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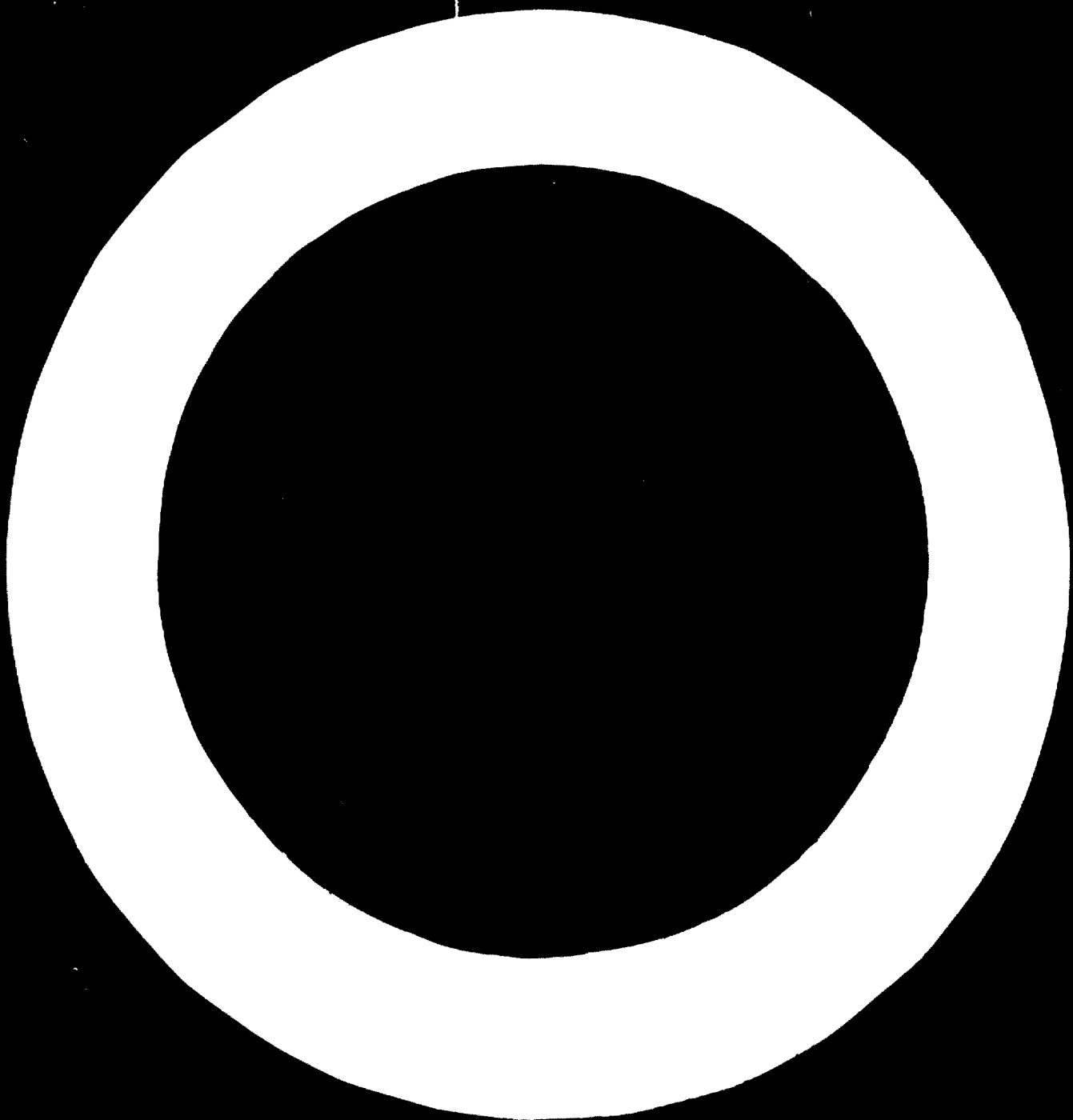
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STANDARDS, QUALITY ASSURANCE AND THE  
INTERNAL MARKET

As we have already seen, standardization is not a national matter alone. It is increasingly international in character. While, therefore, the whole range of standards work can and should be a powerful instrument for building and developing a nation, it can be seen also as providing an example of the growing interdependence of nations, and the fact that no small or large country can be totally independent. Many of the countries represented here are fortunate in being able to start from the beginning, not only in the planning of a national standards organization, but in deciding on the part that Quality Assurance schemes should play in the national plan.

Quality Assurance is the theme of this particular paper. My aim will be to outline some of the experience achieved, to say something of what is going on, to present alternatives and discuss the merits of different approaches. The decision which method to adopt must, of course, be made at national level, taking into account international matters and also the nature of the particular national economy.

Let me try to define the terms quality assurance and quality control and enquire into why they are included in this series of discussions on standardization at all. Surely there is plenty to do without talking about this rather specialized form of the use of standards? This would seem to be a basic question to be answered. First, though, to definitions. The title presented by UNIDO includes the words 'Quality Control' so we had better start with that.

We get close to the heart of the matter by thinking about the word 'Quality'. Quality is in the eye of the beholder, what the user requires it to be: in more precise terms it is conformity with a specification - a specification of what the user wants and the manufacturer can supply. It is the manufacturer who is responsible for making the product to the specification. He should have a precise description of what is wanted, and the means of measuring objectively that he has made what is required. He must have a method for making sure, under conditions of continuous production, that each item, or batches, or consignment, meet that same specification. The process by which he achieves this is called his 'Quality Control'. We can, therefore, define 'QUALITY CONTROL' as:

The overall system of activities whose purpose is to provide a quality of product or service that meets the needs of users.

Now, as I have said, it is the manufacturer's task to have a system - a quality control system that is applicable not just to one individual item, one 'special', - what engineers call a one-off - but to mass production. It will generally not be economical to test each and every item to all the requirements of the specification, so the manufacturer has to devise a system for checking on the many aspects of the manufacturing process: from the review of the specification to the feedback of information on its use. He will require to know and check the quality of the raw material and components that he himself buys, to check the various processes of fabrication, processing and assembly down to the inspection and testing of the end product. Indeed it will often go beyond that point to include the products' packaging and

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the provision of installation and other advice on the use of the product in question. One can easily appreciate that, with all the variables of different specifications for different products, of different price restrictions, of different marketing policy, of different factory and supervisory skills and all the other variables, the manufacturers' attitude to the business of quality control will vary considerably.

That is where the next term, 'Quality Assurance', comes in. The manufacturer wants to make a claim about the quality of his goods. This can often be seen in his promotion of the brand image, a trade mark name, such as 'OSMAN HAMID' for Quality products', or 'Johnnie Walker still going strong', through which he hopes to convince the purchaser of continuing quality. Every time he fulfills an order he will in one way or another be saying: 'I've made what you asked for - here it is'. Faced with the claim, the purchaser, if he is prudent, will want to assure himself that he has in fact got what he ordered. He can take up several attitudes. He can say 'I trust OSMAN HAMID or Johnnie Walker - he would not let me down' and leave it at that. He can make a visual inspection of a sample of the goods, or he can employ any degree of inspection up to an 100% test of each item. The degrees of quality assurance are many. Let us take the following definition which (like the other that I gave you for Quality control) comes from the American Society of Quality Control:

**QUALITY ASSURANCE:**

A system of activities whose purpose is to provide an assurance that the over-all quality control is in fact being done effectively.

The system involves a continual survey of the adequacy and effectiveness of the quality control programme so as to correct it if necessary. For a specific product or service, this involves verifications, audits and the evaluation of the quality factors that affect the specification, production, inspection and use of the product or service.

Generally speaking, Quality Control is the manufacturer's business and is concerned with ensuring conformity with a specification and Quality Assurance has to do with making sure that Quality Control is doing what it should. It should dispel doubt. Later on we will go deeper into the definition of what this means and how it is done.

Earlier I queried why Quality Assurance should be a service provided by standards organizations. Well, I think we can agree about the relevance of standards to this business of Quality Control and Quality Assurance. First, many standards are of a type known as a Specification - a precise definition of the values that the various features of a product should reach and the means of measuring these values. Such specifications, drawn up with the help of both manufacturers and users will be for products for which manufacturers will have to devise quality control arrangements, and for some products quality assurance will be required. Secondly, the reputation of the standards organization is at stake; if a manufacturer claims that his products conform to a standard specification, and yet his quality control system is not efficient, he may damage the reputation of the standards organization which has produced the specification. Thirdly, standard organizations must be interested in the quality of the finished product: experience in actual manufacture and use of the product made according to standard specifications gives a valuable check and provides information for improving and revising standards. Standards, technology and experience all progress together. Fourthly, an element of independence is desirable in the business of Quality Assurance. Standards organizations have to be independent: they have to hold the balance between the manufacturer and the user, and produce a standard on which both sides are in agreement, and which are considered by all to be the best possible.

These are good reasons for the involvement of National Standards Organizations in the business of independent or 3rd party Quality Assurance. Note I have used the word involvement. I do not think that standards organizations should themselves be the only bodies performing or checking Quality Assurance. Others could do the job. Governments could do it directly. Insurance Agencies are often involved in such matters. Industry itself can suggest and operate such a scheme, (as in the case of the International Wool Mark). The question is how much and for what type of production should standards organizations be involved. That is one of the choices that must be taken at national level.

The answer is not at all simple. Standards organizations have a prime responsibility - that of preparing standards. The business of providing independent quality assurance, even for products made to standards, is a secondary business. It can be regarded as one that gives purpose and precision to the making of standard specifications or it can be regarded as a useful but not necessary side of standardization work.

If quality assurance is not regarded as an essential part of standardization, it may be found that too little effort and too few resources will support it.

Before, however, we leave this brief analysis we should recognize, once again, that Quality Assurance is an area of international as well as national activity. Standards and the linked business of Quality Assurance is all to do with trade - the arteries and veins for the life blood of a Nation. Just as priorities for international standardization are often dictated by matters concerned with trade and trade barriers so again is international Quality Assurance. These are often interdependent matters. In international trading sheer distance and lack of information tends to emphasize the need for independent quality assurance. I am sure that you can think of many examples, where the purchasers of raw materials and goods from your countries have organized forms of quality assurance at your end - at the exporting end in the same way as you will probably want forms of quality assurance for goods that you import. Progress is taking us a long way from the restricted local markets where the maker meets the user in the market - where a critical inspection of the hides, the weapons, the food, the tools or the cooking pots can take place there and then between principals. And yet, as we shall see, there are many purchasers, not least Governments themselves, who use up immense funds and resources in continuing to preserve traditional patterns of inspection today. Although this may be justified in certain specialized areas it is questionable, to say the least, whether this is the most economic method of obtaining the assurance required. We shall be examining this later on.

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What I hope we have established so far is:-

What Quality Assurance means - a method of checking the Quality Control exercised by the manufacturer.

What 'QUALITY' is - Call it the Purchaser's Specification.

The connection there is between Standards, Quality Control and Quality Assurance - and their close relations with trading, whether on a national or international scale.

Let me attempt to link this theory with problems familiar to us all:

1. The protection of the consumer.
2. The quality of locally produced goods for the home market.
3. The quality of imported goods.
4. The comparison that will be made between 2 and 3.
5. The effect of that comparison, and
6. The quality of exported goods.

The first point - the protection of the consumer leads me to the picture of the consumer movement generally.

I am sure that I do not need to tell you that the consumer movement - a co-ordinated, organized, vocal expression of consumer needs and attitudes, has grown up recently. While legislation often provides some consumer protection in the area of health and safety, in other fields it has been the responsibility of the purchaser to make sure that the goods he bought satisfied his requirements. He is responsible for examining the product and having exchanged money for it has little chance of redress. While this may have been acceptable in the market place, it can hardly be so suitable in matters of complicated international trading today. Today, choice of products is limitless, their characteristics can often only be measured by sophisticated laboratory tests, and modern advertising and marketing techniques frequently do not reveal all the facts about a product. However, providing some help for the consumer, there is a growing evidence of legislation restricting the practices of the seller - both of services and goods. A recent example is the Trade Descriptions Act of 1968 in the United Kingdom which makes it a punishable offence to give a false or misleading description of goods offered for sale. In Germany, too, the recent Safety Legislation makes it obligatory for all equipment used in factories, offices, the home and sports to be safe 'according to the generally recognized rules of technology'. Laws of this kind impose obligations on the manufacturer, strengthen the protection of the consumer with regard to safety and health and misleading statements made by the manufacturer or seller. In the case of the Trade Descriptions Act the law not only prohibits wrongdoings but enables the state to require sellers to provide information to the user. (While no orders to require such information have yet been made in the United Kingdom, proposals have been put forward, for instance, for the labelling of textiles as to fibre content, of tyres as to type, of sheets as to size, and of fire extinguishers as to suitability of use and performance).

In addition to this legislative activity a number of Governments have established a Council to represent the consumer interest in the broadest possible terms. The Consumer Council of the United Kingdom, established in 1963, is one such independent grant-aided body. Others of similar status have been established elsewhere while in other countries an Advisory Body Council with similar terms of reference is directly responsible to an appropriate Minister of State. In the United States of America a Presidential Committee was established to advise the President directly in these matters. Some



Australian States, New Zealand and South Africa, provide similar examples, demonstrating the growth of the consumer movement.

The best known international consumer organization is the International Organization of Consumer Unions (IOCU). Established in 1960, with headquarters in the Hague, its early activity was in the comparative testing of products. The growth of its influence, and of the number of members it possesses (now including many different types of consumer organizations) and of its scope (now including all important matters that concern the consumer) has contributed notably to the world consumer movement and kept pace with it. Its recent World Congress in Vienna, well reported in their journal INTERNATIONAL CONSUMER \*, produced statements on the following subjects, as well as many others:

### Education

Called to UNESCO to convince member nations of the importance of formal Consumer Education, and failing that, of including informal consumer education in their education system.

### Health and Safety

Expressed concern about the alleged sale of exported goods that do not satisfy the health and safety standards of the countries in which those goods were manufactured.

### Law

Laws of consumer protection to be planned.

The use of publicity to enforce them.

The need for a survey of best means of bringing compensation to the consumer.

### Representation

More and better consumer representation on important decision making bodies, e.g. monopolies, nationalized industries and public utility companies.

Consumer affairs to be the specific responsibility of one powerful Minister or ministerial body at the very heart of political power; the importance and the effectiveness of such a Minister must however depend on the presence of effective bodies of consumer criticism and consumer thought such as existing or improved consumer councils, and finally on the energetic activity of consumer movements.

### Expansion and future work

More comparative testing works to be done by a number of member bodies together.

Work on pollution of the human environment.

Technical barriers to trade.

Consumer viewpoint on international care labelling, that is, the marking of products with details of how best to preserve them in good condition.

More help and encouragement (as was given to the CARIBBEAN CONSUMERS' COMMITTEE) in promoting the consumer interest in developing countries.

IOCU has been recognized by the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC) by being invited to serve on the important International Standards Committee for Consumer Affairs (ISCA) one of the standards organizations, responses to the movement.

This may seem unrelated to the practical national problems that will be facing you, but it helps to make the point that while any consumer movement must have its impact on the individual it must also have influence with those who control national and international affairs; it also shows that as more protection and guidance is provided for the consumer both nationally and internationally the seller is forced, by self-interest or by law, to take on the responsibility of ensuring that his products satisfy the purchaser's requirements. The way in which the Consumer Movement can be created and assisted in any of the countries represented at this Workshop depends, as always, on local conditions: those who know the people know best how to help. I am confident, however, that the consumer movement as represented by IOCU has a vital contribution to make in national development, and that a mutual trust and respect can be established in the area of standards and of quality assurance between consumers and the Government.

ISCA is not the only example of the way in which standards organizations have responded internationally to consumer matters. A special Committee - ISO/TC 73 'Consumer Questions' has been active particularly in encouraging the preparation of standard methods of measuring performance to be used as a base for certification, comparative testing and informative labelling. It played an important part in setting up ISCA. There is another link between us. The ISO Committee known as DEVCO - concerned with the needs of developing countries in the area of standardization co-operates actively with UNESCO and, as this Workshop demonstrates, with UNIDO.

Let us return to practical difficulties that you will have to face. The problem of persuading consumers to accept local products is considerable. It is to be expected that as an ever increasing number of people have more money to spend, they will be inclined to spend it on imported products. There are several possible reasons for this: in some cases, such as the motor-car, there may be no other choice, but in many other cases the attraction of imported goods lies in one fact that, although only slightly different from the locally made product, they have a certain 'status symbol' appeal because they are recognized as being more expensive. And, of course, we are all familiar with the vexing situation where the imported article is considerably more advanced. Here, surely, standards combined with quality assurance can play their part. A suitable standard of performance has to be set; the local manufacturer must comply with it, supplying an after sales service if necessary, and all those agencies concerned in encouraging local

Production should support it. The intention, the plan and the Publicity are all required. The publicity - the marketing, the advertising is of critical importance, without it the plan will be unsuccessful, and must reach the prospective consumer.

A campaign for quality consciousness will require more than a marketing organization. It must touch all sectors of the community and especially those who can least afford to make mistakes in their purchasing. Mass media - the press and radio, together with traditional forms of communication can be useful in this task. You will remember that the IOCU report expresses regret that consumer education has little place in schools. A full education should produce a good consumer, that is someone who can select and discriminate, who does not give up easily and who exercises balanced judgement. The campaign for quality consciousness must of course, be directed at the producer as well. Nothing will convince industrial and commercial management quicker than pointing to the financial good sense of quality consciousness. Such a campaign will, of course, benefit greatly from the support that a co-ordinated plan can provide, including, for instance, governmental support for the promotion of national quality assurance marks.

In Britain, the National Council for Quality and Reliability (NCQR) is effective in aiding industry. This council attempts in many ways to promote quality and reliability. Local Groups in all the manufacturing areas arouse interests, and encourage study and discussion over a wide range of topics; the use of standards, methods of quality control, selling quality, marketing policy, and so on. Much time is given by industrialists and those engaged in commerce both as sellers and purchasers to the work of this organization which has achieved a sound and encouraging reputation in the country. NCQR is not unique in the U.K. Similar organizations exist in other countries.

Ideally, there should be a meeting for all this activity. There is a case for a co-ordinated plan, at the centre of which should be the Government itself. It must take the lead and seek directly or indirectly to co-ordinate all this effort. It is important that the central Government and local authorities are persuaded of the value of standardization and of national quality marks, because their influence is of prime importance. If the government accepts standardization and its associated quality assurance schemes, other purchasers will probably do likewise.

One of the major advantages of a planned approach to standards and quality assurance lies in the business of Export. No country in the world is independent of the need to export and the need to build up its reputation in the countries with which it trades: and in this Government is necessarily involved. The need for a unified approach is therefore stressed. Unfortunately, this is often forgotten until an economic crisis is apparent. One need not look beyond India and Japan to see where the tools of standards and quality assurance are being used both in building up local production and ensuring the quality of export goods. Japan has perhaps the most extensive of all national quality assurance arrangements, closely invoking standards. It is no mere coincidence, I believe, that their national commercial reputation now based upon a wide variety of products has so vastly improved over the last two decades and that it is predicted that Japan will be ahead of every other country in its quality control performance within the next seven year

period. It is interesting to note also that in Japan the theory of 'Zero Defects', which is so highly emphasized throughout their industries and thus encourages a concern for quality assurance from top management to the lowliest manual worker, is a striking success.

Allow me now to sum up once more. We have noted the recurring theme of standards and their application to quality assurance, to consumer affairs, to the quality of local goods, to health and safety, and to the vital business of exports - of the link that standards provide with international trade. I am sure that you would now wish me, before we come to any final summing up, to re-state the principles of independent quality assurance and broadly, the way it is operated in many countries through the agency of standards organizations.

We call the business of independent, or third party, quality assurance by the name of certification. In BSI we define certification as follows:-

Certification:

Assurance by a competent organization, independent of trading interest, that goods are consistently in conformity with a specification. You will note the factors involved:

Assurance: Dispelling doubt;

Competence: Includes technical competence, integrity and authority;

Independence: Of the trading interest;

Consistency: A continuing function. Not a once only, or one-off affair;

Conformity: A continuing conformity to specification;

Specification: A precise tool. A defined basis of contract which may well be contained in a British or other standard, but not necessarily so.

You will note that certification is a form - a specialized form - of quality assurance. All certification is a form of quality assurance but only some quality assurance qualifies as certification. The great distinction is, of course, that certification is by a third party, an organization not under the manufacturer's control and indeed often independent of the trading interest as a whole; while quality assurance can be, and constantly is, provided on the sole authority of the manufacturer himself and can be entirely unsupported by any independent evidence. The second distinction that is less obvious is that my definition for certification means that only batch or mass production, and not one-off products, can be the subject of certification.

We recently defined what we in BSI practice in relation to our own Kitemark certification scheme covering some £500 million worth of goods per annum and what we are advocating for adoption in international certification schemes. The definition reads as follows:

## The Concept of Certification

The object is to provide an assurance that will satisfy the user without further inspection and testing, that the products conform to a specification that has been as precisely defined as possible. An international recommendation published by the International Organization for Standardization, ISO/R 189, recommends that each national standards body should possess a standards mark, protected by law, indicating compliance with standards approved by the national standards body; the use of a standards mark by a manufacturer should be permitted only by the issue of a licence by the national standards body, which should take steps to satisfy itself that the marked goods comply with the appropriate specification. A 100% assurance cannot be achieved without 100% testing and inspection; since this is economically impractical where non-destructive testing cannot be applied, a system has to be devised, product by product, which will provide the desired assurance within practicable and economic limits. The achievement of such assurance can be secured by the application of quality control techniques and supervisory methodology. The long experience of certification practice by Standards Organizations, Government and others leads to the conclusion that this is generally best achieved under a system which incorporates initial testing of a system of quality control at the manufacturing point, backed by regular inspections by an independent inspectorate and independently verified tests thus ensuring consistent and regular adherence to the quality control disciplines agreed upon and continuing conformity of product.

Briefly we do not seek in the UK to provide, and certainly not to impose, any particular scheme of quality control. The devising and maintenance of a quality control system suited to the product is the business of the manufacturer. It is not the business of BSI. What we do try to do is, first, to offer an independent survey and, we hope, approval of the firm's own quality assurance arrangements. Secondly we offer, after the initial acceptance, a system which provides a reasonable and economically practicable check on that system that we have previously approved. In providing this service we never take over any of the responsibilities of the manufacturer, but we offer him, and, through him the user an independent assurance that the manufacturer's quality control system is being properly maintained.

We hope that a number of advantages will flow from such a service:-

To the manufacturer: An impartial, expert and continuing check that his quality assurance scheme is satisfactory.

To the Quality Control Manager:

A supporter and adviser.

To the user:

An impartial assurance that quality and reliability are being well looked after.

To the Marketing Manager:

A considerable additional tool for selling purposes.

The basic system is, in principle, a simple affair even if the detail often involves specialized techniques. A manufacturer asking to come into the scheme is told about the obligations it imposes. On his formal application, he is visited by a representative of BSI who inspects his own quality control arrangements in detail, records what the practices are and takes samples of the products for which certification is required, for independent testing against the specification. If both inspection and testing reports come up to the requirements of the standard and of the specific requirements of the scheme of supervision and control devised by BSI we grant him a licence to use the Certification Trade Mark of the Institution. We say, in effect, that provided the control he exercises in relation to his bought in materials and components, his production, his testing, inspection and record keeping remain as recorded he can continue to mark his products with this Mark. But we shall continue to check his quality control through regular inspection and testing and shall withdraw his licence at any time if we consider his control ceases to be effective. Basically the same system - that of regular checking of the manufacturer's own quality control - is the method used by all Standards Organizations which provide a certification service.

Other bodies independent of standards organizations operate certification schemes. Well known examples are those connected with insurance interests such as Lloyds Register of Shipping, Bureau Veritas (France), Underwriters' Laboratories (USA) and the International Wool Secretariat's Woolmark scheme.

Similar schemes to those operated nationally are planned for on an international scale. One such - a model in many ways - is nearing maturity in Europe and is concerned with Electronic Parts of Assessed Quality. It provides an example of a successful co-ordination, through standards, of Government and the private sector working to the same basic specifications, the same basic quality assurance rules and using the same inspectorates. Started in the United Kingdom as the Burghard scheme and run by BSI, it has developed rapidly to the point where 6 European countries have indicated that they will participate in the scheme, and it is hoped that the first 'European Components' will be available by the end of the year. Considerable interest has also been expressed in this European scheme by Japan, Canada and America; and it has now been agreed within IEC that the possibility of that organization taking on, in due course, the expansion of the European scheme to a world wide one should now be examined. Thus a sound scheme vitally linked with standards and standard quality assurance procedures is progressing rapidly.

ISO too is, at the time of writing this paper, about to discuss the formation of a high level advisory committee on international certification. All this activity emphasises the need for the harmonization of quality assurance and acceptance procedures since differing practices create hidden barriers to trade, now revealed as tariff-barriers are increasingly removed. The question at the heart of all current attempts to promote mutual recognition of quality assurance arrangements is how to establish mutual confidence between the authorities concerned in the different countries and within what organizational framework this objective should be pursued. The main focus of activity in this field today is Western Europe.

CONCLUSION

It is time to conclude.

I indicated in the beginning that I would not be seeking to give you a plan, but I hope that I have demonstrated that there is a good case for the following. It is no more than a framework within which you can plan the details as suits the particular national case. Here then is that broad conclusion which is proposed for your further consideration:-

That the business of standards is a central point in economic national planning.

That it is of critical importance in the business of Quality Assurance.

That, as regards International Quality Assurance excellent progress is being made through the agencies of standards organizations.

That the Consumer Movement is a very valuable one and needs to be educated into the quality assurance business.

That standards organizations both nationally and internationally are responsive to the movement of world events - and not least in this area of responsibility of UNIDO - that of Industrial Development. We send our greetings and good wishes to all those represented here and undertake in the future to continue to help and offer advice from the knowledge we have accumulated both in failure and in success.





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