2.00   EXECUTIVE SUMMARY

2.01   This chapter summarises the key findings and recommendations of the study on the comprehensive review of Bureau of Indian Standards.

BACKGROUND

2.02   The Bureau of Indian Standards (BIS) is the "National Standards Body" of India. It was established under the BIS Act 1986 for the "harmonious development of the activities of standardization, marking and quality certification of goods and other related matters. The organisation is under the overall administrative control of the Ministry of Consumer Affairs, Food & Public Distribution, Government of India.

2.03   The key activities performed by BIS include
- Standards Formulation
- Standards Promotion
- Information dissemination services and WTO Enquiry Point
- International participation in ISO/IEC
- Product Certification (including Hallmarking for Gold)
- Quality Management Systems Certification
- Environmental Management Systems Certification
- Laboratory Services
- Training Services

NEED FOR THE STUDY

2.04   Standardisation has linkages to several areas of economic development of a country. Several changes are taking place related to standardisation some of which are outlined below:
- Competitive WTO regime and growth of trade.
- Emergence of new players in the "Quality, Standardisation, Testing and Metrology"(also called MSTQ) institutional Framework.
- Emergence of new technology areas.

2.05   In the above context, several National Standards Bodies are attempting to re-orient their strategies and operations in line with the changing needs of stakeholders.

2.06   BIS has also felt that there are gaps in the way it is currently performing and in the manner it would like to operate in the future both in terms of strategy and operational activities. It has thus felt the need for a comprehensive review of its objectives and role, which would help it strengthen its core competencies, create a contemporary professional operating environment and enhance its image as India's National Standards Body.

EXTERNAL ENVIRONMENT ANALYSIS

2.07   The role and relevance of National Standards Bodies is being debated in several countries due to increased and changing demands of various stakeholders. Also there have been several changes in the Indian Standardisation and Conformity Assessment framework since BIS was created in 1986. Hence the external environment (in both the International and Indian context) has been reviewed to derive relevant inferences for BIS. The key findings of the external environment analysis have been summarized in the following paragraphs.

International

Impact of Globalisation on Standardisation

2.08   Over the last few decades, there has been a considerable integration of national economies and a flow of trade and investment across boundaries. As a result of WTO negotiations, almost all countries have lowered tariff barriers to foreign trade. As these traditional barriers to trade and investment are gradually reducing (or being eliminated), there is increasing pressure to harmonise standards and conformity assessment requirements.

2.09   The focus has been to ensure that the standardisation and the conformity assessment structure in individual nations facilitate the growth of trade rather than act as a barrier. There is an obligation on various standard bodies to avoid duplication of effort and multiplicity of standards to the extent possible within a country and internationally.

Increased focus on influencing international standards development

2.10   Since 1950, the volume of global trade has risen by around 2000%. An estimated 80% of world trade activity is affected by standards and associated technical regulations. Standardisation is increasingly becoming a tool for creating competitive advantage, spreading best practices and entering new markets. Hence considerable emphasis is being given to influencing the formation/evolution of global standards that are important to a country. In this context, the extent of participation in ISO and IEC committees for standards formulation is becoming an important key performance indicator for various National Standards Bodies.

Diverse Mix of Standards Formulation Organisations at the Global level

2.11   With the increase in trade, there has been a renewed focus on specialised international organisations mandated to promote standardisation in specific areas. There are several international standard-setting organisations that operate on a global scale. They can be divided into 3 broad categories[1]:

- International Standards Bodies containing organisations of international scope with a country based structure of representation (e.g. ISO, IEC, ITU, Codex etc.)

- Formal Standardisers, some of whose standards are used internationally(e.g. ASTM, API etc)

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[1] Regulatory Reform and International Standardisation, OECD

- Adhoc standardisers (e.g. Internet Engineering Task Force (IETF), DAVIC etc)

2.12   In the Indian context, while BIS is linked with ISO and IEC; bodies such as the Ministry of Health and Ministry of Food Processing represent the country in Codex; TRAI is a member in ITU and organisations such as Automotive Research Association of India align themselves to UNECE.

2.13   In the future, there is a distinct possibility of several bodies emerging in the Indian context with specific sector focus, which may be given the mandate to formulate standards in their respective areas. The need for this is likely to be derived from the need to align with sectoral bodies internationally, formulating global standards.

Multilayered Standards Infrastructure and Emergence of a Global Accreditation regime

2.14   Standards and Conformity Assessment procedures are becoming important features of trade agreements. There has been an emergence of an additional layer in the Standardisation infrastructure internationally. The standardisation infrastructure typically now comprises of the following layers:

- Layer 1: Standards formulation, which involves writing a standard.

- Layer 2: Conformity Assessment.

- Layer 3: Accreditation and Recognition System.

2.15   Hence there has been an emergence of "Accreditation boards" in several countries, which have international linkages with organisations such as IAF and ILAC. There is also an increased pressure on Product Certification Bodies, Systems Certification Bodies, Inspection Bodies, and Laboratories to get their schemes accredited by an Accreditation Body having international linkages.

Increased trend towards standards formulation outside the "formal system"

2.16   In several new technology areas, where the product and design life cycles are generally short, there has been a trend of standards being developed outside the formal system. The traditional methodology of consensus based standards often do not meet the needs of new technology sectors. This trend is also picking up momentum in India.

Standardisation moving beyond traditional areas

2.17   There are new areas emerging where the importance of standards is being increasingly felt (e.g. Corporate governance, corporate social responsibility, waste disposal, urban infrastructure, biometrics etc.). The emergence of new areas offers both opportunities (in terms of increasing its relevance and benefiting society at large) and challenges (in terms of availability of adequate and appropriate resources) for National Standards Bodies such as BIS.

Emphasis on closer linkages with Regulators and Government

2.18   There is recognition in several countries that although the regulators reserve the right to decide on the standards and the manner of implementation; it is beneficial for all stakeholders

concerned to have closer coordination between regulators and the National Standards Body[2]. There are attempts to increase the use of voluntary standards as an alternate to mandatory technical regulation. Attempts to promote the benefits of standardisation to Government and Regulatory bodies and increase the level of co-operation with them is a key focus area for many NSBs

2.19   The above changes have resulted in the following

- National debates culminating in the formulation of "National Standards Strategy" in many countries
- Restructuring efforts by several National Standards Bodies

2.20   The National Standards Strategies have focussed on measures to:

- Increase relevance of standardisation and National Standards Bodies.
- Increase emphasis on International participation.
- Widen base of stakeholders in the National Standards System.
- Promote standardisation as a mechanism for innovation and intellectual property management

2.21   The focus of restructuring efforts of National Standards Bodies have been on :

- Unbundling of standardisation and commercial activities (comprising of conformity assessment and training services)
- Expanding beyond national boundaries

Indian Context

2.22   The Indian Standardisation infrastructure has multiple stakeholders having different needs and expectations. The following paragraphs summarise the key trends in standardisation and conformity assessment in the Indian context.

Emergence of Standards Developing Bodies (including Regulatory Bodies) in Various Areas

2.23   With economic liberalisation, there is an increasing trend towards emergence of "regulatory bodies" (E.g. IRDA, TRAI etc) in various industry sectors. In India, there are around 35 bodies which formulate regulatory standards or standards in niche sectors. Some of these bodies have international linkages with specific international standards developers in their respective areas; for example PFA with Codex; ARAI with UNECE etc. Many of these bodies involve BIS in the standards formulation process and refer to BIS standards if any while formulating their own standards. However, in some cases, there are overlaps of standards, which is an area of concern for BIS.

Changing Sectoral composition of GDP

2.24   The sectoral composition of GDP is changing in favour of the services sector in India; especially in the fields of financial services, information technology, communication services, insurance, education, health etc.Presently, majority of BIS's standards are in the manufacturing

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[2] Reference: Malaysia: Implementation of standards-voluntary or mandatory, National Standards Congress, Oct 2002, Kuala Lumpur

sector. While this sector is no doubt important to the country'' economy and trade; in the future standards in services would become critical especially in context of growing trend of exports of services and the changing composition of the Indian economy.

Increased trend in mandatory certification

2.25   Although BIS's product certification is primarily a voluntary scheme, there are some standards where obtaining certification from BIS has been made mandatory for all manufacturers of the product. In the past 2 decades, there has been a growing trend towards mandatory certification. A combination of the increased trend in mandatory certification products and the regulatory powers have contributed to an impression that BIS is a regulator of quality of these products.

Increased emphasis on financial self-sustenance in Indian context

2.26   There has been a shift in the policy of the Government of India encouraging government/semi-government/autonomous bodies to move towards financial self-sustenance and reduce its dependence on government support.

Conclusion

2.27   The key challenges and opportunities emerging for BIS in this context include the following:

- Need for a nodal agency, which can coordinate the development of a National Standards Strategy, which could guide the standardisation movement in the country.

- Need for a mechanism /framework for avoiding duplication of effort and multiplicity of standards, in line with the TBT agreement

- Need for identifying areas, which are of strategic interest to Indian trade and economy and participating effectively in international standardisation in those.

- Need for aligning with emerging sectoral international bodies formulating global standards in their specific areas, besides ISO and IEC. This would enable BIS to establish standards in a larger number of areas.

- Need for networking to increase the base of volunteer experts for standardisation in the country, to address the issue of new emerging areas where standards are required.

PERCEPTION SURVEY

2.28   As a part of the study, a limited perception survey was carried out of various stakeholders to assess their **perception** on **the** brand image of **BIS (as an organisation)** and **BIS's certification mark(s)** including Product and Management System Certification.''

Parameters & Aspects for the Perception Survey

2.29   The parameters & aspects on which the survey was carried are as below:

- Awareness
- Role: Adequacy & effectiveness.
- Service quality & level
- Promotion/Brand building
- Perceived overall brand image
- Appropriateness of price of services
- Interaction with stakeholders

Sample Plan

2.30   The sample size for the perception survey was around 140 respondents covering various relevant stakeholders' categories (Manufacturers, Service providers, consumer organizations, industry associations, ministries, research institutes, other standards formulating bodies, regulators etc). The geographical coverage included Delhi, Mumbai, Ahmedabad, Vadodara, Kolkata, Hyderabad, Bangalore, Chennai etc.

Key findings of the Perception Survey

2.31   The following paragraph summarizes the key findings of the perception survey on various aspects of BIS.

- **Awareness:** Awareness of BIS's role in standards formulation, sale of standards and product certification was 'good' (almost all the respondents contacted across different stakeholder categories were aware). Among the licensees (of product certification) of BIS, the awareness about the management system certification services of BIS was 'relatively low' (around 70% are aware). Other respondent categories such as Industry Associations, Consumer Organisations and Technical Institutes were generally aware of the management system certification services. The awareness among the licensees about the training services of BIS was low (only around 30-40% of the licensees contacted were aware).

- **Adequacy of Indian Standards in terms of coverage/range:** Most of the respondents found the adequacy of Indian Standards to be 'somewhat adequate to adequate' (on a 3 point scale: Inadequate; Somewhat Adequate; Adequate).

- **Technological contemporariness of Indian Standard**: Most of the respondents (~62%) felt the Indian Standards were 'at par' with the existing state of technology. But at the same time, a fairly significant percentage (~35%) of the respondents commented that that the Indian Standards 'lagged' behind the existing state of technology and there was a lack of focus on timely revision of standards.

- **Adequacy of representation on ISO/IEC:** Almost all the industry associations (more than 90%) felt that the representation of BIS on international level (ISO/IEC/CODEX) was 'inadequate' (on a 3 point scale: Inadequate; Somewhat Adequate; Adequate).

- **Value proposition of Certification Services**: Majority (around 80%) of the respondents commented that the products carrying BIS's certification marks are perceived as "better quality" products/services by the users/buyers.

- **Adequacy/Effectiveness of Consumer Awareness & Standards Promotion Programmes:** Majority (~80%) of the respondents found the adequacy/effectiveness of consumer awareness & standards promotion programmes to be 'fair-to-poor' (on a 4 point scale: poor; fair; good; very good).

- **Process/Certification cycle time:** Overall a 'fairly significant' percentage of the respondents (~23%) were dissatisfied with process/ certification cycle time. In case of Hallmarking, the percentage of dissatisfied respondents increased to around 50% (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Courtesy extended by BIS staff:** Only around 9% of the respondents were dissatisfied with the courtesy extended by BIS staff (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Accessibility /availability of staff:** Only around 9% of the respondents were dissatisfied with the accessibility/availability of BIS staff. Around 70% of the respondents were satisfied with the accessibility/availability of staff (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Availability & quality of information:** Overall a fairly significant percentage of the respondents (~16%) were dissatisfied with the availability & quality of information (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Timeliness of renewal reminders:** Majority of the respondents (~76%) were satisfied with timeliness of renewal reminders (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Effectiveness of grievance redressal:** The existing customers seemed to be reasonably satisfied (43%-Satisfied & 40%-Somewhat satisfied) with the consumer grievance redressal system of BIS (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Other value-added services (training & feedback):** A significant percentage (~35%) of the existing customers contacted were dissatisfied with other value-added services provided by BIS (on a 3-point scale: dissatisfied; somewhat satisfied; satisfied).

- **Procedural ease:** Only around 34% of the existing customers surveyed perceived the certification process to be "simple", while majority (~60%) perceived it to be "cumbersome-to-somewhat simple" (on a 4 point scale: cumbersome; somewhat simple; simple; very simple).

- **Brand image of certification marks:** Around 46% of the respondents rated the brand image of BIS certification marks as 'good'. Among existing customers, around 50% rated the brand image of BIS certification marks as 'good. Among industry associations, only around 18% rated the brand image of BIS certification marks as 'good'; majority (~60%) rated it as 'fair'. Among consumer organisations, majority (~60%) rated the brand image of BIS certification marks as 'good (on a 4 point scale: poor; fair; good; very good).

- **BIS as an organisation:** Around 50% of the respondents rated the brand image of BIS as 'good'. Among existing customers, around 50% rated the brand image of BIS as an organisation as 'good'. Among industry associations, only around 24% rated the brand image of BIS as an organisation as 'good'; majority (~ 60%) rate it as 'fair'. Among consumer organisations, majority (~ 80%) rated the brand image of BIS as an organisation as 'good' (on a 4 point scale: poor; fair; good; very good)..

- **Appropriateness of Price of Services:** Out of the total respondents, majority (~65%) felt that the price charged by BIS for its services was <u>inappropriate</u> (i.e. on higher side). In case of product certification services, majority (~70%) of respondents felt that the fee charged was <u>inappropriate</u>. In case of management system certification, majority (~80%) of respondents felt that the fee charged was <u>appropriate</u>.

Conclusions

2.32   Various stakeholders through the Perception survey expressed various needs/views, which are presented below.

Role related
- A mechanism for coordination with other standard formulating bodies so as to enhance coverage of Indian Standards and reduce possibility of multiplicity of standards

- To strengthen Standards formulation; need for increased participation of various stakeholders in the Standards Formulation process ; need for greater use of Information Technology tools and providing appropriate incentives to stakeholders for participation.

- BIS to play a strategic role and outsource non-core /routine activities to the extent possible.

- To strengthen Standards Promotion, Consumer Awareness and Enforcement related activities.

Strategy Related

- Improvement in awareness of Training & Management System Certification Services especially amongst manufacturers/service providers and WTO Inquiry Point/Technical Information Service amongst all stakeholders.

- Increased participation in international standardisation activities; focus on Mutual Recognition Agreements for trade facilitation

- Long term funding strategy for standards formulation, promotion and other development roles.

- Reduction in Process cycle time of certification; Simplification of certification process (e.g. in terms of paper work involved) ; Single window clearance concept

- Improved availability of standards and quality of printing

- Increased awareness of the consumer grievance cell of BIS

- Increased brand building efforts for its services

BENCHMARKING REVIEW

2.33   The roles, structure and operating framework of the National Standards Body in select countries have been examined with a view to derive relevant inferences for BIS. The comparators for the benchmarking study included the National Standards Bodies of UK, Canada, Australia, Singapore[3]. Additionally relevant inferences have been drawn from select autonomous organisations such as IIM-Ahmedabad, IIT-Delhi, TRAI etc from the point of view of governance structure and overall functioning.

2.34   A summary of the key findings of the Benchmarking Review is presented below:

- There is a **formally designated National Standards Body(NSB)** in most countries for developing and promoting voluntary standardisation

- The **focus** of most National Standards Bodies is **on standardisation** related activities with linkages with quality. However there are some NSBs such as SPRING-Singapore, which also has a mandate for productivity improvement.

- No National Standards Body performs all the activities in the primary Standardisation Matrix; i.e. Direct Operator and Accreditor for both Standards Formulation and Conformity Assessment. Different NSBs have **different combinations of activities** as part of their product/service portfolio. However, all NSBs undertake other key services such as Standards promotion, Information services, Training etc.

- In countries, which traditionally have competent technical bodies in various areas, having capability of coordinating the formulation of standards, the National Standards Body plays the role of accrediting these bodies. In most other countries, however the National Standards Body itself coordinates the formulation of standards in various areas. Recently, a hybrid approach has emerged wherein the National Standards Body coordinates the formulation of standards in several areas through its Standards Development Board; but has also accredited Standards Developing Organisations through an independent "Standards Accreditation Board" for specific sectors.

- Most National Standards Bodies have linkages with conformity assessment services. In some countries, the National Standards Body performs the role of an accreditation body for other organisations, which operate various conformity assessment schemes. In some countries, the National Standards Body directly operates conformity assessment schemes, while there is a separate body for accreditation.

- In countries where the National Standards Body also directly operates conformity assessment schemes, there is a trend towards segregation of the standards formulation & promotion activities (which are more of a "not-for-profit activities") and other commercial operations (including conformity assessment schemes). However in countries where the National Standards Body performs an accreditation role for both Standards Formulation and Conformity Assessment, there is no specific segregation of activities in terms of business structure.

- There is no homogeneity in terms of "legal status" of National Standards Bodies. Some of them have been established under an "Act of Parliament" and are responsible to their Parliaments through the Government (e.g. Canada) ; others have been formulated as "statutory boards" linked with the Government (e.g. Singapore);

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[3] Some inferences have been drawn from DIN(Germany) and AFNOR(France) as relevant

whereas others are private bodies(e.g. Australia), but have "members" representing different stakeholders, which may have a fixed or varying composition. The legal status of NSBs are often a function of the unique needs of stakeholders and standards traditions in individual countries

- An important trend observed in several comparators related with conformity assessment is the expansion of activities to other countries outside one's own boundaries

- Funding of the Standardisation Activities: Standardisation activities are funded through different sources in different countries, primarily through Government support or commercial services (including conformity assessment and training etc)

- New Products and Services and Improved Delivery Systems: Various comparators are offering their stakeholders new services and making concerted efforts to improve the delivery of their existing services. Some of the new products/services being offered in different countries by the NSB include Professional services for standards development for individual clients, including Publicly Available Specifications; Separate certification marks for different categories of clients; Inspection Services, Training in new emerging areas such as Six Sigma.

- Emphasis on Human Resource Development and Marketing of Services: Significant emphasis is being given to the development of the Human Resource Team in various NSBs. To increase its relevance amongst various stakeholders and for promotion of voluntary standardisation, marketing professionals have also been retained in some NSBs

- The number of employees depends on the activity portfolio of the NSB. The organisation structure is generally in line with the products and services (or logical grouping of the same) of the NSB.

- There is a trend towards strong Governance structures(for eg. independent members, audit committees) and appropriate accountability mechanism.There is also an emerging trend towards development of strong internal governance systems and encouraging employees to play an important role in key decision making processes related to strategic and operational issues (for eg. at IIM and IIT).

- Inferences on HR Issues: Better performing autonomous organisations such as the IIMs and IITs have in-built mechanisms in their promotion policies to ensure that the best candidates (internal or external) are selected. There is also some flexibility in terms of compensation, as faculty members are allowed to undertake consultancy assignments. Administrative decisions at IIMs such as recruitment of faculty, specifications of qualifications, experience and competencies required, job descriptions, organisation structure are decided at the Director level. Administrative decisions at IIMs such as recruitment of faculty, specifications of qualifications, experience and competencies required, job descriptions, organisation structure are decided at the Director level. The posts such as Director, Dean etc are for fixed periods and often the incumbents return to their position of being faculty members after their tenure. This provides an opportunity for a larger number of faculty members to obtain experience in administrative posts.

DIAGNOSTIC REVIEW

2.35   A "diagnostic review" of the functioning of BIS covering the role & mandate, services, structure, manpower distribution, human resource issues and financial performance has been carried out.

2.36   The role and mandate of BIS has been defined in the BIS Act (1986), which is the harmonious development of the activities of standardization, marking and quality certification of goods and for matters connected therewith or incidental thereto. To fulfill the role/mandate outlined, BIS has a portfolio of services, which is summarised in the following exhibit.

Exhibit 2.1: Service Mix of BIS

Standards	Conformity Assessment	Other Key Services
• Standards Formulation	• Certification − Product (including enforcement) − Management System • Laboratories (testing of samples)	• Standards Awareness and Promotion • Training • Standards / Technical Information Services • WTO Enquiry Point *(mandate given by Ministry of Commerce)* • Technical Facilitation

2.37   The key observations on service mix of BIS and challenges thereof have been summarized below:

Strategic Focus

2.38   BIS has a mandate for roles of nature ranging from developmental to commercial which have varying needs in terms of structure and policies. A key concern area has been the diffused focus on the developmental role in recent times. There is a need for renewed focus on the core function of standards formulation and related developmental activities

Standards Formulation

2.39   BIS has a wide range of areas for standards development mostly in traditional sectors (mainly manufacturing); there is comparatively lesser focus on new emerging areas(IT, Biotechnology, Health, Corporate responsibility etc), including service sectors. This is understood to be primarily due to non-availability of desired expertise within BIS. There is a need for developing expertise in new emerging areas either through networking or developing inhouse competence.

2.40   There is a need for greater involvement of stakeholders in identifying areas where voluntary standards are needed. A challenge for BIS would be to make standardisation a part of a larger

public debate, so that a larger section of the population (especially industry, government/regulators etc) is involved. Options include increasing marketing efforts and awareness campaigns.

2.41   There is a need for enhancing procedural efficiency in the standards formulation process. Significant effort is required in administrative activities in Standards Formulation(around 20 man-days for each technical committee meeting) such as follow-up with members, collating comments etc. as the use of IT is still limited and at an initial/buildup stage. There is a need for optimal utilisation of its (human) resources and one of the key challenges/requirements for BIS would be to enhance the use of IT tools in various services of BIS to increase the efficiency of operations.

2.42   The Technical Committees form the backbone of the voluntary standardisation infrastructure. BIS would need to sustain the level of participation of technical committee members in the future and also increase the base of voluntary standardisation in the country.

2.43   Other needs and challenges for BIS would include the following:

- Mechanism for identifying technical experts in various areas, ensuring balanced representation to various stakeholders by review the constitution regularly. Options could be to include experts from regulatory bodies, international experts in the technical committees.

- Rationalization of standards; need to segregate active and dormant standards and have separate strategies for different standards.

- A separate long term strategy for funding of Standards Formulation. Options include developing a corpus with contributions from government and various stakeholders.

- Ensuring the availability of standards to stakeholders, when they are required.

Product Certification

2.44   The number of product certification licenses (both voluntary & mandatory combined) has been continuously increasing over the past 4 years registering a compounded annual growth rate (CAGR) of around 5.8%. The CAGR for voluntary certification (~6.3%) has been more than that for mandatory certification (~4.5%). The majority (around 70%) of Product Certification licenses are accounted for by 3-4 major Product Categories namely Civil Engineering, Food & Agriculture, Electronics & Electro-technical.

2.45   The needs and key challenges for BIS are summarised as follows:

- There is a large untapped market for product certification. There is a need to increase the base of its certification scheme

- In order to increase the effectiveness of the surveillance inspection activities and optimise resources deployed, there is a need for categorisation of risk and selection of appropriate surveillance strategy

- There is a need to bridge the competency gap for strengthening enforcement related activities. Options include increasing in-house competence (specialised training, use of quantitative tools), Outsourcing to professional agencies (for obtaining market intelligence information), networking with consumer organisations etc.

- There is a need for accreditation of BIS's product certification scheme to ensure international recognition.

2.46   In this regard, it is understood that there have been internal initiatives within BIS to bring about changes in the legislative framework to simplifying procedure for post-raid activities such as making misuse a cognizable offence etc.

Management System Certification

2.47   BIS operates in a highly competitive scenario in this service. There are several players, including international organisations, which offer this service in India. The number of QMS Certification licenses has increased significantly over the past 6-7 years. Even though the contribution of Management System Certification to the total revenue of BIS is significantly lower than that of Product Certification, this is an important service as it provides an opportunity for BIS to compete in an open market. The service is synergistic to the other services of BIS. Also this service offers significant growth opportunities and hence needs to be encouraged to grow.

Laboratories

2.48   The laboratory has traditionally been a support service to the ""Product Certification" activity of BIS. The key observations on Laboratories of BIS are presented below.

Low asset utilisation

2.49   The facilities planned in the laboratories have been traditionally set up with a view to support the Product Certification function of the Bureau. Several stakeholders have raised concerns regarding low asset utilisation; equipment and manpower. The reasons attributed include inadequacies in planning, training of personnel etc

Inadequate Quality of service

2.50   Considering the average number of samples tested per month (~2500) and the number of samples pending (~5000), it emerges that the work-in-progress (WIP) inventory for labs is almost in the range of 2 months. On an average the sample testing time is in the range of 15-20 days, which implies that a WIP inventory level of almost 2 months is on a higher side. This also indicates that the <u>cycle time</u> is higher than is required.

Inappropriate Administrative and HR policies

2.51   Some of the Human resources and Administration policies are not conducive to laboratory functioning. For eg. Working timings in laboratories (8 hours), whereas some tests require continuous monitoring and might last for more than 8 hours ; transfer policy resulting in inadequate development of expertise; training for all levels of laboratory personnel is an area of concern.

2.52   The needs for BIS in this context are presented below.

Need to build cost competitiveness

2.53   In order to contribute to BIS's overall objective, BIS's laboratories need to be cost competitive. Specific areas which would need to strengthened include:

- Rationalisation of resources: A key challenge for BIS would be to evolve a medium and long term plan (including infrastructure, capital equipment, consumables, manpower, finances etc) for laboratories in an integrated manner for all locations.
- Underlying systems and procedures including the costing system
- Training to build appropriate competencies
- Administrative policies

Training Institute (NITS)

2.54   The Training activities of BIS are synergistic with the overall objective of promoting the standardisation infrastructure in the country. BIS is in a unique position to utilise its expertise in standardisation and conformity assessment. There is also scope for developing a symbiotic relationship with other training institutes of organisations such as NPC, Management Institutes.

2.55   BIS has developed its infrastructure to support its growth plans in this area. It has a unique opportunity to develop NITS into a premier Regional training centre atleast at the Asian level.

2.56   It is understood that the faculty at NITS are often constrained from performing optimally/effectively due to inadequacy of support staff for purchase, finance and other administration work related to the Training Institute. Also NITS has certain constraints in terms of flexibility in terms of determining fees, providing consultancy services etc.

2.57   In this context additional resources to support the training service could increase the effective utilisation of faculty. There is scope for considering the Training business as a separate strategic business unit. Separate structuring of the training institute can contribute to removing areas of conflict of interest of the training institute with the conformity assessment services.

Standards Awareness and Promotion (including SSI Cell & Grievance Redressal)

2.58   Given the need for increased standards awareness programs and resource constraints within BIS, it is extremely difficult for BIS to single handedly undertake such activities. There is a need for institutional linkages with consumer organisations/NGOs, industry associations, educational institutes, local government bodies, other institutions mandated for similar purposes such as Quality Council of India (QCI) and National productivity Council (NPC) etc.

2.59   Presently, standards promotion is funded primarily through revenues from BIS's conformity assessment activities. In the long run, to increase the effectiveness of its schemes, BIS would need to develop a separate funding strategy, which could involve developing a corpus comprising of contributions from various stakeholders.

2.60   As compared to the number of licenses granted, the number of formal complaints appears to be limited. There is a need to integrate the standards promotion strategy with an awareness campaign for assisting common consumers to register their complaints.

Information Services (Technical Information Services Centre & WTO Enquiry Point)

2.61   WTO Inquiry point is an important service played by BIS especially in the global trade regime. However it has had relatively limited focus in the overall BIS scheme of things. This service provides BIS an opportunity to play an important role in the promoting trade in the country

2.62   The perception survey findings indicate a relatively low level of awareness of this service amongst many stakeholders. This is an area of concern for BIS and a key challenge for BIS would be to increase the awareness of this service amongst various stakeholders.

Interface/Linkage with Other Stakeholders

2.63   The BIS is presently under the overall administrative control of the Ministry of Consumer Affairs, Food & Public distribution, Government of India. However it has interlinkages with several organizations in India and abroad.

2.64   Presently, there is no representation from key stakeholders from the standardisation infrastructure in the country such as QCI, Ministry of Health as well as stakeholders related with trade in the country such as Ministry of Commerce etc in the Executive Committee of BIS. There is also no formal arrangement with other standards formulation bodies and regulatory bodies such as the Indian Road Congress, CPCB, PFA(Ministry of Health) etc

2.65   There have been limited formal efforts to promote standardisation in an integrated manner along with bodies mandated to promote related concepts such as quality (QCI) and productivity (NPC).

2.66   In line with changes in the standardisation infrastructure in the country, a key challenge for BIS would be to identify emerging stakeholders in the standardisation and conformity assessment framework and establish appropriate formal and informal linkages.

Structure, Manpower Distribution and Human Resource Development Related Issues

2.67   BIS's Office structure is traditional mix of functional and geographical business structure comprising of a 3 tier structure with a Head office in Delhi (as its policy & developmental unit), Regional Offices and Branch Offices along with Inspection Offices at select locations. Presently it has 5 Regional Offices in each of the 5 zones (Chandigarh, Delhi,Kolkata, Mumbai, Chennai), 33 Branch Offices and 5 Inspection Offices. For supporting its service of product certification, BIS has a laboratory network comprising a Central Laboratory and 8 laboratories (Chandigarh, Delhi, Kolkata, Mumbai, Chennai, Bangalore, Patna and Guahati[4]). It has a separate Training Institute at Noida.

2.68   The present manpower strength is much lower than the sanctioned strength prescribed in the BIS regulations. It has also been observed that there is a wide variation in manpower strength (as against number of licenses) across various Branch Offices and Regional Offices. A future challenge for BIS would be to ensure distribution of its human resources (in number as well as specialization) in line with workload in various offices.

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[4] Understood to be almost disfunctional

2.69   Based on discussions with various employees and a study of existing HRD related policies, it emerges that there is considerable scope and need for improvement in Organisational and HR practices in BIS in terms of transparency and objectivity. The specific areas that need to be strengthened are discussed in the following paragraphs.

Performance Appraisal System, including feedback mechanism

2.70   BIS has a performance appraisal system; but based on discussions with employees it is understood that there is scope for improvement in the following areas in respect of the existing performance appraisal system.

– Feedback mechanism of performance and areas of improvement, as against a confidential report

– Training to appraisers to ensure uniformity of understanding and application of parameters

– Integration with reward systems and training need assessments

– Integration with career planning processes

Linkage of organisational objectives to individual objectives

2.71   Although BIS has made a beginning in this regard by setting specific objectives for operating offices and departments, it needs to evolve a comprehensive performance management system, wherein the organisation's objectives for the year (in terms of top line, bottom line, product mix and any other) would be clearly spelt out and drilled down to other organisational layers so that the specific contribution of individuals to organisational achievement is well understood.   This also requires the definition of positional responsibility and accountability both of which is often blurred today.

Competency Building and Training

2.72   Competency building and Training of personnel at all levels has been expressed as an area of concern at all levels. It is understood that the focus on training and skill development activities in BIS in the past needs to be strengthened.

2.73   The specific areas of concern include the following:

• Inadequate Technical and Managerial training, which is essential at positions requiring specific technical skills(for eg Finance, Accounts, HRD etc) and those bearing administrative responsibility

• Inadequate focus on developing functional/service specialisation: Personnel deployed for training for a particular purpose have often been transferred soon after, which has resulted in the organisation not deriving full benefits. Also personnel transferred to a new area of operation have no/limited induction training, which limits their productivity considerably for a significantly long period of time. This is understood to be so in all categories of personnel.

• Inadequate refresher training courses at various points of time during the entire career span at BIS.

- Much of BIS's work involves interfacing with a large range of stakeholders; however there is no major training initiative for BIS personnel to deal with various situations related with client management etc.

- A major role of BIS is the promotion of adoption of voluntary standardisation in the country. Hence in addition to technical skills, marketing skills are inherently required for this job, where no special training is imparted.

Absence of lateral entry

2.74   Presently BIS does not recruit professionals at any other level other than entry level, which also results in absence of competencies for select specialist positions[5].

Career progression

2.75   Based on discussions with various BIS personnel, the key observations and their implications for various categories of personnel are presented below.

Scientific Officers

2.76   BIS has adopted the "Flexible Complementing Scheme" for its scientific cadre personnel (Class I/Group A positions). This special scheme, which has been adopted by most scientific organisations in the country allows for "in-situ promotion" of scientists/technical personnel who are engaged in scientific activities. As per this scheme, candidates becomes eligible for promotion (in terms of next higher designation and associated pay-scale) on meeting the conditions of a minimum residency period and achieving a particular rating in the Annual Confidential Report. This therefore provides a path/opportunity for eligible scientific cadre personnel for getting promoted. This upward movement however does not necessarily mean corresponding change in role performed.

2.77   The entry level for Scientific Cadre is the "Scientist B"(Class I) position. There are 6 hierarchical levels for this cadre. There are no lateral entry positions at higher levels, except through deputation. The mode for filling up the positions at the entry level are through direct recruitment(90%) and promotion from Class II/Group B personnel on a prescribed criteria.

2.78   Another feature of the scientific cadre is that although the total sanctioned positions for the entire cadre have been indicated the positions at various levels(namely 6 hierarchical levels) have not been specified. This therefore facilitates the implementation of the Flexible Complementing Scheme, whereby an individual can be promoted to the next hierarchical level as long as the total number of positions for the entire cadre is within the sanctioned limit.

Past promotion trend of Scientific Cadre Officers

2.79   The past promotion trend of Scientific cadre Officers of BIS has been reviewed and the key findings are presented as below. The following Exhibit 2.2 presents a level-wise distribution of scientific officers vs. average time spent (in years) per level (prior to being promoted to the present level).

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[5] There is a provision for filling up positions on deputation

Exhibit 2.2: Level-wise Distribution of scientific officers vs. Average time spent (in years) per level prior to being promoted to the present level

No. of Promotions in BIS	Present Level	% of scientific officers spending on average			
		1-3 yrs	3-5 yrs	5-7 yrs	7-9 yrs
		per level (prior to the present level)			
1	Scientist C	3%	61%	36%	-
2	Scientist D	-	64%	35%	1%
3	Scientist E	-	40%	57%	3%
4	Scientist F	-	-	58%	42%

Note: The minimum residency period for eligibility for promotion is as follows: Scientist B- 3 yrs; Scientist C- 4 yrs; Scientist D- 4 yrs & Scientist E- 5yrs.
(Source: BIS Manpower Database)

2.80   The key observations on the above exhibit are as follows:

− For the personnel presently at Level C, more than 60% have been promoted from Level B to C within around 5 years and 95% within around 7 years; against the minimum defined residency period of 3 years.

− For the personnel presently at Level D, around 65% have been promoted from Level B to D within around 10 years (average of one promotion every 3-5 years); against the minimum defined total residency period of 7 years.

− For the personnel presently at Level E, around 40% have been promoted from Level B to E within around 15 years (average of one promotion every 3-5 years); and around 57% have been promoted within around 21 years (average of one promotion every 5-7 years); against the defined total residency period of 11 years.

− For the personnel presently at Level F, around 58% have been promoted from Level B to F within around 28 years (average of one promotion every 5-7 years); against the defined total residency period of 16 years.

2.81   It has also been observed that out of the total number of officers presently eligible for promotion[6] (~ 210), for around 60% officers promotion have been pending for 1-2 years, as presented in the following exhibit. For around 29% (~ 68 officers) of the total eligible officers promotions have been pending for 2-4 years and for the rest (~10%) promotions have been pending for more than 4 years(refer Exhibit 2.3).

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[6] Officers who have completed the residency period (defined for various levels).

Exhibit 2.3: Distribution of scientific officers (eligible for promotion*) vs. Years for which promotion has been pending

Parameter	Range of years for which promotion has been pending after completion of residency period							
	1-2 yrs.	**2-3 yrs.**	**3-4 yrs.**	**4-5 yrs.**	**5-6 yrs.**	**6-7 yrs.**	**7-8 yrs.**	**8-9 yrs.**
No. of eligible officers	142	20	48	8	9	7	1	2
% of total eligible officers	59.9%	8.4%	20.3%	3.4%	3.8%	3.0%	0.4%	0.8%

*Note: * after completion of residency period*
(Source: BIS Manpower Details)

Impact

2.82   Exhibit 2.4 presents the grade-wise distribution of existing Scientific Cadre Personnel at various levels. There is a high percentage of scientific cadre personnel at middle and senior levels, though the actual percentage of personnel performing middle and senior level roles (Activity Head, Group Leader, Heads of Group of Functions, Branch Heads, regional Office Heads etc) is much lower.

Exhibit 2.4: Distribution of Scientific Cadre Personnel
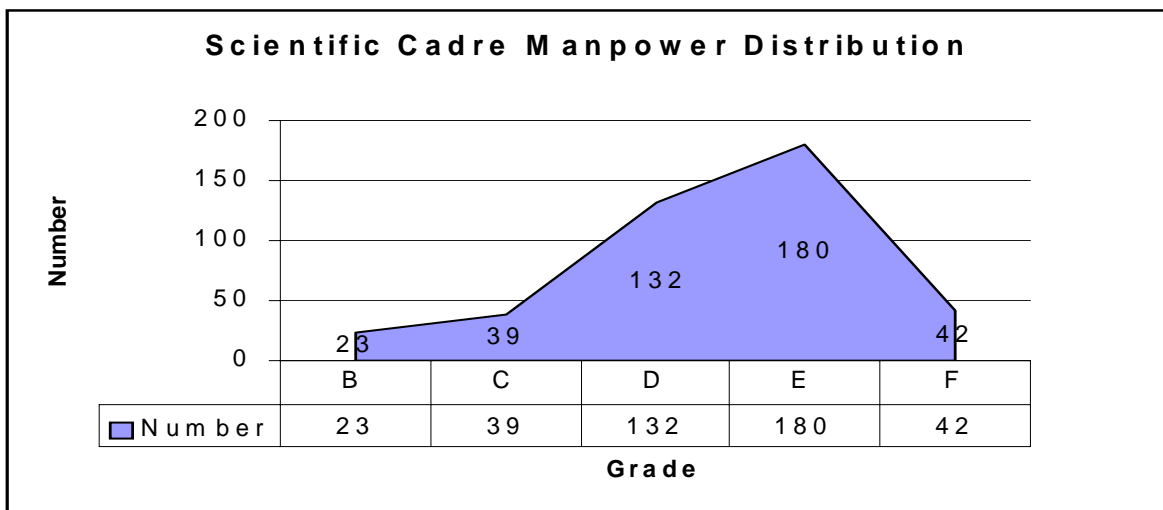
2.83   The percentage of Scientific cadre personnel in levels corresponding to Scientists E and higher is presently around 53% of the total Scientists Cadre strength. This could increase to around 65% in a span of around 7 years (assuming 25% of all eligible candidates get promoted every year; please refer Appendix III, Schedule 2 for details). The present skewed manpower distribution is an area of concern expressed by select stakeholders of BIS.

2.84   It is observed that as per the existing promotion policy, a Scientist B can rise upto a level of Scientist G (i.e. Joint Secretary level) in 21 years (or even 19 years in cases of exceptional merit. However, an analysis of the present scenario shows that although a large percentage of the

Scientific officers are in the D and above categories (i.e. middle and senior level), there are no incumbents in Scientist G.Hence there are no eligible internal candidates for the position of the Director General of BIS[7].

2.85   Based on discussions, it is understood that in other organised services, a percentage of incumbents reach a scale equivalent to a Joint Secretary in a span of 20-25 years.

Laboratory Technical Posts

2.86   For Laboratory Technical positions, the entry level is "Technical Assistant" which is filled in by direct recruitment. There is a limited opportunity for these personnel to move into Scientist cadre. The upward movement for personnel in this category is based on vacancies in the higher level. The number of sanctioned posts at each level has been specified.

2.87   The key areas of concern with respect to career progression include the following:

- Limited/no opportunity for change in role, resulting in promotion opportunities of maximum 2-3 in a career span of around 30-35 years. Presently only 10% of Group A (Assistant Director) level may be filled in by Technical Supervisors. However, it is understood that less than 15 incumbents of the total 418 Scientific Officers are from the Supervisor category. Hence effectively there are only two levels of promotions for laboratory personnel

- Disparities in terms of pay scales and authorities vis-à-vis corresponding levels from other cadres of BIS.

Administration, Finance and Others -Group A

2.88   These positions are from diverse categories of functions such as Administration, establishment, Finance and Accounts, Legal, Technical Support Services (such as Printing, Library etc), Hindi etc. There are different channels and varying opportunities of promotion for different categories of personnel. The number of sanctioned posts at each level has been specified. . The upward movement for personnel in this category is based on vacancies in the higher level.

2.89   The key areas of concern with respect to career progression include the following:

- As the career progression for this category is based on vacancies, there is disparity vis-à-vis Group A Scientific Cadre in terms of the rate of progress.

- The hierarchy levels differ in different cadres such as Administration & Finance, Scientific etc. For eg. whereas the levels for Scientific (Group A Officers) begin from Scientist B and move upto Scientist G (i.e. 6 levels); for Administration and Finance positions, the entry level is Assistant Director and move upto Deputy Director, Director, Director-SG and Deputy Director General levels (i.e. 5 levels).

- Some functions such as Hindi have only 1 level of promotion

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[7] *The position specification of the Director General states that all applicants have to be in the scale of a Scientist G (or equivalent) for a period of 3 years and should have atleast three years of service before super-annuation.*

- Some categories of personnel such as Public Relations, Hindi, Library have limited options to move across different functional areas and services

- Inadequate training to personnel for taking up the responsibilities of a specific position. This creates difficulties in undertaking specialist functions such as Finance, HRD, especially when the incumbents have been promoted/transferred from an unrelated area etc

- The provision for lateral entry is only through deputation and not utilised, resulting in inbreeding and absence of specialist skills in some areas.

  Implication

- There are instances of stagnation for long periods of time amongst some incumbents.

- Inadequate training leads to long lead times for new entrants in all functional areas (including Finance, HRD, Administration, Standards formulation, laboratory, certification, training etc) to perform their role effectively.

- Some positions in specialist common support functions (for eg. HRD, IT, Finance/Accounts) are manned by personnel who do not have an appropriate background (in terms of relevant qualifications and experience).

Administration, Finance and Other Posts (Groups B,C and D)

2.90 The areas of concerns regarding career progression for the above category of personnel include the following

- As the career progression for this category is based on vacancies, there is disparity vis-à-vis Group A Scientific Cadre in terms of the rate of progress.

- Varying career progression opportunities for different categories of personnel, ranging from 1 to 3 in an entire career span of 35 years.

- Disparities in position specifications vis-à-vis level and authority in the overall BIS hierarchy

  Implication

- Several instances of stagnation for long periods of time amongst some incumbents

- Disparities in terms of pay scales and authorities within cadres/categories of personnel of BIS

- Mismatch in qualification vis-à-vis nature of work performed and corresponding level.

Summary of Key Concerns

2.91   Based on discussions with various BIS personnel, the key concern areas which emerge in context of HRD aspects include the following:

Varying extent of career progression opportunities across cadres

Flexible Complementing Scheme vs. vacancy based

2.92   The total number of positions sanctioned for the Scientific cadre personnel is aggregated across levels whereas for other categories of personnel, it is fixed for each level. The Flexible Complementing Scheme[8] has been adopted for Scientific Officers, which provides an opportunity for eligible personnel to move up in terms of pay scale and designation. On the other hand, since the number of positions for other categories of personnel has been fixed for individual levels, the promotions are vacancy based.

Scope for Movement across functional areas/services

2.93   Some categories of personnel have an opportunity to move across different functional areas, locations and service groups; whereas others do not. For eg. Scientific Cadre Officers have an opportunity to move in different services (Standards Formulation, Certification, Training, Laboratory etc), functions (standards related, IT, Planning etc) and locations, whereas some other categories of personnel such as Laboratory Technical Assistants, Public Relations, Hindi, Library have limited options to move across different functional areas and services

Differences in Upward Movement Opportunities

2.94   There is limited upward movement opportunity for some categories of personnel. The hierarchy levels differ in different cadres such as Administration & Finance, Scientific etc. There is limited/no opportunity for change in role for some categories of personnel. This results in stagnation for select personnel in cadres such as Laboratory Technical Staff, Technical Support services and Administrative and Finance posts

Inadequate Training and Limited Scope for Lateral Entry

2.95   Inadequate training to personnel for taking up the responsibilities of a specific position. This creates difficulties in undertaking specialist functions such as Finance, HRD, especially when the incumbents have been promoted/transferred from an unrelated area etc. The provision for lateral entry is only through deputation and not utilised, resulting in inbreeding and absence of specialist skills in some areas. This results in some positions in specialist common support functions (for eg. HRD, IT, Finance/Accounts) are manned by personnel who do not have an appropriate background (in terms of relevant qualifications and experience).

Motivation and Morale

2.96   The general motivation level and morale of employees needs to be strengthened. This is an important aspect if BIS needs to successfully transform itself into a progressive, market oriented organisation.

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[8] Adopted by most Scientific Organisations for their scientific officers

Infrastructure and Work Environment

2.97   There is considerable scope for improvement in the maintenance levels of offices at several locations and working conditions; these also act as demotivators and lead to inefficient work processes. There is still considerable dependence on individual files and manually maintained registers resulting in duplication/cumbersome work processes; considerable time and effort are understood to be spent in collating information from files and registers for information requirements of superior offices.

Financial Analysis

2.98   An analysis of the financial performance of BIS is presented below.

- **Income details of BIS:** Product Certification is the major contributor to the total revenue of BIS (contributes more than 80%) & the product certification income has grown at a CAGR of around 12% over the past 4-year period. Quality System & EMS Certification contributes around 3% to the total revenue of BIS & Quality System & EMS Certification income has grown at a CAGR of only around 10%. Income from Sale of Standards has grown at a CAGR of around 16% and its contribution to total BIS's income has increased to 4-5%. Income from Conference, consultancy & Training services has grown at a CAGR of around 35%, but their contribution to total BIS's income is insignificant (only ~1%). Interest income has grown from around Rs.2 crores during FY2002-03 to Rs.18 crores during the last 2 years, which is primarily on account of increased level of investment against provision for pension liability account.

- **Expense details of BIS:** Employee cost accounts for the majority (~70%) of the total expense base of BIS. Other significant heads of expenses are: Office expenses- ~9%, Testing expenses- ~7%, Repair & Maintenance- ~3% & Depreciation- ~3%. Publicity expenses remained almost in the similar range (Rs.60-70 lakhs) during 1999-2000 to 2002-03, but there has been a significant increase of around 100% in publicity expenses during 2003-04. During the period 1999-2000 to 2002-03, there has been a continuous fall (from Rs.42 lakhs to Rs.4 lakhs) in overseas travel expenses, which indicates a decline in focus of BIS on international participation

- **Surplus (Income over Expense) Details of BIS:** The details of surplus of income over expense of BIS are provided in Chapter6-Exhibit 6.29. During FY2003-04, the surplus (income over expense) of BIS was around Rs.53 crores and has grown at a CAGR of around 50% from the level of around Rs.10 crores during FY1999-2000.

2.99   The key observations on sources and applications of funds and comments/implications thereof are as follows:

Liabilities

- Over the past 5 years, reserves and funds have increased significantly primarily on account of internal accruals of surplus from operations.

- Reserves & funds (Rs.227 to 280 crores) accounted for more than 80% of the total funds deployed during the last 2 financial years.

- Capital fund has increased from around Rs.29 crores to Rs.52 crores over the last four

years.

- Over the past 5 years, there has been a major reduction in loan funds from around Rs.3 crores at FY1999-2000 end to around Rs.1 crores at FY2003-04 end.

Assets

- Over the past 5 years, the fixed assets have remained almost in the similar range (around Rs.19-27 crores). It indicates that there has not been any significant addition/investment in the fixed assets/facilities of the organisation (such as laboratory facilities, office infrastructure etc.).

- The only asset, which has grown significantly over the years, is investment by the organisation. The investments have increased from around Rs.120 crores at the end of FY1999-2000 to around Rs.257 crores at the end of FY2003-04. The organisation has been investing major portion of its surplus earned in 'investment against provision for pension liability account', which accounts for around 70% of the total investment portfolio.

2.100 Based on the above assessment of financial performance of BIS, the key conclusions are as follows:

- BIS is 'self-sustaining' in terms of meeting its expenses.

- Product Certification has emerged as the major revenue provider (out of which Mandatory Certification accounts for more than 40%)

- Fixed costs are very significant (more than 80% of total expenses) and have been continuously growing (at a CAGR of around 5% over the past 4 years)

Legislative Framework

2.101 The Governance framework for BIS is defined in terms of its legislative framework comprising of Act, Rules and Regulations. Select observations in this context are presented below in the following paragraphs.

2.102 BIS by its very nature of operations has a large number of diverse stakeholders. The legislative framework governing BIS recognises this feature and provides for representation from a wide range of stakeholders in the Bureau and the Executive Committee of the organisation. The Act also provides for flexibility to choose the exact composition and number of members of the Bureau. However, it ensures that the Bureau works under the overall policy guidelines of the Government of India.

2.103 Based on discussions with various stakeholders, it is understood that the rules and regulations governing BIS often get into procedural and operational matters and hence often understood to constrain the effective functioning of the organisation. Illustrative examples include the following:

- The regulations governing "certification activities" prescribes the format for application by a licensee, the minimum number of inspections to be carried out, marking fee etc. Hence any modifications and improvements in procedures relating to certification require amendments in the regulation

- The Recruitment to Scientific Cadre regulation specifies the fields from where scientific category personnel may be recruited. This could restrict recruitment of personnel in new emerging areas.
- Some Rules and regulations have several cross-references to various Central Government rules such as in the Powers of the DG.

2.104   The fundamental purpose of the Rules and regulations are to support the organisation in performing the role envisaged in the BIS Act. In line with challenges faced by BIS and the need for BIS to orient itself quickly, flexibility in application of regulations and rules may help significantly in this process.

2.105   *However the key challenge for BIS would be to develop a mechanism for accountability to various stakeholders including the Government and a transparent performance management system, so that the necessary confidence is developed in various stakeholders including the Government, regarding its performance.*

2.106   It is envisaged that once such a mechanism is in place, then the Rules and Regulations could be reviewed periodically in line with the changing needs of the organisation.

SWOT Analysis

2.107   Based on the above findings and various other inputs, a SWOT analysis for BIS is presented below(Exhibit 2.5):

Exhibit 2.5 SWOT Analysis

Strengths	Weaknesses

- Linkages with ISO and IEC
- Expertise in standards formulation in various sectors
- Financially self-sustaining organization.
- Wide geographical spread
- Experienced technical manpower with exposure in a wide range of industries
- Established brand image:
  ▪ as an organisation
  ▪ ISI certification mark
	- Dilution of focus on Standards formulation & absence of long term standardization strategy.
	- Limited participation at international level.
	- Limited efforts to promote standardization.
	- Perceived to be a regulatory body.
	- Low morale amongst personnel
	- Not equipped to leverage growing opportunity

Opportunities	**Threats**
- New products & services (PAS, National Data Bank etc). - Promoting use of voluntary standards to regulatory bodies. - Enhance voluntary standards structure. - Effectively participating in international standardisation activities, thereby enhancing its own and the country's image - Positioning itself as knowledge driven organization. - Separate funding strategy for standards formulation.	- Emergence of other Standards Developing bodies - Competition from System certification bodies - Emergence of other bodies who may be allowed to certify against the Indian Standard - Decreased participation of volunteer experts in Standards Formulating activities

RECOMMENDATIONS ON ROLES AND STRATEGIC DIRECTION

2.108   The National Standards Body in any country typically plays the following role.

Standards Formulation
- Ensure harmonious development of **voluntary** standards. Options include to
  - Coordinate formulation of standards through technical expert committees
  - Accredit other Standards Development Organisations
  - A combination of the above

International Representation
- Nodal point for Representation in international standardisation bodies; such as ISO and IEC

Standardisation Promotion
- Catalyst agency for promotion of **voluntary standardisation** in the country

Information Services
- Nodal agency for dissemination of standardisation related information for both internal and external clients, WTO enquiry point, Technical Document Center etc.

2.109   Additionally the National Standards Body typically has a role in Conformity Assessment activities (such as certification, laboratories, inspection services etc) and related activities such as Training, Consultancy etc. The role options include

- Accreditor agency for bodies operating conformity assessment schemes
- Direct operator of conformity assessment schemes.

2.110   The role envisaged for BIS would broadly fall within the above overall framework of various activities.

2.111   The following paragraphs present the specific features of the role envisaged for BIS and the associated broad strategic direction.

Formulation of a National Standards Policy

2.112   The importance of standardisation has increased considerably in line with globalisation and increased volume of global trade. In this regard there is an increased focus on influencing international standards development, as it is increasingly becoming a tool for creating competitive advantage and spreading best practices. Simultaneously, standardisation is moving beyond traditional areas (industrial products) and the need for standards is being felt in emerging areas (for eg corporate governance, corporate social responsibility, waste disposal, demographics standards, urban infrastructure, and new services).

2.113 As outlined in the "External Environment Analysis", there are several international standard-setting organisations that operate on a global scale and can be divided into 3 broad categories[9]

- International Standards Bodies comprising organisations of international scope with a country based structure of representation, i.e. national delegations meeting or voting to develop and/or approve standards to be given "international" designation. These include organisations such as ISO, IEC, ITU etc. Within the above, there is further categorisation, which is outlined below:

    - ISO/IEC where National Standards Bodies (such as BIS) of respective countries are members

    - Sectoral bodies (such as Codex, UNECE, IPPC, IMO, ITU etc) for Agri-food, Telecommunications, Chemical, Pharmaceuticals, Automotive parts, Measuring instruments, where the respective regulators in various countries (who lead the standardisation process) are members

- Formal Standardisers, some of whose standards are used internationally: includes standards organisations, which are not composed of national delegations.

- Adhoc standardisers: comprises of organisations, which are considered to be consortia rather than formal standards organisations, such as Internet Engineering Task Force (IETF), DAVIC etc.

2.114 In the Indian context, while BIS is linked with ISO and IEC; bodies such as the Ministry of Health and Ministry of Food Processing represent the country in Codex; TRAI is a member in ITU and organisations such as Automotive Research Association of India align themselves to UNECE.

2.115 In the context of possibility of multiple standards developing organisations operating in the same area (product/service), the Code of Good Practice (in the TBT agreement) necessitates that a framework be evolved within every member to prevent multiplicity of standards, which can act as a barrier to trade.

2.116 In context of the above imperatives, there is a need for a "Standardisation Policy for the country", which provides a strategic direction to standardisation in the country, defines roles of various agencies involved in standardisation and allied areas in the country, future thrust areas, resource deployment options and relationship amongst various standardisation stakeholders in the country. The policy would be applicable for all stakeholders (including regulatory bodies), related with Standards formulation, Conformity assessment and allied areas.

2.117 With the objective of avoiding duplication of efforts and multiplicity of standards, it is desirable to designate one body for coordinating the formulation of standards in any given area (which could be driven by their linkages with International Standardisation bodies). This can facilitate the formulation of a single national standard in a particular area. The policy could provide a framework for ensuring the full and active participation of various stakeholders including relevant regulatory bodies.

2.118 The National Standards Policy shall examine the feasibility of identifying a body for coordinating with various standards formulating bodies to enable the formulation of a "national

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[9] Regulatory Reform and International Standardisation, OECD

standard" in any given area. In view of its existing activities (as the National Standards Body) and expertise, BIS could undertake such a role.

2.119   The policy would also need to address aspects such as:

- **Identification of thrust areas** where standards need to be formulated in India.

- **Identification** of strategic areas which are of concern to India's long term trade interests which can form the **basis for participation in international standardisation** forums.

2.120   The formulation of standardization strategy requires a public debate involving views from a large number of stakeholders. BIS is envisaged to be the agency for providing knowledge support and operational coordination support for the formulation of the National Standards Policy.

Coordinator for Voluntary Standards Formulation

2.121   The primary role of the National Standards Body is to promote the development of "voluntary (including multi-stakeholder consensus) standards" in the country. BIS is envisaged to continue playing the role of coordinating voluntary standardisation activities, especially in areas where it has linkages with international standardisation bodies (such ISO and IEC).

2.122   The key guiding principles for BIS in this context would be the following

- Ensure increase in the base of voluntary standardisation contributors through networking

- Contribute to a wide range of standards formulation activities

Increasing the base of voluntary standardisation in the country

2.123   As the areas where standards need to be formulated become diverse and more specialised (especially new technology areas), there is a need to expand the skill base of experts who can contribute towards standards formulation in these areas. The base of the voluntary standardisation infrastructure would include new volunteer experts and specialist organisations who can contribute both as experts as well as perform a secretarial role of preparing base documents.

2.124   This would offer BIS an opportunity to increase its network of experts and the flexibility to ensure that standards are developed in different areas which may other wise be difficult with existing limited in-house skill sets.

2.125   This may be undertaken through both formal and informal means.

"Informal" route:

(a) Develop a mechanism for enrolling volunteers (by creating special interest groups and professional standards societies) who could be groomed up for various standards related activities and can also contribute to preparation and review of standards. These volunteers could be from the student community, professionals in the industry etc. Special incentives such as certificates, access to international databases of BIS could be provided to attract volunteers. Creating e-groups for facilitating an open discussion on

development and usage of standards in various areas is also suggested.

"Semi-formal" route:

(b) Enter into MoUs with specialist agencies who can formulate the preliminary draft of standards (especially in emerging areas), which then can be taken up through the BIS technical committee system for formulation of voluntary consensus standards.

These agencies may be treated as "professional service providers" who would need to be compensated appropriately for their professional efforts. This would also entail a change in the existing revenue model of BIS. **In this context, BIS could seek to create a special corpus for funding of standards in emerging areas. This may involve contributions from concerned ministries, industry and other interested stakeholders.** Appendix V contains an indicative revenue framework model in the changed scenario.

"Formal" route

(c) Develop organisations who can be groomed to take over the member secretariat role for select product categories

(d) Develop an accreditation mechanism for these new standard developing organisations

The formal route is not recommended in the immediate future, as the number of organisations, which have capability in performing the secretariat role for standards formulation is still limited in India and hence there is limited use of an accreditation scheme. However BIS could prepare the ground for this option so that it can be exercised if required in the future.

Contribute to Standards Formulation Activities

2.126 Presently BIS coordinates the formulation of National standards only. However, there is also a need for standards, which are required by select stakeholders for specific purposes. BIS has an in-house team of professionals whose expertise could be utilised for the purposes of contributing to these specific standards. It is understood that in the past, BIS has prepared standards for specific customer groups.

2.127   In this context, there is an **option** for BIS to expand services to include formulation of standards other than Indian standards. This option includes developing "Publicly Available Specifications" which could cater to specific requirements of industry groups and regulatory bodies. These could be sponsored by the organisation requesting the standard. These could be marketed to regulatory bodies and industry that need to develop standards within a short time frame. This would enable BIS as an organisation to participate in a wide range of voluntary standardisation activities and meet specific needs of a wider range of stakeholders. Internationally, many National Standards Bodies (such as British Standards Institute) offer such services to their clients.

Develop a mechanism for research inputs in Standards Formulation

2.128   In the present context, the standards formulated are based primarily on the technical inputs provided by the technical committee members. However as the standards are ultimately notified by

BIS, the onus of the contemporariness and adequacy of the standards lies with it. In order to institutionalise its strengths in standards formulation, a mechanism needs to be developed to ensure that adequate research inputs from various sources are available to BIS while formulating and thereafter "maintaining" the standard.

2.129   This mechanism could be combination of
- Internal sources:
  - In-house laboratory data and a test databank (refer recommendations for Laboratory Business in later paragraphs)
  - Sample audit of process of formulating standards
  - Peer review mechanism for standards formulated
- External sources: Map specific research organisations and establish formal linkages with them (with identified accountability) and informal special interest groups for audit of standards and raising timely alerts to BIS in the event of any discrepancies or external changes (for eg. in technology) necessitating changes in the Indian standard.

This mechanism would complement the existing system of review of standards after a five-year period.

2.130   BIS could seek to create a special corpus for funding this activity.

Regulatory Standards: Role of the National Standards Body vis-à-vis Regulatory Bodies

2.131   In India, as in several other countries, there are instances where regulatory bodies have not referred to voluntary standards prepared by the National Standards Body, while developing technical regulations.

2.132   The role of BIS as a NSB vis-à-vis regulatory bodies would need to be governed by the following guiding principles:

- Recognition world-wide of the benefits of closer coordination between regulatory bodies and the voluntary standardisation structure

- Obligation for utilisation of voluntary standards in technical regulations, as per the TBT agreement to which India is a signatory.

- The National Standards Policy which provides the basis/framework for formulation of standards which would meet the needs of various regulatory and policy requirements. To achieve the above objective, the strategy would need to provide a basis for ensuring the full and active participation of various stakeholders including relevant regulatory bodies. The standards formulated by other organisations could be taken by the technical committees constituted by BIS and included as an Indian standard. BIS may give due credit to these organisations by incorporating their names in the standard.

2.133   In the intermediate time period, a common notification system may be developed wherein, the work programs and progress status of various standards developing bodies (including regulatory bodies) are available at a common place. This would help in avoidance of duplication of effort to some extent.

Catalyst agency for Standardisation promotion and a nodal agency for Technical Information Dissemination

2.134 The Standards system is a "knowledge based system" as standards are developed by technical experts, embody best practices and are vehicles for information exchange and technological diffusion[10]. Empirical studies in some European countries have highlighted the benefit of standardisation in terms of economic terms. However the relevance of standardisation is often not understood by various stakeholders including business, consumers and government.

2.135 There is a strong need to increase the understanding of standardisation amongst various stakeholders. In this regard, BIS as the National Standards Body, is a reservoir of best practices and technical knowledge in a large number of areas of interest to various stakeholders. Hence BIS is envisaged to be the nodal agency for performing this role.

2.136 Although this role is being presently performed by BIS through consumer awareness programs, press releases, advertisements, brochures, there are limitations in terms of the quantum and reach of the present effort. Hence the future strategy for BIS would need to include the following elements:

- Identification of specific target groups (for eg. SMEs, service sector, government departments); where standardisation can bring significant and quantifiable benefits to stakeholders and market the use of specific voluntary standards.

- Developing case studies of success stories and documenting benefits, which could be publicized widely.

- Integration/linkage with the promotion activities of related concepts such as quality and productivity. There is a need for stronger linkages with organisations such as Quality Council of India(QCI), National Productivity Council (NPC) for standards promotion

- Making select standards available "freely available" on the Internet and publicizing this to promote their usage. It has been suggested by some stakeholders that the option of making all standards available "free of cost" may be considered. However as the objective of this step is to promote consumer safety and popularise the use of standards, it is recommended that in the immediate future, those standards of products which are related with consumer safety may be provided on the internet (free of cost) and subsequently extended to other products in a phased manner. This step however needs to be vetted legally for any possible copyright infringements or loss of revenue to other bodies, especially in cases where Indian Standards are adopted from International Standards/Standards formulated by other organisations.

2.137 BIS is the designated WTO Enquiry point and has a Technical Information Dissemination service. This role is envisaged to be strengthened so as to enable BIS to **position itself as a "nodal agency" for Information dissemination regarding standards and best practices in the country**. In this regard, BIS is envisaged to have not only information regarding "Indian standards", but also standards prepared by other Standard Developing Organisations in niche areas in the country. BIS

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[10] Source: Adapted from Issues Paper, Towards a Canadian Standards Strategy, SCC,1999

would need to have institutional understanding with these organisations in this regard. Also, this service needs to be publicised widely in the industry, technical community, Government, consumers etc. Necessary manpower and financial resources would need to be provided for effective discharge of this proposed role.

Role in International standardisation

2.138   As international standards are becoming increasingly important for international trade, it is important for BIS to contribute effectively on the international stage. Strategic participation and contributing to international standardisation activities is envisaged to be an important thrust area for BIS. It is recommended that BIS give priority to increasing the number of Secretariat positions and membership in various committees at the ISO and IEC. This should be linked to domains/areas where India has strategic trade interests.

2.139   As a part of the National Standards Strategy, it is envisaged that specific areas be identified where it is desirable that BIS participate effectively in terms of international standardisation. In this context, BIS should also provide a platform to technical experts and industry interests to participate along with its own experts.

2.140   As international participation in standardisation requires funds, a separate corpus for this activity may be envisaged wherein contributions from various stakeholders could be sought.

Role of BIS in Conformity Assessment Activities

2.141   The following paragraphs present the options available to BIS in Conformity Assessment activities.

- Option 1: BIS as an accreditation body for conformity assessment
- Option 2: BIS operating a "Product certification scheme", "Management Systems certification scheme, Laboratory
    - All activities carried in-house
    or
    - Phase 1: Sub-contracting of individual activities(such as Inspection, Testing etc)
    - Phase 2: Designating organisations to undertake all certification activities on a turnkey basis except statutory functions like grant, renewal & suspension of license etc (to prepare for any increase in requirement of mandatory certification)
- Option 3: Opt out of conformity assessment and other commercial activities, i.e. BIS undertake only standards formulation activities and development related activities (related with its role as a NSB)

2.142 Ideally in terms of role, it is preferable that BIS plays a coordinating role in all standardisation activities (promotion, formulation and conformity assessment) in the country. However, it is understood that the role of an accreditation body is no longer available with BIS, as QCI has been given the mandate to perform this role. Hence the role of accreditation (Option 1) has not been considered for BIS.

2.143 Based on feedback from various stakeholders, it is established that there is a need for certification schemes in the country; BIS has been mandated to perform this role and has done so for many decades(especially Product certification). Hence, BIS has developed a certain degree of expertise in undertaking this role. The scheme generates revenue for BIS and has contributed to the financial self sufficiency of BIS. This role also provides an opportunity to BIS for providing "technical inputs" to licensees to promote quality in the country in general. There is also no international inference; wherein the National Standards body has no linkage with accreditation or operation of conformity assessment schemes. Also focussing on only development activities of standardisation considerably limits the scope of the NSB. Hence the option of BIS to opt out of conformity assessment and other commercial activities and undertake only standards formulation activities (Option 3) is also not considered appropriate for BIS.

2.144 It is recommended that BIS continues with its conformity assessment activities (i.e. Option 2). However there are the following issues which need to be kept in mind while undertaking conformity assessment activities

- Ensure segregation (in terms of structure, policies and resources) of conformity assessment activities from the core role of standards formulation, so that there is no dilution or loss of focus on the standards formulation activities. The structuring of various activities is discussed separately in subsequent paragraphs.

- Considering the limited resources available in-house and the need to increase the coverage over a long period of time, it is recommended that BIS outsource non-core and routine activities in a phased manner. This would enable BIS to focus on specific key aspects, such as developing a stronger/responsive consumer grievance redress mechanisms, sample audits, increased awareness of the benefits. This could also help in improving the cost-effectiveness of operations.

Strategic Direction for Conformity Assessment Activities

2.145 BIS presently has the following activities related with Conformity Assessment
- Product Certification Scheme (ISI and Hallmarking)
- Management System Certification Schemes

Product Certification

2.146 The recommendations with respect to BIS's Product Certification scheme are:

Phase 1: Outsourcing individual activities

2.147 There is a need for optimally utilising limited resources within BIS for offering product certification services. In this regard, the activity which requires significant effort is inspection. There is scope for selectively outsourcing this activity. In this regard the following steps are envisaged to be undertaken

- Categorising clients or product categories into high risk, medium risk and low risk

- Establishing a scheme for empanelling individuals or organisations for inspection activities. Illustratively, these could be technical institutes (including academia); individual consultants, retired BIS professionals, retired industry professionals etc

- Initiating outsourcing of inspection activities in a stage wise manner.

Phase 2: Designating Organisations for Conformity Assessment on a turnkey basis

2.148   The outsourcing model may be further extended from individual activity outsourcing to turnkey outsourcing, wherein designated organisations would undertake all certification related activities except for statutory functions such as grant, renewal & suspension of license etc. This may become necessary in the event of rapid increase in mandatory certification licenses.

2.149   The illustrative parameters that need to be considered while designating these conformity assessment bodies have been presented below:
- Have demonstrable experience for carrying out conformity assessment requirements and procedures.
  - Technological knowledge of the relevant products, processes or services.
  - Management capacity
  - Geographical reach
- Accreditation by the National Accreditation Body.

2.150   BIS would need to develop a pre-qualification criteria for its potential partners, devise terms and conditions for engagement, develop training programs for ensuring commonality of understanding, parameters for monitoring etc. BIS could also have an arrangement with the accreditation bodies (QCI and NABL) for arranging joint inspections as a part of the monitoring process. Also, BIS would need to have an appropriate confidentiality clause with the empanelled inspecting agents and designated bodies.

2.151   The individuals and agencies carrying out the above mentioned activities would need to be treated as "professional service providers" and would need to be appropriately compensated. This would also have an impact on the existing revenue model of BIS. An indicative revenue model in the changed scenario is presented in Appendix V.

Increase base of voluntary product certification

2.152   There is a large untapped market for third party voluntary certification in the country. With outsourcing, it would be possible for BIS to focus on increasing its base of clients for voluntary ISI mark certification. It is essential that BIS actively promote its ISI mark and its benefits ("re-launch of the ISI mark"). This would also enable clients to derive benefits from using this service. A professional Brand Manager, who can assist in formulating specific promotion strategies for BIS, may be considered on a short-term basis.

2.153   Specific research papers and case studies of benefits accrued to clients and consumers through the use of ISI mark may be prepared, which could be published in business magazines, newspapers etc.

Accreditation

2.154   It is suggested that an accrediting body having linkages with IAF accredit BIS's Product certification schemes. This would help in enhancing the recognition of the service abroad as well as strengthen it in India.

Enforcement

2.155 Enforcement is an important activity in the BIS context and requires a "zero-tolerance approach". It is recommended that BIS have an integrated enforcement strategy comprising of the following elements

- Develop an institutional mechanism to obtain complaints on misuse of ISI mark. This could include a combination of consumer awareness programs and special incentive schemes, publicizing the consumer complaint mechanism in the local media and talk shows.

- Develop a comprehensive database of all complaints in the country, so that trends in nature of complaints, product categories etc could be analysed. Use of statistical tools for identifying patterns, categorising of products into high/medium/low risk categories would assist in developing a scientific and analytical basis for focussed effort for enforcement and complaint redressal. It has also been observed that the present classification of offences does not differentiate between technical violations (such as breach of terms of licensing) and those related to sub-standard product supplied to consumers that would affect human health and safety. It is therefore recommended that appropriate changes in the BIS Act be made to raise the penal provisions as well as grade the penalties on the basis of seriousness of the offences.

- Facilitate the State level committees to play an active role for providing enforcement support and field intelligence on misuse of the ISI mark.

- Encourage field offices to develop case studies, best practices and success stories, which could be replicated in other regions.
- Develop and track performance indicators for monitoring response times for complaints and other aspects related to enforcement.

- Provide special training to officers for enforcement activities. Utilise the services of support staff in BIS for intelligence gathering activities. Enlist the support of NGOs for raid related activities. This would involve personally approaching NGOs and offering financial assistance if required for this purpose.

- Explore the possibility of outsourcing the fieldwork and related legal work related with enforcement activities as a self –sustaining activity.

- Ultimately, it is not possible for a single body such as BIS, which has limited resources to undertake enforcement related activities effectively. Hence, it must continuously engage with Local Government, regulatory bodies and NGOs to assist it to control misuse of the mark. BIS should conduct training programs for various officers in these bodies on various means for detecting misuse.

Change in terminology

- It is suggested to change terms such as "licensees" into "clients"; "inspectors" into "advisors"

Training to field officers

- It is recommended that BIS conduct training programs for its officers in the area of "customer relationship management", etiquette, complaint handling; business communication (written and interpersonal)

- A key area of concern expressed by clients of BIS is the inadequacy of feedback provided to them for improvement in the quality of their products and operations. It is recommended that BIS design a special module for providing feedback to its clients. This would involve collation of the nature of enquiries and problem areas of various categories of clients (Product, size, region wise etc). Then a team of BIS experts could develop a broad outline (methodology) to be followed by the field officers, when queries are raised or when they see specific problems. This should be followed by special training programs for its field officers.

AN ALTERNATIVE SCENARIO FOR PRODUCT CERTIFICATION

An alternative scenario in the context of product certification in the country is outlined below.

❑ There would be growing trend towards "self-certification" or supplier declared conformity to a particular standard. Hence any "false declaration" would come under the ambit under acts such as the "Consumer Protection Act".

❑ Suppliers may also opt for third party certification as an option(voluntary).The benefit of third party certification marks would be in terms of the following:

- For suppliers: A means for "due-diligence"; tool for overall improvement in quality
- For customers: A third party assurance to the customer that the supplier has gone through a process of quality checks.

❑ This envisages a high level of consumer awareness of the benefits provided by self-certification by the supplier and a third party certificate. This also envisages a high degree of self-regulation and accountability on part of suppliers. Hence there would be no need for "mandatory certification" for any product.

❑ This is a strategic direction, which policy makers (including stakeholders involved in standardisation) may consider as an alternative to mandatory certification.

Management Systems Certification

2.156 The Management Systems Certification scheme is perhaps the only service where BIS competes with other players on an equal basis. This scheme also provides an opportunity for BIS employees to have an exposure to a wide range of industries including the service sector.

2.157 This service is synergistic to the overall objective of BIS and also offers opportunity for significant growth in the future. It is recommended that BIS continues with this scheme and expand its customer base in both Private and Government organisations.

New Products/Services

2.158   One of the threat areas for BIS is the possible competition in the "Product certification" service of BIS, which is a major source of income. In this possibility, an option for BIS is to explore its options in related conformity assessment services.

2.159   With increase in trade, there is likely to be an increased demand for inspection services. Inspection services require skill sets that have similarities with product certification activities and could help in better utilisation of existing BIS resources. This service also could provide an opportunity for BIS to move beyond national boundaries.

2.160   One of the inferences from the Benchmarking review indicates that the British Standards Institute has entered into "commodity inspection" in a large way, especially outside UK. This business now accounts for a significant percentage of the revenues of BSI.

2.161   Also, it is understood that BIS has had experience in the past in undertaking "inspection activities" although on a limited scale.

2.162   Hence, as one of the means of offsetting threat of competition in product certification, (which could impact revenues) and expanding its service portfolio, BIS could initiate its entry on a limited basis and gradually expand in a phased manner depending upon its success.

Laboratories

2.163   In the present scenario, laboratories operate as a support to the "product certification" scheme. BIS has initiated steps towards outsourcing its laboratory requirements on a limited basis. The options for BIS for its laboratory operations are

- Option 1: To retain laboratory services as a part of its service portfolio

- Option 2: Gradually hive off this service

2.164   An evaluation of the above indicates that there is a need for having laboratory services within BIS's portfolio for the following reasons:

- BIS's product certification service requires laboratory services and hence there is a need within BIS for this service. Also some of the services required by the Product Certification unit may not be provided by other laboratories

- To ensure that laboratory services are provided at an appropriate price, laboratory services inhouse are desirable. Else there is scope for charge-out rates to increase (due to monopoly or cartelisation) especially in areas where there are only 1-2 specialist private laboratories.

- Laboratory services could be a source of invaluable data, which could support standardisation activities (primary activity) of BIS.

2.165   Hence, Option 1 is recommended in the BIS context. However, it is envisaged that BIS laboratories would play a strategic role by:

- Providing services which are otherwise not available

- Performing a balancing role in terms of cost of services

- Constantly evaluating/reviewing in-house vs. outsourcing options

2.166 It is essential that laboratory operations become competitive and not be cross-subsidised by other activities of BIS. In the long term, it is envisaged that laboratories at BIS operate on a self-sustaining basis. For this the cost competitiveness and service quality of the laboratories would be the critical success factor. In this regard, it is envisaged that

- Laboratories should be specialised to the extent possible to enable better utilisation of equipment and development of expertise. A comprehensive five-year plan needs to be prepared for identifying capacities which need to be created in-house and those for which adequate facilities are available outside BIS (or for which vendors can be developed).

- Laboratories to support not only Product certification, but also standards formulation, as a source for test data for research. The laboratory business should initiate a "National Test Data Bank" to support the standards formulation activities. The data may be obtained not only from BIS's own laboratories, but also from other testing laboratories.

- BIS undertake a detailed exercise to compile the utilisation pattern of various equipment and identify the root-causes for under-utilisation, if relevant. Based on discussions and inputs from various BIS personnel, these could illustratively be aspects such as mismatch in filler equipment, inadequate training, administrative policies, manpower, inadequate maintenance, inadequate demand etc. The above would form the basis for of a corrective action plan, which could lead to measures to improve utilisation, disposal of some equipment, relocation of some equipment to other laboratories, training on use of select equipment, etc.

- The costing system of BIS should be strengthened to ensure that the actual cost of undertaking this service is captured accurately.

- The testing charges should be regularly compared/benchmarked with the charges of other players to ensure that BIS's services are competitive.

2.167 The structural relationship of BIS's laboratory services with other services is discussed subsequently.

Training

2.168 BIS has established a separate Training Institute, which imparts training services to participants from Standardisation bodies in other countries, industry and its own employees. BIS is in a unique position to utilise its expertise in standardisation and conformity assessment and has the potential to become a premier Regional training centre atleast at the Asian level.

2.169 In this context, there is also scope for developing a symbiotic relationship with other training institutes of organisations such as NPC, Management Institutes etc. It is also desirable that BIS have formal institutional linkages with similar training institutes of other National Standards Bodies which would enable faculty exchange programs, student exchange programs and sharing of

course material. Also, in order to develop a strong brand for itself, the training institute needs to have a strong research base in the area of standardisation and quality.

2.170   However to achieve this objective, there is a need for considering the Training business of BIS as a separate strategic business unit as the needs of the institute are quite different from that of other services of BIS. This is discussed in subsequent paragraphs.

Structuring of Standardisation and Conformity Assessment Businesses

2.171   The key areas of concern with respect to the business structure of BIS have been as follows:

- Inadequate strategic focus on the core activity of BIS; i.e. Standards Formulation

- Separate operating environments for Standards formulation, promotion, which are more of developmental activities vis-à-vis Conformity assessment activities, Training and Laboratories and hence different needs in terms of structure, HR policies etc.

- Chances of internal conflict if standards formulation and conformity assessment activities are grouped together.

2.172   Internationally, there is a trend towards segregation of developmental activities (standards formulation, promotion etc) and commercial activities.

2.173   In the BIS context, to ensure that adequate focus is provided to developmental activities, it is recommended to segregate Standards Formulation activities from other services of BIS.

2.174   Laboratory services, if grouped with conformity assessment services can be a cause of weakness in internal control (the laboratories need to independently verify samples that are collected by the Product certification team). Hence it is recommended to treat the Laboratory business as a separate business unit.

2.175   The Training services of BIS(which are more akin to a "teaching institute"), though a commercial activity have separate needs than conformity assessment activities. Separate structuring of the training institute can contribute to removing areas of conflict of interest of the training institute with the conformity assessment services (Training a client and undertaking conformity assessment activities for the same client could be viewed as a conflict of interest).

2.176   AFF's recommendations on the emerging business structure of BIS are outlined below

- Four business units (headed by SBU heads)reporting to the Head of the Organisation (i.e. the Director General)
    - Group 1: Standards Formulation, Standards Promotion, Technical Information Dissemination including WTO Enquiry Point
    - Group 2: Conformity Assessment Group (Product and Management System Certification, Legal etc)
    - Group 3: Laboratories
    - Group 4: Training

2.177 The Support services (Finance, HRD, IT etc) in the initial/interim period are proposed to remain centralised / under common pool. However in the long term these could be considered for decentralization so that the Business Units become self-contained entities.

2.178 A separate DG Support Cell could be created which would include functions such as Vigilance, Planning and MIS etc.

2.179 It is envisaged that the Standards formulation group and the Conformity Assessment group have cells that would focus on developing protocols and guidelines for engaging with various partners (Outsourced agencies, designated bodies etc). These activities would illustratively include

- Identifying potential geographical areas, products based on a risk analysis, where BIS could initiate its outsourcing process.
- Mapping potential partners
- Identifying pre-qualification criteria for potential partners
- Devising terms and conditions for engagement of partners (including aspects of confidentiality etc)
- Developing training programs for its partners and ensuring commonality of understanding
- Developing parameters for monitoring (including audit on sample bases) for ensuring uniformity of practice.
- Developing mid-course corrective action plans as required.

2.180 The Governance issues in the emerging business structure are discussed below.

Governance

2.181 Governance deals with the accountability for performance of an organisation and internal relationships within the organisation(primarily between the Executive Committee and the Top Management) that determine decision-making and accountability.

2.182 In the context of the emerging roles and the critical stage BIS is in at the present point of time, there is a need for a strong Governance structure which can lead the changes that are required.

Role of the Executive Committee

2.183 The EC's role is critical in defining the strategies to ensure the continuity and sustenance of the changes envisaged for BIS. Appropriate representation of business heads in the EC would facilitate their involvement and ownership for implementation of various policy and strategic measures in the organization. It is envisaged that the EC will increasingly assume responsibility for monitoring the effectiveness and propriety of deployment of the organisation's resources. In this regard it is suggested that the EC establish for itself broad parameters of performance measurement for BIS and time-lines for review of the organisation's performance over a specified period (such as 3 years). In this regard, the EC could also establish "internal codes of performance" for its members and establish a system of peer review for evaluating its own performance. The parameters for this performance system could be developed in consultation with major stakeholders including the Government. This system would contribute enormously to establishing its accountability to various categories of stakeholders and also help in self-regulation.

Internal Governance Structure

2.184 There is a trend towards strengthening of internal governance structures in various organisations, which can enable employees (as internal stakeholders) to participate in various decision-making processes related to the organisation (The representation could include the heads of the proposed business units of BIS).

2.185 In this regard, it is envisaged that "Unit Committees" be constituted for each of the four business units of BIS. These Unit Committees would comprise of the "business unit head", senior functional heads (from within the business unit and representatives from other business units) and external experts. This would enable representatives of the BIS to participate effectively in various policy and advisory matters (besides operational matters) related with the functioning of the organisation. The strengthening of the internal governance structure would involve them in key decision making processes, help in improvement in sense of ownership and hence general motivation level amongst employees.

2.186 It is suggested that the committees establish internal codes of performance for themselves under the guidance of the Executive Committee and a system of internal peer review to evaluate their own performance.

2.187 Similar parameters of performance could be set for the Head of the Organisation (Director General) and for the top management comprising of heads of the four proposed business units. The ultimate goal of the Governance system is to have clearly defined responsibilities and accountability at all levels. However the final authority for policy and strategic decisions would lie with the Executive Committee and the Director General.

Legislative Framework

2.188 In the context of the above Governance structure and accountability mechanism being established and the need for operational flexibility to function in a rapidly changing environment, it is imperative that the legislative framework be reviewed to meet the current needs of the organisation.

Guiding principles for changes in legislative framework

2.189 Once an accountability mechanism is in place, it is recommended that regulations and rules be reframed to enable

- The Chief Executive/Director General and the Executive Committee with appropriate delegation to Business Unit Heads and Unit Committees to decide the means in terms of quality and quantity of resources(human resources, finance, support infrastructure etc) required, means of raising these resources, institutional systems and internal working procedures, internal structures etc to achieve the goals/targets set for the Unit (Regulations related with the "powers of the DG", Regulations related with recruitment and progression of various cadres etc)

- Operational flexibility in services to meet the market needs (Regulations related with certification)

2.190 A mechanism of review of the legislative framework periodically should be in-built to ensure that these adequately support the desired role and objective of BIS.

2.191 The above mechanism would also enable several matters which are presently referred to the Government to be addressed at the Executive Committee level itself.

Other changes in legislative framework:

2.192 In addition to above changes, it is recommended that following changes be incorporated in the BIS Act:

- It has been observed that the "BIS Act" does not mention that BIS is the National Standards Body of India. Hence it is recommended that necessary changes be made in the Act to formally specify the same. This would be truly reflective of the role performed by BIS and its nature of activities.

- There are a wide variety of deviations in the product certification of BIS ranging from technical violations (breach in liscencing terms) to those related to safety and health. The present provisions in the Act do not provide for any differentiation of penal action in line with the diverse risk categories. Hence it is recommended to allow BIS to grade the categories of offences in terms of risk and damage potential and raise penal provisions accordingly. The same may be incorporated appropriately in the Act.

- In line with the National Standards Policy, suitable changes as required in the BIS Act may also need to be incorporated.

Brand Image of BIS

2.193 Improving the Brand Image of BIS as an organisation and that of its services requires immediate attention. Although some of the measures suggested for improving the same have already been highlighted in the previous paragraphs, these are summarised below along with select other suggestions.

- Standards Promotion and helping stakeholders understand the relevance of standardisation would re-iterate/increase the relevance and strategic significance of the National Standards Body. This would require preparation of position papers and case studies where standardisation has benefited society; identification of new areas where standardisation could help stakeholders etc.

- Promoting BIS as a reservoir of knowledge-base of best practices and improving the dissemination mechanism would enhance BIS's image as a knowledge driven organisation. This would need BIS to actively undertake research, collate best practices in the country and abroad and participate in technical and scientific seminars. In this regard, the services of retired BIS personnel having expertise in specific areas could also be utilised on a contractual basis.

- Develop mechanisms for enrolling volunteers through special interest groups and facilitate them in terms of training.

The above three suggestions require a combination of marketing effort and

research/scientific effort.

- Increase effective participation in international standardisation. This would result in an overall improvement in BIS's image in the international forum. This would also help Indian industry, as they would have an opportunity to learn from participation in international standardisation activities.

- Training to Field Officers in the areas of customer relationship management, complaint handling, business communication would also improve the front-end interphase. A change in internal terminology used such as "clients" instead of licensees, "review" instead of "inspection", "advisors" instead of "inspectors" could also help in changing the overall image of BIS. Similarly training is envisaged to be provided to various personnel on basics of "Marketing management", which would help not only standards formulation personnel to promote the use of standardisation, but also conformity assessment professionals to handle clients effectively.

- Enforcement for Product Certification: Increased use of IT to develop a comprehensive database of complaints, scientific analysis for categorisation of risk, publicising the complaint mechanism available to customers, providing special training to officers, seeking help from local authorities/NGOs, exploring the possibility of outsourcing of field work could help in improving the brand image and confidence in BIS's product certification

- A review of the procedures followed for standards formulation and conformity assessment services needs to be carried out, to identify application areas for enhanced use of IT. Facilities such as online purchase of standards, checking of status of certification application, "frequently asked questions" on the BIS web-site where answers are given for common queries would also help in improving the brand-image of BIS.

- It is essential that BIS actively promote its BIS mark and its benefits ("re-launch of the ISI mark"). This would also assist the clients of this service to derive benefits from using this service. A professional Brand Manager, who can assist in formulating specific promotion strategies for BIS, may be considered on a short-term basis.

- Improvement in infrastructure and related housekeeping, aesthetics etc could also improve the overall image of the organisation.

MANPOWER REQUIREMENT

2.194 A summary of manpower requirement projection are provided in the following paragraphs in terms of brief of the existing human resource inventory and the estimated manpower requirements.

Existing Human Resource Inventory

2.195 At the HO level there are around 136 officers, out of which around 65 is in Standards Formulation function. At RO/BO level the number of officers is around 266, out of which around 67 are based in the Southern Region. In labs there are around 40 officers (out of which Central Lab has around 16 officers).

Key Aspects for Manpower Requirement

2.196 The key aspects taken into consideration for manpower requirement are provided as under(Exhibit 2.6):

Exhibit 2.6

Key activities envisaged	Support Services	Statutory Positions	Organisation Structure
▪ Standards Formulation ▪ Product Certification ▪ Management Systems Certification ▪ Laboratory Services ▪ Technical Information Services, IRD, Publications, Library Services ▪ Training ▪ Standards Awareness, Promotion	▪ IT ▪ Administration, including Project Management and Works, Legal, PR ▪ HRD ▪ Planning and Coordination ▪ Sales	▪ CVO, Vigilance ▪ Hindi Unit	▪ 5 Regional Offices ▪ 33 Branch Offices[11] ▪ 7 Labs

Key assumptions for manpower requirement assessment

2.197 The key underlying assumptions for estimation of manpower are as follows:

- Total available working man-days in a year has been assumed to be around 206, excluding various public holidays, leaves (actual leave taken~50% of total allotted leave) and Sundays & Saturdays

- A time frame of five years has been considered for manpower requirement. Y0 has been taken as FY2003-04.

- Projection of physical level of workload in line with the past trend in case of regular activities (such as number of inspections, raids, market samples etc. in case of Product certification; number of technical committee meetings, draft standards etc. in case of Standards Formulation). The projected workload (along with exiting level-Y0) for major functions (Product Certification & Standards Formulation) is provided as under (Exhibits 2.7 and 2.8).

- For ad hoc activities (such as handling of government queries, meeting with external departments/ministries, preparation of exception reports etc.) provision (in terms of effort required) has been appropriately factored into.

- No basic procedural changes have been assumed in different functions.

- The existing business structuring in terms of various functions/departments and the existing office set-up in terms of geographical/locational spread have been assumed to be continued.

- Operational improvement in working on account of IT application has been assumed.

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[11] Including Branch Office set-ups at Regional Offices

Exhibit 2.7 Projected workload/Activity Level for Product Certification

Workload/Activity	Y0	Y1	Y3	Y5	Remark
No. of licenses	17798	18866	21198	23818	Growing @ a CAGR of ~ 6%
No. of new licenses granted per year	2678	2946	3564	4313	Growing @ a CAGR of ~10%
No. of preliminary inspections	2898	3240	3921	4744	Has been on average ~1.1 times no. of new license granted per year
No. of surveillance inspections per license per year	1.2	1.3	1.5	1.5	~1.2 surveillance inspections per license per year
No. of surveillance inspections	19796	23832	30897	34715	-
No. of licenses renewed	15120	16018	17998	20223	~90% of total licenses are renewed
No. of licenses cancelled	1725	1780	2000	2247	~10% of total licenses are cancelled
No. of other inspections	4278	4583	5149	5786	~0.25 other inspections per license per year
No. of raids per BO per month	0.5	0.75	1.0	1.0	Target to be achieved by Y3
No. of raids	207	297	396	396	-
No. of market samples collected	15500	16430	18461	20742	Assumed to increase in line with increase in no. of licenses

Exhibit 2.8 Projected workload/Activity Level for Standards Formulation

Workload/Activity	Y1	Y3	Y5	Remark
No. of standards (in force)	18278	18978	19678	-
No. of standards formulated per year	350	350	350	On average around 350 standards have been formulated per year
Extent of review of standards for reaffirmation*	17%	20%	20%	As per the last year data, only around 16% standards have been reviewed
No. of standards reviewed (for reaffirmation) per year[12]	2286	2794	2899	-
Number of technical committees[13]	340	340	340	Existing no. to be continued
No. of meeting per technical committee per year*	0.7	1	1	To improve from existing level of 0.6 meetings per committee to 1 by Y3
No. of technical committee meetings per year	238	340	340	-

- Outsourcing of select activities both in product certification and standards formulation functions—Envisaged targets for level of outsourcing are as follows(Exhibit 2.9):

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[12] It has been estimated assuming 25% of standards to be dormant

[13] The number of Technical Committees has been assumed to remain fixed.

<div align="center">**Exhibit 2.9**</div>

Activity	Y1	Y3	Y5
Product certification: Surveillance & other inspections	10%	25%	50%
Standards Formulation: Preparation of draft standards	25%	40%	50

- In other functions (such as RO level, Labs & Support Services) manpower requirement is determined primarily by functional positions.

2.198 The estimation of manpower requirement for the next five-year period is provided as under(Exhibits 2.10 and 2.11):

<div align="center">**Exhibit 2.10: Estimated Manpower (Officer Level) (without outsourcing)**</div>

Office/ Function Group	Functions	Estimated Manpower		
		Y1	**Y3**	**Y5**
HO Level				
DDG-M	CMD 1,2,3 & 4	14	14	14
DDGT1	Stds. Formulation, IRD, TIS & Bureau Secretariat	110	124	125
DDGT2	CAD, PMWD, P&FL & ITSD	10	10	10
DDGT3	MSCD, P&C, Legal & Public Relations	13*	13	13
DDG (Trg.)	Training Institute	6	6	6
DDGA	Establishment, Admn., Security, Hindi, LSC, PTD, HRD & Sales & Distribution	18*	18	18
DDGF	Finance & Accounts	5	5	5
CVO	Enforcement & Vigilance	8	8	8
BO/RO Level		339	398	448
Labs (including DDGL)		56	56	56
TOTAL		**579**	**652**	**703**

<div align="center">**Exhibit 2.11 : Estimated Manpower (Officer Level) with outsourcing**</div>

Extent of outsourcing	BO/RO Level			DDGT1			Other functions			Total for BIS
	S[14]	NS	**Total**	S	NS	**Total**	S	NS	**Total**	
Y1: Outsourcing- 10% in (a) surveillance & other inspections & (b) formulation of draft stds.	323	7	**330**	89	6	**95**	94	36	**130**	**555**
Y3: Outsourcing-25% (a) in surveillance & other inspections & (b) in formulation of draft stds.	361	9	**370**	97	6	**103**	94	36	**130**	**603**
Y5: Outsourcing-50% in (a) surveillance & other inspections & (b) formulation of draft stds.	373	11	**384**	97	6	**103**	94	36	**130**	**617**

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[14] Sc: Scientific, N.Sc: Non Scientific

Existing vs. Estimated Manpower

2.199   A summary of exiting vs. estimated manpower is provided as under (Exhibit 2.12).

Exhibit 2.12: Existing Vs. Estimated Manpower (Officer Level)

Cadre	Existing	Sanctioned	Estimated					
			Without outsourcing			With outsourcing		
			Y1	Y3	Y5	Y1	Y3	Y5
S[15]	417	579	530	601	650	506	552	564
NS	39	57	49	51	53	49	51	53
Total	**456**	**636**	**579**	**652**	**703**	**555**	**603**	**617**

2.200   Keeping in view the extent and nature of efforts required vis-à-vis the availability of human resources, it is envisaged that BIS should partly outsource some of the select activities such as surveillance inspections and formulation of draft standards in the initial phase. Subsequently BIS should increase the extent of outsourcing (optimally possible) and consider other activities (such as review of standards for reaffirmation etc) for outsourcing.

2.201   Inline with the envisaged targeted extent of outsourcing, which is 50% in surveillance and other inspections and 50% in formulation of draft standards in year Y5, the estimated long term manpower requirements at officer level works out to be around 564 in Scientific cadre and around 53 in Non-Scientific cadre[16].

2.202   With any restructuring of business or office set-up, the projected number of manpower would remain almost same except for few changes at senior management level.

HUMAN RESOURCE ISSUES INCLUDING CAREER PROGRESSION OPTIONS

2.203   It is felt that one of the main factors for the present state of career progression scenario has been that BIS has adopted career progression schemes from various Central Government organisations, Scientific organisations for various categories of personnel etc. The extent of adoption has also varied over the years. This has lead to fragmentation of the organisation into multiple cadres of personnel and hence increased scope for internal conflict. In line with its objectives to operate in a contemporary, market oriented, professional environment, BIS needs to significantly strengthen its HRD policies including the career progression options of its employees.

2.204   The key imperatives for BIS include:
- Need for a uniform system for all employees in the organisation, but give due importance to the ranking of the role to be performed.
- Need for career progression system to be integrated with performance appraisal.
- Need for avoidance of skewing of the organisation structure at any level, but retain the flexibility of providing adequate levels for each role to provide progression opportunities to all employees.

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[15] S: Scientific & NS.: Non-scientific

[16] In case of outsourcing to the extent of 50% in long term (i.e. by year Y5) in other certification activities viz. preliminary inspections and market samples collection, the estimated manpower requirement in Scientific Cadre would be around 536 in Y5.

- Need to provide an opportunity for personnel to move to any role, as long as the basic eligibility criteria are met. Hence this also ensures that minimum competencies exist to perform all roles

2.205   Hence in view of the above, it is felt that there is a need for addressing many of the legacy issues through a separate detailed Human Resource study, for all categories of personnel. The key activities to be undertaken would include the following:

Outline roles to be performed for each functional/service area

- The organisation needs (in terms of roles, business objectives, corporate targets etc) would determine the organisation structure and associated positions with respect to the roles to be performed for various functional areas/services. For eg. the number of Regional Heads would depend on the number of Regional Offices, number of Branch Heads would depend upon the number of Branches, Activity Heads for Standards formulation would depend on the areas where BIS formulates standards. Hence there is a need to clearly outline the roles required to be performed in each functional/service area.

Outline Job responsibilities and accountabilities for each role

- There is a need to clearly outline the job responsibilities and accountabilities (in terms of key result areas) for each of the roles. This has already been initiated to an extent in BIS (Role directory has been prepared), but accountabilities are yet to be delineated.

Prepare position specifications for each role

- There is a need to prepare position specifications for each role, in terms of qualification, experience and competency requirements. This would help to firm up the minimum eligibility criteria for individual roles. At present position specifications for various roles in different functions and services have not been clearly laid down.

Job Evaluation

- A job evaluation exercise needs to be carried out to rate a particular role in terms of its contribution to the overall objective of the organisation. For eg. a job evaluation exercise may indicate that the role/"relative worth" of an Activity Head for Standards Formulation is rated/ranked higher than say the role of an Activity Head for Printing.

Define vertical levels, which could correspond to designations

- There is a need to lay down the various levels in the BIS hierarchy, which could correspond to designations. This could be similar to existing levels or may be developed afresh in line with the present need of the organisation. For eg. it may emerge that BIS has say 15 levels in the entire organisation.

Match role with level

- Subsequently, there needs to be an exercise for matching the role against various levels, in line with the Job evaluation carried out. This clearly defines the band of levels within

which a role may be performed. For eg. it may emerge that an Activity Head of Standards Formulation is matched against Levels 7-10; whereas an Activity Head of Printing is matched against Levels 7-9.

Change in Role

- Any employee meeting the minimum eligibility criteria for a role could compete for any vacancy. This would also enable lateral entry of professionals if the position specifications for a particular role were defined clearly.

Recommendations on Human Resource Management

2.206   The recommendations on Human resource Management issues are presented below

Undertake a comprehensive HR study

2.207   In order to deal with various legacy issues, it is recommended that BIS undertake a comprehensive HR study covering all categories of personnel. The indicative terms of Reference for the study are presented below

- Role Mapping: To prepare the job responsibilities, key result areas/key performance indicators (accountabilities) and position specifications for each unique position based on the role and business structure of BIS.

- Job Evaluation: To undertake a job evaluation exercise to rank/rate each role/position in terms of its contribution to the overall objective of the organisation.

- To suggest rationalisation of cadres and levels in line with the above

- Performance Appraisal System: To identify weaknesses in the existing Performance Appraisal System and recommend changes if any.

- Promotion Policy: To devise an appropriate promotion policy for various categories of personnel and evaluate the feasibility of establishing equivalence with services such as All India Services, Technical/Scientific organisations etc.

- Training: To identify training needs for various unique positions

- To suggest changes if any to various HR policies such as recruitment policy, transfer policy etc

2.208   The suggested time frame for the study would be 5 months

Enhance focus on training

2.209   It is recommended that any change in role is preceded by adequate managerial and functional training, so as to enable an incumbent to perform adequately in the new role. This is especially necessary for specialist positions such as finance and accounts, IT, HRD etc

Non-Monetary Incentives

2.210   The HRD policies should be developed in a way so that the focus of career progression gradually shifts from a pure focus on "monetary benefits and perks" to non-monetary benefits

including training, public felicitations etc. Also enhancement in role (job enrichment), greater responsibilities could be considered as non-monetary incentives.

2.211 It is recommended that the training requirements be integrated with the Career Planning, Career Progression, and Performance Appraisal system of BIS. As a part of the performance appraisal process undertaken every year, the training needs of each individual are envisaged to be identified. The training needs could be in terms of

- Business Management
- Marketing Management, Customer Relationship Management
- Human resource Management
- Finance for Non-Finance Personnel
- Business Communication
- Refresher Technical courses in individual areas of specialisation
- Quality Management

2.212 The training courses could be through inviting internal and external guest experts, attending Management Development Programs, Secondment/Deputation to other organisations (including laboratories, technical research organisations etc)
.

Encourage lateral entry for specialist positions

2.213 It is recommended that in roles (in any functional area/service/business unit) where BIS does not have adequate inhouse capability, it should encourage lateral entry of specialist experts on contractual basis or even full time basis. This could include functions such as Standards formulation, IT, HRD, Finance and Accounts, Legal etc.

Encourage development of specialisation, but provide for job rotation

2.214 In the context of the recommended business structure of BIS, wherein there are distinct business units, the transfer policy of BIS needs to be modified to encourage specialisation, especially in areas of Standards formulation, Laboratory and Training. However, there needs to a flexible provision, wherein personnel in a particular business unit could be deputed for a fixed period to other business units. This would provide an opportunity for BIS personnel to obtain experience in different areas of standardisation. However for permanent deployment to a specific role, the minimum eligibility criteria must be met.

Rotational administrative positions in select cases

2.215 In several educational institutes, there is a system of rotational administrative posts; wherein the "Head" of the Department is more of a coordinator and facilitator of the activities of the department and hence is rotational in nature. This provides an opportunity for a larger percentage of personnel to obtain administrative experience. In some areas such as Standards formulation, Training etc, this concept is suggested to be tried out on an experimental basis, to improve the general work environment in BIS.

Modify recruitment policy to consider separate position specifications for various business units of BIS

2.216 Presently the position specifications for various roles in various functional areas/services are not clearly laid out and hence there is no consideration for differences in positional needs, including aptitude needs. It is recommended that the recruitment policy be modified to cater to specific position needs of various roles.

Enhance individual contribution to Standardisation and Quality

2.217 It is recommended that employees (especially Scientific Officers) need to be encouraged to effectively contribute to the Standardisation and Quality knowledge base. Illustrative areas could include:

- Papers in the area of standardisation, Quality management
- Documentation of case studies of benefits accrued to clients after adopting Indian standards
- Documentation of best practices adopted in Management Systems by various clients
- Research findings based on data collated through laboratories
- New areas where standardisation could benefit society
- Documentation of best practices adopted for enforcement
- Position papers for Standards promotion to specific target stakeholders; SMEs, Local Government etc
- Best practices in deployment of IT in standardisation

2.218 The contribution of an individual to the knowledge base should be an important factor for appraisal of all employees, irrespective of the service one is positioned in.

Others

2.219 A framework has also been suggested for improving the motivation level of employees.