar problems and operational deficiencies for a considerable period. Both had been complaisant in spite of these deficiencies and their attitude had been un-businesslike till 1970/71. However, HAL showed inclination and capability to improve operational efficiency while same cannot be said about IDPL.

An absence of information about IDPL’s efforts cannot be a proof against the management for lack of motivation and attempts. But had there been anything to strengthen IDPL’s case, it would have appeared in the BPE reports/COPU reports.

Conclusion 5.15. Since nothing to support the improvement in procedures and practices is found, the researcher has no hesitation to conclude absence of serious efforts. On every criterion of operational efficiency about which information is available, HAL seems to have fared better than IDPL.
5.20. MATERIALS MANAGEMENT

HAL: Inventory holding showed a declining trend till 1969/70, then increased to 3.96 months' consumption in 1973/74 as regards indigenous raw-materials. It was argued that the Government procedures stood as hurdles. In case of indigenous materials, there were delays from DGS & D and imported spares acquired under the 'actual users' licence' could not be disposed off without the Government approval.

In 1974, a Board-committee while looking into the problems of production came across lacuna in the materials management. Following steps were taken:

⇒ Purchase and stores departments hitherto working independently, were integrated into a Materials Management Department in 1978/79.
⇒ Inventory-control cell was established under the Manager, Materials.
⇒ The National Institute for Training In Industrial Engineering (NITIE) was appointed to review, develop and implement an integral Materials Management System.
⇒ A task-force was appointed to identify non-moving stocks, materials modification and to design physical layout of stores.

NITIE could complete 80% of the assignment so, HAL employees completed the remaining job in 1979 by creating committee for disposing of surplus items, cell for codification and introduction of scientific methods of management and a committee to review 'A' items from the important raw-materials. This department was made up-to-date and was computerised later.

IDPL: Rishikesh plant- Rishikesh plant had fixed norms of 2 months' and 6 months' consumption inventory holding of indigenous and imported raw-materials. But large stocks were piled due to frequent changes in the production-plans, low off-take, non-adherence to time-schedules by suppliers, changes in requirements due to changes in technology and preference to transportation in bigger lots with a view to distribute overheads. Out of 10484 items of common use, minimum, maximum and recording levels for 546 items were fixed by 1970, other items were to be covered by 1972.

Hyderabad plant - Norms were fixed at 3 months and 6 months consumption for indigenous and imported items. Collaborators had given stock of spares along with the original plant. Subsequent expansions also contributed to inventories. ABC analysis was not conducted till 1973 and there is no reference that it was ever conducted in later years. Procedures for physical verification were found to be defective with almost 24% of stock remaining outside the coverage in 1969/70. This percentage was brought down to 4.6% in 1972/73. Considerable shortages were detected in the stocks from the inception.
Surgical Instruments Plant - Conditions were worst in this plant. Maximum, minimum ordering levels were not fixed (till 1972). Inventory holding was as follows:

- Raw materials: 150 months' consumption.
- Spares: 144 months' consumption.
- Imported raw materials: 5 months' raw consumption.

There was an improvement in the inventory-holding position of both the PEs from 1981/82 to 1986/87 but it deteriorated in 1991/92.

Conclusion 5.16. Thus in spite of the organisational improvements in HAL there is not commensurate improvement in the results.

The possible reason could be HAL's policy to obtain working capital loans from banks against the security of inventory. Following table gives comparative figures for HAL and IDPL.

<table>
<thead>
<tr>
<th>Table T 5.9. Inventory-holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of finished goods to net sales</td>
</tr>
<tr>
<td>% work in progress to cost of production</td>
</tr>
<tr>
<td>Finished goods inventory</td>
</tr>
<tr>
<td>Raw materials inventory</td>
</tr>
<tr>
<td>Work in progress inventory</td>
</tr>
<tr>
<td>Sundry debts</td>
</tr>
</tbody>
</table>

* For 1991/92 inventory position for raw-materials and work-in-progress is not separately given and for IDPL, information is not available.

Conclusion 5.17. As far as materials management is concerned HAL has made deliberate efforts to improve efficiency. Same cannot be said about IDPL in the absence of corroborating data.

5.21. PERSONNEL

HAL: Number of employees has increased gradually, average emoluments have increased but its pace has been less than the value of production per man-month and value added per-month.

IDPL: A continuous increase in the number of employees is recorded till 1986/87 and a considerable decrease in 1991/92. Average monthly emoluments kept on increasing in spite of
fall in the value of production per man-month and value added per man-month till 1986/87. In 1991/92 all the three increased but emoluments increased more than proportionately.

Following table will give some idea about the personnel position of the two PEs.

Table T 5.10. Employees, emoluments & value added

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>HAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of employees</td>
<td>2533</td>
<td>2644</td>
<td>2713</td>
</tr>
<tr>
<td></td>
<td>12426</td>
<td>12867</td>
<td>11349</td>
</tr>
<tr>
<td>Average monthly emoluments</td>
<td>1734</td>
<td>2789</td>
<td>5034</td>
</tr>
<tr>
<td></td>
<td>1271</td>
<td>2163</td>
<td>5174</td>
</tr>
<tr>
<td></td>
<td>(3.5%)</td>
<td>(70.1%)</td>
<td>(80.5%)</td>
</tr>
<tr>
<td>Value of production per man-month</td>
<td>8873</td>
<td>16988</td>
<td>40515</td>
</tr>
<tr>
<td></td>
<td>6767</td>
<td>5403</td>
<td>11016</td>
</tr>
<tr>
<td></td>
<td>(9.14%)</td>
<td>(20.15%)</td>
<td>(72.2%)</td>
</tr>
<tr>
<td>Value added per man-month</td>
<td>2267</td>
<td>4964</td>
<td>14925</td>
</tr>
<tr>
<td></td>
<td>1795</td>
<td>1545</td>
<td>2114</td>
</tr>
<tr>
<td></td>
<td>(118.9%)</td>
<td>(13.9%)</td>
<td>(206.6%)</td>
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<td><strong>IDPL</strong></td>
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<tr>
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<td>(13.9%)</td>
<td>(206.6%)</td>
</tr>
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</table>

Note: Figures in the bracket indicate percentage increase over the earlier recorded year i.e. over 1981/82 and over 1986/87 respectively.

Percentage of man-power cost in the total cost of production has decreased from 15.5% (1981/82) to 13.5% (1986/87) and to 10.29% (1991/92) in HAL; while it increased in IDPL from 13.9% (1981/82) to 24.5% (1986/87) to 26.63% (1991/92).

**HAL**: In 1978/79 a separate personnel department was created and GM personnel, reports directly to the CMD. Recruitment rules are formulated and the management has been cautious while giving estimates of personnel requirements at the time of expansion. The Industrial Engineering Wing is under the Management Service Division which makes manpower plans. Sometimes, employees are left without work for the want of raw-materials or break-downs. But they are provided alternative work of routine like maintenance. Standing instructions for employees are formulated since 1958.

HAL resorted to manpower deployment in 1974/75 recruitment was frozen for some time. There is an instance of strict disciplinary action being taken for absenteeism and indiscipline by removing 70 persons. There is no change in the percentage of the line staff to the administrative staff.

Labour participation in management is ensured by introducing shop-floor committees, joint plant committees and other 6 such committees. There is only one trade-union though at times rival unions emerge and are dissolved into the bigger one. Loss of production due to labour unrest is negligible. There was a major industrial dispute in 1979 when there was 61 days' agitation and 45 days' strike. Short duration strikes were recorded in 1963, and 1968.

**HAL** conducts variety of training courses of short duration. Courses are conducted in the company by inviting outside experts. Employees are deputed to specialised institutes also. They have a regular one-year apprenticeship course at the stage of induction. In 1981/82 39 in-
house training programmes covering 1200 employees were conducted. Corresponding figures 1986/87 and 1991/92 are 35 courses - 508 participants and 58 courses - 1158 participants respectively. Outsiders from the neighbouring industries are allowed to participate. Number of employees' deputed to outside institutions in 1986/87 and 1991/92 are 133 and 71 employees respectively.

Table T 5.11. Township expenditure/receipts HAL

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<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross block</td>
<td>1.54 crores</td>
<td>1.7 crores</td>
<td>2.56 crores</td>
</tr>
<tr>
<td></td>
<td>(11.7% increase)</td>
<td>(84.64% increase)</td>
<td></td>
</tr>
<tr>
<td>Revenue expenditure</td>
<td>0.67 crores</td>
<td>1.25 crores</td>
<td>1.99 crores</td>
</tr>
<tr>
<td>Receipts</td>
<td>0.39 crores</td>
<td>0.452 crores</td>
<td>0.75 crores</td>
</tr>
<tr>
<td>Receipts / revenue expenditure</td>
<td>46.3%</td>
<td>36.08%</td>
<td>37.82%</td>
</tr>
</tbody>
</table>

It is evident that the revenue-expenditure on township has increased with increase in the capital-block but receipts have not increased proportionately. About 40% of employees get accommodation in the township.

It is claimed that the labour-productivity is the highest among the public sector pharmaceutical companies. It has continuously increased from 2.99 (1986/87) to 5.04 (1990/91).

IDPL : At the time of DPR and ER, the estimates about man-power-requirements were faulty. The Board appointed a committee for deciding actual requirements. For the Hyderabad plant, manpower requirements for technical posts were worked out by the Industrial Engineering Department. But similar study for technical staff was not conducted.

In the Madras plant problem of surplus staff existed in 1970 and production was regulated according to the staff employed and not the other way round. Due to changes in the product-mix, labour became redundant which could not be deployed. Practice of paying honorarium was common which was later discontinued in 1973/74. Problem over staffing was severe in the Madras plant where out of 1100 persons 900 were without work in 1986/87 and possibility of absorbing them in other PEs was meagre. In recent years, IDPL followed a policy of 'golden handshake' as a part of the rehabilitation plan.

Small training cells existed. But according to COPU “even key technical personnel on the plant are hopelessly out of touch with developing trends.” Whatever staff was provided with training, could not be retained because till 1969 there was no provision for a bond. Till 1971, 78 trainees had left the company.

In the initial period, there were many deputationists, but the number was brought down.
There was a 55 days’ strike at the Hyderabad plant by an unorganised trade union in 1978/79. Strained relations in the marketing division were reported in late 1980’s and IDPL could not take disciplinary action.

There is reference to increased efficiency in the Madras plant between 1968/69 to 1972/73 and between 1986/87 to 1991/92.

5.22. BOARD OF DIRECTORS/ TOP LEVEL MANAGEMENT

HAL - In the earlier period all the directors were official directors. The number of directors varied between 4 and 12. Usually there are 2 official and 2 functional directors and no part-time non-official director. The top-most post was that of MD for quite a long time with a part-time chairman. For last few years there is a CMD at the top. Barring 3 instances of top-level vacancies for a period of 2/3 months at a time and a single instance of vacancy for 6 months, the company was not left top-less for long duration. Tenure of MD/CMD was 3 years which was later changed to 5 years. Hence there has not been a problem of either discontinuity or frequent changes in the top management. At present there is a CMD and 3 directors. A span of 10 years (1982/1992) saw 3 CMDs.

Conclusion 5.18. HAL seems to have better personnel management than IDPL because:

- HAL does not face the severe problem of over-staffing.
- There has been an increase in the value-added per man-month and value of production per man-month.
- Labour efficiency has increased.

5.23. MARKETING

HAL : HAL used to sell a large portion of its products to private formulators. If sold its formulations under generic names to the public institutions. Hence marketing of drug was not much of a problem. HAL also enjoyed 10% price-preference from the public hospitals. Ideology for which HAL was set up in the public sector and its pioneering role in the antibiotics did not make the management feel the necessity of efficient and aggressive marketing system. The role assigned to the marketing wing was limited. Between 1967/68 and 1974/75, it was observed that sales increased marginally while the expenditure on marketing increased more than proportionately. Ratio of selling expenses to turnover was brought down from 4.46% (1974/75) to 3.09% (1976/77).

The management became aware of the positive role that can be assigned to the marketing system in late 70’s. At that time there were only 20 medical representatives out of whom 6 were meant for getting market information. Others were supposed to pursue Government business in
different states. This was bare minimum to cater to 7000 public institutions. They were not given promotary role. Representatives were expected to procure orders, follow up deliveries, pursue settlement of bills, attend to complaints and expedite the collection of outstanding from the public institutions.

COPU had recommended a centralised marketing organisation for all PEs. HAL management was not for such an arrangement because of possible inherent practical problems. It would not have been possible to correlate production with marketing. Again a common MR could not have convincingly canvassed for more than one company’s products while dealing with medical professionals. They thought that though a centralised organisation looked less expensive, it would proved costly because of its ineffectiveness. HAL management was contended in having link-ups with marketing organisations of other PEs. However, it was thought that a common committee of representatives of all PEs could co-ordinate dealings with the public institutions. The experiment did not succeed.

An inter-Ministerial Committee specially constituted by BPE gave a comprehensive recommendation in 1971. HAL could neither join Operation Research Group of Sarabhai for want of funds nor could use private marketing organisations.

In 1976, the Board decided to strengthen the marketing organisation in a phased manner with an immediate object of increasing sales by 50% in 1976/77. They tried incentive schemes for outside agencies and sales-personnel, with a view to enter trade.

As a 1st step HAL increased the number of Mrs and experimented regional distributorship. In spite of sincere efforts of the distributors HAL could not compete with high-pressure salesmanship of multinationals. Five parties were appointed to ‘create’ demand and targets were fixed for them. This arrangement gave encouraging results.

In 1982, a post of GM, marketing was created under whom 3 marketing managers were posted and 12 posts of supervisors were created to supervise 6/8 MRs. For agricultural drugs there were 15 MRs, 7 distributors and 175 dealers in 1982. Number of MRs increased thus 1973/74 - 12, 1979/80 -66, 1980/81-119, 1981/82-112. At present, HAL has field strength of 400 MRs including 50-55 officers and has a network of distribution to the remotest corners of India.

As second step Medical Service Department was started. It was decided to use brand names and print brochures for briefing the professionals. At present share in sales of drugs under brand names is around 30% to 35% (total drugs 25).

As third step, HAL decided to diversify the product-range. They planned to introduce 60 new drugs. Use of brand-names and production of category 3,4 drugs under DPCO was a strategic decision taken by the management which indicated prospects of better financial results and viability in future.
As a result of these strategies, sales increased by 100% in 5 years. HAL recorded 90.6% and 157.7% increase in sales during 1981/82 to 1986/87 and 1886/87 to 1991/92. HAL won 'IMM Best Marketing Company of the Year Silver Award' in 1992 for the best performance among private and public sector companies.

**IDPL**: The Government had issued a guideline to all the public hospitals to purchase drugs/instruments from PEs. So, like HAL, IDPL had a captured market. IDPL decided to approach other customers with bulk orders. Both the PEs offered 15% discount on narrow spectrum antibiotics, 2.8% discount on tetracycline to the Government institutions and 7.5% discount to the dealers. But IDPL had to establish its name and its products while HAL had already established itself in the market. Later, the Government introduced a zone system for the sale to public institutions.

Marketing Division of IDPL was set up in 1967. It was entrusted with the job of distributing imported drugs(1970). Director, Marketing at the corporate level has two GMs under him who look after marketing and Medical Service Zonal managers are appointed who in turn have divisional managers under them.

**Hyderabad Plant**: Prices of Drugs were fixed by the Government on the basis of application by IDPL. But at those controlled prices also, IDPL-drugs faced resistance in the market. IDPL claimed that CIF prices of imported drugs were kept at an artificially low level without reference to the cost of production in the country of origin in order to discourage indigenous production. Government policy to import the same drugs in large quantities was also partly responsible for the resistance.

**Madras Plant**: IDPL instruments faced similar resistance in spite of good quality. Because, cheaper but low-quality substitutes were preferred by the medical practitioners. IDPL had to give varying degrees of discount to public hospitals, teaching institutes and dealers.

Marketing Research Unit was started in the Marketing Division of the Madras plant. Field Investigation Unit was set up at the head office which collected feedback information from sales representatives. Madras plant appointed distributors and technical representatives to directly approach the medical institutions, surgeon and purchase committees in different states. They explained and demonstrated the instruments.

In spite of IDPL's claims on aggressive marketing tactics, sales remained stagnant COPU criticised the whole set-up as 'poor and inefficient.' In addition, IDPL lost institutional sales because of the formulation-units set up in the northern states by IDPL in the joint-sector.

IDPL failed to take notice of change in the demand pattern. Industrial relations with the field force were strained in the 80s. Marketing Division was infected with groupism which needed
complete revamping, IDPL could not take disciplinary action for quite a some time. Later, the division was moved to Gurgaon and its Director was replaced by a more competent man.

It was argued by the management that Government's insistence on the use of generic names for PEs proved to be a hurdle. But, there is room to doubt PEs' capability and will to generate brand-loyalty among the customers with a weak, unmotivated marketing organisation. With a view to deploy redundant staff, IDPL tried to transfer administrative staff to field-work jobs. They were neither trained nor motivated for out-door sales jobs after being conditioned in the desk jobs.

A haphazard effort at sales-promotion with the help of ill-trained, un-motivated staff of middle-age group could never have succeeded in competing with the private firms with their all-out efforts to capture larger share of market. Orientation courses offered to the deployed personnel could not inculcate necessary attitudes. As a result, there was 8.7% decrease in the volume of sales from 1981/82 to 1986/87. The position improved in 1991/92, recording 71.6% increase over 1986/87 figures.

Conclusion 5.19. Not only are the marketing set-up and practices of HAL better than that of IDPL but sales-performance is also superior. There is a fivefold increase in sales during 1983/84 and 1993/94.

5.24. EXPORTS

HAL: HAL entered export trade in a modest way in 1965/66 in order to fulfil export-obligations placed on HAL by the Government in return for the import of equipment. Government gave HAL a partial waiver. HAL exported drugs at selling price < cost of production; but it could earn foreign exchange.

Till 1990/91, there was not a serious effort at export promotion. But in 1991, Export section was separated from domestic marketing section. There has been a systematic export-promotion campaign. Before 1990/91 exports amounted to a few lakhs. In 1990/91 HAL won Chemixil Award for export performance when exports reached Rs. 3.77 crores figure. Since then, export earnings have increased progressively, though there was a substantial fall in 1994/95.

At present HAL is exporting about 25 drugs and 2 agricultural products to the developing and developed countries. Usually, export-prices cover the costs.

IDPL: As a marketing strategy, IDPL decided to export surgical instruments since they faced resistance in the domestic market. Besides foreign-exchange earning, it also ensured better capacity-utilisation. Percentage of exports in total sales increased from 57% to 87% during 1968/69 to 1972/73. But these exports were made at an unremunerative price leading to total losses of Rs.187.84 lakhs during the same period. Hence, exports were reduced.
IDPL's export-earnings remained moderate till 1978, then increased to Rs. 1 crores in 1979, 1980. After a break of four years, IDPL re-entered the export market in 1986. It mainly exports bulk-drugs. Export earnings of both the PEs since 1990/91 are given below.

Table T5.12. Export-earnings (Rs. in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>HAL</th>
<th>IDPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990/91</td>
<td>3.77</td>
<td>0.23</td>
</tr>
<tr>
<td>1991/92</td>
<td>6.60</td>
<td>1.08</td>
</tr>
<tr>
<td>1992/93</td>
<td>7.83</td>
<td>1.28</td>
</tr>
<tr>
<td>1993/94</td>
<td>10.38</td>
<td>0.66</td>
</tr>
<tr>
<td>1994/95</td>
<td>3.52</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Conclusion 5.20. Even though HAL’s entry in the export-trade is late and even though HAL is yet exploring the export prospects, its performance is better than that of IDPL. The volume of export-earnings is more and the composition of export items is varied and superior. Hence HAL has an upper edge over IDPL.

5.25. RESEARCH & DEVELOPMENT

Indian Pharmaceutical Delegation (1964) had attached importance to pilot plant studies and had enumerated principles for research work. But, sufficient importance was not given by the PEs to research efforts. Delegation’s recommendation about the co-ordination among PEs and Central Drug Research Institute, Lucknow is not being given enough attention.

HAL- R&D division in its modest form was set up in 1955. Work allotment of research staff was approximately as follows:

- 40%: Routine problems of the plant.
- 30%: New antibiotics to be developed.
- 20%: Basic research.

There is a standing Technical Committee of the Board which meets R&D at least twice in a year. In 1971, while judging the performance of the R&D division, the Board claimed that continuous technical advice was being given by R&D to achieve higher productivity, improve strains, keep properties of salts of drugs, study biosynthesis and to evolve better technology. This is corroborated by the fact that HAL could improve productivity under a given strain and did not purchase new strain till 1989/90. Some processes are developed for manufacturing industrial enzymes, converting starch into dextrose and penicillin 1st crystal in 6 APA.

The R&D division has been successful in substituting indigenous raw-materials in place of imported ones. Lactose, corn steep concentrate corn-oil, lard oil are some such items. Consumption of imported raw-materials was brought down from 25.2% in 1968/69 to 6.20% in 1974/75. But it has increased from 5.8% in 1976/77 to 7.5% in 1981/82 and 11.23% in 1991/92.
At times, this substitution has adversely affected the yield. R&D has to its name two new drugs viz. Hamycin, Aureofungin (plant medicine). However HAL could not reap the benefits out of their commercial production, mainly due to the problem of a short shelf-life. Problem of toxicity is successfully handled by the R&D in case of Hamycin. No new drug is discovered after Hamycin.

A family planning kit - ‘Nancy-kit’ (1981/82) and “Drug Detection Kit” (1986/87) are the two important products developed by the R&D division of HAL. New types of drug-delivery system for anti-inflammatory, anti-ulcer and anti-asthmatic cardiovascular drugs are initiated by the division.

A regular Research & Science Journal is being published by the R&D wing. Expenditure on R&D varied between 3% of the turnover to 5.5% till 1986/87. In 1991/92 it was only 1.18%.

IDPL - R&D division was set-up in IDPL right from the beginning. A co-ordinating committee set up by the Government to co-ordinate the research efforts of these PEs has been ineffective. Both HAL and IDPL mainly concentrated on the routine problems of their plants. Since technologies employed by the two PEs are different, it is claimed that there is no duplication of research.

At the Hyderabad plant, the concern was about achieving progressive economy in existing product-lines and discovering new products. In the Madras plant, Scientific Advisory Committee appointed by IDPL in 1969/70 recommended production of disposable and electromedical diagnostic equipment. But, Madras plant had to concentrate on product-modification and product-designing. 68 instruments out of 97 for which production-plans were ready in 1974, were either newly developed or modified by the R&D division.

In the Rishikesh plant, import-substitution has been the main aim. 11 out of 30 items were substituted till 1973/74. R&D division was also successful in designing effluent disposal machinery.

Expenditure on R&D has varied around 1% to 2% of the total sales. Though the R&D division has no new drug to its name they have been successful in developing a process for manufacturing 4 drugs/intermediates and 23 formulations.

Conclusion 5.21. Though the performance of R&D has not been outstanding in both the PEs, HAL has an upper edge because of successful technology-absorption and technology-development efforts, two new-drugs and ‘kits’ developed by the R&D division of HAL.
5.26. FINANCIAL MANAGEMENT

HAL: Debt-Equity Ratio has been around 1:1 to 1.6:1 during 1976/77 to 1991/92. In the earlier period debt meant ‘Government-loan’ but since 1984/85, the percentage of bank-loan in the total loan has gone up. It was 45.6% in 1991/92. It does reflect the credit-worthiness of the company.

On the recommendation of COPU, capital restructuring was done in 1983 by conversion of loan into equity. HAL was given interest-holding on non-plan loan given by the Government for 5 years (1984/85 to 1988/89) which amounted to Rs. 31.06 crores. HAL was expected to improve the performance during period.

Finance-Director is a full-time Director on the Board. There was much to be desired in the financial discipline. Till 1976, there was no accounting manual or a regular reporting system.

Standard costing was introduced in 1976. Till 1966/67, expenditure was recorded cost-centre wise, then computed process-wise. Costing was done without actually recording service-utilisation till 1973/74. System of submitting a consolidated audit report to the Board was introduced only in 1982. Inventory-holding could not be controlled properly. HAL faced a severe working-capital shortage. Yet, bill-collection period stood at or around 90 days from the day of dispatch. Even now it is the same in spite of measures taken by the management. This is more true about the public institutions.

It was only around 1978/79 that HAL became conscious about the profitability and economic viability. HAL brought more professionalism in its approach after 1979.

Financial results: In the initial period, HAL could have make moderate profit though price of penicillin was reduced progressively and though HAL had an obligation to supply a fixed quantity to UNICEF towards repayment of loan. But during that period HAL could not declare dividend due to a clause in the agreement requiring HAL to work on no-profit basis. This clause was deleted in 1961/62 and HAL declared dividend at rates varying between 6 1/4 to 10%. Total dividend paid till 1972 amounted to 105% of the paid up capital.

But after 1972/73 HAL started incurring losses due to a variety of reasons, some of which were not under the control of HAL-management. Strict price-control in spite of a progressive price-escalation of raw-materials price-freeze in 1978/79 and rigid credit policy for obtaining working capital were some of the major factors. There is always a time gap between the rise in cost-of-production (due to rise in raw-material prices) and the price-revision. During this period company has to fear the loss. There has been some arrangement to adjust prices automatically with changes in raw-material prices in case of formulations, but no such arrangements are made in case of bulk-drugs.
Conclusion 5.22. The factors for which HAL-management can be held responsible are:

- Lack of financial discipline arising out of complaisance due to favourable financial results in the earlier period.
- Ill-conceived and half-cooked projects without considering the economic viability.
- Inadequacies in the operational practices.
- Inadequate efforts of R&D.
- Failure to control inventory-holding within the prescribed limits.

By 1981/82, HAL’s accumulated losses had wiped out the paid-up capital (Rs. 24.6 crores as against the paid-up capital equivalent to Rs. 21.22). In 1991/92 the accumulated deficit was Rs. 29.42 crores against the paid-up capital of Rs. 40.34 crores.

After capital-restructuring and an interest holding for 5 years, due to all-out efforts by the management, HAL showed profits since 1987/88 till 1992/93. In 1993/94 the company has incurred a loss of Rs. 12.68 crores. In 1990/91 HAL had entered a MOU agreement with the Ministry and could fulfill the targets of turnover/net-profit in 1991/92. The major reason for the recent losses in claimed to be the stickiness of prices of bulk drugs.

Conclusion 5.23. Financial results of the PEs can be deceptive in more than one ways.

- They may hide inefficiencies which come to surface after a time-lag.
- Net-profits can be a short-term phenomenon as an effect of financial arrangements made by a budgetary support in the earlier period.
- A profit-making PE can simultaneously carry ‘accumulated losses’ over the years which do not tell upon the current financial results due to a provision to schedule it.

IDPL: Till 1973/74 the Debt-Equity Ratio had been around 1:1. To ranged between 1.33:1 to 1.59:1. IDPL was given moratorium for 4 years, a waiver to panel and compound interest (amounting to Rs. 1.80 crores,) for 5 years. IDPL was also given interest-free working capital loan of Rs. 24.85 crores for 5 years. Till 1975 there was no handbook of distribution of financial powers as between the Financial Advisor (F.A.) and the MD. Hence that was not clear policy about issue requiring prior concurrence/consultation with F.A. One does not know whether such a hand-book was compiled by the management at a later date.

There was no proper costing system or proper accounting practices in 1973/74 and later reports keep silent about costing system or accounting practices. Volume of outstanding / sundry debts has been considerably low as compared to HAL and it was kept low especially after 1984. In
case of IDPL also, the major share of outstanding is attributable to the public institutions. Only 6% of the outstanding was attributable to the private parties.

**Financial results**: IDPL could show moderate profits for 5 years between 1974/75 and 1978/79 after incurring losses for all the years of its existence till 1974/75. By 1973, (within 5 years of IDPL’s commissioning) the cumulative ‘losses were Rs 38.25 crores which were more than the paid up capital of Rs. 33.7 crores.

**Conclusion 5.24.** Hence there is ground to conclude that the profits made during 1975 to 1979 were due to the financial measures (adopted by the Government) like moratorium.

After 1978/79 IDPL never made profit. There was reduction in the volume of annual losses by 12.5% and 19.07% over the earlier years during 1982/83 and 1983/84. But this trend proved to be temporary. In 1991/92, the figures for paid-up capital and accumulated losses were Rs. 113.06 and Rs. 540.61 crores respectively.

In 1989/90 IDPL again approached the Government for capital-restructuring but the Government kept the decision pending. IDPL approached the Industrial Reconstruction, Bank of India for rehabilitation. In 1992, IDPL was declared as a sick company and was referred to BFIR in 1992/93. In 1994 the reformed revival package containing capital restructuring was approved. Historical interest-burden till March 1993 is likely to be reduced.

IDPL had neither paid dividend nor contributed to the exchequer substantially in the form of interest or taxes. The company has been a financial burden on the Treasury all along. In addition to the factors at the Government-level that were responsible for adverse financial results of pharmaceutical PEs (enumerated earlier in case of HAL), following factors can be added in IDPL case.

**Conclusion 5.25.** Additional factors responsible for the adverse financial results:

- **Initial project-planning/implementation**
- **Wrong initial decision regarding technology**
- **Low operational efficiency in almost all the areas of management**
- **Low moral and work-culture non-conducive to the institutional progress**

The possibility of liquidation of IDPL cannot be considered by the Government because of its role in holding the prices of life-saving drugs. But chances of turn-around seem to be remote in case of IDPL, even if the management is allowed to begin with a clean slate.
Recommendation 5.2.

Chances of IDPL’s revival are more if following steps are taken:

- Separating three plants from each other.
- Selling out the Madras plant to a private party after impartial evaluation of the assets without putting obligations on the purchase regarding employee-absorption.
- Leasing out plants for a fixed period to private parties after putting conditions regarding the quality and quantity of certain drugs.

This may change the work-culture and improve the operational efficiency.
17. Pg. 118, Committee On Public Undertakings 80th Report, 5th Lok Sabha.
19. P 21 Ibid.
20. P 21 Ibid.
21. P 21 Ibid.
25. PP 17,18, Recommendation No. 21, Action Taken Report, Committee On Public Undertakings, 38th Report, 8th Lok Sabha.
26. Minister of State, Department of Chemicals, Lok Sabha (18/3/87.)

## Appendix 5.1.

(Rs. In crores)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tr>
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<td>HAL</td>
<td>IDPL</td>
<td>HAL</td>
<td>IDPL</td>
<td>HAL</td>
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<tr>
<td>Authorised Capital</td>
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<td>50.0</td>
<td>30.0</td>
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<td>Paid up Capital</td>
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<td>45.8</td>
<td>21.5</td>
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<td>Loan from GOI</td>
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<td>13.3</td>
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<tr>
<td>Working Capital</td>
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<td>61.4</td>
<td>22.1</td>
<td>13.7</td>
<td>44.0</td>
</tr>
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<td>Loan from GOI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserves &amp; Surplus</td>
<td>4.3</td>
<td>0.7</td>
<td>0.3</td>
<td>1.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Cumulative Depreciation</td>
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<td>23.8</td>
<td>10.1</td>
<td>46.5</td>
<td>19.8</td>
</tr>
<tr>
<td>Gross Block</td>
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<td>56.9</td>
<td>19.8</td>
<td>119.2</td>
<td>43.9</td>
</tr>
<tr>
<td>Capital Work in progress</td>
<td>0.4</td>
<td>8.2</td>
<td>16.3</td>
<td>15.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Working Capital</td>
<td>6.6</td>
<td>45.7</td>
<td>13.7</td>
<td>54.5</td>
<td>25.4</td>
</tr>
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<td>-</td>
<td>-</td>
<td>1.5</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Deficit</td>
<td>8.4</td>
<td>29.9</td>
<td>-</td>
<td>-</td>
<td>37.6</td>
</tr>
<tr>
<td>Capital Employed</td>
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<td>78.8</td>
<td>23.4</td>
<td>127.3</td>
<td>49.5</td>
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<td>Sales/Operating Income</td>
<td>15.4</td>
<td>73.1</td>
<td>27.9</td>
<td>104.5</td>
<td>53.1</td>
</tr>
<tr>
<td>Other Income</td>
<td>-</td>
<td>-</td>
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<td>8.3</td>
<td>7.8</td>
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<td>Gross Profit</td>
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<td>N.A.</td>
<td>(-)0.4</td>
<td>(-)12.4</td>
<td>7.6</td>
</tr>
<tr>
<td>Interest on GOI</td>
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<td>6.4</td>
<td>4.6</td>
<td>12.1</td>
<td>6.2</td>
</tr>
<tr>
<td>Tax Provision/Dividend declared</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Net profit</td>
<td>(-0.5)</td>
<td>4.3</td>
<td>(-)5.7</td>
<td>(-)27.4</td>
<td>(-)0.8</td>
</tr>
<tr>
<td>Expenditure on R&amp;D</td>
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<td>N.A.</td>
<td>N.A.</td>
<td>1.5</td>
<td>3.1</td>
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<tr>
<td>No. Of employees</td>
<td>N.A.</td>
<td>N.A.</td>
<td>2533</td>
<td>12426</td>
<td>2644</td>
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Financial Ratios:

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<td>%</td>
<td>HAL</td>
<td>IDPL</td>
<td>HAL</td>
<td>IDPL</td>
</tr>
<tr>
<td>Value of production to Capital employed</td>
<td>-</td>
<td>-</td>
<td>115.3</td>
<td>79.3</td>
</tr>
<tr>
<td>Material Cost to Cost of Production</td>
<td>-</td>
<td>-</td>
<td>38.9</td>
<td>42.7</td>
</tr>
<tr>
<td>Manpower Cost to Total Cost</td>
<td>-</td>
<td>-</td>
<td>15.5</td>
<td>13.9</td>
</tr>
<tr>
<td>Value added to Capital employed</td>
<td>-</td>
<td>-</td>
<td>29.5</td>
<td>21.0</td>
</tr>
<tr>
<td>Cost of Sales to Net Sales</td>
<td>-</td>
<td>-</td>
<td>125.4</td>
<td>135.7</td>
</tr>
<tr>
<td>Gross Margin to Capital employed</td>
<td>-</td>
<td>-</td>
<td>1.8</td>
<td>Loss</td>
</tr>
<tr>
<td>Gross Profit to Capital employed</td>
<td>-</td>
<td>-</td>
<td>Loss</td>
<td>Loss</td>
</tr>
<tr>
<td>Gross Profit to Net Sales</td>
<td>-</td>
<td>-</td>
<td>Loss</td>
<td>Loss</td>
</tr>
<tr>
<td>Profit before tax to Net worth</td>
<td>-</td>
<td>-</td>
<td>Loss</td>
<td>Loss</td>
</tr>
</tbody>
</table>

Appendix 5.2.

Details about project formation stages of HAL and IDPL.

HAL:

1945: 'The Planning And Development Department' appointed the 'Panel of Fine Chemicals, Drugs and Pharmaceuticals' to report on the status of the manufacture of drugs in India.

1946: A team sent to UK, Canada, USA to get acquainted with manufacturing techniques.

1948: A team deputed to obtain latest information about requirements, costs involved and the economies of the proposed undertaking.

1950: 'Indian Penicillin Committee' constituted to implement the project of bottling plant in Bombay.

1951: Government of India entered into a tripartite agreement with WHO and UNICEF.

Source: HAL publication 1956

IDPL:

1956: A team of Russian experts visited India to study the possibility of offering collaboration for drug-manufacturing.

1956: Indian team sent to USSR to assess the possibility of adopting Russian technology; submitted the report in December 1956.

1958: Government decided to set up 5 plants after inviting Russian team to give estimates of foreign exchange requirements and to lay down production plan.

1959: Government of India entered into an agreement with USSR.


Source: COPU 22°R, 3° L.S.
Appendix 5.3

Details about the projects that failed in HAL:


- **Tetracycline** - Process discovered by R&D department of HAL coincided with one that was already patented by another company. HAL was legally not allowed to use the process.

- **Aurofungin** - Inadequate and seasonal demand coupled with a weak marketing organisation.

- **Neomycin Sulphate** - Problems occurred in the process of manufacturing and a weak marketing organisation.

At present '1st' and '4th' are manufactured in the pilot plant as and when necessary. Problem of toxicity in case of 1st was successfully solved by R&D.

Appendix 5.4

Details about schemes submitted between 1986 to 1988:

- Capacity augmentation of penicillin first crystals from 200 mmu to 300 mmu.
- Capacity augmentation of penicillin production in the existing plant from 360 mmu to 420 mmu.
- Plan to set up a new penicillin plant with initial capacity of 250 mmu.
- Change over to new improved technology developed by R&D.
- Capacity augmentation of Gentamycin from 1 MT. to 4.5 MT. in collaboration with Pharma-Chim, Bulgaria (Agreement signed in 1988).

(Source :- BPE Reports).

Appendix 5.5

HAL's wise decision / Joint Ventures

- HAL took a wise decision not to take-over 'J. G. Glass Works' though it was HAL's ancillary industry and located in their premises. Though HAL had to face considerable inconvenience due to adamant attitude of this unit regarding pre-determined prices and timely and adequate supply of vials, HAL preferred not to take it over because of the special problems of glass-industry itself.

- HAL management did not show enthusiasm to the proposal that Rishikesh unit of IDPL be attached to HAL.
Joint-ventures of HAL:
♦ Maharashtra Antibiotics Private Ltd.
♦ Karnataka Antibiotics Private Ltd.
♦ Goa Antibiotics Private Ltd. (HAL has disinvested from GAPR since)
♦ Manipur Hindustan Drug Private Ltd.

Government took the decision to set up a formulation in Manipur and in 1989/90 and asked HAL to participate. Total estimated outlay was Rs. 250 lakhs which has now come to over Rs. 400 lakhs. Due to Assam agitation and unstable law and order situation this plant could not be completed in stipulated period; it has started production in phases.

Appendix 5.6.

Unsuccessful projects of IDPL:
♦ After investing around Rs. 68.28 crores on expansion schemes in Rishikesh plant, there proved to be a mismatch between production-capacity and sales. All new sections had to be closed.
♦ Hyderabad expansion project: By the time expansion projects were completed some major products were banned by the Government and some could not compete in the market.
♦ Gurgaon formulation plant: IDPL could not use 22 million ampouling capacity till 1984 after which the capacity concluded that the equipment and machinery should be sold in the absence of any hope for improvement.
♦ Joint-ventures-formulation capacity created by IDPL and their joint-sector subsidiaries was much in excess of actual requirements which resulted into under-utilisation of capacity in all the units.

Appendix 5.7.

Gap between the domestic production and domestic demand for antibiotics:
The total sanctioned capacity (as in 1986/87) was 1574 MMU and the installed capacity was 574 MMU (of HAL and IDPL). The figures for production and demand for 1977/78 to 1989/90 were as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (MMU)</th>
<th>Demand (MMU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977/78</td>
<td>314.57</td>
<td>-</td>
</tr>
<tr>
<td>1978/79</td>
<td>319.95</td>
<td>-</td>
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<tr>
<td>1979/80</td>
<td>326.96</td>
<td>-</td>
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<td>1980/81</td>
<td>336.82</td>
<td>-</td>
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<tr>
<td>1981/82</td>
<td>360.61</td>
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<td>1982/83</td>
<td>358.37</td>
<td>890</td>
</tr>
<tr>
<td>1983/84</td>
<td>316.74</td>
<td>1010</td>
</tr>
<tr>
<td>1984/85</td>
<td>221.68</td>
<td>1150</td>
</tr>
<tr>
<td>1985/86</td>
<td>269.11</td>
<td>1320</td>
</tr>
<tr>
<td>1986/87</td>
<td>266.64</td>
<td>1520</td>
</tr>
<tr>
<td>1987/88</td>
<td>N.A.</td>
<td>1765</td>
</tr>
<tr>
<td>1988/89</td>
<td>N.A.</td>
<td>2040</td>
</tr>
<tr>
<td>1989/90</td>
<td>N.A.</td>
<td>2270</td>
</tr>
</tbody>
</table>

Source: COPU 38th Report (ATR) 8th Lok Sabha, P.P. 26.29