Driving Information Systems for Holistic Tax Initiatives

IT Strategy for the
CENTRAL BOARD OF EXCISE AND CUSTOMS

OCTOBER 2014
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PREFACE

The modernisation of an indirect tax administration hinges crucially on sound Business Processes, effective and optimal use of Information Technology (IT) and Human Resources. For an IT implementation to result in the desired business outcomes, it must necessarily be aligned with the organisation’s overall strategy, goals and objectives. A dynamic tax environment, a rapidly changing technology landscape and growing stakeholder expectations make this alignment even more important. More so, when in India indirect taxes contribute significantly to the total Union tax revenue.

The Central Board of Excise and Customs (CBEC) embraced IT fairly early on and has a range of IT enabled services today, hosted from its centralised IT infrastructure. While significant advances have been made, there remain gaps between the expectations of the taxpayer and internal stakeholders, vis-à-vis the deliverables of IT implementation thus far. The IT wing of CBEC which is mandated with overseeing and managing the IT implementation is constrained by inadequate resources (human and financial), from achieving its actual potential and becoming CBEC’s chief enabler for actualizing CBEC’s goals and objectives. Managing a complex, changing IT implementation to achieve the twin objectives of taxpayer facilitation and effective enforcement needs a motivated, committed workforce which in turn requires empowerment by way of skill & capacity building and adequate resources.

The CBEC Chief Commissioners’ Conference in July 2013 recommended the setting up of a High Powered Committee to arrive at recommendations for CBEC’s IT strategy. A concept titled DRISHTI - Driving Information Systems for Holistic Tax Initiatives – evolved. DRISHTI, means ‘vision’ in Hindi, symbolizes CBEC’s commitment to an IT-led transformation over the next five to ten years, for achieving its vision of creating a climate of voluntary compliance and combating smuggling, tax evasion and commercial frauds. A High Powered Committee (HPC) was set up on 27.02.2014 with the approval of the Hon’ble Finance Minister, for defining an IT strategy for CBEC (Government of India, Ministry of Finance, Department of Revenue, Office Memorandum issued vide F. No. 296/33/2014-Cx.9 dated 27.02.2014 constituting Committee No.26/2014-(Annexure 1)

The DRISHTI HPC is mandated to study existing initiatives, the requirements of external and internal stakeholders, gaps between the two and come up with strategic and operational
recommendations to fill these gaps which could be considered for implementation in the short to medium and long term by the CBEC for achieving its vision. The specific terms of reference of the Committee are as follows:

- Identify and formalise strategic objectives towards achieving the IT vision
- Advise on appropriate applications to support business services
- Identify data to support the business objectives
- Suggest appropriate technology architecture
- Suggest a protection, obsolescence and archival policy
- Evaluate the need for a consultant to implement DRISHTI &
- Any other recommendations that may be necessary to give effect to the above said purposes

With these above Terms of Reference in mind, meetings of HPC were held on 16.04.2014, 13.5.2014, 19.05.2014 and 13.10.2014. A series of internal meetings as well as a meeting with other stake holders were held to appreciate the issues involved, the expectations of the stake holders and the challenges faced to meet them. A two day intensive workshop was also held where domain experts visited CBEC’s IT facilities and met the CBEC project managers heading the ongoing IT projects. An interaction with representative taxpayers was also held at Bangalore.

The HPC has made its recommendations addressing the Terms of Reference set forth by the Government and hopes that, when implemented; these would bring in a paradigm shift in the manner CBEC functions. They would also help in achieving its Vision, Mission and Objectives.

I would like to place on record my appreciation of the Central Board of Excise and Customs for this initiative. I would also like to thank the members of the Committee and especially the Director General, Systems, CBEC for their support and assistance. I would like to convey my best wishes to the CBEC for taking this initiative forward.

TV Mohandas Pai
Chairman
DRISHTI High Powered Committee

13th October 2014
New Delhi
## High Powered Committee (DRISHTI)

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<td>Dr. Kamlesh Bajaj, CEO, DSCI</td>
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<td>Dr. Srikanth Sundararajan, Venture Partner, Helion Advisors</td>
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<td>Ms Ananya Ray, I.R.S., Chief Commissioner of Customs (Preventive), New Delhi</td>
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<td>Shri S. Ramesh, I.R.S., Chief Commissioner of Customs, Chennai Zone</td>
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<td>Shri Pradeep Rao, IA&amp;AS, Financial Advisor, Ministry of Finance, Govt. of India</td>
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<td>Shri C. Rajendiran, I.R.S., Commissioner of Customs, Vishakapatnam</td>
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<td>Shri Vivek Chaturvedi, I.R.S., Additional Director General, S.I. Systems, New Delhi</td>
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ACKNOWLEDGEMENT

The HPC acknowledges the guidance and support provided by Ms. J.M. Shanti Sundharam, I.R.S., Chairperson, CBEC.

The HPC also acknowledges the help and support extended by the following officers of CBEC:

Shri V.S. Krishnan, Chief Commissioner, Central Excise, Mumbai-I Zone
Smt. Arusha Vasudev, Chief Commissioner, Central Excise, Mumbai-II Zone
Smt. Vanaja Sarna, Chief Commissioner, (Tax Arrears Recovery)
Shri D.P. Dash, Additional Director General, Systems
Shri Gautam Bhattacharya, Additional Director General, Systems
Shri Alok Shukla, Jt. Secretary, TRU
Shri Sanjay Kumar Agarwal, Commissioner, Service Tax, Chennai
Shri S.V. Singh, Additional Director General, Systems
Smt. Arti Srinivas Aggarwal, Additional Director General, Systems
Smt. Shubhagata Kumar, Additional Director, Systems, New Delhi
Shri Suresh Kumar, Additional Commissioner, Service Tax, Bangalore
Shri R. Sriram, Additional Commissioner, LTU, Bangalore
Shri Jayant Sahay, Jt. Director, Systems and
Shri M.V. Vasudevan, Jt. Director, Systems
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<td>Regional Training Centre</td>
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<tr>
<td>RTI</td>
<td>Regional Training Institute</td>
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<tr>
<td>RTO</td>
<td>Recovery Time Objective</td>
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<tr>
<td>SAFE</td>
<td>Standards to Secure and Facilitate Global Trade</td>
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<tr>
<td>SERMON</td>
<td>System for Excise Revenue Monitoring</td>
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<tr>
<td>SEZ</td>
<td>Special Economic Zone</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>SOA</td>
<td>Service Oriented Architecture</td>
</tr>
<tr>
<td>SRP</td>
<td>Self Removal Procedure</td>
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<td>SVB</td>
<td>Special Valuation Branch</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>UNODC</td>
<td>United Nations Office on Drugs &amp; Crime</td>
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<tr>
<td>UPSC</td>
<td>Union Public Service Commission</td>
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<td>US</td>
<td>United States</td>
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<tr>
<td>US IRS</td>
<td>United States Internal Revenue Service</td>
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<td>VAT</td>
<td>Value Added Tax</td>
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<td>VPN</td>
<td>Virtual Private Network</td>
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<tr>
<td>WCO</td>
<td>World Customs Organization</td>
</tr>
<tr>
<td>XML</td>
<td>Extensible Markup Language</td>
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EXECUTIVE SUMMARY

The roles and functions of the CBEC have undergone a significant transformation both in terms of scope and content since the time it came into being in 1963. Beginning with the primary role of collection of Customs and Central Excise duties on goods and commodities, imported and domestically manufactured respectively, and since 1994, collecting taxes on services, it has seen a paradigm shift to a more constructive engagement with taxpayers as a facilitator of compliance and a provider of Internet based taxpayer services. The economic liberalisation of the 90’s and resultant rationalisation of tax rates, reduction of physical control and simplification of procedures were the keystones of this transformation.

The contribution of Indirect Taxes since the beginning of the nineties when it contributed close to 80% of the Central revenues has seen a decline over the last twenty years to about 45% today. This decline in indirect tax collections vis-à-vis direct tax collections is a sign of moving towards a developed economy. This makes it even more critical for CBEC to reinvent itself by redefining its role in the administration of Indirect Taxes, including the implementation of the ensuing Goods and Services Tax (GST) in partnership with the VAT departments of various states.

The need to maximise revenues, improve the quality and variety of taxpayer services, encourage voluntary compliance, increase its risk-based approach to tax assessments, and make its enforcement interventions focussed make it imperative for CBEC to leverage the latest advancements in IT, including risk assessment techniques and advanced data analytics. It also necessitates a fresh look at its human resource management and the requisite up-gradation of its human resources from the present generalist work force to one with specialised skill sets suited to its new role. The organisational structure and governance mechanism also have to be revisited appropriately so that they serve the purpose of the organisation optimally.

The HPC studied CBEC’s Vision Document and the present IT implementation. Consultations with the stakeholders, including departmental officers, trade and industry representatives were held and their views understood. Domain experts visited CBEC’s IT facilities and interacted with the personnel who manage these facilities on a daily basis.
While CBEC’s IT implementation itself is a significant achievement in terms of technology and standards, the business processes are largely unchanged for the last several years and the IT wing is constrained by the lack of adequate funding and human resources. While the IT wing is expected to deliver on several fronts, on time and within cost, it has not been empowered in a manner that makes this possible, and it is struggling under its present workload. The details of the existing workload (documents handled and revenue collected) are depicted in Annexure 2. A clear picture that emerges from this study is that IT is currently seen as just another wing of the CBEC and there are gaps not only in the alignment between IT and business, but also between the expectations from it and the resources at its command.

IT can no longer be treated as an auxiliary or support system, as it is the chief enabler for modernizing today’s tax administration. IT must become integral not just to providing effective taxpayer services, but also to the internal governance functions within CBEC. There seems to be a misplaced perception that a change in the IT systems at CBEC is sufficient for it to achieve its objectives. Changes in IT systems alone without concomitant changes in the underlying business processes, organisational structure and human & financial resources would not bring the desired results. The present organisational structure wherein any person can be posted in any role and which does not incentivise or sustain specialisation and the development of domain expertise, cannot support the transformation required at CBEC. The HPC reviewed the best practices followed by tax administrations the world over and found that without the right organisational structure in place, tax administration cannot operate effectively and the revenue collection efforts will be sub-optimal.

It is seen that even after major changes in the statute such as change from assessment by the department to self-assessment by taxpayer, the organisational structure continues to be geographical and jurisdiction-based (Range, Division, Commissionerate). Instead, CBEC may consider re-organisation of its structure on functional lines such as Taxpayer Services, Enforcement, Audit, Assessment etc., with an appropriate IT core and suitable support infrastructure.
From a taxpayer perspective, CBEC ought to make the transition from an “intrusive, in your face” tax administration to a modern tax administration with a light touch, yet with a comprehensive outreach based on state-of-the-art technology, latest techniques in advanced data analytics and risk management to ensure that those who evade taxes are suitably identified and dealt with as per law.

A large number of officers and staff are still engaged in low value, routine tasks such as preparation of reports, which could easily be made system-driven. This would free up precious expertise and domain knowledge for high value tasks such as audit and investigations and also enrich careers.

The administrative structure under which CBEC functions, gives it little room to exercise the kind of financial decisions that are required for agile IT systems that can meet changing business demands quickly. When the global trade and tax environment has changed so much and when there are expectations from CBEC to deliver world class IT systems, there needs to be a change in the degree of financial and administrative autonomy that governs its functioning.

The recommendations of the HPC thus encompass not only IT issues but also other core issues such as organisation design, business process reengineering and human resource management. The HPC is of the firm belief that the mandate, environment and challenges of the CBEC in the next decade are going to be hugely different from its past. These challenges cannot be merely addressed by means of incremental solutions and therefore it can no longer be business as usual. CBEC needs to take a measured and calibrated approach for this change.

The recommendations of the HPC can be categorised into three components,-
- those that could be implemented within the next 2 years (Short Term)
- those which could be implemented between 2 and 4 years (Medium Term) &
- those which could be implemented between 4 and 6 years (Long Term)

The report has been structured as follows:
Chapter I of the report traces the structure, growth and IT initiatives of the CBEC in the past and the present and examines the strategic objectives needed in the future, keeping in view the Vision, Mission and Strategic Objectives of CBEC. There is a need to revamp Human Resource Management in CBEC since an efficient IT implementation requires specialised skillsets and an IT centric HR Management Policy. Though much has been achieved in terms of centralised IT infrastructure, in view of the current constraints, in terms of hardware and network etc., there is an urgent requirement to redesign the business applications after an appropriate BPR to move towards a modern Service Oriented Architecture.

Chapter II provides an overview of IT applications in CBEC, discusses the existing constraints and challenges and makes strategic and operational recommendations.

The Committee finds that the current organisation of DG Systems needs immediate steps to post adequate human resources since there is an extreme resource crunch. There should be an IT centric HR policy with a programme in place for attracting and retaining the right talent at the IT Wing with specialised technical skillsets. Additional compensation by way of special pay should be provided as an incentive. There should be an electronic database of central HR to enable real-time tagging with Central User Access Management system for which an automated Human Resource Management tool must be implemented to include all details from joining till retirement (Para 2.5.3).

Administrative and Financial constraints currently faced by DG Systems need to be suitably addressed so as to minimise cost and time overruns of IT projects and in a way that is conducive to an agile IT organisation (Para 2.5.4). Ownership and support of IT initiatives by the highest level at CBEC is required at all times to deliver on the objectives of the IT strategy (Para 2.5.5).

The use of Mobile applications in Customs needs to be considered for maximizing efficiency. The three applications of ICES, ICEGATE and RMS should be ideally merged into one integrated application to make it faster and more resilient, in place of the present inefficient scheduler based system which has its limitations. The Risk Management System should be modified to run on a database optimised for analytical queries. Entity based risk management
also needs to be included. After a thorough BPR exercise in Customs, an integrated Customs system based on Service Oriented Architecture should be implemented to provide a single window-based tax payer friendly system with minimal need to print documents. There is a similar need to conduct a BPR in Central Excise and Service Tax for increasing the functional capability of ACES for improved tax payer services. The design of many functionalities in ACES needs review with provision for invoice level data capture and risk based analysis (Para 2.5.6, Para 2.5.7, Para 2.6.1, points a & b).

There should be a provision to use advanced analytics for selection of units for audit and mobile based applications for audit teams. The possibility of implementation of Big Data could also be explored on a pilot basis at the appropriate juncture (Para 2.6.1, point e).

The BPR exercise should ideally consider all processes in CBEC and identify common touch points between business areas in Customs, Central Excise and Service Tax so that the Service Oriented Architecture can be optimally leveraged (Para 2.6.1, point a).

CBEC must have access to third party data such as Income Tax, DGFT etc. with structured data exchange on regular basis for better analytical reports to plug tax evasion (Para 2.6.1, point d).

CBEC’s Disaster Recovery capability needs to be significantly enhanced as it is inadequate at present. Keeping in view the criticality of CBEC’s IT services and the need to ensure zero data loss, the computing capacity must be increased to provide full redundancy with an automated recovery system (Para 2.6.1, point k).

The information security of CBEC’s network should be further enhanced on immediate priority basis given the heightened security threats to critical government infrastructure. While CBEC complies with most of the guidelines circulated by MHA, it requires additional funding to implement some of the recommendations such as implementation of a Security Operations Centre etc. This funding must be made available to CBEC at the earliest. The Committee is of the firm view that considerations of national security including cyber security and the criticality
of CBEC’s IT operations must override any considerations of cost alone and must be judged by their efficacy in preventing breaches of security (Para 2.6.1, point l).

The network itself needs to be more robust providing better connectivity with review of bandwidth allocation at sites, revamp of VPN solution and best in class network monitoring tools deployed at NOC (Para 2.6.2, point a).

There should be the best diagnostic tools to trace end user transactions of stake holders to data centre to identify and resolve grievances in the quickest possible time. An integrated national help desk should be set up to improve the present help desk services. CBEC should consider reducing the multiplicity of vendors to the minimum that is required to make it more manageable (Para 2.6.2, point d).

A real time replica system should be used for transactional and hybrid reports which should not impact the online transactional systems (Para 2.6.2, point e).

CBEC also should consider strengthening the access control by features like One Time Password, two factor User authentication system to ensure that the integrity of the IT systems are not compromised (Para 2.6.2, point g).

A document management system must be ensured to digitise and store current business documents at local and central levels (Para 2.6.2, point h).

The IT infrastructure of CBEC must have enough buffer capacity to cater to additional load with scalable server technology (Para 2.6.2, point l). The use of flash memory at data centres for improved performance must also be explored (Para 2.6.2, point m).

CBEC website needs modernisation with introduction of value added services (Para 2.6.2, point i). ICEGATE, the e-commerce platform should use latest technology platforms discarding the current technology which is obsolete (Para 2.6.2, point k). CBEC should come up with an
appropriate data protection and archival policy (Para 2.6.2, point o) and also a policy to address Technology Obsolescence (Para 2.6.2, point p).

**Chapter III** discusses the current challenges relating to Human Resource Management of CBEC and makes recommendations to improve the same in order to support the changes proposed in the area of IT.

The Committee acknowledges the fact that CBEC being a government organisation, recruitment of personnel is governed by the recruitment rules which have very limited flexibility for functional specialisation, lateral on-boarding of subject matter experts, or flexibility in compensation/ remuneration packages. The Committee is of the view that defined skill sets are necessary to carry out jobs such as Audit, Policy Formulation, IT skills and Advanced Analytical Skills which will be used in all the areas of working of CBEC (Para 3.2).

As in the case in many developed economies, with a view to fully harnessing the power of IT and also to make optimum use of the resources, there is a need for CBEC to create specialised functional units by moving from the current geographical based organisation structure towards function based structures. To man the specialised units, specialisation of work force is sine-qua-non. Creation of such specialised units will bring in results such as greater specialisation across the organisation, improved compliance results, simpler processes for the taxpayer and the administration, ability to develop specialties within the administration, better resource management, integrity, etc. (Para 3.3.1).

IT should also be effectively used to maintain a comprehensive ERP based HR system in CBEC. Once fully developed, this can be used for posting officers by matching the requisite Aptitude, Competencies and Enterprise with the job description and skillset requirement. The HPC would like to call this as developing the ACE Strategy (Para 3.3.4 and Para 3.3.5).

Capacity building of officers needs to be carried out in a systematic manner, in tune with National Training Policy 2012, framed by DoPT. CBEC could consider implementing internal e-
learning programme comprising a Learning Management System and a Knowledge Management System, which would benefit both the Officers and the Tax Payers (Para 3.3.6).

To man certain specialised functional units, resources can be laterally inducted either by deputation from other Central Services such Indian Economic Service, Indian Statistical Service and NIC, etc. as well as from professional experts on contractual terms (Para 3.3.7).

There is an urgent need to have structured Leadership Development Programme in tax administration, tax strategies, policy formulation, and global tax developments with wide exposure to other modern tax administrations. Besides, Change Management has to be embedded in the curriculum of NACEN so that the officers and staff adopt a more constructive engagement with the Tax Payers (Para 3.3.8 and Para 3.3.9).

**Chapter IV** provides an overview of the current state of IT Governance and recommends various models including SPV which can be adopted by CBEC for managing its IT operations.

**Chapter V** discusses some ideas for reforms in order to realise the vision and make it a reality.

This Chapter attempts to encapsulate some of the major recommendations relating to the IT enablement of CBEC into one holistic set of recommendations delineating the Strategic Objectives to achieve the IT vision, which the Committee would like to call “Big Ideas”. The Committee believes that these “Big Ideas” would provide a logical and focussed roadmap towards a successful implementation of DRISHTI in CBEC. It also covers certain recommendations relating to compliance requirements as well as tax payer services. Though some of the ideas were discussed in detail in the previous chapters, this Chapter in a nut shell lists out some ideas which will act as a game changer for CBEC.

Tax administrations all over the globe have been consciously engaged in devising and adopting customer-driven strategies. Underpinning these strategies is the need to facilitate the tax payer, reduce the burden of compliance and ensure that the tax payer’s rights are safeguarded by creation of National Tax Payers Services Directorate (Para 5.7, point a).
CBEC should fast-track the recently announced Customs Single Window Project, considering that the interface with other Government Agencies would become seamless, leading to on-line approvals/ test results. This will reduce compliance cost and enhance the competitiveness of Indian products in global market. The Committee recommends a document management system on the lines of the project implemented in Bangalore (Para 5.1).

The phenomenal technological development that has taken place in the IT industry has made the concept of Centralised Assessment Facility a reality. It is strongly felt by the Committee that Centralised assessments can be done on-line, by commodity-wise pool of experts, located at different Customs Houses or at a national level. The much needed specialisation in Assessment will bring in uniformity in assessment practices across the country and substantially reduce litigation. This can be achieved by setting up a National Customs Assessment Centre (Para 5.2 and Para 5.3).

The Committee is of the view that to carry out the enforcement related function, there is a need for setting up of National Targeting Centre (Para 5.4).

As GST implementation is on the anvil, with the global linkages and the vast experience in administering Harmonised System of Nomenclature over a period of 30 years in an automated environment, CBEC and its HR Training wing (NACEN) can play a very crucial role in managing the change from the current Tax regime to GST regime effectively and smoothly. It can play a lead role in creating, moulding and nurturing ideal work force for effective implementation and working of GST at the national and state level. It can take initiative in preparation of self-learning and self-evaluating learning modules and conduct the ‘Train the Trainer (TOT)’ programme for the officers of CBEC as well as various state governments. With a Pan India presence, it can provide an ideal training programme for ushering in and implementing GST throughout the length and breadth of the country.

On the lines of KAI (Knowledge Analysis and Intelligence) wing of HMRC, NACEN may consider developing its own Centre for Excellence - a Research and Knowledge Hub for entire
Indirect Tax Administration. It needs to have representatives from various proposed specialised units of CBEC such as Audit, Enforcement/Intelligence, Tax Policy Planning, Tax Payer Services, Data Analytics Unit, etc. It may also consider tying up with reputed Universities and Research Institutes as Knowledge Partners; engage Interns for carrying out research relating to tax and other functional areas as mandated by CBEC. CBEC may also allow its own officers to be posted to COE on research assignments on the lines of National Police Academy. CBEC should also approach NIC for using high-speed Knowledge Network for NACEN, RTIs and COE, which will greatly facilitate easy access to research material across the internet and help the researchers(Para 5.5).

The Committee is of the view that CBEC being the apex body for ensuring international cooperation and mutual assistance between other Customs administrations, it is necessary to set up a full-fledged Directorate of International Customs to garner the requisite expertise and face the challenges of complex negotiations (Para 5.6).

The need for creation of specialised units has been discussed at various places in the Report. However, the importance of setting up of National Tax Payers Services Directorate, creation of Data Analytics and Business Intelligence Unit, and the creation of specialised units for various functioning of CBEC such as Audit, IT & Automation, HR Services, and Business Process Re-engineering (BPR) are discussed at length in this chapter (Para 5.7).

Chapter VI summarises the recommendations made in the previous chapters with the approximate time period for implementation. The Committee has also recommended steps to be taken for overseeing implementation of DRISHTI report. For a large, complex, transformational IT initiative like DRISHTI, it may be essential to seek external expertise and CBEC may seek such expertise as necessary, to support its officers in the implementation.
CHAPTER I
THE CHANGING FACE OF CBEC
A tax administration is closely inter-linked with the business environment it operates in. With the change of time, and as the economy progresses, the tax administration must modernise, matching the changes in trade and industry, stride for stride. As the traditional, legacy role of an enforcer changes more towards a facilitator and enabler of voluntary compliance, tax administrations have to become more taxpayer focussed and non-intrusive. This chapter provides a brief overview of the present state of CBEC’s organisational structure, IT implementation, resource constraints and drivers for change, which necessitate a fresh look at the overall vision, IT strategy and the changes required in organisational structure and resource management to bring this strategy to fruition and realise the desired outcome.

1.1 CBEC Organisational Structure, Roles & Functions

1.1.1 The Legacy

The Central Board of Excise & Customs (CBEC) was constituted under Section 3 of the Central Boards of Revenue Act, 1963 for matters relating to Indirect Taxation, viz., Customs & Central Excise. CBEC deals with the tasks of formulation and implementation of policy concerning the levy and collection of Customs & Central Excise duties as well as Service Tax and prevention of smuggling and narcotics related activities.

From 1947 till 1991, indirect tax revenues accounted for almost 80% of the total revenues. The tax policies centred around high tax rates, a complex import control regime with quantitative restrictions by way of Licences and Permits etc., strict controls over production, distribution & deliveries. CBEC’s organisational structure was designed to implement these policies and its field formations performed largely executive and enforcement-oriented roles.
On the Customs side, the focus was on curbing smuggling activities especially at borders and coastal areas, while on the Central Excise side, there was physical control over factories and the focus was on curbing the clandestine removal of goods. This necessitated extensive physical interface with taxpayers.

Various field offices namely Commissionerates, Divisions and Ranges were thus primarily responsible for interface with the taxpayers and for enforcement of tax laws and border controls based on their geographical jurisdictions. Directorates were created for ancillary support functions. The organisational structure of CBEC was also designed to focus on revenue collection and augmentation, anti-smuggling and anti-evasion. The “Non-Core” functions were essentially designed to support the core functions.

1.1.2 Major Reform Initiatives in Tax Administration

The first major reform came in 1969; the existing Physical Control over factories of production under Central Excise was dispensed with and a new procedure called SRP (Self Removal Procedure) was introduced. Later in 1986, the Modified VAT (MODVAT) was introduced to reduce the cascading effect of multiple taxes.

Significant reforms in Indirect Tax Administration came about in 1991 when Customs duties were lowered, the import restrictions were eased and tax laws and procedures were simplified. Service Tax was introduced in 1994 and has since become the fastest growing component of indirect taxes.

The winds of liberalisation also led CBEC to change its focus and functioning to a more facilitative role. The importance of providing taxpayer services as an integral part of its workflow began to be recognised and Help Desks/ Regional Advisory Committees for tax-payer facilitation were launched.
1.1.3 Early Initiatives in use of IT

CBEC was one of the earliest to embrace IT in Government, when, in 1986 it undertook the networking of major Custom Houses with the Sperry MAPPER System. The first significant step towards an EDI-based paperless workflow was made in Customs with the introduction of the ICES at Delhi Air Cargo Complex in 1995. In a phased manner ICES was rolled out in major Customs ports and airports, which accounted for almost 85% of the total import and export trade covering about 35 locations by 2006. On the Central Excise side, a software package called SERMON was launched. The package was essentially designed to capture Central Excise revenue related information and develop a taxpayer database of registrants.

1.1.4 Modernisation in Customs Administrations

After 9/11, Customs organisations worldwide reoriented their focus towards National Security and border control. On the technology side, the event emphasised the need for a strong disaster recovery strategy and concomitant IT implementations as this tragedy resulted in loss of critical data. Many Customs organisations have since changed their organisational structure and brought all border control functions under a single umbrella. An example of this can be seen in Canada Customs where the Canada Customs & Revenue Agency (CCRA) has transformed into Canada Border Services Agency (CBSA). The aftermath of 9/11 was also a trigger for strengthening the international supply chain logistics using IT, so that consignments could be screened and treated based on their respective risk even before they reached a country’s borders. The SAFE framework of the WCO and the AEO programme are examples of steps initiated post 9/11 to strengthen the security of international trade.

CBEC launched its Risk Management System in Customs around 2005 for risk-based scrutiny of import consignments, which has since been extended to exports as well. A pilot implementation of scanning of containers was also carried out in one of India’s largest ports at Nhava Sheva in Mumbai, which has now been extended to Chennai, Tuticorin, and Mumbai ports.
1.2 CBEC Organisational Structure,

The Central Board of Excise & Customs (CBEC) is the apex body entrusted with the responsibility for administering the tax policies relating to Customs, Central Excise and Service Tax, enforcement of laws relating to these three taxes as well as enforcement of Narcotics-related laws. In addition to this, as part of the border-control functions, the CBEC has also been entrusted with the implementation of a host of allied Acts such as Antiquities Act, Wildlife Protection Act, etc.

1.2.1 Current Structure

At the apex level, the CBEC comprises a Chairman and six Members, all ex-officio Special Secretaries to the Government of India. A diagrammatic representation is furnished below:

The present structure of CBEC is geography-based, with limited taxpayer segmentation-approach, such as LTUs (Large Taxpayers Units), and centralised Service Tax registrants, which caters to large taxpayers having entities all over India.

1.2.2 Field-level & Attached Offices under CBEC

Field offices under CBEC have been hierarchically delineated into Zones and further into Commissionerates, Divisions and Ranges respectively, based on geographical jurisdiction.
Post-cadre restructuring, there are 27 Central Excise & Service Tax Zones and 11 Customs Zones. Under these Zones, there are

- Central Excise Commissionerates - 119
- Customs Commissionerates - 60 (including Customs Preventive Commissionerates)
- Service Tax Commissionerates - 22
- Audit Commissionerates - 45
- LTUs (Large Taxpayer Units) - 5

In addition to the above, the organisational structure also consists of a number of Directorates, dealing with HR, Logistics, Legal Affairs, Systems, etc. - which provide important ancillary support to the field formations. For the first time, 45 Audit Commissionerates have been set up as functional units. Further, on the Enforcement/Investigation and Intelligence side, there are two important Directorates, the DGRI (Directorate General of Revenue Intelligence) for Customs enforcement and DGCEI (Directorate General of Central Excise Intelligence) for Central Excise and Service Tax enforcement. All these Directorates have Zonal offices located across the country. For matters relating to tax litigation and quasi-judicial/judicial remedies, there is a two-tier structure. The first Appellate authority is Commissioner (Appeals) and the second level is the Customs, Central Excise & Service Tax Appellate Tribunal (CESTAT).

The core of organisation has largely remained unchanged. New formations, wherever they have been created, have remained revenue-centric with geographical jurisdiction. Most of the non-core formations have been set up as Directorates such as Directorates of Systems, Valuation, Export Promotion, Safeguards, Logistics, Legal Affairs - to name a few. Consequent to the growth of trade and industry, the lateral expansion of the organisation led to the creation of more field formations, by carving these out of existing jurisdictions. The time has perhaps come for CBEC to take a fresh look at its geographical, jurisdiction-based structure and see whether it can reorient itself for a more optimal use of its resources, targeted at achieving its strategic objectives and harnessing the benefits of a centralised IT system.
1.2.3 Organisational Reform in CBEC

Need for Revamping Human Resource Management in CBEC

People are the most significant asset among People, Process and Technology and they are the greatest differentiator for an organisation. A motivated and empowered workforce can deliver even the most demanding goals. An efficient IT implementation requires specialised skillsets and an IT centric Human Resource Management policy. The Committee has therefore carefully analyzed the existing organisational structure and human resource management in CBEC and suggested suitable reforms to align the same with the IT strategy.

A system which assumes that everyone can do everything and be equally good at it does not encourage specialisation. It also assumes that time based rotations would encourage versatility. In fact everyone has a different learning curve and universal application of interchangeability deprives the department of the value addition that specialised skill sets bring. There is also no incentive for any individual to develop specialised skills. A case in point is the lack of any incentives to people working in IT which is now a 24x7 operation in CBEC while up to 30% of basic salary is available as a special allowance in NACEN, even though the IT wing is also involved in imparting training in specialised areas such as applications, networks, databases, security etc. It is understood that such incentives are available to other formations in Central Government dealing with specialised areas of work.

A modern tax administration which leverages IT requires the co-opting of external subject matter experts from time to time in areas such as advanced analytics & data mining, statistics & econometrics, forecasting & modeling, technology & obsolescence, information security etc. There needs to be a structure which allows the flexibility of on boarding special skill sets on a need basis, without necessarily getting into issues of salary structure, career progression, and retirement benefits etc. This would allow CBEC to get expert technical advice on critical areas. Other countries are known to do this. For example the NSA and NIST, in USA, engage the best available minds in mathematics, statistics, cryptology etc. from reputed institutes such as Stanford, MIT, Caltech, Harvard etc.
In order to implement the above mentioned changes, CBEC needs to adopt an appropriate organisational structure. Several strategic decisions need to be taken first before choosing an appropriate organisational structure, especially for the IT wing. Some of these require decisions on what to outsource, providing greater financial autonomy, choice of appropriate methodology to on-board external subject matter experts etc. The strategic decisions on these points would influence operational considerations and the model of governance chosen.

The Committee is also of the view that, CBEC could take inputs from the modernisation of other tax administrations and draw upon their experience to enrich its own modernisation. Since many tax administrations have opted for functional specialisation rather than jurisdiction based, CBEC could consider whether these are more appropriate as it moves forward to become a completely IT based organisation. These are further discussed in Chapter IV of this report.

The HR policies required to support the proposed organisational structure have been discussed in further detail in Chapter III of this report.

1.3 Vision & Mission of CBEC

In 2008, the CBEC adopted the “CITIZENS CHARTER” in its present form (Annexure 3) which outlines the Vision, Mission and Objectives of the CBEC. Emphasising a tax-payer friendly approach with deployment of Information Technology as a conscious strategy, the Citizens Charter delineates the Regulatory as well as the Service functions rendered by CBEC.

1.4 Present State of IT at CBEC

1.4.1 Business Applications

IT is being extensively used in Customs, Central Excise, Service Tax functions across the country, leading to greater facilitation to the tax-payer and tangible benefits to the tax administration.
Currently, there are three major IT components of Indian Customs:

- ICES-Indian Customs EDI System
- ICEGATE-Indian Customs EDI Gateway, CBEC’s e-commerce portal
- RMS-Risk Management System

On the Central Excise and Service Tax side, CBEC has implemented ACES, a workflow-based application, which provides web-based services to taxpayers and reduces their physical interface with the department, and along with an electronic accounting system, EASIEST, it provides functional workflows to departmental officers.

CBEC is one of the first government departments to have implemented an Enterprise Data Warehouse, a repository of identified business data across Customs, Central Excise and Service Tax with some of the leading Business Intelligence software tools for online analytical processing, statistical analysis and data mining. The EDW today is the primary source of data and reports required by CBEC, other ministries and external agencies. However, the internal uptake and usage of the EDW needs to be improved in a structured manner for it to become the mainstay for all of CBEC’s data and reporting needs. Details of these business applications are given in Annexure 4.

It is pertinent to note that CBEC’s IT initiatives have been duly recognised and awarded at national and international levels, as mentioned in Annexure 5.

1.4.2 Centralisation of IT Infrastructure

CBEC’s early IT initiatives were on a distributed setup as the state of network technology in the early 90s was not as advanced as it is today. Each Customs location had a standalone setup and bringing a new location online had a long gestation time, since all equipment had to be housed and maintained locally, along with separate maintenance teams at each site. Around 2004-05, CBEC took a strategic decision to leverage advancements in IT and enable a central consolidated computing facility that would host IT services centrally from a professionally run data centre and allow it to be accessed over a stable and secure network. Increased dependence on IT also meant
that services should face least disruption and that critical services should also be available in the event of a contingency and disaster. A centralised system made for better control over the IT infrastructure, uniformity of IT management procedures and greater security. It not only allowed CBEC to enhance taxpayer services and manage the implementation better, but also allowed CBEC to leverage the economies of scale and implement globally accepted standards of information security and IT service management.

Although this centralised IT infrastructure has served CBEC adequately until lately, it is now facing severe constraints in terms of computing capacity, lack of infrastructure for new functionality, frequent break downs of the network etc. In addition, these legacy systems do not lend themselves well for the kind of agility and quick response that is needed by a dynamic tax system which seeks to introduce new services for taxpayer facilitation and internal user empowerment. The current architecture has brought CBEC up to the present state but now it appears unsustainable in its present shape in the long term. There is a perceptible need for redesign of business applications after an appropriate BPR to move to a modern Service Oriented Architecture which could accommodate changes necessitated by policy considerations of national interest with minimum disruption to existing services. CBEC’s data centre infrastructure is such that it could support this change, provided it is suitably augmented. These issues are discussed in detail in Chapter II of this report along with strategic and operational recommendations for the same.

CBEC, over the years, has changed from a Tax Administration based on physical controls and manual documentation to one relying heavily on IT, based on self-assessment and trust based control with focus on post clearance audit. However, in spite of remarkable achievements in terms of centralised IT infrastructure, there is a strong need to revamp the tax administration on functional lines based on specialisation of workforce.
CHAPTER II
FROM IT ENABLED SERVICES AT CBEC TO ‘CBEC ONLINE’
2 CHAPTER II: FROM IT ENABLED SERVICES AT CBEC TO ‘CBEC ONLINE’

Our intuition about the future is linear. But the reality of Information Technology is exponential, and that makes a difference. If I take 30 steps linearly, I get to 30. If I take 30 steps exponentially, I get to a billion.—Ray Kurzweil

2.1 Introduction

A modern day tax administration must necessarily leverage advances in Information and Communication Technology to fulfill rising taxpayer expectations and meet its own strategic and organisational goals. Optimal use of IT can raise the level of delivery of taxpayer services and at the same time free up human resources to focus on those areas which necessarily need human intervention.

Technology enablement paves the way leading to quicker clearances, standardisation of procedures, reduced discretion and faster, improved decision-making. All of these lead to reduced transaction costs for Trade and industry while enabling better management of service delivery.

In recent times, tax administrators have been constantly concerned about developing new ways of improving institutional performance, increasing the effectiveness of tax control, providing taxpayers with improved services at lower costs while allowing them to better comply with their tax obligations. Technology enablement is very critical in making the above happen.

This Chapter highlights the IT initiatives which have been undertaken by the Central Board of Excise & Customs (CBEC) in Customs, Central Excise and Service Tax administration with a view to providing transparent and efficient tax payer services. It provides a brief overview of the IT projects currently ongoing across CBEC three primary lines of business, namely Customs, Central Excise & Service Tax and also includes the committee’s suggestions for improvement in these
services from an end-user and manageability perspective in a manner where CBEC transitions from a variety of different IT Services to a comprehensive System for taxpayers and internal users, which is aligned with CBEC’s strategic objectives and is reliable, scalable, flexible and agile.

2.2 Automation Initiatives in CBEC

Computerisation in CBEC is managed by the Directorate General of Systems and Data Management, which comprises Revenue Service officers who perform the function of business analysts and programme managers for computerisation programmes. They are assisted by a Programme Management Unit (PMU) comprising twelve external consultants with skills in Project Management, Financial Management, and core IT.

CBEC has several applications across its core lines of business – Customs, Central Excise and Service Tax. In addition it has a Risk Management System (RMS) on the Customs side and an Enterprise Data Warehouse (EDW) to meet its data reporting and analysis needs. While the RMS and EDW are internal-facing applications, the other applications in Customs, Central Excise and Service Tax have taxpayer-facing as well as internal-facing aspects. It has its own email domain www.icegate.gov.in as well as its corporate website www.cbec.gov.in in addition to its ICEGATE and ACES portals.

2.3 IT Applications in CBEC: An overview

In Central Excise, the automation initiatives began in 1986, with two Pilot projects at Delhi and Chennai Commissionerates. Around 1991 the Department introduced a new application known as SERMON (System for Excise Revenue Monitoring) to achieve compilation of revenue statistics, build assessees profiles and achieve uniformity of classification and consistency in valuation.

Subsequently CBEC has implemented the Automation of Central Excise & Service tax (ACES) system, which is a comprehensive workflow-based application for all processes related to Central Excise duties and Service Tax. This system was introduced in all formations across India in 2009 on the centralised infrastructure. This system has enabled electronic filing of returns in Central
Excise and Service Tax on a monthly, quarterly and annual basis. It also enables revenue reconciliation in conjunction with the Electronic Accounting System In Excise and Service Tax (EASIEST), which allows returns to be matched with payments. In addition, it has modules for departmental functions like Audit, Adjudication, Refund etc.

On the Customs side too, the automation initiatives were initially only an offline data capture at each stage of processing, with the implementation of a Sperry based system in 1986. However, this initiative was replaced in 1995 with the launch of the EDI (Electronic Data Interchange) based ICES (Indian Customs EDI System) at Delhi Air Cargo Complex.

The ICES, an online workflow-based system, was implemented in phases and was slowly extended to cover other major Customs ports throughout India and by 2005 was operational in about 40 Customs locations in standalone mode. This model of standalone implementations at each location was very difficult to replicate at all locations from cost, manageability and security perspectives and CBEC took a strategic decision to consolidate its IT infrastructure and host all its applications from a centralised IT platform. Accordingly, starting in 2008-09 the Customs system was migrated in phases to the central data centre and is currently operational in 123 locations.

Along with the ICES, the taxpayer-facing electronic interface to CBEC’s Customs system - an e-commerce portal called “ICEGATE” (Indian Customs EDI Gateway), introduced in standalone mode in a few locations in 2004, was also migrated to the central data centre and now covers all EDI locations. This portal acts as the single point of electronic data exchange between Importers, Exporters, Customs Brokers, and institutional or channel partners like Banks, Port Authorities and other Custodians etc.

Recognising the need for a risk-based Customs clearance system, CBEC implemented the Risk Management System (RMS) for Imports in phases, beginning in 2005. The RMS also started as a standalone system in major Customs locations, and has since been migrated to the central data centre. In August 2013 CBEC also implemented RMS for Exports and currently RMS is operational
at 89 Customs locations. The ICES, ICEGATE and RMS systems interact with each other in real time to provide online Customs clearance to several lakh importers/exporters and Customs brokers.

Thus the Customs system is the hub for cargo clearance which interacts electronically with related stakeholders’ systems – Cargo Custodians for movement of goods, Banks for duty payments etc and data flows to agencies such as the Directorate General of Foreign Trade (the agency which allocates Importer Exporter Code numbers and controls Import Export policy in India) and the Directorate General of Commercial Intelligence & Statistics (charged with statistical reporting of Trade data) – both under the Ministry of Commerce.

Details of CBEC’s applications are discussed in Annexure 4. Details on the IT Consolidation project of CBEC, existing Network Architecture and Security Architecture are discussed in Annexure 6, 7 & 8 respectively.

It is therefore evident that CBEC’s systems are mission critical online systems, for the Indian Industry and Services sector. Equally, any outages of this system can impact Trade rather negatively, causing business disruptions and a huge cost to the Trade.

### 2.4 Data Collection by CBEC to Support Business Objectives

The Committee, after discussions felt it is necessary to have a comprehensive database, which is a pre-requisite for effectively carrying out the mandate of the department covering areas such as tax compliance, enforcement, tax policy formulation, advising the Government on trade negotiation with appropriate data and analysed inputs etc. Information should be collected from the asessees/stake holders online and in a structured format so that it can be critically analysed. If we compare the data collected by tax administrations in developed countries, it is seen that they collect various data at the micro level which helps in non-intrusive but efficient tax administration. HMRC is a case in point.
2.4.1 Data Collection in CBEC as it exists now

The data collection in CBEC can be broadly classified into three areas viz, (a) Customs – Import and Export, (b) Central Excise and (c) Service Tax.

a. Customs: CBEC has played a pro-active role by way of automating processing of the import and export transactions since late 80s. Over a period of time, Customs automation has evolved from a mere data capturing system to automatic processing of complex import/export transactions.

While, over a period of time, the Customs Tariff has been simplified and harmonised with few duty slabs and very few exemption Notifications issued, the complexity has increased by charging duty under multiple heads such as Basic Custom Duty, Education Cess, Secondary and Higher Education Cess, Countervailing Duty, Additional CVD. Each duty has a different base for calculation. Besides, as India is entering into more and more bi-lateral and multi-lateral Comprehensive Economic Cooperation Agreement (Covering Goods, Services and Investment) each and every tariff entry has a different effective rate of Customs Duty, depending upon the Source- Country of Origin. In other words, same goods attract different rate of Customs Duty depending upon bi-lateral/multi-lateral Trade in Goods Agreement.

However, Indian Customs has put in place, a robust system which takes care of the above scenario. With the help of Risk Based Management System, ICES process the import/export transactions and clears instantaneously/automatically a substantial percentage of the documents filed without any intervention by the Officers of Customs.

Customs data collection, both on the Import and Export side are taking place at the granular level, meaning thereby in respect of each and every import/export transaction, the data is being collected as per the Standardised form viz., Bill of entry for import and Shipping Bill for export. Currently, this data is being used by the data analysts in the Tax Research Unit, New Delhi for policy planning, by the officers of Director General of Valuation to monitor the Unit Price declared, by the officers of Directorate General of Revenue Intelligence for risk profiling.
and targeting of sensitive commodities, by the field officers at various Custom Houses for generation of various data relating to Revenue collection. Thus, the data is being looked into, by the various wings of the Department to achieve the organisational goal of the particular wing of the Central Board of Excise and Customs. Here again, we do not have a dedicated set of Officers who do this job for drawing the optimal benefits from the system. A data remains a mere data, unless it is looked into by an expert who can find out the underline pattern and interpret intelligently, thus triggering action by other officers in the respective wings.

b. Central Excise: The data collection is being done periodically (e.g. once in a month), by way of mandating the manufacturing units to file statutory returns. The return contains only macro details and does not contain invoice level details. It is felt that, very often, the field formations, either for replying to Parliament Question or for the purpose of analysis by CBEC, need to contact the Assessee and collect the information over the phone. This can be avoided by collecting granular data, at the invoice level, from the assessee, which may even obviate the need for filing of periodical returns. In an age of information revolution, where the technology, both in terms of hardware and software is available, it may not be difficult for the assesses to furnish such information; it will also not enhance the compliance costs as most of the companies will have some structured system of capturing data. In this context, it is relevant to note that in Banking transactions, ATMs/Debit Cards/Credit Cards are being used extensively and such transaction data are updated on real time basis. Theoretically, there is no minimum amount fixed in any of the above transactions. Thus there is a need to capture invoice based information, preferably on real-time basis as the invoice is being used as a document for claiming credit by the Receiver of goods/services.

c. Service Tax: In respect of Service Tax, the service providers are expected to file the return only once in six months whereas they can pass on the credit to the receiver of Services along with each and every invoice raised by them. It is hence imperative to capture the details of the activities of a business, preferably on a real-time basis, rather than wait for an abstract of monthly activities, which is reported twice a year, in the form of statutory returns.
As in the case of Customs, both on the Service Tax front and on the Central Excise front therefore, there is a need to capture data at the granular level (transaction based data) on Real Time basis. Such a system of collection of granular data on real-time basis is done by HMRC. A brief note on the HMRC Data Capturing System on Real Time Information basis is furnished in Annexure 16.

2.5 Existing constraints and challenges

CBEC’s current IT Infrastructure was procured in the years 2006-08. Given the pace of changing business requirements, exponential growth in the number of users and data volumes as well as the demand for extending IT coverage to new locations and introduction of new services, this infrastructure is now unable to cater even to the existing business requirements at the agreed service levels. Some of the challenges being faced by CBEC and its stakeholders are discussed below:

2.5.1 Challenges from a Taxpayer perspective

There are frequent cases of network outage and ‘flapping’ of network links which causes slow response at the user’s end and frequently the clearance work gets impacted. Though mitigating measures such as alternate connectivity at critical sites and VPN connectivity have been implemented at a few sites and for some users, these are not sufficient and 24x7 availability of the network which connects users to the data centre is imperative for a centralised IT infrastructure, at least in the case of Customs.

With nearly all transactions in Customs, Central Excise and Service Tax now being computerised, there is no single dial-in number where tax payers and departmental users can log their queries/ complaints. The existing helpdesks are not able to support the constant rise in the number of calls/ queries resulting in increased call drop rates/ user wait time. It is, therefore, imperative to augment the existing helpdesks into an Integrated National Help Desk to introduce better control on user wait times, call drop rates, call resolution rates etc.,
thus enhancing the overall quality of helpdesk services for the taxpayers. Results of the user feedback survey are given in Annexure 9.

Application development & maintenance and infrastructure support are handled by a multiplicity of vendors. At times this results in lack of co-ordination which is necessary for seamless deployment of patches and troubleshooting etc. In addition, end to end monitoring becomes difficult where service levels across different vendors are not uniform.

2.5.2 Challenges in Change Management

Unlike other tax systems, e.g. Income Tax, which gets a whole year to build and implement changes announced in the annual Union Budget, CBEC is required to make changes to a mission critical online system, which has to become effective from the midnight of the budget day. Since the Systems and IT technical teams receive these changes only on the morning of the Budget day, it is a huge challenge to build and implement changes, right from development stage to pre-production and ultimate production and roll out within a few hours.

A resource constrained team cannot be expected to work in parallel on multiple changes and even if this were possible, it should not be undertaken without proper impact analysis. It is not reasonable to expect that teams already working on scheduled builds/releases be suddenly asked to drop that build and work on something new unless the requirement is critical on account of information security/ business criticality etc.

Any new IT initiative, in most organisations, is usually met with resistance and skepticism as mindsets are averse to change. Acceptance of new systems can be challenging but can be improved through a well-planned Change Management initiative that explains the new initiative to cutting edge officers and helps them overcome their doubts and empower them to embrace the change through training and skill-building. Once they feel a sense of ownership and develop faith in the delivery capability of a new system the resistance to change can be overcome. Wide circulation of
updated, accurate manuals and instruction booklets and more responsive, augmented helpdesks/service desks can also help in overcoming this challenge.

2.5.3 Human Resource challenges

The recruitment rules applicable to CBEC at present do not require even basic familiarity with Information Technology as a mandatory requirement. In a scenario where almost all business of CBEC has become IT dependent, there is a need to adopt a more IT-centric HR policy – one that either requires a basic knowledge of IT, or has mandatory training & certification programmes at various levels of hierarchy, and offers tangible incentives to personnel who opt for the IT department postings.

CBEC’s IT set up does not have an adequately staffed support structure. At the time when IT operations were set to be centralised, steps for increasing central support staff in Systems to manage the shift of operational issues to a central location from the field were not taken. The result is that the shift to centralised systems and operations management is being handled with virtually the same staff strength as existed in 2002. Post Cadre-Restructuring, the sanctioned strength of Directorate General of Systems has increased from 176 to 487. Now immediate steps are required to be taken to address the human resource crunch at Systems, so that IT operations are not negatively impacted. In addition, there is a need to focus on getting the right skillsets and impart training to the newly posted officers so that they can deliver.

There is currently no programme in place for attracting and retaining the right skills into the IT wing, which requires at least a basic level of specialised technical skills and retaining them. DG Systems is currently designing and conducting several training courses across the country to equip the officers and staff with the necessary IT skills required for various IT applications. Thus, in addition to the regular work, the officers of DG Systems are actively involved in capacity building of the field officers. There are no incentives to officers working in DG Systems such as special pay, as is the case with the officers working in NACEN. DG Systems, which is the prime resource centre
of all IT related training programmes, may be renamed as DG Systems and e-Training. The officers of this organisation may be accorded similar benefits as are being provided to officers in NACEN.

One of major gap that exists in the current implementation is the lack of a Central HR database containing uniquely tagged, digitised details of all CBEC officers (electronic service books) which can interface in real time with the central User Access Management system for auto-populating key parameters such as Date of Birth, date of Joining etc. The issues relating to HR and need for specialisation have been discussed in Chapter III.

### 2.5.4 Financial & administrative constraints— An Overview

The HPC recognises that procurement by Government departments are to be in conformity with the General Financial Rules laid down by the Government. While the procedures laid down in these Rules are aimed at ensuring administrative and fiscal propriety, on which there can be no compromise, the procedures and the scrutiny of procurement proposals with specific regard to IT projects becomes excessively intense and elaborate, which often challenges a time bound execution of milestones in IT projects leading to avoidable time over runs and possible cost over runs for such projects. A closer understanding of the requirements of the financial approvals wing by CBEC and a better appreciation of the criticality of IT projects by the Finance wing could perhaps aid expeditious IT administrative and financial approvals. Security and criticality of IT infrastructure cannot be ensured unless it dominates the financial approval process due to its very nature. The IT infrastructure is a part of Tax collection sovereign function and should at all times be up to date and current. It implies that financial approvals should not delay any acquisitions or rejuvenations of such assets.

The Committee also suggests that the Government should review the existing Delegation of Financial Powers and enhance the financial powers delegated to DG Systems, Member (Computerisation) and Chairperson, CBEC.
2.5.5 Active ownership by senior management

A coherent and integrated vision of the organisation’s roadmap for IT based service delivery is a pre-requisite for any organisation involved in delivering IT based services. This is more so in an organisation in transition where some processes are automated and others are still manual. Ownership and support of IT by the highest levels in CBEC is crucial to ensure that the IT wing supports and delivers on the goals and objectives set out by CBEC and also ensuring that the IT wing and all field formations act in harmony to fulfill CBEC’s goals and objectives, without any disconnect.

Where the IT-based integration of processes needs to be driven by changes in the legal framework governing such processes, there is an even greater need for a consensus on the required changes and facilitating integration of these processes into IT systems. This needs an attitudinal change in CBEC to ensure consultation with the IT wing before finalizing any policy decision and fixing any timelines for its implementation.

Since CBEC systems are at the hub of the indirect tax ecosystem, rapid strides in IT can only result in concomitant taxpayer satisfaction when other stakeholders such as Banks, Port and Airport Authorities, Licensing and regulatory agencies etc. are a part of the delivery process. These entities are at different levels of IT maturity and often fall under other ministries/regulatory entities. In such cases, where the delivery mechanisms involve other players outside CBEC’s control, such senior executives can play a key role in securing support from higher levels in government, who can bring all stakeholders on a common platform to achieve stated objectives.

2.5.6 Customs Applications

The existing data centre infrastructure is supporting a greater workload than it was initially sized for. This has been possible by gradual release of spare capacity factored in initially. Thus while the sizing of compute capacity done in 2006-07 has supported the business needs until now, it is inadequate to meet new business requirements which are growing exponentially. There is a requirement to cover several new locations under ICES as well as to introduce several new services
for taxpayers and internal users such as Non-Intrusive Inspection of Cargo, E-Refunds, Intellectual Property Rights Enforcements, and Advanced Passenger Information System etc. The existing infrastructure is hard-pressed to support existing services at the agreed service levels.

There are a large number of application changes that are made to the Customs Workflow Applications (ICES system) for fixing user issues, or adding new functionalities etc. Furthermore, given the fact that ICES is a 24x7 real-time application, it should run on latest technologies to ensure business flexibility and agility, besides the needed scalability. The existing ICES application is a very complex legacy application, running on obsolete technology (Oracle Forms 10g). There is thus a need to review the underlying application architecture of the Customs Applications and transform it in phases to architecture compliant with Service Oriented Architecture (SOA).

The Risk Management System (RMS) in Customs is external to the Customs Workflow Application (ICES) and interacts through scheduler based processes. The RMS database interacts with ICES through a Database link and most data elements in RMS and ICES are very similar. Thus any optimisation in the system response times is limited by the time taken by these schedulers. If for any reason there is a delay in RMS processing beyond the stipulated time, bills go for appraisement rather than facilitation, bringing more consignments under scrutiny which otherwise would have got facilitated.

The analytical reporting inside the RMS is also running on the same relational database as the transactional system whereas it could run faster on a Data Model and a Database optimised for analytical queries.

The Customs Web Interface for Trade i.e. the Indian Customs EDI Gateway (ICEGATE) is currently running on technologies (GXS version 7.0 and Web Methods version 6.5) which have become dated. Not only are these versions now not supported by the OEMs, but some key features like load balancing are not fully functional.
There are more than 130 schedulers running in the Customs Systems for smooth clearance of Customs cargo. These schedulers often need to be restarted for trouble free processing as they often hang due to queue length, memory issues, or time outs. During system maintenance activities these have to be stopped and restarted in a prescribed order to ensure that no transaction is lost/wrongly committed in tandem with ICES. This scheduler based method for message exchange is not the most efficient way of interface and message exchange between applications which perform parts of the same Customs Clearance process.

2.5.7 Central Excise and Service Tax Applications

There is a need to enhance the functional capability of the existing ACES application towards improving taxpayer services. Modules such as Audit, Dispute Settlement & Resolution (DSR) and Refund need to be modified to address the need of the users. CBEC may consider implementing invoice-level CENVAT verification, as part of the existing EASIEST project, so that a comprehensive revenue reconciliation system (both cash and Cenvat credit) can be put in place to assist the departmental officers in detecting fraudulent availment of Cenvat credit and preventing misuse of large scale Cenvat credit facility. Currently, the EASIEST dashboard is made available to one user per Commissionerate. It should also be made available to more officers at the Division and range level so that revenue collection can be effectively monitored. In order to ensure that the refund amount is directly credited to the bank accounts of the claimants, e-payment of Refunds should be implemented by modifying the Refund module in ACES. The Review and Correction process of Service Tax returns needs to be modified to make it more useful and user friendly. Similarly, CBEC may notify the risk parameters in Central Excise & Service Tax so that the same can be used for selecting units both for Audit and detailed scrutiny. After notification of the risk parameters by CBEC, ACES should be suitably modified to enable risk-based selection of returns for detailed scrutiny.

There are several Business Process related issues that need to be addressed in ACES. These include inclusion of Inspector level officers in the workflow, mobility solutions (so that the officers can record their comments/observations during physical verification of premises of new registrants and
examination and sealing of factory-stuffed containers, SMS-gateway, e-payment gateway and a robust MIS.

There are other already identified issues that need to be reviewed from a policy and technological perspective and addressed including:

- Lack of synchronisation between payments and return filing
- Providing validation to prevent delayed filing of returns without payment of dues
- Making provision in the return to capture a row to enter Carry forward of arrears brought forward from previous return cycles
- Providing facility for revision of Central Excise returns during a return filing cycle, as is being allowed in Service Tax

The data points captured in Central Excise and Service Tax are largely returns based, monthly/quarterly/annually in the case of CE, and six-monthly in the case ST. The returns contain mostly macro-level details and do not contain invoice level data. Very often field formations have to resort to contacting the taxpayer for granular information in order to reply to parliament questions/queries from CBEC. In the case of services, a service provider is expected to file a return only twice a year, whereas, they can pass on the credit to the receiver of services on each invoice raised by them. The government remains unaware of the details of the business and its transactions until an aggregated abstract of monthly activities is reported in the form of statutory returns. This non availability of granular data stands in the way of non-intrusive data analytics and an effective risk management in CE & ST. Since invoice-level data is not getting captured, credit reconciliation is extremely difficult if not impossible.

The current version of ACES runs on an outdated application server technology (OC4J - a technology from Oracle), and from a supportability perspective runs the risk of service disruption. The recommendations for Code review by the technical team also should be implemented at the earliest to improve the functioning of ACES.
ACES uses multiple technology products (such as Documentum) in its implementation which at times often poses challenge in the seamless integration/upgrade of these technologies, especially where these skillsets are not easily available in the market, to resolve issues causing business outages.

### 2.6 Recommendations – Strategic & Operational

The Terms of Reference of the Committee in relation to Information Technology are the following:
1. Identify and formalise Strategic Objectives towards achieving IT vision
2. Advise on appropriate applications to support business services
3. Identify data to support Business Objectives
4. Suggest appropriate Technology Architecture
5. Suggest a protection, obsolescence, and archival policy

These recommendations are discussed below and organised into strategic and operational recommendations.

#### 2.6.1 Strategic Objectives towards achieving IT Vision

**a. Business Process Reengineering**

There is a need to review the business processes in Customs and make them more taxpayer-friendly, to comprehensively capture the supply chain and to move towards a paperless Customs. The BPR exercise should comprise a comprehensive review of all steps involved in Customs clearance across all Customs applications to streamline the workflow. The BPR exercise may call for statutory amendments, procedural changes (including those with trade partners), and changes at the policy level but are sure to lead to streamlined workflows which could then be redesigned to meet stakeholder expectations in an integrated manner. In order to be effective, the BPR process should include formal inputs from taxpayers, trade bodies, internal users, policy makers etc. One such example could be a possible elimination/minimisation of printing. CBEC could consider reviewing document formats and permitting
self-printing by the importer/exporter wherever feasible. The security aspect could be taken care of by ensuring that print files are non-tamperable. The central system could securely store these files (using suitable compression technology to optimise storage) in alignment with a suitable archival policy. These files could be shared with the regulatory agencies/Trade partners and stakeholders as secure electronic files, rather than require the Importer to produce hard copy print-outs to local agencies. An electronic notification could be sent via an SMS gateway to the Importer/Exporter stating the date, time and reference number of the file transmission – e.g. to DGFT. Paid services could be provided for generating print-outs on demand – either from active storage or archival storage; or for electronically viewing the status of the electronically transmitted document.

A BPR in Central Excise and Service Tax is required to streamline processes, and address constraints described in para 2.5.7 earlier. Moving towards a non-intrusive, risk based system in CE & ST requires a review of the statutory provisions for capturing data from taxpaying entities and suitable amendments could be considered for getting granular transactional details so that credit reconciliation, risk assessment and effective interventions can be done in a computer aided, non-intrusive manner with minimum physical interface.

The BPR exercise needs to also consider the impending changes in ACES when GST is implemented so that there is a well-planned strategy to transform ACES which interacts seamlessly with the GSTN portal. CBEC may also consider reorganizing its Audit directorate with focus on specialisation, use of advanced analytics for selection of audit and development of a mobile-based application for audit teams.

b. One Customs - Integrated Customs System (ICS) – moving towards a single window system

Redesign of the three different Customs applications into a single integrated system will not only improve user response times, ensure end-to-end accountability, traceability, and enable enforceability of integrated service levels for various categories of Customs transactions. It will ensure a comprehensive risk assessment by processing documents during the entire journey
through Customs. It would also help optimise the infrastructure deployment through optimal use of compute capacity, software licenses etc. and enable better and more comprehensive reporting across Customs applications. Having a single vendor would also ensure that there is no blame game between different vendors handling different pieces of the Customs processes. The implementation of an Enterprise Service Bus would eliminate the need for schedulers and processes would become event-driven rather than time-driven. This unification of the three applications should be carried out after a detailed Business Process Re-engineering exercise.

c. Improving Change Management for Critical Online Systems

This practice of implementing policy changes overnight, such as those in the Union Budget, has its roots from the time when most duties were hiked in the budget, necessitating utmost secrecy and making it effective at the earliest. In modern times when there is talk of tax rate rationalisation, liberalisation and transparency, this practice needs to be reviewed or revisited at the highest levels in government, with a view to providing sufficient lead time to the technical and user testing teams to carry out the requisite changes in the applications in an error-free manner. This can be done in two ways:

- Either the IT readiness for implementing the changes can be ascertained beforehand so that the issue of the notification and release of the software happen in a synchronised manner; or,
- The effective date of such changes is decided in consultation with the IT teams so that they get sufficient lead time to implement the changes in a secure and stable manner

Although the need for agile systems is well understood, especially to accommodate changes necessitated by business requirements, it is absolutely critical that senior business managers in CBEC respect Change Management principles that govern a secure, stable IT environment; especially one that supports real-time critical services. Sufficient lead time is absolutely imperative for a proper impact analysis and error-free rollout of changes that impact online clearance. Multiple changes in quick succession should also be minimised since such changes can impact the stability of a system especially one that has inter-linkages with other systems.
Such emergency changes cannot and should not become routine. Even for ordinary notifications for changes in rates of duty for certain commodities etc., instead of having these randomly all through the year, it should be possible to arrive at a quarterly schedule of changes, unless there is a change of an emergent nature involved.

Since Tax is a dynamic environment and sudden changes can be necessitated by considerations of national importance, CBEC’s IT systems need to be re-architected to make them agile, change-tolerant and designed such that changes to one service do not impact existing services or stakeholders. This can be achieved by implementing SOA (Service Oriented Architecture) compliant applications.

d. Effective utilisation of data from external sources

One of the specific TORs for the Committee is to identify data to support business objectives. The point regarding the need for more detailed data in CE&ST has also been elaborated above. CBEC has embarked on a pilot implementation called Tax 360 where in addition to optimal use of its own data, it has integrated data from external systems such as Income Tax, Directorate General of Foreign Trade, Ministry of Corporate Affairs and State VAT data. This initiative needs to be taken forward and expanded as with the use of advanced analytics, this data can be leveraged to make the analytical reports much more meaningful and enable better policy making and decision support. It is a case in point that the Tax 360 pilot and data exchange with Income Tax data have enabled CBEC to recover around Rs. 300 crores as additional revenue. This initiative needs to be expanded in terms of scope and participation. In addition, it is recommended that standard data formats be used for exchange of data to enhance the ease which such data can be put to use by the various stakeholders.

e. Advanced Analytics – Key to Future

Even though the current data volumes may not be large enough for full scale implementation of Big Data, it would be worthwhile to at least examine where this may be of use going forward, especially as CBEC may need to collect all kinds of statistics like behaviour targeting of end
users, user click analysis, and data from external sources. The Analytics piece may be the right place to pilot Big Data so that when the time is right, CBEC can consider non-relational databases that can deal with large volumes of columnar, time series oriented data. This is a critical manifest within organisation like the US Internal Revenue Service to unobtrusively track non-compliance, and providing compliant citizens/entities with improved credits. This incremental new reporting could be implemented on next generation technologies such as Big Data. A case study of IT Transformation at a leading Tax Agency (US IRS) is discussed in Annexure 10 and a brief write-up on the KAI wing of HMRC UK is given at Annexure 11. These case studies can be examined to identify if CBEC could draw lessons from that implementation.

f. Enhancement of the Risk Management System

CBEC should consider implementing entity-based risk assessment in place of the current document-based risk assessment as a short term measure. The transactional risk engine inside the RMS needs to be integrated with the core EDI engine via an Enterprise Service Bus in the medium term and as SOA based redesign towards an Integrated Customs System in the long term. The advanced analytical capability available in the EDW could also be leveraged for implementing latest advancements in fraud detection and management tools/techniques. Real time risk analysis should also be considered. Risk-based analysis is also required in Central Excise and Service Tax. Ideally, risk assessment should incorporate data inputs from the external sources as well so that risk can be assessed properly and comprehensively in a 360 degree manner.

g. Integration between ICES and ACES

This has become a critical factor from several standpoints where the same documents have to be replicated across the two systems leading to delays. An Enterprise Service Bus could be implemented between the two applications to replace synchronous events with asynchronous events i.e. from time-based to event-based to exchange data as it comes in, on a transaction basis (typically within the context of a workflow). However, a large number of policy, legal and
business related issues have to be resolved before ICES and ACES applications can be integrated fully.

**h. Enabling mobility solutions in business workflows**

CBEC should also consider use of mobile applications on handheld devices. Some of the key business areas where mobile applications usage should be considered include:

- Taxpayer services
- Transactional and Business Intelligence reports and dashboards
- Process of Examination in Customs & Central Excise
- Application for CBEC’s mobile Audit parties
- Capturing data from non-EDI locations

Implementation of a Mobile Device Management (MDM) solution would ensure security transactions are effected through mobile devices. As the world moves to convergence of applications on hand-held devices, it is vital for CBEC to move from e-Governance to m-Governance. Since it is understood that a successful pilot was done for the ICES application, CBEC could examine the feasibility of implementing this in phases starting from short to medium term.

**i. Business services and IT alignment - leveraging Service Oriented Architecture (SOA)**

A Service-oriented approach would enable flexibility, agility and ease of maintainability in the applications, besides bringing in ease of integration within the CBEC application landscape as well as providing services to interface with external applications etc. This approach would also ensure that the future application enhancements can easily be aligned with the business requirements.

A Service-oriented approach at CBEC, to start with, would involve re-designing the existing applications based on object-oriented modeling/programming. For example, the existing ICES
application which runs on the outdated Oracle Forms technology needs to be redesigned to fit newer technologies more suited to SOA, such as Java.

Given the nature of CBEC’s interactive applications, there seems to be little option but to implement Enterprise Service Bus as a mechanism to integrate various applications. An Enterprise Service Bus would also be able to efficiently manage various message queues in CBEC’s IT systems, (such as those between ICES and ICEGATE), substantially reducing the complexity of such message exchange and making it much faster and more resilient. The advantages of an Enterprise Bus far outweigh the implementation of customised queues which are typically not optimised, and need frequent changes to support changes in format. This first step can then be taken forward in phases to SOA. As stated earlier, a scheduler based system like CBEC’s at present, is not sustainable in the long run.

The Indirect tax environment is a dynamic, fluid environment and IT driven applications need to have a very elastic response to changes in rates of duty, new taxes and duties, special schemes etc. A configurable business rule driven system, which does not need the entire application to be changed for every minor change, would be more responsive to the changing policy/business needs. There are several popular rules driven work flow engines that would fit CBEC’s requirements.

The exercise of selecting and implementing an appropriate work flow engine would require to be treated as full-fledged project with a formal gap analysis, building of a prototype and a full round of testing to ensure, performance, reliability and availability as specified in the requirements, appropriate interface to the data layer or third party applications and artefacts would have to be also tested in tandem with the choice of an ESB solution mentioned earlier.

j. **Better alignment of HR and IT**

CBEC needs to consider implementing an automated Human Resource Management System (HRMS) across CBEC which should be used for transfers/postings of all officers, matching
skills with job profiles, identification of training requirements etc. It can also contain self-service options and workflows for leave, travel and intimations required as per rules etc. It should not be the job of the IT wing to do user verification and access rights review.

**k. Adequate IT infrastructure to support business requirements**

CBEC should ensure availability of adequate IT infrastructure at all times to cater to the business requirements across its service lines of Customs, Central Excise and Service Tax. Given CBEC’s dynamic tax environment and critical online services, IT Infrastructure should necessarily maintain buffer capacity to cater to unforeseen requirements from the business – a point to be factored in during IT procurements.

Even for normal operations, the Committee recommends that the system resource utilisation should not exceed 60% on a sustained basis and should have adequate headroom to meet sudden increases in workload. There should be an end to end monitoring system for resource utilisation, which should be able to throw up alerts and trends which can then become triggers for capacity augmentation.

IT should provide a configuration replica on pre-production for better testing (including stress and load testing) of new releases in a pre-production environment. This should ideally also be available to vendor development teams on their development environment. There should be a regular review of IT Assets and CBEC could consider implementing an automated asset management system with bar coding or RFID tagging.

CBEC’s Disaster Recovery capability is inadequate at present and needs to be significantly enhanced. CBEC’s IT services are mission critical and need to be available even during a disaster. Therefore, the computing infrastructure at the DR site should be the same as at the primary site and in order to ensure zero data loss even when services are running from DR, it is necessary for CBEC to implement a near site at DR for synchronous data replication. When going in for augmentation, CBEC could also consider implementing some minimum compute capacity at the DR site/s.
CBEC needs to increase the compute capacity at the Disaster Recovery site to make Disaster Recovery a viable proposition and also implement a near site at Disaster Recovery with a Disaster Recovery Network Operations Centre – to provide full redundancy and a more optimal use of IT resources, by running some applications from the Disaster Recovery site with synchronous replication in place.

### 1. Enhance Information Security

Given the fact that CBEC’s IT Systems are repositories of sensitive Indirect Tax data and it is important to ensure the security and privacy of this information and the security of the underlying IT Infrastructure, proactive approach is required to protect CBEC’s IT systems from various information security risks. CBEC may consider enhancing its network protection and setting up a dedicated Security Operations Centre with state-of-the-art Governance, Risk and Compliance tools, Incident Management Tools, Forensics capability etc. This would help CBEC take preventive action ahead of any critical information security risk and would help investigate the security incidents, if any, in an effective manner. Given the increase in the number of threats on critical government infrastructure, CBEC must enhance its security in the shortest time possible.

The Committee has noted that comprehensive guidelines on cyber security have been circulated by MHA and that while CBEC complies with most of these guidelines, it requires additional funding to implement some of the recommendations such as implementation of a Security Operations Centre etc. This must be made available to CBEC at the earliest. It is the firm view of the Committee that considerations of national security including cyber security and the criticality of CBEC’s IT operations must override any considerations of cost. While it is advisable to exercise prudence in spending government resources, the economic security of the country’s citizens and their sensitive data must take precedence and IT security initiatives should not be judged by cost but by their efficacy in preventing breaches of security.
2.6.2 **Operational objectives**

a. **Improving network connectivity:**

CBEC’s network resilience needs improvement and its network connectivity needs to be made more robust by the following steps:

- Better last mile termination and active-active configuration of network connectivity from alternate service providers. While this is being implemented for some critical sites, this should be implemented for all major offices/locations
- Review of bandwidth allocation at locations and increasing where warranted, considering actual user throughput
- 24x7 network monitoring through best in class network monitoring tools, including packet inspection and traffic analysis tools
- Revamp of the VPN solution by making it more secure, stable and compatible with the latest OS versions
- Review of the Service Levels with the network service provider after root cause analysis of such frequent outages
- Given the frequent shifting of remote sites and connectivity requirements at new sites, CBEC may consider options of secure wireless LAN at its sites

b. **Benchmarking / Load testing of the new modules and functionality**

CBEC needs to ensure rigorous load and stress testing for their applications as well as for new modules using any industry standard tool which is an absolute imperative. (The only time that the Customs application has been benchmarked was in 2007, and that too only for the Service Centre module since this was the only module which had been migrated by then). The ICEGATE and RMS application integration points that are involved in Customs clearance workflow have never been benchmarked in tandem on an end-to-end basis. This is imperative for load estimation and impact analysis.
It should be incumbent upon the application vendors that they share with the Infrastructure team a reasonable estimate of expected load for new releases, so that the infrastructure team gets lead time for provisioning additional computing resources.

The Customs Applications and the Infrastructure teams need to jointly arrive at parameters/data points which will be examined before deciding on the go-live schedule for new sites. These could include business workload at the site, revenue collected, number of total and concurrent users etc.

The respective technical teams should implement requisite tools which enable them to arrive at the average system workload generated by a new site with full functionality. Based on this estimate and the infrastructure position, the number of sites to be brought under the central system in a year could be decided in advance. This will allow the incremental infrastructure to be planned accordingly, so that all stakeholders are aware in advance of the go-live schedule and the infrastructure team is full ready to support new sites.

Each go live should be continually accompanied by collecting performance data and analysing this to better estimate growing needs. Adopting an empirical approach would be a good augmentation, and would require tools and a dedicated team to continue to collect and analyze the changing workload.

c. Need for an integrated Human Resource Management Solution

The above-mentioned HRMS should be used for central allocation of a unique numeric ID to all CBEC personnel to which relevant service information is later tagged and by which an officer is uniquely identified throughout service life. Central notifications and auto updates in cases of transfer, promotion, retirement, and resignation should be done on the HRMS.

Entry and exit formalities should be integrally tagged with enablement and revocation of system access wherever applicable.
In cases of third parties accessing CBEC systems, e.g. Service Centre Personnel and third parties, there needs to be a stringent process in place for background checks by the parent employer and formal entry and exit procedures for such personnel. In particular, regular review of access rights & authorisation with revocation of access in sync with the exit of a resource should be implemented to prevent misuse.

There needs to be a secure system for internal communication which works as an Intranet and a Knowledge Management portal in place – It is understood that a pilot at present under implementation, awaiting augmentation of infrastructure for going online. This needs to be taken forward and implemented early.

d. **Availability of adequate tools towards faster resolution of IT systems issues impacting the stakeholders**

There is a need to implement diagnostic tools that can trace transactions from end-user stations to the data centre, so that problem areas can be identified clearly. There is a need to identify problem areas sharply – whether they are due to network latency, or relate to certain category of documents (e.g. bill of entry with line items greater than a certain number) etc. This is very critical in a multi-application, multi-vendor scenario since quick and correct diagnosis would pinpoint the service provider/s who has/have to rectify the problem. Given CBEC’s application environment, it may not be possible to have just a single service provider for everything from infrastructure to application. Instead CBEC should seriously consider reducing the multiplicity of vendors, at least for its infrastructure to begin with, so that the IT environment becomes more manageable and there is no divided responsibility for connectivity from the user desktop to the data centre.

e. **Implementing a real-time replica system for transactional and hybrid reports**

This needs to be done so that the user response time does not get impacted and users do not have to wait for urgent reports till after business hours. Thus would also help implement a long standing business need for reports to be downloadable as spreadsheets in Open Office/MS Excel.
etc., and not just as .pdfs as at present. The option of using the DR site for running reports which do not require current real time data can also be explored. Separation of the OLTP and OLAP database already exists, however there are some daily or inline querying and ad hoc reporting needs which tend to slow down the OLTP system. Implementation of a real-time replica and redirection of queries to this replica would fulfil business reporting needs without impacting online transactional systems. The standard way of doing it is to have virtual clusters at the database layer with an active-active synchronisation, and all read only queries are directed to this, or one could consider the use of a persisted cache.

f. **Reducing Recovery time in case of a disaster**

CBEC should consider to reduce the time to start operations from the Disaster Recovery site in the event of a contingency (Recovery Time Objective - RTO) significantly. There are various technologies which may be leveraged to achieve this and CBEC should gradually move towards automated failover.

g. **Introduction of two-factor / three-factor authentication at login**

The CBEC may consider introduction of two-factor / three-factor authentication, users should require additional secure input at the time of login to ensure that access inside the system is only possible for authorised users. CBFC’s systems carry a high degree of sensitivity on account of its critical, real time nature. Given the geographical spread of its users and the extent of web-based transactions in Customs, there is a need to uniquely identify users and make it very difficult if not impossible to misuse another user’s identity to commit fraud. The importance of securing user authentication cannot be overstressed, as with the quantum increases in compute power even on handheld devices, a password-based authentication is vulnerable to a brute force attack. CBEC necessarily has to consider going to a secure, password-less authentication in future.
h. Deploying a Document Management System with local and central levels for scanning, tagging, indexing and safe archival of Customs paper documents

A pilot project has been successfully implemented by Bangalore Customs since 2010. Customs documents are scanned and stored using high speed scanners and are available for query by Customs officers via password. The hardcopies are subsequently shipped and stored offsite. CBEC can explore service based models for implementing a centralised DMS at minimal cost to government.

i. CBEC website modernisation

As part of the implementation of its communication strategy, the CBEC corporate website www.cbec.gov.in was launched on 22.8.2000 for providing updated information for the benefit of the general public, taxpayers as well as Departmental officers. It is a static website with information of interest to the general public.

Proper content management and updating of the website is huge challenge in view of the lack of staff and a proper content management structure. CBEC’s website also needs a complete revamp on account of the following points:

- Compliance with the Guidelines for Indian Government Websites (GIGW)
- Making the website disabled friendly
- Making the website fully bi-lingual
- Making the website compliant with the applicable standards of the UN
- Making the website mobile enabled

j. Modernizing the underlying technology of Customs workflow application (ICES)

CBEC should move to a Java based platform in the medium to long term. Since the re-architecting of the application will take at least 18-24 months, given the number of forms involved, an interim approach could be move to a supported version of Oracle forms (11g/12c) so that Oracle support is available to troubleshoot operational issues that may arise until a new integrated application is ready and tested to go into production. Detailed discussions between
technical teams can throw up more options to manage the long term and short term for the core Customs application.

k. **Upgrade of underlying technology of ICEGATE application**

The ICEGATE is currently running on GXS version 7.0 and Web Methods version 6.5 which are dated technologies. Not only are these versions now not supported by the OEMs, but some key features like load balancing are not fully functional currently. CBEC needs to look at upgrading these platforms or option of implementing other industry standard platforms which provide more advanced features and better manageability.

l. **Implementing Modular, Scalable Server Solutions like Blade servers, moving away from Itanium based systems**

Blade Servers are compact and occupy less data centre space, consume less power and hence have lower cooling requirements, have many times more compute power as compared to existing servers. Blade servers allow for seamless addition of more CPUs with very little disruption. Most modern day data centres leverage this today. CBEC may also consider moving away from the existing Itanium based systems, which are outdated now. It should not be difficult to migrate the web and application layers to blade architecture. Since CBEC’s applications are database intensive, other enterprise class servers could be considered for the database layer until the applications are redesigned in a service oriented manner.

m. **Extensive use of flash memory and storage**

This allows for significantly superior performance especially when it comes to implementing caches to improve end user queries. In comparison with increasing CPUs and associated database licenses, implementing flash may be a relatively lower cost option for increasing performance. Several organisations where performance is a very critical business requirement have gone in for all flash data centres e.g. Apple Inc. etc.
n. Moving away from the soon to be de-supported Oracle Http Server/OC4J to proven solutions

CBEC should move away from soon to be de-supported Oracle Http Server/OC4J technologies to newer technologies such as Web Logic (Oracle)/Web Sphere (IBM)/JBoss etc. depending on the best fit.

o. Data Protection and Archival Policy

A Data Archival, Protection and Retrieval Policy is as important as envisioning an IT roadmap for CBEC itself. As data is the most valuable IT asset for any organisation, having a robust policy for such data is imperative. It is noted that the data from legacy systems in Customs and Central Excise was successfully migrated to the central data centre. Currently, for the electronic data in its IT systems, CBEC has implemented storage based replication; where the data is synchronously written to its near site (BCP) and asynchronously to the Disaster Recovery site at Chennai. Data is being regularly backed up on tape/disk libraries and has been tested in the various Disaster simulation drills where failover to the DR site and failback to the primary site has been successfully done for a However full business day. The tapes are being stored off-site on a regular basis. It is learnt that CBEC is also implementing new storage technology with ‘auto-tiering’ facility for its data which will keep its most active data in Solid State Devices as per best practice.

However for manual data, the existing archival policy largely follows the Office Procedure Manual (OPM) for archiving old records and files. The effort should be to bring more and more business areas under digitisation and also implement a robust, well-indexed Document Management System for manual data.

This would enable CBEC to have a transparent and secure system of record, both for the tax payer and the tax administrator. CBEC should identify the files, documents, images, records etc which are to be mandatorily be stored digitally and also have an institutional arrangement to
have such documents digitally scanned or imaged with bar coding facility for ease of retrieval. This is crucial for completeness of data which can then support meaningful policy interventions.

The access to the central data archive should be under tight security protocol for access to the data. CBEC could examine if the taxpayer could also be given access to his/her data through a controlled mechanism in case s/he wishes to refer to the same; if necessary, for a fee.

p. Technology Obsolescence

CBEC has already become heavily technology dependent for delivery of business services to its internal and external users. IT is a field which is dynamic and ever-changing. Acquisitions result in change of OEMs and a change in technology roadmaps, for example, acquisition of BEA Systems by Oracle and of Sybase by SAP. Once this happens, it usually has an impact on the supportability of the technology platforms, for example stopping of functional and technical enhancements, custom bug-fix releases etc. It often has cost implications as well. Given the complexities involved in government procurements and contractual conditions, there is a real need to have adequate provisions in the procurement process to cater to such developments in the technology landscape so that government’s critical IT enabled business services are always on the latest and supported technology platforms. The Committee is of the view that some portion of the funding sought for government procurements should be kept aside for meeting technology obsolescence requirements, both at infrastructure level and applications.

The Committee is also of the view that creation of a separate function, dedicated to technology, under the DG Systems is required to meet this need. This function in the corporate setup is met by the role of a Chief Technology Officer (CTO). Since CBEC already has a similar arrangement for the role of the Chief Information Security Officer under DG Systems, the same could be envisaged for the role of CTO, a role which could be met by an officer of requisite skillsets and/or experience, supported by external expertise as required. The CTO would be responsible for interfacing with the various teams to ensure that all technology platforms are
supported, periodic review of the technology landscape, keeping abreast of latest developments in relevant technology, and coordinating upgrade & replacement activities as appropriate across teams.
CHAPTER III
REALIGNING HUMAN RESOURCE MANAGEMENT IN CBEC
3 CHAPTER III: REALIGNING HUMAN RESOURCE MANAGEMENT IN CBEC

“People are not your most important assets. The right people are” – Jim Collins

3.1 Reorienting CBEC’s Human Resource Management Policy

It is said that HR is not about recruiting extraordinary people; it is about getting ordinary people to do extraordinary work. This is possible with a vibrant HR function which is sensitive to its people, which rewards merit and is focused on capacity building on an ongoing basis. As already mentioned in the earlier chapters, a reorientation would be required in the organisational structure and human resource management to support the transition of CBEC’s IT implementation from the current to the desired state. The completion of IT transformation initiative will need and necessitate changes in the HR structure as IT would drive a very large number of work processes in future across all departments.

3.2 Current Challenges

A brief overview of the current Human Resource Management in CBEC is given in Annexure 12. The present structure of CBEC is a geographically-based one, including some components based on “type-of-tax” structure. This curtails the extent of advantages that can be reaped by any modernisation or reform in CBEC. In the wake of rising taxpayer expectations, opportunities for improving customer-delivery standards need to be suitably addressed. It is therefore imperative for CBEC to re-orient itself into a customer-centric and tax-payer friendly entity by leveraging the benefits of a modern IT system. It is also necessary to adapt the structural design of CBEC to meet the enforcement and compliance verification requirements of a modern tax administration.
CBEC being a government organisation, recruitment of personnel is governed by the recruitment rules which very limited flexibility for functional specialisation, lateral on-boarding of subject matter experts, or flexibility in compensation/ remuneration packages. Personnel are posted interchangeably from one functional area to another and are expected to perform efficiently from day one regardless of the skillsets that a particular role may require. For example, a person could be posted to Directorate of Systems directly from a field formation or the legal branch and expected to ‘learn on the job’. There are no incentives in case a self-motivated individual wishes to acquire special skillsets; equally, acquiring skillsets in a particular area does not guarantee that person’s retention in that job profile.

Another challenge especially for the IT wing is that CBEC does not have in-house technical resources with IT skills. It appears absolutely essential that the hands of CBEC officers tasked with overseeing and managing IT operations be strengthened with adequate technical resources. This matter needs to be addressed either within the existing framework or through requisite amendments in the rules, since basic technical knowledge is required even for managing outsourced resources and overseeing IT operations.

Given the discussions and the recommendations in the preceding chapters, CBEC would need specialised skillsets in several areas, including:

**Skills for an Audit role** – Most taxpaying entities today have electronic accounting systems and auditing such entities requires specialised skillsets not only in accounting, but also in ERP tools which are commonly used, such as, SAP, Oracle e-Business Applications, Microsoft etc. and in use of forensics for data recovery and investigation. While it may be too much to expect career revenue officers to acquire all these skills, it should be nevertheless feasible to engage cost auditors, chartered accountants, ERP specialists and forensic experts to support audit officers.

**Skills for policy formulation** – Ideally, officers engaged in supporting policy formulation should be trained to exploit tools like ‘what-if’ analysis for scenario mapping; data mining for decision
support; revenue forecasting for monitoring tax collections and post policy analysis using indicators like import elasticity, cross elasticity, substitution effect etc.

**Skills for managing IT Projects of CBEC**– The current IT implementation in CBEC is one where day to day management of operations is done by revenue officers while development, maintenance and support of hardware and software infrastructure is done by third party service providers. While this model ensures strategic ownership and tight control of government on its operations, it relies rather heavily on individual skill sets and individual motivation. Managing IT implementations of this scale and magnitude requires a supporting technical layer of subject matter experts in core IT domains such as networks, servers & operating systems, storage, security, databases, application and messaging platforms. It is not enough for the third party personnel to possess skill in these areas as these areas often have interdependencies across service providers and often taking the right decisions at an executive level depends upon getting the right inputs on these technical areas. A basic level of these technical skills ought to exist in house in order to ensure that optimal decisions are taken. It is therefore absolutely imperative that ways are found to fulfill the gap that exists at present.

**Advanced Analytical Skills** – Advanced analytics is an area which is growing extremely rapidly and the use of BI tools, structured and unstructured data for fraud analysis, data mining techniques including neural networks, use of statistical analysis and modelling tools are game changers that can be used to maximise tax revenue, detect potential cases of tax evasion, increase the tax base, find hidden patterns, sharpen the risk assessment etc. These skills are hard to come by and even harder to retain. Not only does CBEC need to augment its existing analytical unit, but also consider developing in-house expertise on some of these skills as this data and its analysis can be extremely sensitive. Skillsets like data stewards, data scientists and expert statisticians are being extensively used by almost all agencies from retail outfits to news channels and enforcement agencies. The same is also required at CBEC.

Some of the operational HR challenges that impact the smooth functioning of IT have been discussed in section 2.4.3.
3.3 Recommendations

3.3.1 Specialisation of the workforce – creation of functional units

As also discussed in Section 1.2.3, CBEC can consider reorganisation based on functions. Unhindered by geographical constraints, such function structure would enable grouping of similar tasks, bringing in expertise in such specialised areas. Most Tax Administrations in the world today have functional organisational structures with segmentation for certain types of taxpayers (such as LTUs), and this has proved to be an effective and efficient model in a Centralised IT environment. The functional organisational structure is based on the theory that, by grouping together activities that require similar skills or specialties, real gains are achieved through an increased depth of knowledge in the areas requiring expertise. Wherever there is an apparent overlapping of roles and functions across functions, the same need to be suitably merged so that the available human resources are optimally utilised. Some of the key advantages of a function-based structure are:

- Greater specialisation across the organisation
- Improved compliance results
- Simpler processes for the taxpayer and the administration
- Ability to develop specialties within the administration
- Better resource management
- A tool for integrity

(Revenue Administration: Functionally organised Tax Administration, Maureen Kidd, IMF, 2010-
Extract given in Annexure 13).

CBEC should, appropriately, review its existing functional units to evaluate whether these should be more cohesively reorganised around functions such as Taxpayer services, Dispute resolution & Grievance redressal, Tax policy and planning, BPR etc.

3.3.2 A separate functional unit for Tax Payer Services

The need for a much sharper focus on taxpayer services has been often discussed. In the light of increased taxpayer expectations, it is imperative for CBEC to take some concrete steps for taxpayer
facilitation beyond what has already been achieved. This can best be met by setting-up a separate functional unit for taxpayer services, as explained in detail at para 5.7 (a).

### 3.3.3 Information Technology Unit

The dynamic tax environment and changing stakeholder expectations has made IT the nerve centre of CBEC operations. Given this fact, it is essential that the IT systems deployed by CBEC are state-of-the-art and the IT wing is manned by a highly skilled and committed work force. In order to attract and retain such talent at the IT wing of CBEC, the officers need to be adequately compensated with special incentives. Irrespective of the organisation structure chosen by CBEC, its IT wing should have a Chief Technology Officer (CTO), who should be a revenue officer, trained in IT, in addition to a dedicated role of Head of IT Operations (HO), with adequate teams. CBEC does not have a dearth of talent and with the appropriate skill building, training and incentivisation, it should be possible to get appropriate personnel for these posts.

For experts brought in through lateral entry, adequate safeguards would have to be ensured since these posts would be of a highly sensitive nature. Concerns like conflict of interest, non-disclosure of CBEC confidential information, cooling-off period before seeking re-employment, sufficient notice before resignation etc. would have to be suitably addressed. Since such resources are highly valued in the industry, enough flexibility may have to be considered in their remuneration packages if the best talent has to be captured.

Sufficient funding also needs to be provided for creating robust and state-of-the-art IT Infrastructure. The Committee observed that the developed economies such a USA and UK spend a substantial portion of their Annual Budget on creating, maintaining and modernizing IT infrastructure. Redeployment of HR resources based on an accurate assessment of functional needs and organisational requirements should be an integral part of the HR policy.
3.3.4 IT based HR Management System

A comprehensive IT-based HR Management System such as ERPs should be implemented by CBEC to cater to HR management and provide efficient web-based services to its employees. The HR System should be one stop solution to manage various aspects of HR- such as recruitment, pay, GPF, leave and other benefits, training, transfer and postings, performance appraisal, promotion and retirement. Barring certain matters of extreme confidentiality, an employee should have full access to his/her personal data. Furthermore, all the officers and staff of CBEC should be provided with a unique Id, which should be used as identifier across all IT systems of CBEC. The HR related challenges in the current IT implementation have been discussed in Chapter II. It is reiterated that for effective and secure user access management, a digital repository of service book information is essential.

3.3.5 Matching Skills, Competencies & Aptitude with the Job description – The ACE Strategy

The DGHRD currently has a database of Group A officers containing their history of postings, educational qualifications and trainings attended. This needs to be expanded to cover officers at other levels also and migrated to a comprehensive HR Management System mentioned above. This would also enable that the job description for every role is mapped out in the organisation structure, against the competencies/skills required for that particular job and the output expected. This will create a transparent mechanism for every individual to understand the competencies needed for the job and undergo specific training for this purpose. Any move towards creating specialised formations must necessarily include staffing these formations with officers having specialised skills and competencies and above all an aptitude befitting their job descriptions in such formations. Transfers and postings may be done, keeping in mind the need to develop specialisation in CBEC, while matching the aptitude, competency and enterprise of the officers with the job description. The Committee would like to call this as the ACE Strategy for HR.
3.3.6 Capacity Building in CBEC

National Academy of Customs Excise & Narcotics -NACEN is the apex institute of Government of India for capacity building in the field of indirect taxation. It also plays a vital role in international capacity building by imparting training to officers of various countries in the field of customs, drug laws and environment protection.

NACEN is the World Customs Organisation (WCO) approved Regional Training Centre (RTC) for Asia Pacific. United Nations Environment Programme (UNEP) has designated NACEN as a collaboration centre for capacity building in the field of environment protection. In collaboration with United Nations Office on Drugs & Crime (UNODC), NACEN is imparting training on drug law enforcement to various Asian nations. The Government of India has entrusted NACEN the responsibility of knowledge exchange, experience sharing and training with various countries of the world.

Over the years, NACEN has been successfully imparting training to the officers of Indian Revenue Service (Customs & Central Excise). Besides, it is also conducting in-service training to the officers of Government of India across several departments in the field of Customs, Central Excise, Service Tax, Drug Laws, Anti-Money laundering, Weapons of Mass Destruction, Fake Indian Currency Notes, Ozone Depleting Substance (ODS), Intellectual Property Right (IPR) etc.

As GST implementation is on the anvil, with the global linkages and the vast experience in administering Harmonised System of Nomenclature over a period of 30 years in an automated environment, CBEC and its HR Training wing (NACEN) can play a very crucial role in managing the change from the current Tax regime to GST regime effectively and smoothly. It can play a lead role in creating, moulding and nurturing ideal work force for effective implementation and working of GST at the national and state level. It can take initiative in preparation of self-learning and self-evaluating learning modules and conduct the ‘Train-the-Trainer (TOT)’ programme for the officers of CBEC as well as various state governments. With a Pan India presence, it can provide an ideal training programme for ushering in and implementing GST throughout the length and breadth of the country.
The competency based framework prescribed by DoPT’s National Training Policy 2012 should be considered for implementation by CBEC. The training component of the IT wing needs to be expanded to take care of the specialised trainings in the areas discussed above. The teaching methodology should include modern techniques, such as group assignments and discussion on selected case studies on issues of national and international relevance. NACEN should invest considerable time and resources to develop a data bank of world-class case studies for use within the department, using live cases in the field. To ensure that officers and staff take these training sessions in right earnest, there must be an objective method of evaluation, which would form part of the yearly assessment of officers and staff. Financial and administrative constraints should be removed so that training needs of the organisation is given the priority it deserves.

Many officers with IT academic background join the service both at Group A level and Group B (Non-Gazetted) level and their knowledge base can be fully utilised in equipping other officers with IT skills. Further, while recruiting Group C (Executive)/ Group B (Non-Gazetted) certain basic computer proficiency should be tested. On joining, basic training in ICT application/s used by the department must be made compulsory before posting in the field, with options for advanced training. CBEC should also consider implementing an internal e-learning system where officers who are interested in these areas but are posted in other formations could also contribute towards web-casts, webinars etc. to enable officers and staff to refresh their knowledge and skills while at work. Such user friendly simple automation tools and programs may be customised to aid specialist officers and staff in the effective discharge of their functions. A Learning Management System (LMS) and a Knowledge Management System (KMS) could be considered to automate this entire process. Training in soft skills should be considered to ensure that the services to taxpayers are delivered promptly, with courtesy, dignity and politeness. Innovative methods of adopting Social media techniques to engage with the taxpayers should be explored. Courses on Ethics, including the revised *Arusha declaration and the WCO Integrity Guide*, should be an integral part of training. In order to enhance capacity building, eminent experts should be engaged through a suitable arrangement to provide trainings in specialised areas including International trade and finance, logistics, IPR, Law, HR, accounting and auditing, Data analytics, Project Management, etc.
3.3.7 Lateral Inductions

Several instances are available in tax administrations abroad, where lateral induction of highly trained and professional experts is done for specific purposes. For instance, HMRC has formed a specialised wing – KAI - Knowledge, Analysis & Intelligence, with objectives such as maximizing revenue and improving the customer experience. KAI reportedly has staff strength of about 350 consisting of statisticians (38%), Economists (18%), Social Researchers (12%), Operational Researchers (21%), Journalist and IT specialist (11%). The relevant extract of the operations of KAI Wing of HMRC are furnished in Annexure 11.

In certain critical areas, such as IT, Audit, Project Management, CBEC may consider recruitment of specialists on contractual basis. Suitable provisions may be incorporated in the HR Policy/Recruitment Rules for allowing lateral entry of experts and professionals on fixed tenure contracts in areas such as Data Analytics, IT Specialists, Data scientists etc. Alternatively, deputation of relevant experts from other services such as Indian Economic Service, Indian Statistical Service may also be encouraged.

3.3.8 Leadership Development

(“You manage things; you lead people” - Rear Admiral Grace Murray Hopper)

A structured Leadership Development Programme should be a part of the HR policy to ensure early identification and advancement of potential leaders. They should be trained in areas like tax administration, tax strategies, policy formulation, and global tax developments with wide exposure to other modern tax administrations. Succession planning strategies should be delineated as in the Armed Forces, so that potential leaders are adequately groomed and have adequate tenure at the top to plan and execute strategic decisions.
3.3.9 Change Management

Over the years there has been a transformational change in the roles and functions being performed by CBEC - from an enforcement and executive role to that of a facilitative role. Change Management is therefore a necessary and important pre-requisite to gravitate towards a tax-payer centric environment. Change Management should be embedded in the training curriculum so that the officers and staff adopt a more constructive engagement with the tax-payers.
CHAPTER IV

IT GOVERNANCE STRUCTURE OF CBEC
4 Chapter IV - IT GOVERNANCE STRUCTURE OF CBEC

Over a period of time, with the rapid developments in the field of Information Technology and CBEC taking a proactive role in adapting to the changing environment, DG Systems has become the nerve centre of the entire IT operations of the CBEC. CBEC now runs mission critical systems like ICEGATE, ICES, RMS and ACES and if any of these systems develop snags, it can severely impact the Indian trade and industry. Though CBEC is one of the earliest departments of Government of India to adopt Information Technology to deliver online services to taxpayers, the overall management of IT operations has been done by the officers of the Directorate General of Systems. Outsourcing of the IT components has been resorted to leading to multiplicity of vendors. DG Systems functions with responsibilities across all functions of technology and operations, including vendor management.

4.1 Return on Investment on IT

Over the years, there has been a tremendous growth of business in India, resulting in a quantum jump in the number of documents being handled by the Customs and Central Excise officers across different sea ports, air cargo complexes, ICDs, airports and Central Excise and Service Tax formations. CBEC has been managing this task by proactively implementing various automation initiatives. The data given below shows the increasing workload:

I. Although Service Tax was introduced in 1994, no separate staff was sanctioned for this new levy till the recent cadre re-organisation. The work is being managed by diverting staff from other formations, re-engineering business processes and automating the same. But still there is a need for additional staff for handling this growing sector, which has a huge potential for contributing additional revenue for the government

II. With the growth in the aviation sector, modernisation of airports and entry of new airlines, the number of international passengers, both on arrival and departure side has crossed a few millions. In spite of the increase in smuggling of gold, the staff strength is highly inadequate to man the airports
III. CBEC has introduced RMS in Exports and Imports. This has helped in collection of extra Revenue of Rs. 7389 crore in 2011-2014

IV. Increase in Volume of Transactions in respect of Customs

V. No of containers (Imports) – 23 lakhs (2013 – 2014)

VI. No of containers (Exports) – 26 lakhs (2013 – 2014)

VII. Customs is mandate to implement 41 Acts (Imports), 19 Acts (Exports), such as NDPS, Wild life (flora and fauna), SCOMET, 42 Export Promotion Schemes, 400 Duty Exemptions, many International Conventions such as CITES, CWC, Basel, Rotterdam etc.

In case of Central Excise & Service Tax, automation has facilitated delivery of taxpayer services with a single window facility of ACES:

- 1.91 Crore e-Acknowledgements have been issued through ACES
- 2.90 Crore Tax duty paying documents (Challans) have been processed
- 1.09 Crore Returns filed and processed
- 1.5 Lakh Refunds filed
- 3.3 Lakh Claims and 2900 Prov. Assessment request filed in ACES.
- 6200 Show Cause Notices (SCNs) issued and 3800 Orders issued using ACES
- 8 lakh phone/email handled at Service Desk (99% resolution)

On the Central Excise and Service Tax front also there has been a tremendous growth:

I. The number of assessees has gone up from 15.2 lakh in 2009 to 25.6 lakh in 2014 (growth of 70%).

II. Every year about 2.5 lakh new Service Tax assessees are registering with the department.

III. Number of duty paying documents (Challans) processed for reconciliation of revenue has gone up from 43 lakh in 2009-10 to 74.5 lakh in 2013-14 (75% of growth)
IV. Number of CE & ST returns e-filed in ACES has more than doubled in last 2 years itself (from 18 lakh in 2011-12 to 39 lakh in 2013-14)

V. With the introduction of ACES, the system is throwing up a large number of returns, which have errors or require action for recovery of revenue. But because of shortage of staff, they are not able to cope with the increasing number of returns. Return pending for Review and Correction (R&C) has increased 4 times in last 3 years, from 6.8 lakh to 29 lakh

The details of revenue collections during the past five years in respect of Customs, Central Excise and Service Tax are at Annexure 2. It may be seen that during the financial year 2013-14, CBEC has collected a total revenue of approximately Rs.4,96,231 Crores. With the present total manpower of 66,808, this works out to approximately Rs.7.4 Crores realisation per employee last year. This underscores the important role being played by officers and staff in CBEC.

Many of the IT initiatives taken by CBEC have paid rich dividends and have also won several National Awards. For example the investment in the Risk Management System (RMS), which received Prime Minister’s Award, was about Rs.14.62 Crores as against the extra duty collection of about Rs. 7,389 Crores during 2011-14. It has also resulted in enhanced trade facilitation. On the Central Excise and Service Tax front, there has been a huge return on investment (ROI). As against the expenditure of about Rs. 14 Crore, scrutiny of returns has led to voluntary payment of Rs. 2,211 Crores in 2012-13 and 2013-14. Similarly, the Enterprise Data Warehouse and Data Exchange/ Tax 360 projects implemented at a total cost of about Rs. 18 Crores has resulted in the recovery of more than Rs. 300 Crores, which is a return on investment of more than 20 times.

Hence, the Committee is of the view that expenditure on IT infrastructure of Tax Administration should be treated on a higher pedestal and seen as an investment rather than as cost alone.

4.2 Pre-requisites for IT Project Management

The Indirect Tax regime in India is dynamic in nature with frequent changes in laws, forms, processes and procedures. Managing IT projects that automate the business processes of CBEC requires the following:
1. Administrative and Financial autonomy
2. Quick decision making process to procure goods and services
3. Authority to recruit/engage skilled technical resources on short/long term assignments by paying them remunerations as per their competence level and market rates.

4.3 Current State of IT Project Management

The current model of managing the IT projects through the Directorate of Systems has certain inherent limitations as it does not provide the Management any flexibility in the aforesaid areas. Without the right organisational structure in place, IT operations of CBEC cannot operate effectively. Time has come for CBEC to review its existing IT governance structure and adopt a more efficient model.

The systems deployed by CBEC have to be the state-of-the-art and DG Systems should be manned by highly skilled and committed work force. The human resources deployed in DG Systems need to be adequately compensated with assured career growth with sufficiently long tenure and opportunities to upgrade knowledge and skills. The best resources could be put in place by sourcing talent through a mix of people hired on contract, as well as lateral induction from other Government agencies, apart from people from within the organisation. For this, suitable changes in HR policies may be explored. Sufficient funding also needs to be provided for creating robust and state-of-the-art IT Infrastructure. The Committee observed that the developed economies such a USA and UK spend a substantial portion of their Annual Budget on creating, maintaining and modernizing IT infrastructure.

Currently, CBEC retains strategic ownership, managerial control and daily monitoring with CBEC personnel and IT operations are outsourced to third parties. The Committee strongly feels that this system of management of IT systems through the DG Systems may not be very effective in the long run in meeting the fast changing IT needs of the tax payers and the departmental officers as the DG Systems is constrained by the rigidity of the governmental system of obtaining approvals through multiple layers, which is time consuming. The dynamics and urgency of IT operations require
administrative and financial autonomy in taking quick decisions and financial approval. The complexity of the IT operations require highly qualified technical and skilled persons to be recruited from the open market on contractual basis, which may require payment of remuneration at market rates. But this will not be possible in a governmental organisation like the DG Systems, which is governed by the rules and instructions in force. Creation of an in-house technical cadre with all the requisite skillsets will require changes in the relevant recruitment rules and payment of adequate remuneration, career progression etc. This option can only be a long term option since it will involve extensive inter-ministerial consultation and requisite approvals at the highest level.

4.4 SPV Model of IT Governance

The Committee feels that the better option for CBEC would be to set up a governance structure with administrative and financial autonomy. Considering the sovereign function of CBEC and the sensitive nature of commercial data, such a structure should work under the total ownership and strategic control of the government. This will enable CBEC to upgrade, maintain and modernise the IT infrastructure. For this purpose, a Special Purpose Vehicle (SPV) could be considered as one of the suitable structures which can address issues of financial autonomy, flexibility in HR and agility in decision making. Various models of SPV have been discussed in Annexure 15. CBEC could consider these options or any other suitable structure and opt for the SPV model that suits its business needs and IT vision the most. The Indian Railways have set up a Society (CRIS), with 100% ownership of the Ministry of Railways. While CBEC may run its IT operations through the SPV, which will have departmental officers from CBEC and technical people from open market and outsourced vendors, if required, the DG Systems will continue to provide domain knowledge to the SPV, assist CBEC in taking policy decisions and exercise strategic control over the SPV.
CHAPTER V

CBEC REFORMS – THE WAY FORWARD
This Chapter attempts to encapsulate some of the major recommendations relating to the IT enablement of CBEC into one holistic set of recommendations delineating the Strategic Objectives to achieve the IT vision, which the Committee would like to call “Big Ideas”. The Committee believes that these “Big Ideas” would provide a logical and focused roadmap towards a successful implementation of DRISHTI in CBEC. These also encompass certain recommendations relating to compliance requirements relating to audit and enforcement as well as recommendations relating to taxpayer services, which need to be inextricably linked with the IT Vision of CBEC.

### 5.1 Making e-Customs a reality

As a conscious strategy, CBEC needs to make e-Customs a reality in the short to medium term, by conducting a comprehensive BPR exercise to streamline procedures and documentation. Adoption of digital signature to enable paperless transactions and workflow should be done on priority. This would facilitate the ease of doing business and reduce transaction costs. The following schemes should be accorded priority by CBEC:

- a. Customs Single Window Project
- b. Globally Networked Customs
- c. Document Management System
- d. Comprehensive automation of back-end operations and
- e. Advanced Passenger Information System/ API-PNR

The way forward in respect of the above schemes is outlined below:
a. Customs Single Window Project

CBEC should fast-track the recently announced Customs Single Window Project, considering that the interface with other Government Agencies would become seamless, leading to on-line approvals/ test results. The consequent reduction in dwell-time of cargo and the improvement in business competitiveness would be widely welcomed nationally and internationally. CBEC may deploy adequate resources as well as readily available technological solutions for implementing this ambitious project.

Implementation of a Customs Single window project would require inter alia the following:

- Formation of Inter-Ministerial Study Groups to examine all Allied legislations, their requirements and manner of implementation, as well as liaison with the concerned ministries and agencies to ascertain their existing IT facilities and automation to facilitate integration
- A detailed study of the nature of clearance/work-flow under each Allied Act – i.e. whether the clearance is for the importer, for a single consignment, for a specified quantity that may be spread out over several consignments, etc.
- Data Harmonisation to ensure elimination of redundancy of information sought by different partner government agencies, including consequential changes in forms and formats of different agencies
- Selection of an appropriate solution architecture that serves the requirements of all partner agencies keeping in mind the varying levels of IT maturity of each
- Allocation of resources, both financial and manpower, including dedicated pool of domain and IT specialists from each partner agency to drive the project
- Common and collaborative risk management, keeping in view the overlapping and specific needs of each Allied Act implementing agency
- Co-ordinated footprint of all partner agencies, given the differing geographical locations of each
- Governance Structure for implementation of the project is to be clearly laid down
• Plan transition through capacity building and outreach for all partner government agencies, and community partners. Ensure tangible benefits and re-define processes (procedures/forms) that make the benefits visible

b. **Globally Networked Customs - International Data Exchange**

International Data Exchange among Customs Administrations is well established and there are Bilateral and Regional Agreements in place that form the legal basis of such an exchange. Exchange of Information takes place in mutually agreed areas of common interest, and such exchange serves the twin purposes of Customs Enforcement and Facilitation of Compliant Trade.

Exchange of Information amongst Customs Administrations helps in ensuring a tighter control over the International Trade Supply Chain since Customs are uniquely positioned as a lead Cross Border Regulatory as well as Revenue Authority and they can effectively utilise information pertaining to Goods and Cargo Declarations as well as that pertaining to entities like the Authorised Economic Operators to maintain such controls.

Recognising the potential of such Exchange of Information among Customs Administrations, the World Customs Organisation (WCO) also focused on the concept of a Globally Networked Customs as a Building Block of its high level ‘Customs in the 21st Century’ Vision Document. International Data Exchange with our major Trade Partners and with other Customs Administrations who are desirous of such an exchange would inter-alia involve:

• Evolving consensus on common Data Elements and templates
• Secure Communication Protocols for facilitating the information exchange
• Harmonisation of message formats including adherence to International Data Models
• Information exchange could be Transactional, Commercial Information.
• Enforcement related information including Modus Operandi noticed, intelligence exchange for prevention of smuggling activities
• Offence database including photographs, and information pertaining to enforcement of CITES Convention, IPR regime etc.
• An emerging area of such exchange would be the Dematerialisation of Documents (such as Country of Origin Certificates) and Information Exchange on a common Communication platform for joint International Customs Enforcement Operations (like the WCO’s CENCOMM).

Recognising that lack of standardisation in information exchange has adversely impacted the operationalisation of various international agreements on data exchange within a stipulated time and with minimal cost, GNC provides the requisite pathway for taking forward these diverse initiatives, whether it is pre-arrival risk assessment, compliance verification, or enforcement information on the one hand, and implementation of specific programmes like the AEO and MRA on the other. CBEC may actively utilise GNC which would be a catalyst in international information exchange as it provides ease of replication with other countries, instead of starting afresh for each new country.

c. Document Management System

Instead of relying on physical documents, which lead to increased dwell time and compliance costs for the trade, facilities may be made available to upload scanned/electronic documents duly authenticated by digital signature. Thereby, the operation of the Customs workflow in the System will be much faster. Possibility of furnishing forged/ fraudulent physical copies of documents would be ruled out, thereby ensuring accuracy and authenticity of the documents submitted by the trade. In order to facilitate smaller firms, Service Centres may be opened to enable them to digitise and transmit their documents.

A pilot project for Document Management started by Bangalore Customs is currently operational for digitisation of documents like invoice, air way bill etc. and the hard copies are bar coded, classified with periodicity of preservation and stored off site. This needs nationwide replication at all Customs formations. Efforts need to be taken to integrate such a Document Management System with the present Customs work-flow for efficiently utilizing the documents for processes, such as audit, compliance verification, Business Analytics, tax policy, etc.
d. Comprehensive automation of back-end operations

In order to ensure better trade facilitation, several back-end operations, still in manual mode, need to be brought into the fold of automation. Some of these are:

- Capturing more post-import or post-export conditions - licenses, installation certificates, monitoring of Export Obligation for Export Promotion Schemes
- Special Valuation Branch functions: including references from the field formations to SVB’s, transmission of EDD circulars online, finalisation and revalidation of SVB Orders
- EDI-based monitoring of PCA/ CRA Audit issues: online logging and replying to Test Audit memos, Statements of Fact, and Draft Audit Paras - issue wise.
- Capture of dispute resolution and appeals pertaining to consignments - either individually or in clusters
- Capture of scanned images using Container Scanners in the Ports- for better detection of misdeclared Cargo in a pan-India manner

e. Advanced Passenger Information System

The Advanced Passenger Information System along with Passenger Baggage module would facilitate international passengers, while enhancing border control by use of advanced risk-profiling techniques in respect of passengers. Currently, Customs has implemented a pilot project of APIS at IGI Airport, New Delhi for incoming passengers. This needs to be rolled out to all international airports in India and cover both incoming and outgoing passengers and crew members. Since many of the countries have already implemented i-API and PNR systems, Indian Customs should implement the same at the earliest which will help in proper profiling of the passengers. As regards baggage clearance at the airports, there is an urgent need to automate the entire process including collection of duty and creation of Offence Database of air passengers.
5.2 Creation of a National Customs Assessment Centre

The Harmonised System used for assessment is governed by "The International Convention on the Harmonised Commodity Description and Coding System". The Harmonised System provides a logical structure within which over 1,200 headings are grouped in 96 Chapters, the latter being themselves arranged in 21 Sections. The sophistication of international trade and the increasing concern at cross-border crime has seen the Harmonised System evolve into a multi-purpose tool and it ensures Classification is uniform irrespective of geography. This new instrument allows all Customs administrations to monitor and control the trade in goods.

The phenomenal technological development that has taken place in the IT industry has made the concept of Centralised Assessment Facility a reality. Centralised assessments can be done on-line, by commodity-wise pool of experts, located at different Custom Houses or at a national level. The much needed specialisation in Assessment will bring in uniformity in assessment practices across the country and substantially reduce litigation.

5.3 Formation of a National Processing Centre for Central Excise & Service Tax Returns and CENVAT Verification System

Currently, the Central Excise and Service Tax returns filed through ACES are being centrally processed against a set of validations which are uniformly applied across India. The returns which are found to have errors or require action by the officers to safeguard revenue are marked for review and correction by the officers posted in the ranges. This model of central processing with local resolution helps the taxpayers as they can approach the local officers for resolution of their grievances. However, a large number of returns are pending for Review and Correction by the officers.

CBEC may, therefore, consider setting up a National Processing Centre for Central Excise & Service Tax by posting some officers at the NPC to work as a team with the application team. The NPC can look into various types of macro issues and take up periodic review of validations for
preliminary scrutiny, suggest risk parameters for risk-based selection of returns for detailed scrutiny, audit or enforcement. It can also suggest policy level changes so that data fields in the returns can be suitable modified to enable the tax officials get the information that they need for their work. CBEC may also consider setting up of a Risk Management Division for CE & ST.

CBEC may consider early implementation of a fully automated invoice-level CENVAT verification system so that a comprehensive revenue reconciliation system (both cash and Cenvat credit) can be put in place to assist the departmental officers in detecting fraudulent availment of Cenvat credit and preventing large scale misuse of Cenvat credit facility. The suppliers and receivers of goods and services can upload invoice details into the system, which should process it quickly and display the mismatches so that the buyers and sellers, the service providers and service receivers can sort out their issues at their level without involving the departmental officers. Such a transparent and non-adversarial automated tax system will encourage voluntary compliance; reduce disputes, and act as a major deterrent in preventing misuse of Cenvat credit, thereby augmenting revenue.

The Committee is of the view that the setting up of such a National Centre will yield immense results benefiting the tax payer and the department. It is felt by the Committee that the National Centre will improve data quality, enhance tax compliance and thereby increase tax collections.

5.4 Setting up of a National Targeting Centre

The Risk Management Division makes a document-based risk assessment with the main focus on facilitating international trade and collecting extra revenue. In the absence of a comprehensive offence database, it is not able to make a proper entity-based risk-analysis. In order to manage potential threats in the movement of goods, and people through the international borders, CBEC could consider setting up a National Targeting Centre (NTC).

There should be a holistic entity-based risk assessment by taking into account inputs from within the ecosystem of CBEC (Customs, Central Excise & Service Tax) and from outside agencies
namely Income Tax, Ministry of Corporate Affairs (MCA), Serious Fraud Office, Narcotics Control Bureau, Enforcement Directorate, Financial Intelligence Unit, CBI, Bureau of Immigration, NIA and other agencies. A Centralised Offence database may be built using inputs from these agencies. Such multi-agency NTCs are successfully functioning in US and Australia and CBEC may consider setting up such a Centre by upgrading the Risk Management Division and bringing within its fold the Advance Passenger Information System. The NTC can comprise two broad divisions: NTC Goods and NTC Passengers. The existing RMS application should be revamped and a more robust application built with state-of-the-art Business Intelligence, Analytics and Fraud detection tools. From a purely revenue-oriented enforcement approach of RMS, NTC should help CBEC expand into other areas for which Indian Customs is mandated at the borders including those which pose threats to national security such as narcotics, terrorism, explosives, wild life, etc.

On the passenger side, CBEC should take a lead role in implementing iAPP and PNR so that the profiling will be more focused and result-oriented.

Currently, CBEC has implemented container scanning module of RMS in only three locations. It should be implemented across all major ports, and airports at the earliest. The Committee noted that the prevalent world-wide practice is that the procurement and installation and day to day running of such container scanning equipment is the responsibility of ports/ custodians and that the Trade uses this service on payment of the prescribed fees. The responsibility of Customs is only for its Risk Management interface with the scanning system.

In order to monitor the movement of suspicious containers and people, on a real time basis, centralised command centres should be set up under the NTC, separately for cargo and airports.

5.5 Establishment of an autonomous National Centre of Excellence similar to KAI

While NACEN takes care of the capacity building of the staff and officers, the need of the hour is to conduct in-depth research on Indirect tax administration, both prior to policy formulation and also after implementation. In fact, research needs to be carried out on a continuous basis covering the
entire gamut of indirect tax administration. The committee is of the view that the Centre of Excellence (CoE) presently under NACEN cannot function as a full-fledged research wing and therefore recommends that the CoE can be made as an autonomous body headed by an officer of the rank of Principal Director General, who will directly report to Member, CBEC.

CBEC can develop CoE on the lines of KAI (Knowledge Analysis and Intelligence) wing of HMRC, as a Research and Knowledge Hub for entire Indirect Tax Administration. KAI of HMRC carries out Research on policy and operational areas covering four dimensions viz. (a) Policy (b) Compliance (c) Compliance costs (d) Understanding customers and operational efficiency. KAI has a staff strength of about 350 consisting of statisticians (38%), Economists (18%), Social Researchers (12%), Operational Researchers (21%), Journalist and IT specialist (11%). It consists of 7 divisions which look after different aspects of tax management and they are:

1. Data Policy and Coordination
2. Direct Business Taxes
3. Tax Gaps in Indirect Taxes
4. Personal Taxes
5. Benefits and Credits
6. Enforcement and Compliance &
7. Project Group

Relevant extract of the activities of KAI are furnished in Annexure 11.

The proposed CoE need not be an exact replica of KAI. It can go beyond and emerge as a knowledge and Research Centre and Indirect Tax Administration. It may have representatives from various proposed functional units of CBEC such as Audit, Enforcement/Intelligence, Tax Policy Planning, Tax Payer Services, Data Analytics Unit, etc. It also needs to work closely with leading Academic Institutes and Research bodies and have representatives on contract basis. It may also consider tying up with reputed Universities and Research Institutes as Knowledge Partners and engage Interns for carrying out research relating to tax and other functional areas as mandated by CBEC. CBEC may also allow its own officers to be posted to CoE on research assignments on the lines of the National Police Academy.
CBEC should also approach NIC for using high-speed Knowledge Network for NACEN, RTIs and COE, which will greatly facilitate easy access to research material across the internet and help the researchers.

5.6 Setting up a full-fledged Directorate General for International Customs

CBEC is the apex body for ensuring international co-operation and mutual assistance between other Customs administrations. However, the manpower resources for this very important function are presently inadequate. CBEC may upgrade the existing International Customs Division into a full-fledged Directorate General of International Customs Co-operation to garner the requisite expertise and face the challenges of complex negotiations. The Directorate should also conduct research into the effectiveness of FTA/CEPA and render valuable data-driven policy level suggestions.

The Directorate would serve as a research centre for carrying out in depth analysis of Customs issues which have a bearing on our International Commitments. It would help the CBEC in formulating position on key issues being debated in various Regional and Multi-lateral Customs forums. Apart from providing critical inputs for bi-lateral negotiations such as Free Trade Agreement negotiations, the Directorate would also help CBEC in formulating long term strategies of continued engagement in International forums, and in increasing the participation and intervention in such meetings. Through its continuous work, it would help CBEC to not only formulate positions on issues, but it would also serve as a repository of knowledge and Institutional Memory and its inputs would be critical for the briefing of Indian Customs Delegates to various meetings abroad. In the long run, this work would invariably lead to an elevation of Indian Custom Administration’s profile in the Global Customs Fraternity.

5.7 Functional Units in CBEC

As proposed in the earlier Chapters, CBEC may consider the formation of ‘functional units’ so that the organisational objectives are achieved. The advantages of a Functional Organisation Structure
are explained in **Annexure 14**. These functional units may be introduced in the medium term, say within 5 years. The recent introduction of exclusive Audit Commissionerates is a clear indication of the need to adopt this strategy. The specialised functional units proposed are listed in the table below and the details of such ‘functional units’ are discussed elaborately in the ensuing paras

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<th>National Tax Payer Services Directorate</th>
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<td>Data Analytics and Business Intelligence Unit</td>
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<td>Audit Unit</td>
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<td>Enforcement, Intelligence and Investigation Unit</td>
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<td>Tax Dispute Resolution and Litigation Unit</td>
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<td>HR Management</td>
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<td>Business Process Re-engineering(BPR) Unit</td>
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The IT unit of CBEC would function as a running thread across CBEC providing seamless support to the other functional units.

**a. National Tax Payer Services Directorate**

Tax administrations all over the globe have been consciously engaged in devising and adopting customer-driven strategies. Underpinning these strategies is the need to facilitate the tax payer, reduce the burden of compliance and ensure that the tax payer’s rights are safeguarded. World over, taxpayer services cover the entire gamut of services - from dissemination of tax related information, codified service deliverables and service standards, grievance redressal mechanism to promotion of voluntary compliance. With technology-enabled innovations and an active social media presence, CBEC can enhance customer experience on real-time basis and more cost-effectively.

It would be essential to create a National Tax Payer Services Directorate in CBEC to undertake the following functions:
- Dissemination of tax payer related information, especially their rights and obligations
- Adoption of International benchmarks for tax payer services
- Devising a proper communications strategy for using multiple channels-such as phone/web-based/ interactive/ social media etc. to engage tax-payers and encourage voluntary compliance
- Development of mobile “apps” suited for enhanced taxpayer interaction/transaction
- Providing an efficient and prompt tax payer grievance redressal mechanism
- Consultative mechanism for tax-policy formulation/procedural simplification etc.
- Creating a standardised measurement and evaluation system for taxpayer satisfaction
- Conducting online tax payer satisfaction surveys, etc. for enhancing tax payer services
- Publication of ‘Performance Reports’ on various taxpayer related deliverables (e.g., publication of Average Time Release study as per Bali Trade Facilitation Agreement, 2013)
- Enabling Research in Taxpayer behaviour, focused delivery of products/services – sector wise, including LTU/SSI/ etc.
- Formulation of an Action plan for ensuring confidentiality of tax payer related information
- Training of officers/staff to provide soft skills/relevant domain knowledge/INTEGRITY for effective tax payer interface

b. Data Analytics and Business Intelligence

A dedicated Data analytics team has to be set up that is comprised of domain experts (rules), algorithm experts (NLP, Machine learning), and statistical experts. A unified data base (logical view) has to be created across all the three major indirect tax functions, since the work flows etc. are different across the three systems, they cannot function on top of a single physical
database today unless the BPR exercise is carried out. In the interim, common information that could provide a unified view should be identified.

Business Intelligence system should be put in place across all three indirect tax functions so that intelligence is gathered about delinquent tax payers or industry segment on a national level. This would not only check tax evasion but also promote security by having advance information on possible movement of contraband such as narcotics and arms.

Since a large part of indirect tax system is linked to other agencies such as RBI, DGFT, banks, and other government departments, it would be preferable to have a straight through model for transaction processing, such that integration standards as well as data refresh standards are all included. References can be taken from OLTAS. Further steps can be:

- IT system of CBEC to be linked to CBDT, MCA 21 and state VAT IT systems to enable 360 degree view of the taxpayers
- A project on the lines of Connect system of HMRC can be considered
- As GST is on the anvil, CBEC should have an interface with state VAT administrations for sharing invoice level data
- Internal MIS to ensure seamless flow of data to all decision makers

c. Audit Unit

Audit, compliance and other internal governance issues should be handled electronically through system reducing physical audits and minimizing physical interactions. CBEC should put in place a fully automated database of tax payers and historical data of audit which would enable determination of risk factors which are important for selection of units for audit. A risk based selection of units for audit should be put in place based on pre-determined risk factors such as size or complexity of tax payers and the compliance level of the assessee. Most modern and applicable tax audit tools and techniques should be used to analyze/ examine the tax payer’s accounts.
Focused Audit needs to be done on selected issues such as exemptions schemes, tax credit schemes, etc. Selection of units, intimation to the units and issue of audit report has to be automated; historical data is to be gathered in a methodical and analytical format. The database of audit should also be supplemented with third party information drawn from other sources such as Income Tax, Registrar of Companies, etc. Various types of irregularities detected during audit of a specific assessee, serious compliance issues in a particular industry segment, unique modus-operandi of tax evasion notice etc., should be available in the system for future reference of the Auditors. This will automatically improve the tax compliance level and enhance the skill-set of the Auditors. Further, this will enhance the output of the auditors with the minimal and focused intervention resulting in enhanced trade facilitation, increased level of tax compliance and buoyancy in revenue collection.

Auditors need to test the Behavioural risk by evaluating the tax delivery mechanism of a corporate and they have to understand end to end process, identify the risk points, and monitor them. They need to be continuously trained through in-house training programmes and encourage to acquire external professional qualifications required for an auditor. They need to have extensive knowledge of specific accounting software for e.g., SAP, TALLY, etc. and provide assistance in auditing businesses using those systems and develop sector specific expertise.

They need to carry out scientific and systematic audit of the business units. For example, the audit process carried out by auditors of HMRC comprises of five stages viz., (1) Examine the business systems and processes; (2) Document the flow of tax revenue through a business; (3) Outline the key systems used within a business and evaluate the risk; (4) Carry out risk based audit for e.g., VAT return analysis, analysis of capital allowances etc. and (5) Software reviews. Some of the audit tools used by the auditors of HMRC are

- IDEA (Interactive Data Extraction & Analysis)
- ACL (Audit Command Language)
- Spreadsheet Auditing
- Entertainment Macro
d. **Enforcement, Intelligence and Investigation**

The Directorate of Revenue Intelligence was constituted for dealing exclusively with the work relating to the collection and study of information on smuggling activities and the deployment of all anti-smuggling resources at the all India level, besides arranging training for the intelligence and Investigation officers of the Custom Houses and Central Excise Commissionerates deployed on similar work. Since then, it has grown from strength to strength and it is known for its professionalism both within and outside the country. Subsequently, when the need was felt, a new Directorate (DGCEI) was formed to address the issues relating to evasion in the area of Central Excise; the ambit of DGCEI was further expand and to cover evasion relating to Service Tax. Both the Directorates, with their committed work force, have produced commendable results. The Committee is of the view that both the existing units viz. DRI and DGCEI should be further strengthened.

It is further felt by the Committee that the officers deployed in these formations need to be provided intensive training in Data Analytics and Data mining concepts for carrying out tasks such as targeting of suspicious transactions, to carry out tax behaviour analysis, prevention of frauds, study of industry segments to verify & ensure tax compliance, etc. The outcome of their work also need to be ploughed back to the Tax Policy and Planning functional units for taking corrective policy measures which will plug revenue leakage and bridge the tax gap. For this purpose, CBEC may consider setting up a National Targeting Centre and creation of a Central Offence Database.
e. Tax Dispute Resolution and Litigation

A Comprehensive package for dispute resolution needs to be put in place. The disputes can arise either on account of Audit or Enforcement action. A centralised Data base of such disputes will enable comprehensive 360 degree view of disputes. The pattern emerging out of disputes need to be studied for initiating necessary policy measures and bring more clarity in the area where disputes are more.

There should also be a comprehensive real time based arrears collection system linked to dispute resolution system. This will enable tracking of realizable arrears and enable initiation of prompt recovery action. The National tax-arrears data base with quality data, needs to be set up, constantly updated and monitored for effective recovery.

f. Tax Policy and Planning Unit

While the macro-economic policies of the Government will determine the directions of Tax policy and Planning, it needs to closely work with various functional units such as Audit, Enforcement, Intelligence and Investigation, Tax Dispute Resolution, Tax Payer Services, etc. The inputs from these functional units need to go into Tax Policy Formulation and Planning so that over a period of time, the CBEC fully realise the twin objectives of raising the much needed resources efficiently and at the same time providing enhanced Tax Payer services. All over the world, tax administrations are facing the uphill task of raising more and more resources with less budgetary and HR constraints. Hence, this suggestion will be very useful to CBEC.

g. HR Services

As already elaborated at paras 2.6.1 (j) and 3.3.4 earlier, a Human Resource Management System (typically part of an ERP system) needs to be deployed to provide a holistic view of benefits, payroll, policy changes, skills-upgradation programs, internal opportunities for growth. A departmental collaboration system also should be set up with sufficient capacity which should include mail, and other means for collaboration like IM, chat, and audio/video support. The
collaboration system should also take into account next generation IRM technology to ensure that artifacts are appropriately protected.

Other important aspects of HR Services include the following:

- Several high quality educational institutions may be roped in to conduct research so that new path breaking ideas can be generated
- With greater use of information systems, the nature of work of the officers and staff will change. There is a greater need for greater empowerment, delegation and decision making closer to point of dispute
- The present Learning Management System (LMS) may be revamped. All users to be trained on a simulated system. Self-learning modules are needed to ensure training on a continuous basis
- Training and Certification programmes for members of trade/Customs Brokers/AEOs need to be conducted through certified third party training providers

**h. Business Process Re-engineering (BPR)**

A dedicated function/team for Business Process Reengineering has to be set up that will focus on continuous improvements within and outside the organisation. Best practices, both within and outside the country, need to be proactively identified, disseminated, prototyped and implemented. BPR is not to be considered a one-time affair but as a constant process of improvement, a la kaizen.

**5.8 Overseeing the Implementation of DRISHTI Recommendations**

The Committee also recommends that the CBEC may consider setting up a suitable Empowered Group with the requisite project execution expertise and domain knowledge for overseeing the implementation of its recommendations.
For a large, complex, transformational IT initiative like DRISHTI, it may be essential to seek external expertise to help in its implementation. The HPC recommends that at appropriate time intervals and for appropriate projects, such expertise be sought by the department. The HPC opines that its recommendations cover a wide gamut of areas, many of which can be handled by the department itself. For a few of these recommendations, such as IT and HR there may be a need for external expertise.
CHAPTER VI

RECOMMENDATIONS
6 Chapter VI- RECOMMENDATIONS

The Committee has carefully analyzed the gaps in the present IT System as well as in the organisational structure and Human Resource policies of CBEC and has suggested several recommendations in various Chapters, which are summarised here for better understanding. The recommendations of the Committee are divided into three temporal components:

- those which could be implemented within the next 2 years (Short Term)
- those which could be implemented between 2 and 4 years (Medium Term &
- those which could be implemented between 4 and 6 years (Long Term)

Taking a holistic view, the Committee has not only covered the necessary reform aspects in the present IT System, but also tendered suggestions for a comprehensive change in other related areas such as structure and Human Resources. It is hoped that DRISHTI will enable the CBEC to rejuvenate itself and fulfill its Vision and Mission towards tax payer facilitation and voluntary compliance in the years to come.

6.1 Recommendations in Brief with timelines for implementation:

<table>
<thead>
<tr>
<th>Para.No</th>
<th>Recommendations</th>
<th>Timeline for implementation (S/M/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5.1</td>
<td>The Existing Help Desk to be augmented and converted to an integrated National Help Desk to enhance overall quality of Help Desk services</td>
<td>S</td>
</tr>
<tr>
<td>2.5.3 (2.6.1, point j)</td>
<td>Need to adopt a more IT-Centric HR Policy with special incentives Manpower Resource augmentation at Systems Directorate Centralised HR Management System</td>
<td>S-M</td>
</tr>
<tr>
<td>2.5.4</td>
<td>Administrative and Financial constraints to be suitably addressed so as to minimise cost and time overruns of IT projects</td>
<td>S-M</td>
</tr>
<tr>
<td>2.5.6 (2.6.2,</td>
<td>Need for technology upgrade of ICES application</td>
<td>S</td>
</tr>
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</table>


| point j) | 2.5.7 | Review and redesign ACES and introduce invoice level data capture to enable CENVAT credit reconciliation. | S-M |
| 2.6.1, Point a | Conduct a comprehensive review of Business Processes in Customs, Central Excise and Service Tax | S-M |
| 2.6.1, Point b | Redesign of ICES, ICEGATE and RMS into an Integrated Customs System | M |
| 2.6.1, Point c | Introduce a well-planned change management initiative at policy level for providing sufficient lead time for technical changes such as during the Budget and tax notifications | S-M |
| 2.6.1 Point d | Need to expand the Tax 360 initiative | S |
| 2.6.1 Point e | Increasing the use of advanced data analytics | S |
| 2.6.1 Point f | Enhancement of Risk Management System across Customs, Central Excise and Service Tax | M |
| 2.6.1 Point h | Implementation of mobility solutions | S-M |
| 2.6.1 Point k | Sufficient headroom to ensure that resource utilisation does not exceed 60% on a sustained basis. Increase the computing capacity at the DR site to provide full redundancy with zero data loss through synchronous replication and a DR Network Operation Centre. | S-M |
| 2.6.2 Point a | Improve CBEC network resilience and connectivity with better bandwidth allocation best in class network monitoring tools revamping VPN solutions etc. | S |
| 2.6.2 Point d | Making the IT infrastructure more manageable by reducing the multiplicity of vendors | S-M |
| 2.6.2 Point e | Implement real time replica system for transactional and hybrid reports so that the OLTP system is not impacted | S-M |
| 2.6.2 Point f | Reduce disaster Recovery time to move towards automated fail-over | M |
| 2.6.2 Point g | Strengthen user authentication process by measures such as two factor authentication | M |
| 2.5.2 Points h & o | Deploy Document Management System for business documents at local and central levels for safe archival; even for manual data | S-M |
| 2.6.2 Point k | Upgrade ICEGATE application technology to supported versions | S |
| 2.6.2 Points l & m | Implement modular, scalable server solutions, use of flash etc. | S |

## CHAPTER III

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<thead>
<tr>
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<th>Timeline for implementation (S/M/L)</th>
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<tbody>
<tr>
<td>3.2</td>
<td>Human resources handling IT operations to be strengthened. Lateral entry of experts Capacity building of officers</td>
<td>M</td>
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<tr>
<td>3.3.1</td>
<td>Creation of specialised functional units for handling functions such as Audit, Processing of Import &amp; Export Transactions, Return Processing, Enforcement, Data Analytics, Tax Payers Services, IT wing etc.</td>
<td>S-M</td>
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<td>3.3.3</td>
<td>Creation of a Chief Technology Officer (CTO) function under DG Systems</td>
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<td>3.3.6</td>
<td>Implement an internal e-learning system comprising a Learning</td>
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### CHAPTER IV

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<tbody>
<tr>
<td>4.4</td>
<td>Consider the various IT Governance Models including SPV Model</td>
<td>M</td>
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### CHAPTER V

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<thead>
<tr>
<th>Para.No</th>
<th>Recommendations</th>
<th>Timeline for implementation (S/M/L)</th>
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<tbody>
<tr>
<td>5.1</td>
<td><strong>Point a</strong> Customs Single Window Project interfacing with other Government departments and regulatory agencies.</td>
<td>M</td>
</tr>
<tr>
<td>5.1</td>
<td><strong>Point b</strong> Engage with other Customs Administration towards International Data Exchange</td>
<td>M</td>
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<tr>
<td>5.1</td>
<td><strong>Point c</strong> CBEC to implement document management system on the lines of the project implemented in Bangalore.</td>
<td>M-L</td>
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<tr>
<td>5.1</td>
<td><strong>Point e</strong> Introduce Advance Passenger Information System</td>
<td>S</td>
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<tr>
<td>5.2</td>
<td>Set up a National Customs Assessment Centre for central processing of Customs Import &amp; Export declarations.</td>
<td>M</td>
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<tr>
<td>5.3</td>
<td>Create a National Processing Centre for Central Excise &amp; Service Tax Returns.</td>
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<tr>
<td>5.4</td>
<td>Establish a National Targeting Centre dedicated to collection, processing, analysis and dissemination of critical data/information across the country and abroad for real-time intervention and action</td>
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<tr>
<td><strong>5.5</strong></td>
<td>Setting up a National Centre of Excellence similar to KAI to act as Research and Knowledge Hub for entire Indirect Tax Administration, also to play a lead role in creating, moulding and nurturing ideal work force for effective implementation and working of GST at the national and state level</td>
<td>M</td>
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<tr>
<td><strong>5.6</strong></td>
<td>Setting up a Directorate General of International Customs</td>
<td>S</td>
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<tr>
<td><strong>5.7</strong></td>
<td>Strengthening and reorganisation of Functional Units in CBEC</td>
<td>M-L</td>
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# 7 ANNEXURES

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<td>7.16 Annexure 16 - Note on the HMRC System of Data Capturing on Real-time Basis</td>
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7.1 Annexure 1 – Office Memorandum for Constitution of HPC

F.No.296/33/2014- CX.9
Government of India
Ministry of Finance
Department of Revenue
Central Board of Excise & Customs

New Delhi, dated the 27th of February, 2014

OFFICE MEMORANDUM
(Committee No. 26/2014)

Subject: Setting up of a High Powered Committee (HPC) to define the IT Roadmap of CBEC – Driving Information Systems for Holistic Tax Initiatives ‘DRISHTI’ – reg.

The Hon’ble Finance Minister has approved the constitution of a High Powered Committee (HPC) to define the IT Roadmap of the Central Board of Excise & Customs, named ‘DRISHTI’ – Driving Information Systems for Holistic Tax Initiatives. The Committee shall take into account clearly identified initiatives, milestones and responsibilities and consider the requirements of external and internal stakeholders with a view to strengthening CBEC’s initiatives towards achieving its vision of creating a climate of voluntary compliance and in combating Smuggling Revenue Evasion and Commercial Frauds.

2. Based on the approval from the Competent Authority, the High Powered Committee is being constituted with the following Members:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Member &amp; Designation</th>
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<tbody>
<tr>
<td>1.</td>
<td>Shri T.V. Mohandas Pai, Chairman, Manipal Global Education (Chair of Committee)</td>
</tr>
<tr>
<td>2.</td>
<td>Member (Computerization), CBEC (By Designation)</td>
</tr>
<tr>
<td>3.</td>
<td>Member (Computerization), CBDT (By Designation)</td>
</tr>
<tr>
<td>4.</td>
<td>Dr. Kamlesh Bajaj, CEO, DSCI</td>
</tr>
<tr>
<td>5.</td>
<td>Director General (Systems), CBEC (By Designation)</td>
</tr>
<tr>
<td>6.</td>
<td>Shri S. Ramesh, Chief Commissioner of Customs, Chennai</td>
</tr>
<tr>
<td>7.</td>
<td>Ms. Ananya Ray, Chief Commissioner of Central Excise, Shillong</td>
</tr>
<tr>
<td>8.</td>
<td>Financial Adviser (Finance), Ministry of Finance (By Designation)</td>
</tr>
<tr>
<td>9.</td>
<td>Additional Director General (S.I. Systems), CBEC</td>
</tr>
<tr>
<td>10.</td>
<td>Shri C. Rajendra, Commissioner of C.Ex., &amp; Customs, Vishakhapatnam</td>
</tr>
<tr>
<td>11.</td>
<td>Shri Bani Bhattacharya, Additional Director General, NACEN, Bangalore</td>
</tr>
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3. In addition, the Committee may co-opt any other members as may be required.
4. The Charter/Terms of Reference of the High Powered Committee shall be as under:

a) Identify and formalize strategic objectives towards achieving the IT Vision.
b) Advise on appropriate application architecture to support business services.
c) Identify data to support the business objectives.
d) Suggest appropriate technology architecture.
e) Suggest as protection, obsolescence and archival policy.
f) Evaluate the need for a consultant to implement DRISHTI.
g) Any other recommendations that may be necessary to give effect to the above said purposes.

5. The Committee shall submit its report in Three Months from its constitution.

(Surendra Singh)
Under Secretary to Government of India
Ph. No.23092413

Copy to:
1. Chairperson, CBEC, for information
2. All Members of CBEC, for information.
3. All Members of the Committee, for information and necessary action
4. All Chief Commissioners / Directors General, for Information
5. All sections / wings of CBEC for information
6. All Directorates under CBEC for information
7.2 Annexure 2 – Details of Existing Workload & Revenue Collection

Summary of Revenue collected - from EASIEST data (in Rs Crores)

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<tbody>
<tr>
<td>Central Excise</td>
<td>120755.51</td>
<td>113419.41</td>
<td>141316.98</td>
<td>161254.47</td>
<td>198635.82</td>
<td>193461.44</td>
</tr>
<tr>
<td>Service Tax</td>
<td>55678.33</td>
<td>58819.71</td>
<td>66669.66</td>
<td>96963.54</td>
<td>133534.40</td>
<td>153525.76</td>
</tr>
</tbody>
</table>

Summary of Revenue collected - from Customs Imports (in Rs. Crores)

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<tbody>
<tr>
<td>Customs (Imports)</td>
<td>83895.51</td>
<td>71773.30</td>
<td>107076.40</td>
<td>126503.90</td>
<td>156608.30</td>
<td>165356.20</td>
</tr>
</tbody>
</table>
Growth in documents filed and processed on the existing IT Systems

A: Customs Documents

B: Central Excise and Service Tax documents
7.3 Annexure 3 - Vision, Mission and Strategic Goals of CBEC

VISION

Our Vision is to provide a fair, efficient, transparent and tax payer friendly mechanism for collection of indirect taxes and enforcement of cross border controls, with a view to encourage voluntary compliance.

MISSION

Our Mission is to achieve excellence in the formulation and implementation of Customs, Central Excise and Service Tax laws and procedures aimed at:

- realizing the revenues in a fair, equitable, transparent and efficient manner
- administering the Government’s economic, taxation and trade policies in a pragmatic manner
- facilitating trade and industry by streamlining and simplifying Customs, Central Excise and Service Tax processes and helping Indian business to enhance its competitiveness
- ensuring effective control on cross border movement of goods, services and intellectual property
- creating a climate for voluntary compliance by providing information and guidance
- combating revenue evasion, commercial frauds and social menace
- Supplementing the efforts to ensure national security.

STRATEGIC GOALS

- to encourage voluntary compliance by facilitating easy registration and payment of taxes
- to ensure tax payer friendly administration of indirect taxes by building a professional motivated work force and thereby delivering quality services
- to ensure fair and transparent tax system by judicious enforcement of laws and an effective dispute resolution system
• to ensure zero tolerance to non-compliance by putting in place a strong compliance verification system and
• to ensure safe and secure borders through strong cross border controls.
7.5 Annexure 5 – Awards/ Certifications for CBEC’s IT Initiatives

• SKOCH Challenger Award for ICES in 2007
• Prime Minister’s Award for RMS initiative – 2009
• PC Quest e-Governance Award for ACES – 2010
• National Award for e-governance to ICEGATE -2011
• E-Asia award for Trade Facilitation to ICEGATE -2011
• ISO 27001 certification for IT Consolidation project- July 2011
• SAP ACE Award for Data Warehouse Project - 2012
• DSCI Excellence Award for Security in e-Governance – 2012
7.6 Annexure 6 - IT Consolidation at CBEC

Initially, when ICES was implemented, technology limitations necessitated a distributed architecture. This resulted in costs, manpower and management challenges while increasing the coverage of automation to all major locations and all taxpayer services across Customs, Central Excise and Service Tax. A decentralised architecture required location specific system maintenance contracts at field formations, requiring separate teams of skilled systems and database administrators at each site. Updating the system for changes (e.g. the Union Budget) required separate updates at each site. There were challenges in maintaining standardised configurations and uniform policies. There was no disaster recovery capability and all storage of data was in the computer room only. Furthermore, there was a need of centralised infrastructure to launch ACES application in all Commissionerates.

CBEC decided to consolidate its IT infrastructure in a central computing facility, which would be hosted in a professionally managed data centre, meeting industry standards and best practices. Today, there is a Business Continuity site connected to the data centre with dark fibre, and there is a Disaster Recovery site in a different seismic zone so that critical services are not impacted in case of a disaster and no critical data is lost. CBEC has also decided to adopt the managed services model for facilities management and all routine system activities. This central computing facility is ISO 27001 compliant as certified by STQC in July 2011. It has adopted the IT Service Management processes like Incident Management, Change Management, IT Service Continuity Management etc., as embodied in the ITIL (IT Infrastructure Library version 2) best practices.

This infrastructure is accessed over an MPLS based WAN-LAN set-up. CBEC decided to go in for ‘thin client’ desktops for most of its users, for enhanced security and better manageability from a central location.

The benefits of IT Consolidation include:

- High service levels, lower downtimes and better utilisation of servers and storage;
- Better maintenance and administration of the IT infrastructure
- Uniformity of applications, easier deployment of newer versions or modules of application software
- Lower costs of extending automation to all Customs & Excise offices and maintaining them;
- Enhanced and better managed security

The local field level officers are freed from systems housekeeping activities and maintenance contracts and left with more time to focus on their core functions.

The IT infrastructure of CBEC has three major components as below:
- National Data Centre and Wide Area Networking (WAN): There is an MPLS network linking CBEC offices to Data Centre.
- Hardware, Storage, Database, Security Infrastructure and Facilities Management: The server infrastructure consists of enterprise class servers and server-neutral storage to provide computing, data storage, systems security infrastructure, Central Facilities Management and related functionalities to all departmental and external users accessing the CBEC systems. All the department’s applications are hosted centrally on this infrastructure.
- PCs, Thin Clients and Local Area Networks: This provides for local computing via desktops/thin Clients, local networking equipment, peripherals, printers, scanners, and back-up power via UPS and DG sets, along with Resident Engineers at sites having more than 25 nodes.

This centralised infrastructure has been in place since 2008-09.
7.9 Annexure 9 - Summary of User Feedback Survey

7.9.1 Feedback from Taxpayers (ACES)

<table>
<thead>
<tr>
<th>Positives</th>
<th>Opportunites for Improvement</th>
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<tbody>
<tr>
<td>Easy to log in and use the system</td>
<td>Help Desk facility</td>
</tr>
<tr>
<td>Prompt acknowledgment on submission, ease of tracking document status</td>
<td></td>
</tr>
</tbody>
</table>

7.9.2 Feedback from ACES Departmental users
<table>
<thead>
<tr>
<th>Positives</th>
<th>Opportunities for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensiveness of system in catering to business requirements</td>
<td>Printing of documents</td>
</tr>
<tr>
<td>Workflow movement</td>
<td>Learning Management System on CBEC’s intranet</td>
</tr>
<tr>
<td></td>
<td>Saving of documents for future use/ retrieval</td>
</tr>
</tbody>
</table>

### 7.9.3 Feedback from Trade (Customs)

![Survey Results Diagram]

<table>
<thead>
<tr>
<th>Positives</th>
<th>Opportunities for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of paying Customs duties</td>
<td>Help Desk</td>
</tr>
<tr>
<td>Ease of filing BE/ SB</td>
<td>Response time of System</td>
</tr>
</tbody>
</table>
7.9.4 Feedback from Customs Departmental Users

<table>
<thead>
<tr>
<th>Positives</th>
<th>Opportunties for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>User friendly system</td>
<td>Response time of System</td>
</tr>
<tr>
<td>Ease of assessing BE/ SB</td>
<td>Comprehensiveness of System in meeting business requirements</td>
</tr>
</tbody>
</table>
IRS had a real problem on its hand in the late 90’s, it had to interface with as any as 30 departments, and deal and manage with 500 disparate systems. Today it generates up words $2 trillion for the US government on an annual basis, how did they change? The following graphic shows the state of the systems prior to their morph.

The IRS then embarked on a services oriented view to upgrade themselves for the future; beginning with a people first approach, including taking user feedback (internal, external, partners). They also wanted to eliminate any paper oriented transactions, this too led to a lot of review of processes, including several change management workshops to ensure that officers and internal users would adapt to changes.

Here is an excerpt to that approach, and it is not simple and takes time:

Converting to electronic versions of all major tax practice functions may not seem substantially different from what your firm is doing now. However, the real savings are in time not spent deciphering handwriting, searching for files, determining the status of a return at any given time, and responding to staff and client questions at various stages.

The first and most crucial element of success is selecting your internal champions—the individuals or team tasked with executing the plan. The team should include members with
various roles instrumental to your tax process who possess a clear understanding of the goals, are committed to the project’s success, and have the authority to move ahead.

Once your team is in place, the next step is to take inventory of all your existing technology investments. Most firms have already made some investments—tax software, Adobe Acrobat Pro, e-mail, mobile devices, etc. Next, catalog all your existing procedures, documenting how your firm uses its current technology investments.

In addition to your tools of the trade (tax and workpaper software), which products your firm invests in will vary according to the firm’s size and budget, existing technology investments, project plan and goals, and short- and long-term needs. Essential elements of a digital tax practice include:

- **Scanner.** Options and prices vary widely; a basic, reliable scanner will get you started, and you can upgrade from there (see “Don’t Skimp on Scanners,” JofA, Dec. 09, page 25).
- **Dual monitors.** Good quality flat-screen monitors are fairly inexpensive and are essential to working digitally. You may even decide you need triple monitors after your first digital season.
- **Workflow management system.** In its most basic form, this is a mechanism for moving work from person to person in a digital environment. It should also encompass tracking, due date monitoring, reporting and individual and practice-wide work. The underlying workflow in most digital tax practices is:
  - Scan incoming client documents and file them digitally.
  - Move responsibility using workflow software from receipt of source documents through preparation and shipping or e-filing.
  - View scanned source documents on your second monitor to prepare and review the return digitally in your tax software.
  - Use remote access to check the status and/or respond to review points from home or in the field.
  - Archive the completed return with the source documents in your secure document management or network filing tree.
- **Document management system.** Again, here the options vary widely from a simple Windows Explorer filing tree to a complete, scalable document management system.
Remote access. Web-based “software as a service” products offer this flexibility naturally; however, client-server applications can be easily accessed remotely using Citrix or VPN (virtual private network) technology.

Myriad other products are important, if not essential, technologies to consider: client portals (see “Client Portals: A Secure Alternative to E-Mail,” JofA, Feb. 10, page 36), optical character recognition, paperless engagement, etc. Many firms start simple then add as they refine their processes and identify the need for more robust technologies. Many resources, such as totallypaperless.com, can aid in determining the right technologies for your practice.

Adopting technology is the easy part; adapting your culture and processes to optimise your technology investment is the real challenge. Documenting your existing processes, identifying “better practices,” and standardizing them across your tax practice will help you maximize the benefits of a digital environment.

As one can see, there are several aspects to consider when changing core processes, especially around personnel and change management.

IRS chose a few focus areas as the corner stone to modernisation following a service oriented approach, this is elucidated below in the graphic:
The IRS then took a very encompassing view to how the organisation would align, the following graphic is a work in progress in this regard:
Then a careful mapping was carried out in terms of where various components would fit in the context of a true next generation service oriented architecture, which was presented earlier. The following graphic elucidates this.

The above exercise continues within IRS, and has progressed well in supporting their 2020 vision for the future. IRS has also adopted an elastic internal cloud infrastructure and focus on SLAs at all 3 levels of Cloud services like IaaS, PaaS, and SaaS, with a unified help desk support.

An example of their infrastructure is presented in the following graphic.
Their infrastructure like CBEC is ITIL compliant and so are all the change management processes (application, infra, and network), and outages are well managed within timelines.

To conclude, the IRS approach can be used as a reference to drive the support of IT for CBEC from a 2020 perspective, in other words to enable the fruition of Drishti.
7.11 Annexure 11—Write-up on KAI Wing of HMRC

HMRC analytical themes

HMRC undertakes research and analysis across a variety of policy and operational areas. The department has multidisciplinary teams of analytical specialists including economists, statisticians, social researchers and operational researchers. Below are current themes of analytical interest for the department, which HMRC encourage external proposals to focus on:

**Policy**
Support policy development, review effectiveness, learn lessons and improve policy making (for example):
- the effect of the tax and benefit system on incentives to work, save and invest
- the effect of the tax system on the environment
- the impact of the tax system on cross-border issues

**Compliance**
*Tax gap measurement:* expanding and improving the measurement of the gap between theoretical liability and actual receipts.
*Drivers of behaviour:* understanding attitudes to compliance and how these impact on the tax gap, how HMRC interventions change attitudes and how different types of non-compliance interact.
*Evaluate compliance interventions:* measuring direct and indirect effects of interventions.
*Tax planning schemes:* better understanding of the market for tax planning advice.

**Compliance costs**
*Deregulation and compliance costs:*
- Understanding the relationship between compliance costs and other HMRC objectives.
- Measuring change in compliance costs over time/in response to HMRC actions.
Understanding customers and operational efficiency

*Increased HMRC focus on understanding customer behaviour:*

- Developing knowledge of customers' attitudes towards HMRC service.
- Exploring and measuring customer perception and experience with HMRC services.
- Evaluating HMRC operational changes/guidance.

*Operational efficiency:*

- Exploring the impact that long-term trends will have for HMRC service provision for example, social demographics/technological changes.

*Debt management:*

- Exploring how people perceive the debts they owe HMRC and whether they change their management of these debts over time.

(Source: http://www.hmrc.gov.uk/research/generatedresearchproposals/#1)
7.12 Annexure 12 - HRMS in CBEC

At the apex level, the CBEC comprises a Chairman and six Members, all ex-officio Special Secretaries to the Government of India.

Post-cadre restructuring which is being implemented, there will be 27 Central Excise & Service Tax Zones and 11 Customs Zones. Under these Zones, there will be

- Central Excise Commissionerates - 119
- Customs Commissionerates - 60 (including Customs Preventive Commissionerates),
- Service Tax Commissionerates - 22
- Audit Commissionerates - 45
- LTUs (Large Taxpayer Units) - 5

In addition, there are a number of Directorates, dealing with HR, Logistics, Legal Affairs, Systems, etc. - which provide important ancillary support to the field formations. Further, on the Enforcement/Investigation and Intelligence side, there are two important Directorates, the DGRI (Directorate General of Revenue Intelligence) for Customs enforcement and DGCEI (Directorate General of Central Excise Intelligence) for Central Excise and Service Tax enforcement. For tax litigation and quasi-judicial/judicial remedies, there is a two-tier structure. The first Appellate authority is Commissioner (Appeals) and the second level is the Customs, Central Excise & Service Tax Appellate Tribunal (CESTAT).

7.12.1 Recruitment Pattern

The Group A (Indian Revenue Service) consists of those who have been either directly recruited through the UPSC Civil Services Examination or officers promoted from the feeder cadres (Group B). The rest of the cadre is divided into Group B, Group C (Executive) and Group C (Non-Executive) personnel. The mode of recruitment in group B is again through Direct Recruitment through the UPSC Civil Services Examination or through promotion from a multitude of feeder cadres in Group C. The Group C (Executive) recruitment is done by direct
recruitment through the Staff Selection Commission or by way of promotion from feeder cadres further down the line.

**7.12.2 Training Methodology**

The training requirements for officers and staff are met through the National Academy of Customs, Excise & Narcotics (NACEN) located at Faridabad and nine Regional Training Institutes (RTIs) spread across various cities. NACEN imparts professional training to the Direct Recruit IRS officer trainees through a structured training schedule spread over 2 years, which includes both class-room training as well as training in field formations and Directorates. In addition to this, regular refresher courses on various topics relating to indirect taxes are conducted using both in-house training faculty as well as guest faculty comprising domain experts.

For the Group B and Group C cadre, the training is conducted by the RTIs which also conduct various training programmes for Group A officers. Certain formations also conduct their own in-house need-based training programmes to train officers and staff posted in their formations either on their own or with help from NACEN.

Recently, the CBEC has started, as envisaged in the National Training Policy-2012 of the GOI, the MCTP (Mid-Career Training Programme) for Gr.A officers which involves a comprehensive training, with domestic component at premier Institutes like the Indian Institute of Management, Indian School of Business as well as a two-week foreign component in US, Canada, Europe, Singapore, South Korea, etc.

**7.12.3 Human Resources in CBEC**

The sanctioned strength of officers and staff is 66808. This figure is expected to increase to 84875 consequent to the ensuing Cadre Restructuring exercise. The break-up of this strength in terms of Group A, B & C is given in the table below:
<table>
<thead>
<tr>
<th>GROUP</th>
<th>SANCTIONED STRENGTH</th>
<th>REVISED SANCTIONED STRENGTH POST CADRE RE-STRUCTURING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2485</td>
<td>6020 (including 2118 temporary posts at JTS level for 5 years)</td>
</tr>
<tr>
<td>B</td>
<td>35481</td>
<td>46482</td>
</tr>
<tr>
<td>C</td>
<td>28644</td>
<td>32373</td>
</tr>
<tr>
<td>TOTAL</td>
<td>66808</td>
<td>84875</td>
</tr>
</tbody>
</table>
Revenue Administration: Functionally Organized Tax Administration - Maureen Kidd

The organisation structure of the tax administration is a key component of an effective reform and modernisation programme. Of the many possible options, the function-based organisation is viewed as best suited to support a reform and modernisation programme.

A function-based organisation is one structured on the basis of the type of work performed, rather than the type of business or product or the type of customer. This model is based on the theory that in grouping together similar activities that require similar skills or specialties, real gains are achieved through an increased depth of knowledge in core areas of business expertise.

Revenue Administration: Functionally organized Tax Administration, Maureen Kidd, IMF, 2010

What Are The Main Advantages Of A Function-Based Organisation?
There are several advantages to a function-based organisation when compared to a tax-type organisation.

Greater uniformity and specialisation across the organisation: All core tax administration functions are grouped together, overseen by one senior official, with processes designed and delivered in the same way—regardless of where the taxpayer lives in the country. The organisation can capitalize on this structure by building on the core knowledge and expertise it has grouped together in the various disciplines. For example, locating audit staff within the same headquarters unit results in synergies that would not otherwise be possible. One set of direction is given to the field offices for service, processing, payment and audit and their work is monitored accordingly.

Improved compliance results: The tax administration benefits from a complete view of taxpayer behaviour across all tax types. The administration is able to identify trends in noncompliance and act more quickly to address these trends. Individual taxpayer behaviour is also more easily observable.
**Simpler processes for the taxpayer and the administration:** Common processes for core functions (rather than variations on these processes depending on the type of tax) result in easier and simpler interactions for the taxpayer. With only one access point for registration and service (although perhaps multiple channels), one point for payment and another in the event that the taxpayer is audited, the taxpayer is not forced to repeat these interactions across each tax type. This results in simpler tax administration processes.

**Centres of excellence:** One of the strengths of the function-based tax administration is the ability to develop specialties within the administration. For example, all work related to registration is located in one place within the organisation so tax officials can study, research, develop and perfect new techniques and approaches to ensuring that the taxpayer register is as complete and accurate as possible. This same approach holds true for other specialisations within the tax administration.

**Better resource management:** Resource management improves for several reasons. Overall administration costs should be reduced as duplicated processes are eliminated. For example, the function-based organisation only requires one IT system and support team, not multiples for each type of tax. Productivity should be enhanced, meaning that the administration can do more with the same amount of resources. The tax administration will also be better positioned to determine resource allocation, with headquarters assessing the needs of field operations and making informed investment decisions. The function-based organisation also makes it easier to respond to seasonal peaks in one area (e.g. returns processing) when other parts of the organisation may not be subject to a similar workload.

**A tool for integrity:** The function-based tax administration shares responsibility for all tax types across functional lines. As no one unit or division is entirely responsible for one tax, the opportunity for collusion amongst officers is reduced.

*Revenue Administration: Functionally organized Tax Administration, Maureen Kidd, IMF, 2010*
7.14 Annexure 14 - Superiority of the Functional Organisational Structure

(Extract from the “Detailed Guidelines for Improved Tax Administration in Latin America and the Caribbean”, USAID 2013 publication.)

The most prevalent and successful organisational structure for many years has been the functional organisational structure; that is, a tax administration structured on the basis of the type of work performed, rather than the type of tax, business, product, or customer. The functional organisational structure is based on the theory that, by grouping together activities that require similar skills or specialties, real gains are achieved through an increased depth of knowledge in core areas of business expertise.

Most international experts, including from the International Monetary Fund (IMF), the World Bank, and the Inter-American Development Bank, who have conducted countless tax reform missions all over the world over a span of several decades, have strongly and consistently favored and recommended functional organisational structures for national tax administrations. The functional structure has proven again and again that it:

- Permits standardisation of similar processes across all taxes, which enables easier and simpler interactions by taxpayers, e.g., only one access point for registration, service and payment
- Facilitates simplification of procedures which taxpayers are required to follow to comply with their tax obligations
- Permits greater uniformity across the organisation enables grouping of all core functions together geographically for better management oversight and control, and for design of the same operating procedures for each core function in all field offices
- Facilitates computerisation of all work processes;
- Allows greater specialisation, training and career development of staff;
- Promotes greater efficiency and higher productivity of the overall tax administration, as it avoids the duplication of processes across types of taxes;
- With a complete view of taxpayer behaviour across all tax types and early detection of non-compliance trends, yields improved compliance results; and
- Decreases the incidence of intrusion on taxpayers common in organisation by type of tax as it avoids, for example, separate audits at different times by different tax officials focused solely on income tax, value added tax, or other types of taxes.
- Other benefits of functional organisations include:
  - Functional organisations enable units to focus on primary activities, which promotes efficiency – auditors, for example, are able to audit tax returns for all types of taxes;
  - Functional organisations allow an integrated look at the taxpayer during registration, audit, and collections, as well as at the taxpayer base for planning purposes;
  - Functional organisations enhance control and accountability, because no single tax official is responsible for all administrative elements related to a single taxpayer; and
  - Functional organisations can accommodate major legislative changes, such as the introduction of a new tax, with minimal changes to the organisational structure.

It is not surprising, therefore, that functional structures are in extensive use in most developed countries and in developing countries as well. A recent study by the Organisation for Economic Co-operation and Development’s Forum on Tax Administration confirms that, despite some significant variations in the organisational structures of revenue bodies from country to country, "there appears to be a substantial reliance on the functional model of organisation—13 out of the 49 surveyed revenue bodies indicated that the functional model has been adopted as the primary criterion for structuring their tax administration operations, while 30 revenue bodies reported that a broad mix of criteria, including function, are applied in practice.” In other words, 43 out of 49 tax administrations count on functional structures. It should also be noted that those few countries that rely exclusively on taxpayer segmentation (type of taxpayer) invariably organize the taxpayer segments, like Large Taxpayer Offices, under a functional structure, with components for audit, collection, and taxpayer service.
7.15 **Annexure 15 - Note on Different models of SPV for managing IT projects of CBEC**

The Indirect Tax regime in India is dynamic in nature with frequent changes in laws, forms, processes and procedures. Managing IT projects that automate the business processes of CBEC requires the following:

1. Administrative and Financial autonomy
2. Quick decision making process to procure goods and services
3. Authority to recruit/engage skilled technical resources on short/long term assignments by paying them remunerations as per their competence level and market rates.

The current model of managing the IT projects through the Directorate of Systems has certain inherent limitations as it does not provide the Management any flexibility in the aforesaid areas. Alternative IT Project Management models are below as adopted by government departments:

1. **NIC Model:** NIC was set up as a one-stop solution for the government departments to meet their IT requirements. NIC has its own data centres, cloud computing facility, technical teams to develop and maintain hardware and applications, and network teams etc. Its subsidiary NICSI recruits manpower and procures hardware for the government departments. NIC also has the facility to issue email IDs and Digital Signature Certificates. They provide National e-Payment Gateway facility, National Service Delivery Gateway facility (e-Sangam - for obtaining web-service from other government departments), Mobile Service Delivery Gateway facility etc. In this model, the entire IT requirement i.e. development of application, setting up of infrastructure (servers etc.) and network can be entrusted to NIC, which can manage the projects and maintain it.

In respect of CBEC, NIC has been managing the Customs application (ICES) for about 20 yrs. It was also managing the pre-ACES Central Excise applications. It has been decided that NIC will develop ACES 2.0 and maintain it. Further, NIC is developing the Advance Passenger Information System (APIS) and IPR (ARTS) applications for CBEC. However, the hardware and infrastructural facilities required for these applications are being managed by CBEC on its own through the private vendors selected through an open tendering process.
With the increasing load on NIC and lack of sufficient human resources, they have started outsourcing their work to the private sector and are often reluctant to undertake any new projects. If NIC can be convinced to provide CBEC a one-stop solution for our IT requirements, this will be the most preferred solution. This model has great potential and if managed properly, can make a huge impact on the e-governance sector. However it is up to the Government to take the initiative. Unless NIC is re-energised, this model remains more a theoretical option than a realistic one.

2. **PSU Model:** In this model, the IT projects are managed by a Public Sector Undertaking. But since PSUs too have their own recruitment procedure through the PSESBs, and have financial and administrative limitations, they do not enjoy enough flexibility and autonomy to professionally run the company. All major decisions are taken by the administrative Ministry concerned and the same complex bureaucratic procedures come on the way of efficiently running the projects. This model, therefore, is not significantly different from the Directorate model. If different departments set up different PSUs to run their respective IT projects, there will be a mushrooming of such PSUs and it will meet the same fate as many other PSUs in the industrial sector have experienced in the past decades. No doubt, the PSUs can be either a profit making company or a not-for-profit company under Section 25. In either case, the general PSU culture of India, barring a few successful exceptions, will not allow them to run the company in an efficient manner.

3. **Private Company Model:** CBEC collects a lot of data from the manufacturers, service providers, importers, exporters and dealers, which are very sensitive from a commercial point of view and any leakage can be detrimental to the commercial/business interest of these entities. Further, being a private company, profit making will be their main motive and they may not create enough infrastructural facilities to provide better taxpayer services. If it is a not-for-profit Section 25 Company, with strategic control with the government, it will, in all probability, run like a PSU as the private partners will not be allowed to run it the way a private company is run. The GSTN SPV is an example of the
latter variety and it is premature to say, how it will function when the GST is actually implemented.

4. **NSDL Model:** Technically NSDL is a non-government company, although the shareholding by nationalised banks and other government PSUs is more than 51%. However, this is a non-listed company and the private participation is by the selected banks from the private sector. It runs professionally, earns profits, and has huge infrastructural facilities and technical resources. They have mostly undertaken work for the Governments on nomination basis and some of the projects run on transactional payment model in which the infrastructure is provided by NSDL, application is developed by them and the entire project is managed by them including the Help Desk. The users do not have a headache when the transactions go up, requiring additional infrastructure, as the vendor provides the same without any additional cost. The user only pays for the transactions. CBEC has opted for this model by entrusting the EASIEST project to NSDL, which has developed the application, set up the infrastructure and Help Desk and has been maintaining it for over 8 years to the satisfaction of CBEC, which pays only for the transactions, based on rates fixed per challan. This model is worth considering for other projects. To get over the nomination problem, the Govt. may consider increasing its own share holding in this company (at least 51%) and departments may be given the option to either go for NSDL on a nomination basis or for an open tender.

5. **Society Model:** In this model, a Society, registered under the Societies Registration Act, with 100% contribution (grant) from the Government can be set up to run the IT projects. In the beginning of the financial year, the administrative Ministry will place a certain amount of money (projected by the Society) at the disposal of the Society, which will have the freedom to use it for the projects. Of course, for fiscal prudence, performance measurement and accountability, the Society will have internal financial control and will be subjected to audit by CAG. It will be free to engage technical resources/consultants or empaneled vendors on a need-based approach, both for long and short term requirements,
on payment of fees as per the skill set and prevalent market rates. Railways have set up CRIS, a Society with 100% contribution from the Ministry of Railways. This has been in existence for about 20 years and is reportedly working satisfactorily. However, since Railways have a separate Budget of their own, different from the Union Budget and the entire Railway Ministry is run by the officers from the railway services, having the domain knowledge about the railways system, they understand the requirement of CRIS very well and provide adequate funding and support for smooth functioning. The work cultures in other Ministries are very different. Hence, it has to be carefully examined whether this model will work satisfactorily in CBEC as well.

As per Rules, setting up of autonomous bodies will require Cabinet’s approval and as far as possible the autonomous bodies should be encouraged to generate their own sources of revenue to be self-sustainable.

There are many examples of such Societies under the Govt. of India. A few such examples are given below:

Institute of Bioresources and Sustainable Development (IBSD), Imphal. IBSD is an autonomous organisation funded by the Department of Biotechnology, Government of India, registered as a society under the Manipur State Societies Registration.

This model has a great potential to provide administrative and financial autonomy to the management and flexibility to run IT projects more efficiently.
7.16 Annexure 16 - Note on the HMRC System of Data Capturing on Real-time Basis

If the data is captured on Real Time Information (RTI) basis, the Government will be able to monitor and predict the trend in tax collection. Quality and reliable data is essential not only for policy planning but also for ensuring effective compliance by a focused enforcement approach. HMRC, having understood this factor makes it obligatory for every employer to intimate HMRC through system the details of payment made to the employees, irrespective of the periodicity and quantum of the payment. It is also immaterial whether the recipient of the payment comes under the tax net or falls under the exempted category.

In this regard, HMRC mandates the employers as under:

“Almost all employers must report payroll information online to HM Revenue & Customs (HMRC) when or before any employee is paid. This information includes details of employees themselves and their pay and deductions .....”

You need to include the details of all employees you pay, including those who earn below the NICs Lower Earnings Limit (LEL), for example students. (http://www.hmrc.gov.uk/payerti/reporting/when-to-report.htm)

**What if I don't send any PAYE reports in real time?**

If you don't submit your FPS or a nil EPS on time, HMRC may raise an estimated charge - referred to as a 'specified charge'. A specified charge is HMRC's calculation of what you owe based on your previous PAYE filing and payment history. HMRC will raise a specified charge for each tax month that you fail to send a real time FPS or nil EPS.

**Specified charges**

If you don't submit your FPS, or an EPS telling HMRC that you haven't paid any employees in the tax month, on time they may raise an estimated charge which they refer to as a 'specified charge'. A specified charge is HMRC's calculation of what you owe based on your previous PAYE filing and payment history. HMRC will raise a specified charge for each tax month that you fail
to send an FPS, or an EPS telling HMRC that you haven't paid any employees in the tax month.

You will be able to see online any specified charge on your Business Tax Dashboard.

A specified charge does not replace the need for you to send your FPS or EPS. Only the submission of the missing FPS or EPS for each month will replace the specified charge(s) with the amount that is due for each month according to your records - which you should pay without further delay. If you send in updated year to date figures in your next FPS instead, the specified charges will remain in place, but your accounting record will be adjusted - to reflect the year to date figures supplied in the later month. Again, you should pay what is overdue without further delay.

If you are an employer who makes quarterly payments to HMRC you must still submit your FPS on or before the date you pay your employees, and/or an EPS to HMRC by the deadline dates - otherwise they will create a specified charge for each month. However, you will still only be expected to pay in full on a quarterly basis rather than monthly.

Further, as HMRC is having access to various databases, it could make a concerted and focused approach while implementing its enforcement and compliance verification strategy.