# MANAGEMENT ACCOUNTING SYSTEMS: SOME FIELD EVIDENCE FROM SIXTEEN MULTI-NATIONAL COMPANIES IN IRELAND

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## *ABSTRACT*

*Apart from surveys by Clarke (1992) and Nulty (1992), little is known about the management accounting systems used by Irish manufacturing firms. While both surveys provide some useful insights, further research is needed. The purpose of this paper is to present the findings of semi-structured interviews with 16 financial controllers in large, multi-national companies operating in Ireland. A range of attitudes became evident in relation to existing cost systems. There was virtually no use of activity based costing; there was limited application of just-in-time systems; quality issues were important in most companies but formal cost of quality reports were generally absent.*

## INTRODUCTION

It is now fashionable to criticise the current state of cost/management accounting practice. Indeed, to some, the profession of management accounting is facing a crisis of relevance (Atkinson, 1987). It is convenient to group the many criticisms into two broad areas. The first area of criticism relates to the conventional focus on costing products using only traditional overhead recovery bases such as direct labour hours. The second source of criticism relates to the role of management accounting in a world class manufacturing (WCM) environment where firms strive to manufacture quality products which reach customers quickly and at a low cost to ensure high customer satisfaction. The elements of world-class manufacturing such as just-in-time (JIT) and total quality management (TQM) require appropriate measurement systems to underpin these philosophies and influence desirable employee behaviour.

In truth, this two-way classification is convenient but slightly artificial,

since both criticisms are linked. For example, Kaplan (1988) did not differentiate when he stated:

> 'Our cost accounting systems are designed to accommodate our deficiencies, not to point to ways of solving the problems. The result of this kind of thinking is long lead times, high inventory, poor delivery performance and poor quality.'

In order to evaluate such criticisms in an Irish context, it is first necessary to know and understand actual current practice. In this paper we report and discuss findings from a small sample study, based on interviews conducted during early Autumn 1992, on cost/management accounting systems. We concentrated, in particular, on the implementation of new cost/management accounting techniques such as ABC; issues such as JIT and quality; and the barriers to, and expected benefits from, management accounting improvements.

The paper progresses through five distinct areas. The research objectives and research methodology are first discussed. Attitudes towards the existing cost system and the possible introduction of ABC are then examined. This is followed by the issue of quality and its accounting implications. The findings in relation to JIT are then presented. Finally, the conclusions and limitations of the research are set out, together with suggestions for future research.

## RESEARCH OBJECTIVES AND METHODOLOGY

The objectives of this study can be summarised as follows:

- To ascertain the attitudes of the interviewees to their existing costing systems and to examine why companies are or are not considering the introduction of ABC and what difficulties and reservations they may have about its implementation
- To investigate the importance of quality to the companies participating in this study, discover what measures are used to evaluate quality performance and ascertain the extent to which cost of quality reports are used
- To discover the extent to which JIT exists in Irish manufacturing firms and what impact this has had on management accounting practice.

The selected sample was drawn from the many respondents to the Clarke (1992) study who indicated their willingness to engage in subsequent face-to-face interviews. Due to logistical and time factors, a small sample

was identified based on the respondents' interest in management accounting developments. These were multi-national companies. The financial controllers of 16 companies were contacted and all agreed to be interviewed. On-site visits took place mainly in Dublin, Cork, Limerick, Galway and Athlone and were undertaken by both authors.

Some background information on the responding companies is provided in **Table 1** (Number of Employees), **Table 2** (Industrial Classification) and **Table 3** (Total Cost Structure) in **Appendix I**.

## EXISTING COSTING SYSTEMS

All 16 companies operated a traditional standard costing system with conventional variances extracted for materials, labour and overheads. As regards the level of detail in the standard costing system, the following picture emerges:

| Type of Variance | Number of Companies |
|---|---|
| Material variances only | 3 |
| Material and labour variances only | 1 |
| Material, labour and overhead variances | 12 |

Despite all the negative comments that have been made about the inappropriateness of direct labour as a basis for overhead recovery, the majority of companies were using it. However, a small number of companies (three) indicated that the arbitrary method of overhead absorption was being replaced by a system of direct charging. In other words, what were previously considered overheads, to be arbitrarily apportioned to products, are now being considered direct costs by establishing a valid cause/effect relationship.

Most interviewees expressed some level of dissatisfaction with their companies' existing costing systems. We have classified these reasons between those relating to product costing (that is, the product cost distortion argument) and those relating to the absence of relevant information for decision making. (In reality, these two issues are related.)

Typical comments made by interviewees regarding the distortion of product costs were as follows:

- The traditional system is overcosting high volume products. (It was estimated that overheads assigned to such products were three or four times too high)

- Low volume products are being heavily subsidised by the high volume products
- The engineering and production people know that the overhead allocation system is wrong and that the existing costing system distorts product costs
- New products must be costed more accurately. (This was especially relevant for those companies that used cost plus pricing)
- Direct labour is only 4% of product cost in one particular company and yet direct labour hours is being used as the basis for absorbing overhead.

In addition, some financial controllers felt that the company's accounting system did not provide relevant information for decision making. The typical comments were:

- There is need for more accurate product costs to influence marketing decisions. Too many products are earning too little profit
- The accounting system is geared totally to the manufacturing process. It does not measure the efficiency and effectiveness of non-production tasks and activities
- Information is too late for control purposes (for example, there is a lack of on-line information)
- There is a lack of strategic information such as customer profitability
- There is no follow-up on variances
- The existing accounting system is not reflecting major success factors of the business such as on-time delivery to the customer and high quality.

One would anticipate that a degree of dissatisfaction would lead to a change in the accounting system. Six financial controllers specifically mentioned, however, that they could not change their costing systems without head office approval. One financial controller highlighted the resistance to change at corporate level by accusing corporate accountants of being more concerned with information for financial reporting than with more accurate decision-oriented information for product costing. Another financial controller mentioned the resistance of brand managers to change from the traditional costing system. Related to this was the reluctance of one financial controller to change the costing system because of the uncertainties which that might create for product line decisions.

Another financial controller indicated that the marketing division of the company would not accept the new costings, being very sensitive to price increases. The transfer price to the marketing division is based on standard cost and any change to the standard costing system would

be resisted. The reasons for this kind of resistant behaviour are explored by Markus and Pfeffer (1983). They state that resistance to, and failure of, new accounting and control systems are common and suggest that resultant actual or perceived changes in the power structure within the organisation are the cause.

## THE ISSUE OF ACTIVITY-BASED COSTING (ABC)

The Clarke (1992) study indicated that only a small number of companies (14%) claimed to be using an ABC system. This is a low percentage but is similar to that found by Murphy and Braund (1989) in the UK. Subsequently, Bright *et al.* (1992) reported in their UK study that 32% of their respondents had ABC in place, while 33% of the Nulty (1992) respondents had ABC in place.

Clearly, some of the respondents in the present study were not entirely happy with their existing cost systems. It was, however, interesting to note that, in some cases, the unease with the system originated with the *users* of the accounting system rather than with the *preparers* of the data. Thus, we learned that it was the production managers who initially queried the extensive amount of overheads assigned by the cost accountant to a product or product line. It was also reported that when a semi-ABC system was introduced (that is, to cost a limited number of activities for overhead absorption purposes) and a cause/effect relationship could be established, the company's production managers were much more willing to accept overhead assigned to their departments.

As little evidence of the operation of ABC was found in these sample companies, respondents were asked why they were reluctant to introduce such a system and what difficulties they perceived in its implementation. The responses can be classified between those relating to principle and those relating to difficulties of implementation:

*Reasons of Principle:*

- Constraints imposed on change through linkage with the Group's world-wide accounting system
- The company is a production centre and there is not the same emphasis on cost accuracy as there would be if it was involved in marketing its products
- No great need to introduce ABC due to the relative insignificance of overheads. Thus, product costs were not expected to change significantly if ABC was introduced

- The company has only one major product
- Failure to be convinced that the introduction of ABC would have any impact on decision making
- The existing traditional costing system is deemed satisfactory for measuring performance and showing trends in product costs.

*Perceived Difficulties with Implementation:*

- Getting people interested. It was suggested, however, that cost consciousness would facilitate the introduction of ABC
- Costly to implement (time, software, training)
- Identifying cost pools and cost drivers
- Reorganising cost centres into activity centres. This reorganisation had implications for the reporting structure and individual responsibilities
- Over-selling by consultants creating a certain amount of cynicism
- Benefits of ABC are difficult to quantify
- Reluctance of senior personnel to adopt a new costing system
- The commonality of some costs
- Output of ABC system deemed too complex in the context of the need for an uncomplicated and understandable costing system.

Two companies reported experimenting with ABC. One company used 20 cost drivers, while the other used ten. Some examples given of activity centres (cost pools) and cost drivers are as follows:

| **Activity Centre** | **Cost Driver** |
|---|---|
| Materials procurement | Number of purchase orders |
| Supplier development | Number of suppliers |
| Surface mounting | Number of placements on board |
| Machine insertions | Number of insertions |
| Hand assembly | Number of direct labour hours |

It is interesting to note that direct labour hours can still be used as an overhead absorption base under ABC. Under ABC, direct labour hours becomes one of the many bases used by the firm to recover overheads.

The two companies in the study which are experimenting with ABC have only begun to do so in the recent past. Thus, the feedback on benefits of ABC is rather limited. One company, however, had become very cost conscious of non-value-added activities and discovered that the materials handling activity was far more expensive than was realised. This activity was targeted for cost reduction as a result of an ABC analysis, and some savings have been made.

The second company experimenting with ABC indicated that they realised that the number of placements on each computer board was more costly than previously thought. Thus, cost savings could be generated by redesigning the production process to reduce the number of placements. In other words, the ABC system had impacted on the production design process.

Interviewees were asked about the perceived benefits of introducing an ABC system in their plant. It became apparent that there was an element of unfamiliarity with the concept of ABC. Those who were familiar with ABC seemed to focus on ABC as a method of product costing. However, some respondents did not realise that ABC can be viewed in a broader, more strategic perspective such as costing activities to highlight and eliminate waste and provide a sharper focus on customer profitability. Also, the availability of cost driver rates could have an impact on the design of existing products.

A number of companies in the study are considering the introduction of ABC. This consideration is being driven by the growing cost and competitive pressures being experienced by these companies. There is also a general awareness that traditional product cost information may be distorted due to the use of only volume-related cost drivers to assign overheads to products. The expected benefits were listed as follows:

| **Expectation** | **Frequency** |
|---|---|
| More accurate product costs | 6 |
| More effective cost management by focusing on wasteful activities | 4 |
| Information for budgeting | 2 |
| Influencing design decisions | 1 |
| Assisting in customer profitability analysis | 1 |

## MEASURING QUALITY

In today's highly competitive marketplace, quality is one of the key success factors for many companies, along with timely delivery to customers. If quality is to be a priority, then it must be managed. Before quality can be managed, however, it must first be measured and performance reported against a standard. Thus, quality costs are incurred both to ensure that quality standards are met and because quality standards are not met (Albright and Roth, 1992).

In some modern management accounting textbooks, for example, Horngren and Foster (1991), cost of quality reports are discussed. The objective of such reports is to indicate to management the total cost to the company of producing products that do not conform with quality standards. Three categories of quality cost are identified: prevention, appraisal and failure. In describing the accounting system that organisations need to support world class operations, Kaplan (1983) notes:

> 'The challenge is to devise new internal accounting systems that will be supportive of the firm's new manufacturing strategy. Improved measures of quality, inventory performance, productivity, flexibility and innovation will be required.'

The major advantages of cost of quality (COQ) reports are:

- The total cost of quality is established and management is made aware of its significance (which can sometimes be considerable)
- The total cost of quality can be managed by analysing interdependencies across the three categories. For example, a company might examine how investments in prevention might contribute to reductions in failure costs (internal and external).

Quality is a major issue in each of the 16 companies surveyed, and some interviewees offered the opinion that companies can fail through lack of quality. Indeed, one company's future was threatened when a major proportion of its sales (30%) was returned some years ago by dissatisfied customers.

Six of the companies were certified or seeking certification for the quality standard ISO 9000 or 9001. A similar number of companies indicated that they have total quality management (TQM) programmes. One company embraces world class quality improvement (WCQI) which focuses on quality, JIT and total employee involvement. Another company has introduced a quality leadership process (QLP) which permeates the entire organisation. Two companies had undertaken a one-off study of their cost of quality (COQ) which for one of the companies approximated to 30% of total production cost and £300,000 per year for the other company. These companies were all aiming at a continuous reduction in these costs. Some companies acknowledged that employees respond to what is measured (that is, people do what you inspect not what you expect). Thus, when companies began measuring, say, defects, the defect rate dramatically declined and the estimated costs of the exercise were reported as having being recovered. Another company had fortnightly meetings with employees at which quality (and other issues) were discussed.

*Factors Driving Quality*

The 16 companies identified the major factors driving quality as follows (with some companies mentioning more than one):

- Increasing competitive pressures 8
- Customers demanding higher quality products 7
- Federal Drug Administration/DHSS regulations 4
- Life-threatening impact of poor quality 4
- Justification for maintaining high prices 1

The quality control reports for those companies operating under FDA regulations (which are very stringent) are sent to top management but the accounting staff are not involved in their preparation. The management accountant was aware of their existence but they did not appear to have any immediate implications for him.

*Quality Measures*

Every company in the study used quality measures, with five companies using at least four measures. The measures in use are as follows:

**Type of measure**

- Defect rates (one company had a target defect rate of 2 per million)
- Scrap rates
- Returns from customers/warranty claims
- Customer complaints
- Delivery time to customers
- Raw materials yields
- Stoppages of production which were analysed between supplier and internal defects
- Absenteeism (classified between authorised and non-authorised).

*Cost of Quality Reports*

It is interesting to note that the accounting system failed in many cases to fully support the quality initiatives introduced. For example, while most respondents indicated that they had a quality programme in place, only a few companies supported this quality initiative with formal cost of quality reports. Just two companies in the study prepared cost of quality (COQ) reports on a regular basis. Let us refer to these companies as Company A and Company B. At the time of the study, Company A's COQ amounted to 7% of the total costs of production. It was not possible to assess the benefits of such reports for Company A as they had only recently been established. One benefit that did emerge was that there was a greater awareness in the company that quality costs money. Company B's COQ was running at 8% of sales revenue and the objective was to reduce this to 4% within a year.

Two companies stated that they operate supplier certification schemes with the objective of ensuring the delivery of defect-free materials on time. One company operated its scheme in the following way. Each supplier starts with 100 points and loses 4 points for some flaws (such as late delivery or defects) and 2 points for other flaws (such as delivery shortages). When the supplier's score falls to 70 points, a warning letter is sent. At 50 points another warning letter is sent, and at 40 points the supplier is notified of the withdrawal of certification.

It is important to note, however, that one significant item missing from the COQs mentioned in this study is the opportunity cost of business lost through supplying the customer with sub-standard products. One company felt that COQ reports were meaningless because of this omission.

## JUST-IN-TIME SYSTEMS

This section briefly looks at the extent to which the 16 companies have introduced JIT systems, and the impact, if any, on their management accounting systems.

Ten companies reported having introduced JIT production systems, and six of these have introduced limited JIT purchasing systems. The principal reason for the non-existence or partial existence of JIT purchasing systems is that the bulk of the companies' raw materials comes from abroad.

For the ten companies that have adopted the JIT production philosophy, the objectives are invariably threefold:
i) The elimination of wasteful activities
ii) The reduction of inventories
iii) On-time delivery to customers.

The major features of the JIT production systems found in these companies have similarities from one company to another and include:
- 'Manufacturing cells' which involve the organisation of the production process around families of similar products or components This type of structure facilitates the speedy throughput of products
- Cross-training of employees (or multi-skilling), thereby facilitating greater flexibility in the production process and a move away from rigid demarcation
- Demand-driven production with the objective of eliminating inventories of finished goods

- Total employee involvement (TEI) which aims at encouraging employees to be self-directing and to take full responsibility for quality.

As part of the JIT system, two companies mentioned quality approved suppliers who guarantee the supply of defect-free materials/components, thereby eliminating the need for inspection.

*Impact of JIT on the Accounting System*

The ten companies using the JIT production philosophy provide a varied picture of its impact on their management accounting system. The following table indicates the kind of changes/innovations brought about as a result of the adoption of JIT by these companies.

| **Change/Innovation** | **Frequency** |
|---|---|
| Increasing use of non-financial measures | 7 |
| Elimination of work in progress | 4 |
| Elimination of labour reporting | 2 |

The non-financial measurements in use reflect the importance of time as a strategic issue in JIT. Lead times and customer delivery times are most frequently used. The elimination of work in progress in four companies is due to significant reductions in manufacturing cycle time. Two companies stated that they had eliminated direct labour reporting, treating labour instead as part of manufacturing overhead. The principal reason for treating direct labour in this way is due to its relative insignificance in relation to total product cost, being less than 10% in both companies.

## CONCLUSIONS AND LIMITATIONS

This paper represents a summary of discussions held with financial controllers in multi-national subsidiaries based in Ireland. The purpose of the study was to gain insights into, and impressions of, management accounting systems in these firms.

Before any conclusions can be drawn, it is worthwhile to stress some of the limitations and difficulties encountered in compiling this study. Perhaps the main limitation is that this is a partial study and one cannot generalise from a sample size of 16 firms, especially as they are all multi-nationals rather than a spectrum of small/medium/large. Moreover, in obtaining information of this variety there is the possibility that there

may be misinterpretation of questions and differing definitions of terms. There is also the possibility, as noted by Bright *et al.* (1992), that some interviewees reported positive involvement because they believed that they should be doing so.

There is also the question of precisely who should be interviewed in the company and/or should there be multiple interviews? Clearly, the financial controller or chief management accountant should be interviewed since he or she should be in a position to provide comprehensive answers to all questions. Based on our experience in researching this paper, we would prefer a single interviewee. On some occasions we found that the presence or entry of a second person during the interview disrupted the free flow of information.

The logistical difficulties in undertaking large-scale research of this variety should not be underestimated. There is a lot of advance preparation, and this is increased if a number of interviews are to be conducted on the same day. While multiple interviews per day reduced the time factor, we found that it resulted in the premature termination of some excellent interviews.

There is also the issue of what companies to target. This study concentrated on multi-national manufacturing firms. Thus, service firms were not included, and their inclusion might provide a challenging area for future research.

The major conclusions of this study can be summarised as follows:

- The companies in this sample operate a traditional standard costing system with variance reporting. Overheads were generally recovered using volume-based measures
- Some dissatisfaction was expressed by financial controllers with the existing accounting system in its ability to provide accurate product costs and other relevant information for decision making
- There was little evidence of ABC usage
- The anticipated benefits of ABC were primarily in providing more accurate product costs with a lesser emphasis on using ABC in a cost management context
- There was a reluctance (in the case of six companies) to initiate change in existing accounting systems as this would distort comparability of cost information within the group
- There was increasing emphasis on quality but this was not supported by formal accounting reports prepared by the accounting staff
- Several companies had implemented JIT systems. However, it is

important to note that usage was restricted by the company's need to import raw materials
- JIT reduced inventory, increased quality and required multi-skilled employees, organised in manufacturing cells. There was a significant use of non-financial measures of performance
- There was little expenditure on research, development and marketing. In some companies which employed 300/400 persons, less than five were engaged in marketing/selling activities. We discovered that the marketing activities were undertaken on mainland Europe
- Most companies in the sample could be viewed as production rather than profit or investment centres.

There are a number of directions for future research. One interesting area, which will be of great importance in future years, is that of strategic management accounting. Competitive pressures, more sophisticated technology and the rapidly changing business environment have made strategic issues more important. In this study we found an absence of strategic management accounting. For example, there was no formal monitoring of market share, competitor cost analysis or expenditure on market research. Indeed, we have reported above the general absence of spending on marketing and research and development which are important in establishing and maintaining market share.

It would be useful to investigate the extent to which companies pro-actively influence strategic change rather than re-actively respond to competitive pressures. Management accountants will increasingly find themselves engaging in bench marking — finding out about competitors not simply from readily available financial data but from physically observing other market players' activities.

Another potential area for investigation is the possible 'information gap' in management accounting systems. We are all familiar with the 'expectations gap' associated with financial reporting. Thus, users of financial reports do not always perceive the function of the auditor correctly and the reported information may not be the type of information required. There may also be an 'information gap' in management accounting, that is, a mismatch between the information required by managers to manage and the information that is typically provided. For example, one financial controller complained that the accounting system was transaction-driven.

Another controller indicated that the accounting system 'did not reflect the way we do business'. In his opinion, the mission of the company

was to 'fill customer orders, on time, at the cheapest possible price, at the highest quality'. Apparently, the accounting system did not report many of these crucial variables. There was also the suggestion that management accounting should broaden its focus to include non-manufacturing activities. All this suggests that new measures of performance need to be developed, implemented and understood by users. If there is an 'information gap' (and the authors believe that there is anecdotal evidence in this regard), then there must be a greater accounting emphasis on 'performance measurement' including more accurate product cost, life cycle costing and quality issues including delivery times and reliable products.

In other words, increasing emphasis will have to be placed on the 'critical success factors' of the business, which in turn may have behavioural consequences, not only of comprehension but also of implementation. It is likely that the performance measures of the future will be non-financial and more externally focused.

The foregoing also suggests that academics and practitioners could usefully interact and discuss one another's problems.

The practical implementation issues of ABC in Irish companies have yet to be explored in depth. This paper has raised some issues that could be usefully investigated. There is also the need to discover whether companies who are using ABC have been able to identify and utilise the full range of benefits that are suggested in the literature from such a system. It would also be useful to explore whether the ABC system is a fully integrated system where the information fed in for financial accounting purposes (that is, the nominal ledger) is channelled through the management accounting system. If it is integrated, are there transitional problems, for example, changes in stock valuations?

Alternatively, is the ABC system operated in parallel with the existing system? Perhaps the ABC system is an *ad hoc* system intended to capture only the cost of specified activities, for example, materials procurement. It must be acknowledged, however, that such a sample size is likely to be restricted by the availability of current users, although this did not constrain Bailey (1991) from undertaking such an investigation in the UK. Indeed, the small sample size may be a very definite advantage!

There is also the possibility that, instead of investigating sample

companies, a case history could be prepared based on one company's experiences. In recent years, Kaplan (1984) has probably been the most vocal in calling for work of this kind. He encourages academics 'to leave their offices and study the practices of innovating organisations' (p. 415). More recently Scapens has described the methods of case study research and their use as a vehicle for research (Scapens, 1990).

Some of the issues raised here have implications for the educational and training process of management accountants. For example, to what extent is the current focus on internal, financial performance an inevitable product of the educational and examination system? For example, to what extent do educators concentrate in the different ways of computing sales variances and ignore the strategic message contained in such variances? Alternatively, to what extent do we teach the computation of standard labour cost variances while failing to appreciate that under a JIT system labour efficiency variances are meaningless?

Under a JIT system it is better for a person to be idle than to be producing goods which are not immediately required (Maskell, 1986). Thus, there is scope for research into the nature and content of management accounting syllabi in this country, including the method of teaching, teaching materials used and the type of examinations set.

It appears that the role of the management accountant in the firm of the future will be to provide information to enable firms to become more competitively positioned in the market place. To this end, the information will have to be more outward looking. There will still be a need for internal information, but increasingly this will take on a non-financial nature.

Thus, while some years ago it appeared to many that most of the problems of management accounting had been solved (and there was an array of texts to suggest this) it now appears that these problems remain unresolved and there are many more problems awaiting investigation by the curious and the committed.

## ACKNOWLEDGEMENTS

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## APPENDIX I

**Table 1: Number of employees in participating companies**

| Employees | Respondents |
|---|---|
| Under 200 | 2 |
| 201 to 400 | 6 |
| 401 to 600 | 6 |
| 601 to 1,200 | 2 |
| Total | 16 |

**Table 1** shows that 87.5% of the participating companies employ more than 200 people, while some 50% employ more than 400.

**Table 2: Participating companies by industry**

| Industrial classification | Respondents |
|---|---|
| Electronics | 6 |
| Pharmaceuticals | 3 |
| Medical supplies | 3 |
| Boat construction | 1 |
| Cosmetics | 1 |
| Other manufacturing | 2 |
| Total | 16 |

**Table 2** discloses that 75% of the participating companies are involved in electronics, pharmaceuticals or medical supplies. In addition, the study discovered that 14 of the above companies were operated as production cost centres, while the remaining two were run as profit centres.

**Table 3** shows that 75% of the participating companies have labour costs of 15%, or under, of total cost. In other words, direct materials and overheads are the dominant cost elements with direct labour being the smallest cost element.

**Table 3: Total cost structures of participating companies**

| | Materials | Labour | Overhead |
|---|---|---|---|
| Electronics | 70% | 10% | 20% |
| Pharmaceuticals | 30% | 15% | 55% |
| Medical supplies | 40% | 25% | 35% |
| Boat construction | 60% | 15% | 25% |
| Cosmetics | 40% | 35% | 25% |
| Manufacturing | 60% | 15% | 25% |

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