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national governments view IP and Innovation system as a whole, making it a policy driven initiative in both developed and developing economies. Most developed economies already have strong systems and policies in place to encourage and protect IPRs, and developing economies are slowly but steadily moving towards creating similar ecosystems most suitable to their national needs.

4. India has also developed a national framework for creation and protection of IPRs, which is continuously evolving and is already meeting global standards. The challenge before the country is to scale up the process of IP creation and capture value from the scientific and technological creations to catapult the country into the league of most innovative and developed nations.

5. It is in this context that the hon'ble President of India declared the decade of 2011-2020 as the Decade of Innovation. Subsequently, the National Innovation Council was created with the objective to formulate a roadmap for innovation with focus on key parameters namely platform, inclusion, eco systems, drivers and discourse. A Sectoral Innovation Council on IPRs was established under the Department of Industrial Policy & Promotion with the mandate to prepare a National IPR Strategy for encouraging innovation and to address the key concerns of sustainable development and inclusive growth.

B Outline of the Present Intellectual Property System in India

6. India has a well-established legislative, administrative and judicial framework to safeguard Intellectual Property Right which meets its international obligations while utilizing the flexibilities provided in the international regime to address its developmental concerns. India's comprehensive legal framework on IPRs includes the Patents Act 1970 as amended in 2005, the Trade Marks Act 1999, the Geographical Indications of Goods (Registrations and Protection) Act 1999, the Designs Act 2000, the Semiconductor Integrated Circuits Layout Design Act 2000, the Copyright Act 1957 as amended in 2012, and the Protection of Plant Varieties and Farmers Rights Act 2001. The Department of Industrial Policy and Promotion is responsible for four of the seven IP rights, i.e patents, trademarks,

addressing the prevention of misuse or abuse of Patent rights in India and ensuring the availability of food, medicine, and surgical and curative devices to the public at affordable prices. The amendment in 1950 specifically addressed the issue of working of inventions and compulsory license/revocation. Thereafter, in 1957, the Government of India appointed Justice N. Rajagopala Ayyangar Committee to examine the question of further revision of the Patent Law. This report formed the basis for the Patents Act, 1970 when both product and process patents were introduced for all sectors with the former not being available for inventions relating to food, medicine or drugs or substances produced by chemical process. The Patent Act 1970 and the Patent Rules 1972 were focused towards encouraging inventions and securing that these inventions are worked on a commercial scale without undue delay.

ii) Amendments to the IP legislations after India became a member of the WTO

9. India became a member of the World Trade Organization in 1995, and this brought about the next round of revisions in the Indian IP system. As per the transitional arrangement it was required to comply with the provisions of TRIPS within a period of 5 years except for the provision relating to extension of product patents to technologies that were hitherto exempt, for which an additional period of 5 years was given. This implied that all IP legislations were required to be compliant with the TRIPS Agreement by the year 2000 with the exception of the Patent legislation which had to be amenable to TRIPS by 2005. To achieve this, the Patents Act, 1970 was modified in a calibrated manner in 1999, 2002 and 2005. The first major amendment to the Patents Act 1970 was made in 1999 (brought into force retrospectively from 1st January, 1995) which allowed for filing of applications for product patents in the areas of drugs, pharmaceuticals and agro-chemicals. The amendment provided for such applications to be examined only after December 2004 and granted exclusive marketing rights to the applicants till then, subject to certain conditions. The second and third major amendments were brought in 2002 and 2005, which included provisions relating

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system ensures protection of intellectual property while promoting balance of rights and obligations.

12. Speed of creation of IP and development has a strong correlation. This seems to be borne out from the fact that the developed countries today such as the US and EU are also among the most innovative. However, anecdotal evidence also suggests that the rate of technical change and of economic growth depends on efficient diffusion of innovation. Further, evidence also supports the need for institutional/organizational innovation and social innovation as much as technological innovation for obtaining and sustaining a high correlation between IP and development. Clearly, the national policies and frameworks play an important role in ensuring diffusion of innovation.

C Recommendations for a National IPR Strategy for India

Introduction

13. India is an emerging economy which has been witnessing unprecedented levels of economic expansion, alongside China, Brazil, Russia, South Africa and Mexico. It is the third largest economy in the world and is expected to be the third largest economy of the world after US and China by 2035. As a cost effective and labor intensive economy, India has benefited immensely from outsourcing of work from developed countries, and has maintained a reasonably good manufacturing and export oriented industrial framework. While India is currently amongst the most attractive destinations globally, for investments and business, it is innovation and efficiency that shall increasingly play a key role in ensuring long-term economic survival and success.

14. Realizing the importance of a strong and balanced IP system, several initiatives have been undertaken at the policy level over the last decade, to foster an environment which is conducive for development of technology and trade in India. However, as most would acknowledge, innovation and IPR is an ever-evolving subject and there is a definite need for constantly reviewing national framework and policies to keep abreast with the global developments while

bodies, venture capital and other relevant stakeholders and entities to establish their own IP strategies in sync with the national IP strategy.

18. The national IP strategy has been prepared in close consultation with important stakeholders with a view to enable India to establish a world class IP system and lay down appropriate national and institutional strategies which would facilitate harnessing the full potential of intellectual property for her development and competitive needs. It would enable India to play an even more important role in shaping development oriented policies and norms relating to IP at the international level.

Vision Statement

19. To develop India during the Decade of Innovation into a major innovative, competitive and knowledge-based economy by strategic utilization of intellectual property as an engine of accelerated growth and sustainable and inclusive development.

Objective of the IPR Strategy

20. The objective of the IPR strategy is to transform India into an innovative economy as would reflect in high rankings in appropriate development and innovation indices from a global standpoint and develop, sustainable and innovation-promoting IPR management system in India while ensuring that the IP system continues to have the appropriate checks and balances conducive to social and economic welfare, and to a balance of rights and obligations. Besides measures that need to be taken, the strategy also needs to have an implementation matrix and a time bound schedule.

21. The aforementioned objectives are proposed to be addressed through the following multi-pronged approach.

- a. Stimulating creation and generation of IP Rights
- b. Strengthening protection of IP and creation of new IP regimes to address the specific needs of the country and the existing gaps

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25. Micro, Small and Medium Enterprises (MSMEs) form the economic backbone of the Indian economy constituting about 50% of the country's industrial production (about 13 million MSMEs in India), employing over 30 million people and forming over 40% of India's total merchandise exports. The intellectual capital of micro, small and medium enterprises in India is often embedded in processes/routines, and the existing methods for managing the intellectual property are highly diverse ranging from formal to informal protection methods. At times semi-formal means are also used.
26. The formal protection of intellectual output entails creation of legal rights acquired through, inter alia, Patents, Trademarks, and Registered Designs, infringement of which has civil and criminal remedies. The semi-formal methods entail some legal mechanisms but without formal registration (contracts is an example of this method). Informal protection practices include developing high-trust relationships with customers, maintaining lead time advantage over competitors and building specialized know-how into products. These informal practices have been embedded within broader managerial practices, and form an integral component of the business approaches of the small business owners in India. This is because most MSMEs prefer to allocate their limited resources to the development of products and processes. Lack of awareness and formal education on the intellectual property rights, and an inclination to reduce transaction cost of acquiring legal IP rights also contributes to high prevalence of such practices.
27. Majority of these MSMEs produce and sell within local markets, which in the past has shielded them from global competition while offering significant cost advantage. Today, cost-effectiveness and local presence alone does not guarantee a customer base. Globalization and attendant sustainability issues have caused a significant increase in competition from the global players and MSMEs have started to realize the importance of innovation and IPRs. There have also been several instances of MSMEs acquiring or in-licensing technologies or IP either from local markets or even global players to enhance their performances.

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(v) Since innovations and creation of IP comes at a cost, state support mechanisms need to be tailored towards offsetting bonafide IP costs and in facilitating technology transfer including through in-licensing from publicly funded research institutions.

■ Academia and Public research laboratories

29. Academia is at the forefront of knowledge creation, and alongside the national research laboratories lead the scientific activity in the country. With innovation as a central theme driving the growth of economies and businesses, the role of academic and publicly funded research laboratories is already witnessing a gradual expansion particularly in respect of their outreach to business community. This is generally true of the leading academic institutions and most of the national laboratories.

30. Academia and public research laboratories potentially form the largest source of technology and intellectual property. The country should establish institutional mechanisms to encourage and propel universities and public research laboratories to not only do top quality research but be inventive as well. For this to happen, the Indian academia needs to be educated about the importance of IP and about the processes involved in creation of and for commercial exploitation of technology innovations. Specific actions such as the following are proposed:

(i) Indian researchers/ innovators must be made aware of basic precautions that need to be exercised before applying for a patent, such as not publishing or demonstrating their research/invention to the public before filing for a patent and also by sensitizing them about not selling out their early stage research to companies/organizations.

(ii) Talented scientists and engineers ought to be motivated to create intellectual property and be encouraged to license technologies/partake in creation of technology ventures Promoting university start-ups can also be an effective technology transfer mechanism.

themselves and gain a competitive edge. They also realize the importance of carefully managing their business practices to avoid infringement on other's intellectual property. Several such companies have incorporated business intelligence tools and IP management systems to safeguard their businesses and intellectual capital. Others are increasingly becoming aware of the importance of IP and, with needful external support, can swiftly catch up. However, innovation-seeking R&D is still at a low level in the country. This therefore, poses a huge challenge to the future development of globally competitive technology.

32. Large organizations have the know-how and the resources required for creation and protection of IP. With increasing globalization, their key challenge will be to create world-class IP and utilize this IP for both organizational and national benefits. Such organizations have to be encouraged to take a long term view of R&D and make necessary research investments to create not just strong self-reliant technology portfolio but, acquire the scale to build strategic global positions. Moreover, the Government should encourage these organizations to share their expertise and resources for national benefit through public-private partnerships.

33. Development of high technology base requires much more than access to codified knowledge. It may call for strategic relationships even with overseas players. Such large organizations ought to be encouraged through state-level intervention to leverage their standing and global reach to facilitate inflow of best practices (including tacit knowledge) and investments from all over the globe. For most large organizations, particularly the ones in strategic areas, it should be mandated to align their innovation strategies to national innovation system.

34. Further, Indian organizations with a demonstrable culture of IP creation may be offered additional sops and, be given preferential treatment in public contracts. Such organisations should be encouraged to tap open innovation platforms and tie-ups with academia in particular, ought to be encouraged and supported. Research led organization should be guided into strategic tie-ups with Government to foster co-creation of critical IP. A mechanism similar to corporate

extent of protection available is the depth issue. Therefore strengthening of IP protection regime will be ensured by the following strategies:-

- i. Keeping IP and IP related laws, rules and regulations under review and updating them, when appropriate and essential, in light of evolving national priorities, international agreements, judicial pronouncements, new legal and technological developments.
- ii. Periodic review and streamlining of procedures, processes and guidelines for the search, examination, grant, maintenance and registration of IPRs, in consultation with relevant stakeholders and benchmarked with best international practices.
- iii. Full benefit will be taken of the global protection systems of WIPO, namely, Patent Cooperation Treaty and urgent steps will be taken to operationalize India's role as an International Search Authority and an International preliminary Examination Authority. India's accession to the Madrid System for the International Registration of Marks will be formalized soon. Consideration will be given to India joining the Hague System for the International Registration of Designs.
- vi. Consequent upon the amendment in 2012 of the Copyright Act, 1957, consideration will be given to India's accession to WPT, WPPT and WAVPT in order to take advantage of membership of these treaties.
- vii. International development of IP laws and jurisprudence as well as avenues for international cooperation in IPRs will be studied and analysed for appropriate action in accordance with national requirements.

38. Indian is one of the largest markets in the globe, and while advanced concepts borrowed from developed countries find their audience in India, the bulk of the trade is centered on indigenous products and services. A salient feature of such products and services is incremental innovation - either in technology or business models. Introduction of a separate legal regime that recognizes and

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under the Madrid Protocol (and perhaps in future the Hague Agreement on Industrial Designs).

4. Recruitment, training and career development aspects of the officials will be carefully reviewed in order to recruit and retain the best possible personnel in the IPO.

5. IPO will strengthen its links with the user community and will actively assist them in not only protecting their IP rights but advising and supporting their efforts in creating more IP assets and protecting, managing and exploiting those assets. Advisory services and value added products will be developed by IPO and customized for use by specific target groups who generate IP assets including MSMES, individual and grass root inventors and students.

6....e filing/paperless working

7....e databases/ e resources

8.....International cooperation with other IP offices

Office of the Controller General of Patents, Design and Trademarks

41. The CGPDTM, a field formation of the Department of Industrial Policy and Promotion, is responsible for registration and management of four Intellectual Property Rights, namely Patents, Trade Marks, Geographical Indications and Designs. It maintains 11 Offices in 5 cities i.e. Delhi, Mumbai, Chennai, Kolkata and Ahmadabad. At present, the office is headed by the Controller General of Patents Design and Trademarks and each of the 11 offices which include 5 branch offices of the Trade Marks Registry, 4 branch offices of Patent and one office each for Registry of Design and Geographical Indications. Besides this, National Institute of Intellectual Property Management (NIIPM) has also been setup at Nagpur which at present addresses the training needs of the o/o CGPDTM and in the future is also proposed to play a role of an IPR think tank. Nagpur also houses the Patent Information System (PIS). Branch heads of both NIIPM and PIS report to the CGPDTM, directly.

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created at various levels. Thereby envisaging increase in the core strength of the office, by more than 100% as compared to the posts available till then. The intervention is to be continued in the 12th Plan also.

43. In addition, steps have been taken to bring about greater efficiency and transparency into the IP system. The processing of Trade Marks and Patent Applications and post-registration activities has been fully e-enabled. Complete e-enablement of Designs Applications is at an advanced stage. A project for outsourcing of prior art search to CSIR Unit for Research on Information Products (URDIP) has been successfully implemented. All records such as examination reports and specifications relating to published trademarks and patents have now been made available online. Details including e-Register in case of granted patents and trademarks are also available.

44. At the operational level, there is a need to address growing pendency especially in the Trade Marks and the Patents side. There are at present more than 4 Lakh applications pending at various stages in the Trade Marks office. On the Patent side also, the pendency of more than 80000 applications is a cause of concern. Besides this, action for improving the transparency and efficiency of the system also needs to be emphasized. At the operational level, following actions may be required to improve the functioning of the IP Offices:

- i) Complete digitization of IP records and uploading it for public view is important for improving transparency in the IP office. Communication with the applicant/agents should be improved with a view to bring greater transparency and meticulousness in the system.
- ii) Database should be made searchable in an effective manner over a number of fields so that the industry, researchers are in a position to conduct effective searches be it for patenting, landscaping, technology tracking or to identify the state of the art technology.
- iii) Electronic filing of applications and its subsequent examination through electronic mode should be made mandatory.

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iii. State governments will be encouraged to establish their own IP Institutes for raising awareness, training and teaching in close consultation with National Institutes and authorities.

iv. Institutes responsible for the training of Customs, police and judiciary will have IP training as part of essential requirements.

v. National institutes and corporations associated with IP creation, management, enforcement or commercialization will be encouraged to incorporate IP training and capacity building in their operations.

vi. Apex Industry and Business associations, IP professional bodies, Inventors Associations, venture capital funds and other private or autonomous entities will be encouraged to develop IP training modules for their members and to develop partnership with government.

vii. Professional partnership will also be developed in the field of IP human resource development with International and UN Agencies, other countries and Institutions.

e. Strengthening of the institutional set up to improve enforcement of IPRs and create respect for IPRs

46. Intellectual Property Right being private right needs to be enforced by its owner through the enabling legal, administrative and judicial framework available for protection of these rights. The Indian IP laws provide for both civil and criminal remedies and the provisions are largely enforced by the State Governments in accordance with the procedures laid down in India's Criminal Procedure Code, the Code of Civil Procedure and the Rules and Regulations framed for the functioning of the judiciary at various levels. The Central Government is, however, responsible for enforcement of border measures.

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Andhra Pradesh, Maharashtra, where the film and music industry is prominent, have introduced the Prevention of Dangerous Activities of bootleggers, drug offenders, goondas, forest offenders, immoral traffic offenders and slum grabbers Act, which includes video piracy as an offence under the Act.

50. Thus, the efforts at enforcement are being taken by disparate group of actors at the State and the Centre level. Involvement of stakeholders in enforcement of IPRs is also a healthy trend which is likely to be reinforced in the future. However, there is perhaps a need for a Centrally managed National Intellectual Property Enforcement Taskforce that could:

- i) maintain database on criminal enforcement measures instituted for trademark infringement and copyright piracy. Besides this information on civil cases filed should also be collated.
- ii) be mandated to deliberate upon operational issues of enforcement with the concerned Central and State agencies
- iii) to conduct periodic industry wise infringement surveys.
- iv) coordinate capacity building programmes for the Central and State enforcing agencies.

51. At the organization or enterprise level, all types of enterprises particularly the more vulnerable smaller and niche businesses should be encouraged to formulate their trademark strategies and establish quality attributes with their Brands. This will help them leverage their corresponding brand value towards business and social advantage. They should also be encouraged to seek international protection to participate in global competition and contribute to international trade activities. Service sector, which is one of the fastest growing contributor to the GDP, and the highest contributor of FDI in the country, needs to be encouraged to adopt strategies for registration of trademarks marks for ensuring local and global competitiveness and for strong business presence. It is to country's advantage to leverage the goodwill of its strong indigenous brands which have acquired sufficient traction (even if with suitable Government

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products and help the indigenous products compete with foreign goods. Stupendous success of companies like Apple and hundreds of others attests to the power of design innovations at the market place. In the Indian context, as the large consumption basket continues to grow designs are going to be increasingly relied on in influencing the choice of consumer and industrial goods. The existing informal practices of protecting designs through trust based relationships need to be translated to formal protection methods to avoid business conflicts and to ensure proper protection for innovations in designs.

54 Protection of Plant varieties is essential to encourage the development of new plant varieties and to protect the extant varieties. Such protection will protect the rights of the farmers in respect of their contribution made in conserving, improving and making available plant genetics resources for development of new varieties. Such protection will facilitate the growth of seed industries and ensure availability of quality seeds and planting material to the farmers. While PPV & FR Authority has initiated the process of registration of new, extant and essentially derived varieties, extensive awareness generation programmes are also necessary to encourage filings.

55. Existing Government interventions which support start ups and SMEs to protect IP has to be enhanced many times over to achieve a fair degree of scale. As the design aspects become more sophisticated, the protection, rights and remedies may have to be suitably viewed and administered under different national laws related to say competition and copyrights. In short, protection of industrial designs needs to be both encouraged and facilitated by needful administrative intervention.

f. Facilitating Commercialization of IPRs

56. For Innovation to create any impact, it is imperative to take the idea/innovation from mind/laboratory to the market, where their true intrinsic

value is realized – through products and services. While larger organizations have the intent and capabilities to take their technology/IP to markets, several others do not. Hence, it becomes imperative to establish facilitative mechanisms that can address such limitations of several SMEs and individual innovators and thus help put knowledge into practice in a big way. Hence, policy interventions are needed to create strong and transparent national systems that encourage and facilitate i) licensing of rights to another entity for commercialization (ii) Cross-licensing agreements where two or more companies can exchange rights to their IP (iii) leveraging the Intellectual assets for future R&D growth and improved products/services; (iv) sale/merger/acquisition of either the Intellectual property rights or the entire business distinguished and appropriately valued by their intellectual capital; (v) patent pooling which allows two or more companies to pool their technologies/IP and join in common interest to create some product that is to their combined benefit and (vi) reinforcing the stability of IP license contracts.

57. National research laboratories, academia and other public funded institutions should stimulate commercialization of their research resultants. They ought to be suitably state-supported in the development and deployment of their intellectual property and know-how in the market place – more particularly their application into industrial production. The intervention could be in building/strengthening the institutional capacity of research-led organizations to enable optimal utilization of intellectual property whether formal or informal. Importantly, the institutional platforms or other market entities should establish value assessment, data management and accounting system for intellectual property. Their IP Management systems should increasingly be guided by market intelligence philosophy.

58. National Level Policy changes are required to encourage development of indigenous technologies . Towards this the Government should fund (through grants / soft-loans) demonstration projects of new technologies requiring large investments. Indigenously developed and commercialized products may be

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allowed suitable tax breaks till attainment of some maturity levels or for some initial period. It is also being argued that qualification requirements during tendering process should accord acceptance to indigenously developed products where heavy development investments have been incurred. In such cases user's interests can be safeguarded by manufacturers through appropriate insurance cover/deferred payment/extended warranty etc. Moreover, towards strengthening the indigenous R&D ecosystem, policy frameworks should provide for flexibility in outsourcing technical expertise in niche areas as well as type-testing of prototypes.

59. Facilitating and encouraging commercialization of IP assets will involve following strategies:

1. Identify IP creators in different sectors and provide legal, professional, institutional and financial support to them to protect, manage, develop and commercialize their IP assets.
2. Forge links between creators and inventors, universities, industry and financial institutions for commercialization of IP assets.
3. Provide facilities for valuation of IP assets, IP audit, licensing, contractual and technology transfer avenues.
4. Encourage evaluation of existing IP pool in India and take necessary steps to gain optimal commercial value.
5. Facilitate MSMEs to identify, protect and commercialize their IP creations through Facilitation Centers providing a package of services needed by MSMEs.
6. Create an IP Partnership Support Center and related data base for bringing together IP creators and commercialization support system.
7. Establish an IP exchange to stimulate trading of IP and creating a market for IP assets.

3. International trends and developments in IP and emergence of new issues and challenges brought about by technological advances, further globalization and digital environment will be monitored for evolving appropriate and timely responses

4. Actively participate in the deliberations on IP issues in international fora on the basis of coherent, well informed and well considered national positions evolved through an inclusive and professional consultative process.

5. Formulate and issue guidelines for preparation and implementation of IP policies strategies in various government, semi government, autonomous organizations and private sector in consonance with NIPS.

6. Periodically evaluate the implementation of NIPS and update it every three years.

61. Interestingly, IPRs have also become an important tool in addressing any dichotomy between cooperation and competition in the Standard creation process more particularly in the ICT industrial sector where there are large number of inter dependent vendors and technology suppliers. This situation also gets aggravated due to rapid pace of technological obsolescence. Thus, emergence of open innovation systems and the role of voluntary Standard Setting Organizations are visualized.

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