Brain Gain

Promoting research and innovation

Team Shodhsanch

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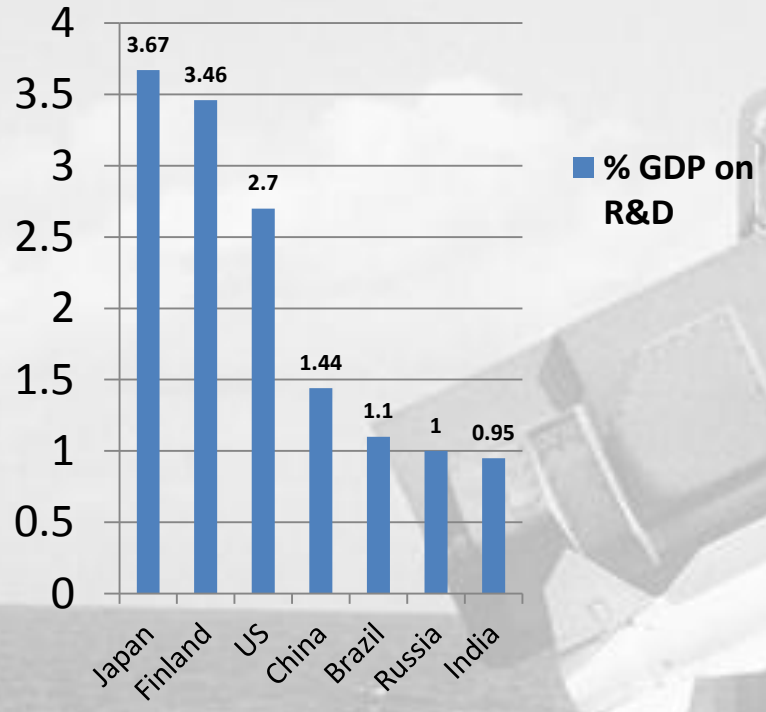
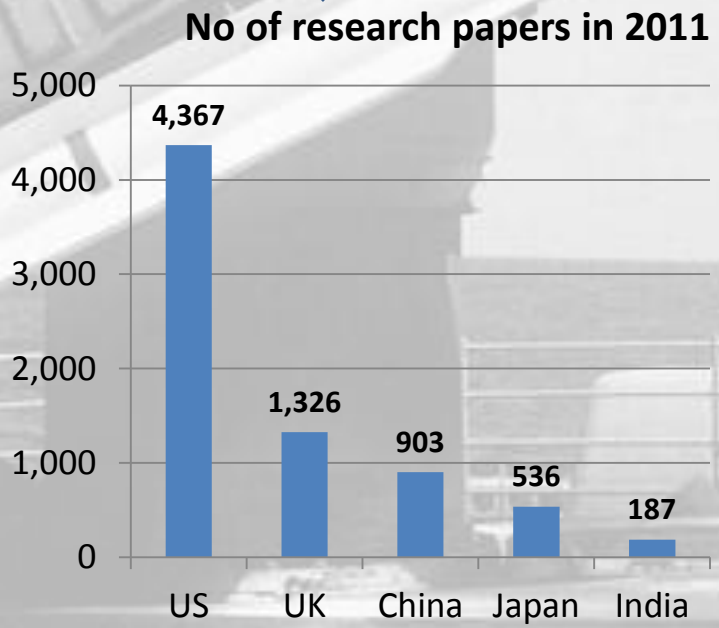
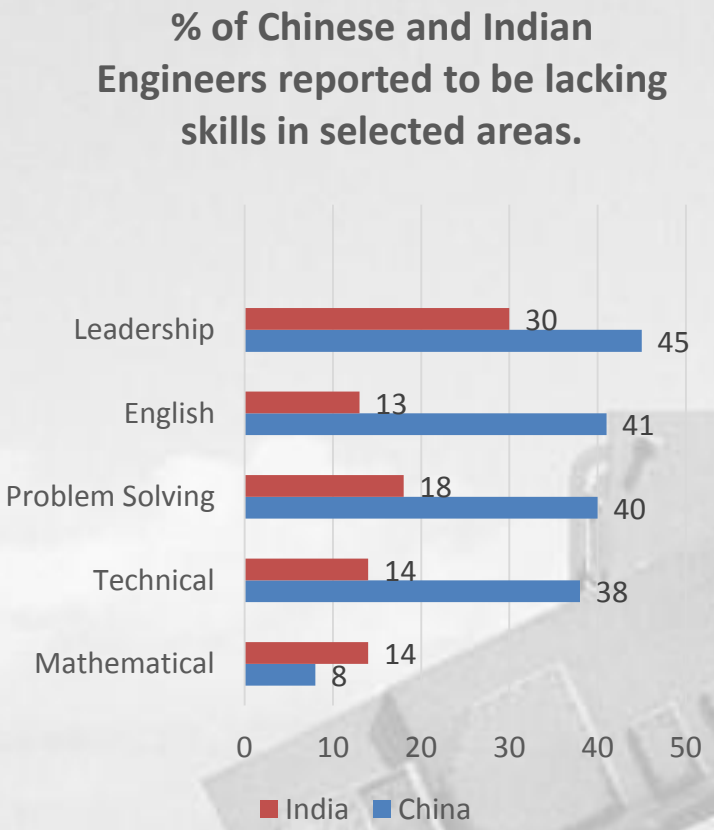
Introduction

Indian research shares only 3.5% of global research output despite of being second largest country and fastest growing economy in the world. India filed only 0.3% of total world patents.India spent only 2.9% of the world's total expenditure on research against China which spent *14.2%*







- *Out of 260 lakh students who were enrolled at the undergraduate level and above in 2011-12, only 0.4% had registered for PhD.*

- *Not even 1 Indian university ranks among the Top 100 Global Universities.*

Causes

- **Lack of quality education:-**

1 out of 6 graduates in India is engineer. Here is graph proving their quality and educational structures.

- **Restriction on investment of private sectors in R&D:-**

R&D in various technology is conducted by and limited to, Govt organizations. The quality of which is quiet deplorable. Hence forcing to procure the required technology from abroad.

- **Provision of proper funding & infrastructure for R&D:-**

Though 0.95% GDP is spent on R&D, but it lacks the planning on infrastructure. Its also not reachable on various sector equally. Also compared to other countries it lacks the quality of equipment in R&D.

- **Lack of co-ordination between Govt , Industries and Institutions:-**

Knowledge required in industries in not taught institutes because of lack of co-ordination between industries and institutions.

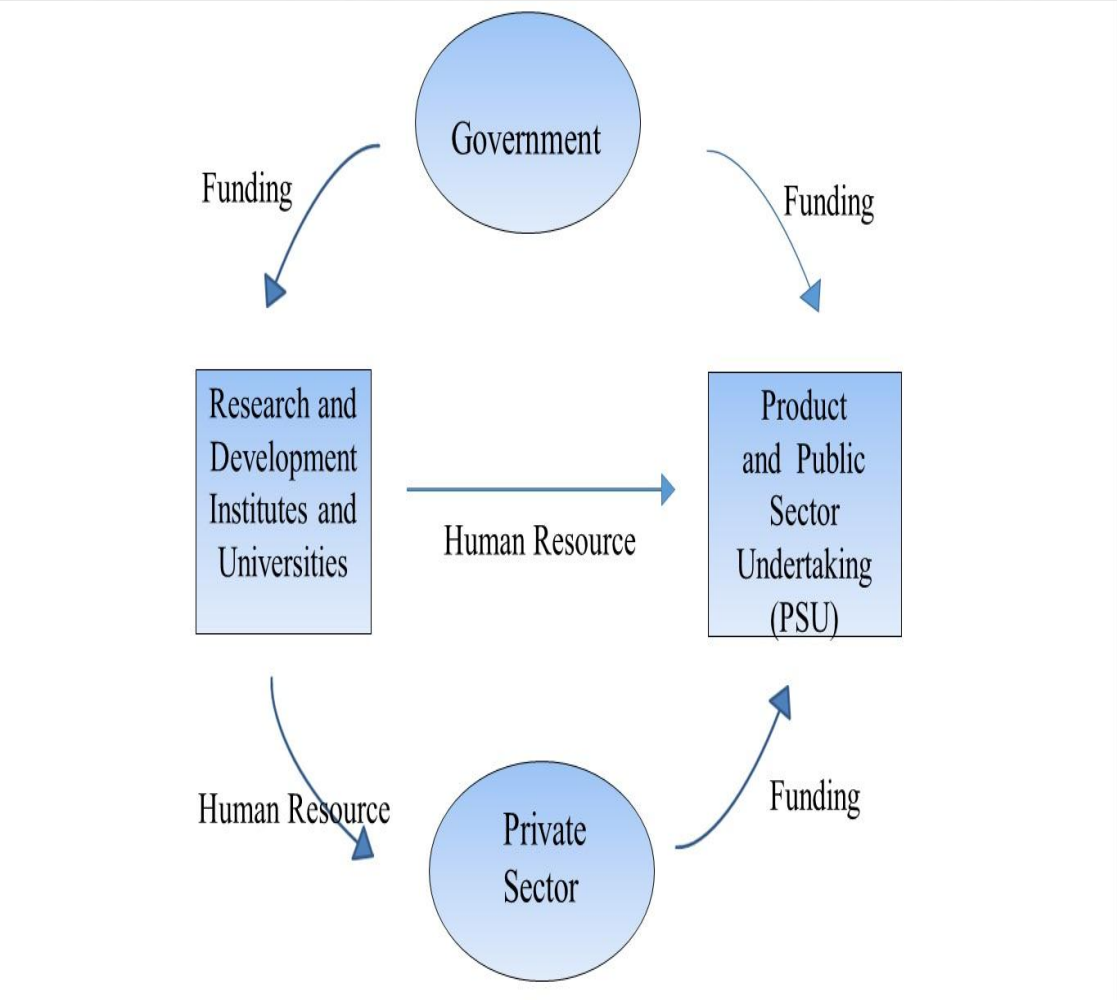
Also ,process of granting and reception of funds and resources is time spending and critical.

- **Lack of innovative competitive exams for developing excellence:-**

India lags from other countries in hosting exams for building skillsets of students. This includes skill development and vocational related examinations.

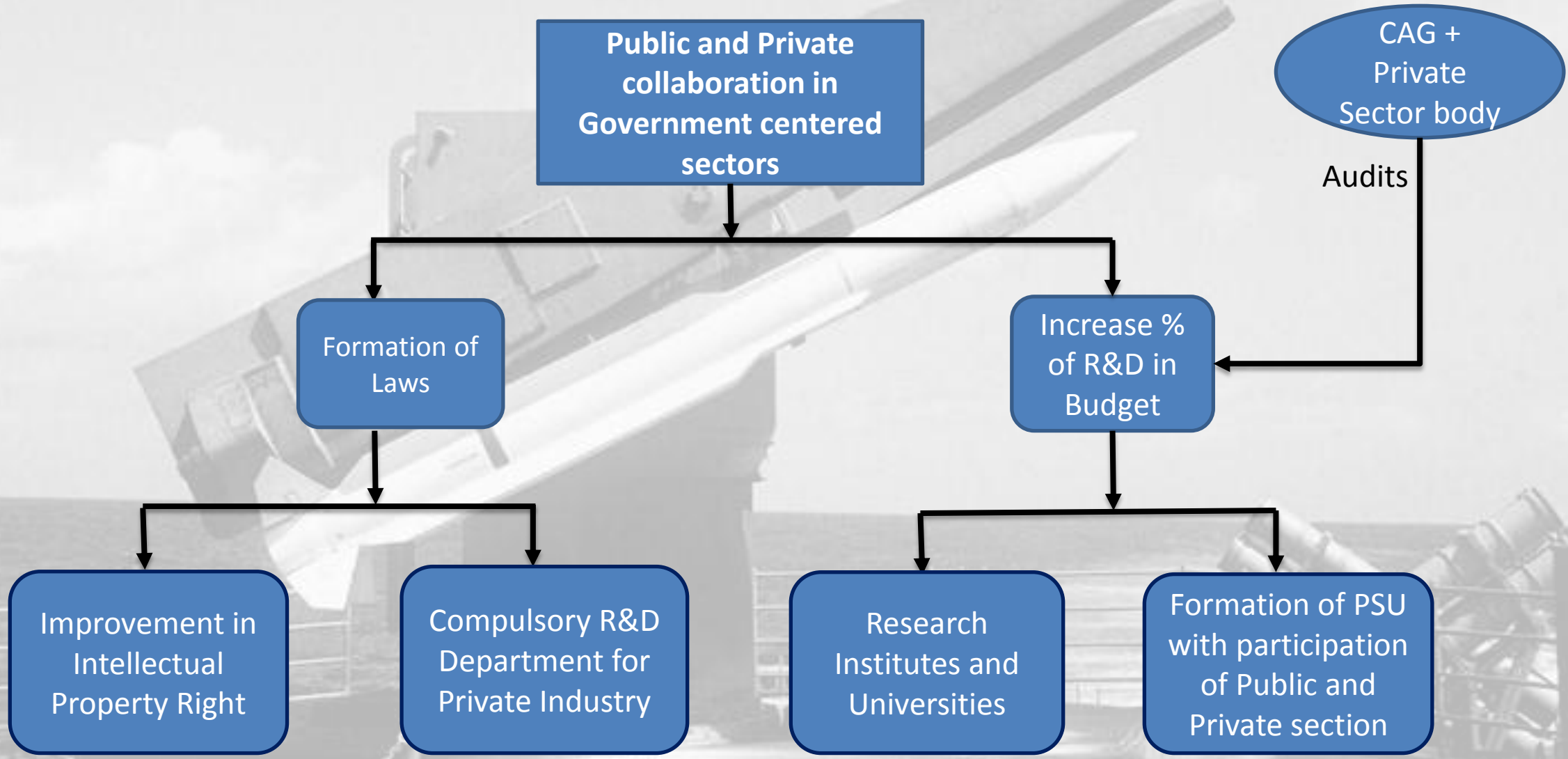
Proposed Solutions

Proposed solution model

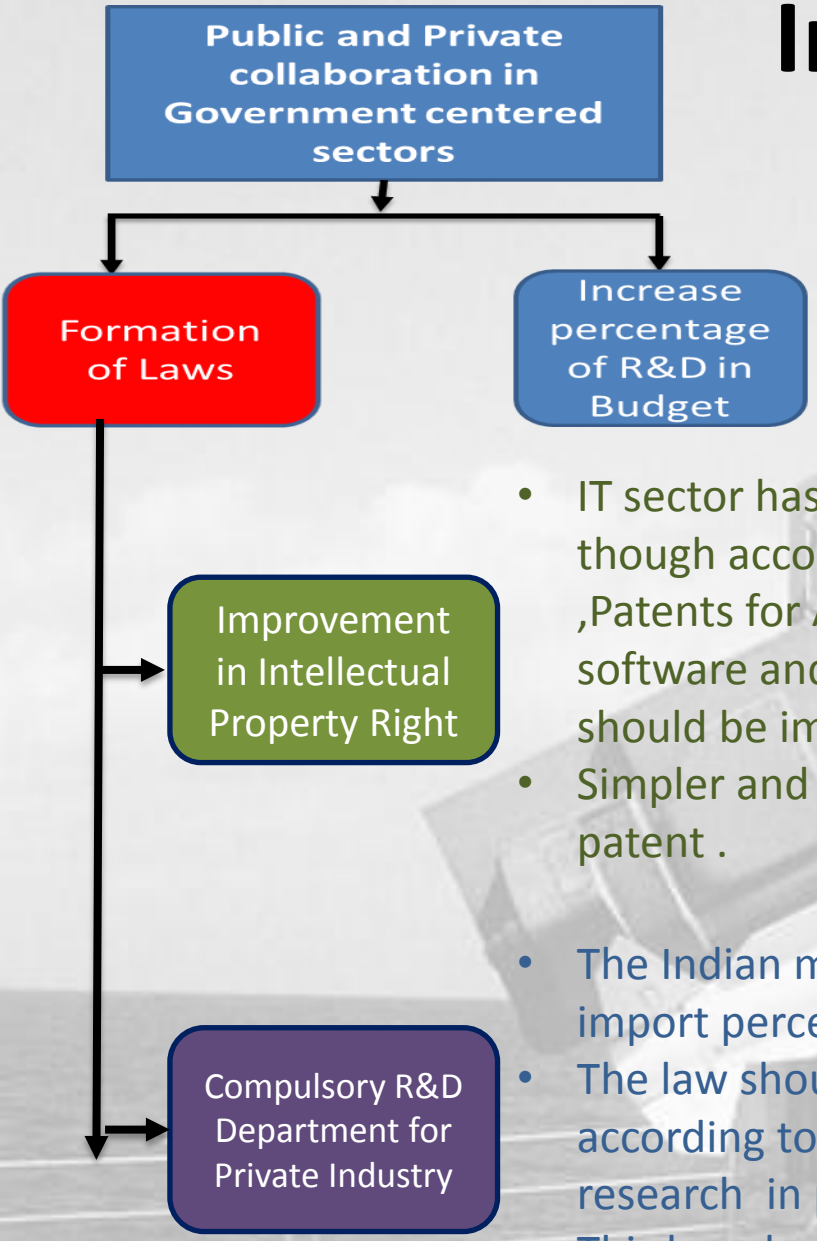


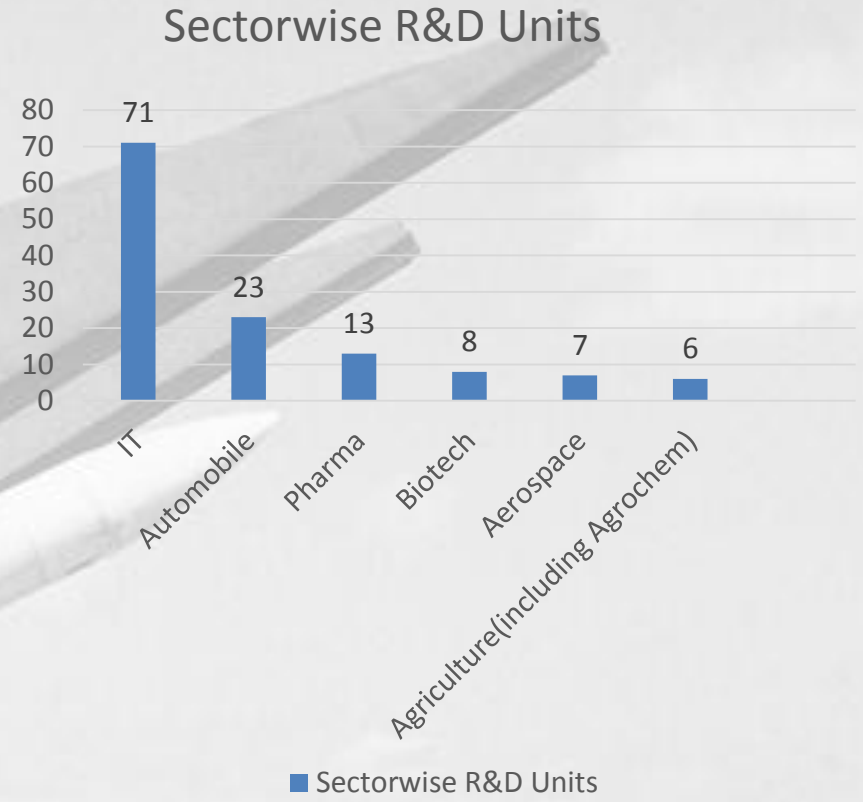
- Promoting Public private partnership (PPP) in building universities and PSU's.
- Sharing and transfer of funds between Govt and private sector for technological advancement.
- Development and production of quality human resource.
- Sharing of this human resources between institutes and industries.
- Strengthing of laws and norms for active and minimum participation of industries in R & D.
- Simplifying complicated procedure for filing patents and research grant(PhD) by amending law.
- Formation of new CAG(Comptroller and Auditor General)cum industry accreditation bodies for audits on PSUs and universities.
- Obligations on timely project completion and security in real time projects like defense ,aerospace etc.

Proposed Implementation Model



Implementation

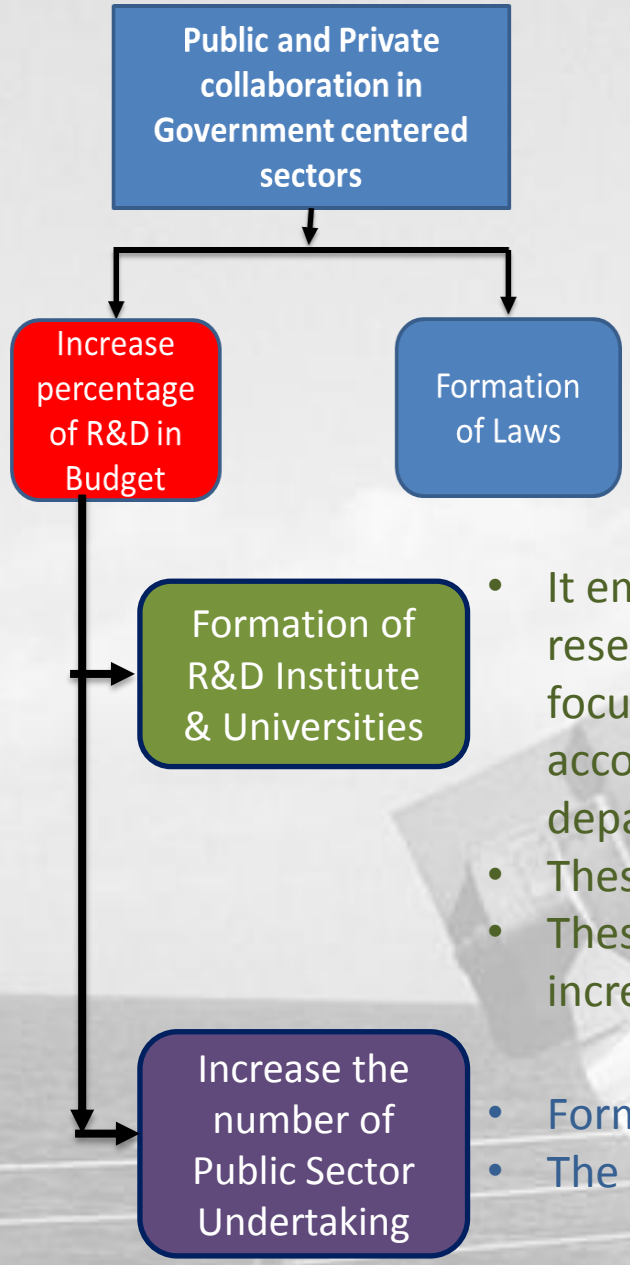




- IT sector has a lion`s share in GDP of India, even though according to Indian Patent Act(1970) ,Patents for Algorithms, Mathematical models, software and formulas cannot be filed .It should be improved.
- Simpler and efficient procedure for granting the patent .

- The Indian market is importing technology from foreign countries which increases the total import percentage leading to depreciation of Indian currency .
- The law should be amended to make compulsory R &D department in Private Industry according to their market value and reduction in the import of technology which support research in production.
- This law should be compulsory only for the giants of the market. Other industries SMEs(small and medium) must focus on Indian products.

Implementation



- It emphasis to formulate special R&D university , under which different colleges devoted for research and development will be providing bachelor degree in research after 10+2 and focus on particular research area only .The various areas of research will be included according to need and guidance of market. This proposed university will head all the R&D departments of existing universities .
- These researchers will be directly recruited in PSU`s and Industrial R&D .
- These Institutes will conduct competitive level at primary and secondary school level to increase innovation in student.

- Formation of different PSU`s devoted specially for lagging R&D sectors in INDIA .
- The fund for this will be acquired by increasing window of stakes of FDI in PSU`s.

References

- http://164.100.47.5/newcommittee/press_release/bill/Committee%20on%20HRD/Universities%20for%20Research%20and%20Innovation%20Bill,%202012.pdf
- http://www.oifc.in/investing-in-india/investment-info/in-focus/education-in-india-the-way-forward
- http://www.searchwarriors.com/ResearchOrganisation.htm
- http://www.rand.org/content/dam/rand/pubs/monographs/2011/RAND_MG1009.pdf
- http://www.simplydecoded.com/2012/10/24/towards-greater-self-reliance-2/
- http://www.indiabudget.nic.in
- http://ipindia.nic.in/ipr/patent/eVersion_ActRules/sections/ps3.html`
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