

Dear Mr. Lav Gupta,

We would like to submit our comments on the issues raised in the TRAI consultation paper on Encouraging Telecom Equipment Manufacturing in India. Please find attached our detailed comments in both Word and PDF.

About Aricent

Aricent is a global innovation, technology, and services company focused exclusively on communications. Aricent combines the leading innovation capabilities of frog design with unparalleled domain expertise in communications as a strategic supplier to the world's foremost infrastructure, application and service providers. The company's investors include Kohlberg Kravis Roberts & Co., Sequoia Capital, The Family Office, and The Canadian Pension Plan Investment Board. For more information, visit www.aricent.com

Shashi Shekhar Pandey
Marketing

Plot-17, Sector 18,
Electronic City, Gurgaon
Tel +124 4095888-3181

Cell +917838291362
<http://www.aricent.com>

<http://twitter.com/aricent>



Aricent's Comments on TRAI

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Manufacturing in India

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Encouraging Telecom Equipment Manufacturers in India

A. R&D

1. What should be the objective and focus of the R&D effort for the year 2020?

The main objective and focus of the effort should be to build world-class product companies in Telecom space that can effectively compete with multinationals in quality.

Specific technologies are difficult to predict for the next 10 years, so we need to nurture a culture/an organization that is focused on emerging technologies and support that initiative fully. We need to find a way to leverage the large talent pool that's already available in India. Focusing on emerging technology will also help us move away from a 'follower' to a 'pioneer'.

Given today's demand, with the expected explosion of demand for bandwidth clearly wireless, especially the ones that will provide cheaper options for people in remote villages/areas need to be encouraged. In addition mobile applications, cloud computing will play a major role in the way SMB's will do business in near future. So focusing on our strength, which is mainly software, will help us a lot.

Few points/thoughts:

- Encourage indigenously developed technologies; Indian R&D has to get an unfair advantage with respect to buying decisions not only from the govt funded operators but also private operators in India. Care needs to be taken that this in no-way makes Indian companies cheap or producers of less qualified products against that of multi-national companies, hence such OEMs should be encouraged/forced to have certain %age of rev from exports. Chinese model has proved that a developing country can create billion dollar companies like ZTE, Huawei that can compete with MNCs effectively over a period of time.
 - Provide incentives to operators to invest in R&D, it can be in the form of in-house R&D or investments in companies that are involved in such activities. Examples, Telcordia was created in this fashion and all large operators also have a large in-house R&D teams in developed countries.
2. Flowing from the above, what should be the objective and focus of the R&D effort for 2015?

Clearly in the short to medium term, technologies focused on mobile broadband (LTE, Mobile Backhaul, Carrier Ethernet), mobile applications (on healthcare, public safety), cloud computing (SAAS/PAAS) are some of the areas we must focus on.

3. What is the level of 'Indian Products' that we should attempt to achieve at the end of 2015 and 2020?

Today India holds roughly 5.7% of the APAC spend (\$180 B) on telecom equipment, we need to target to double this 2015 and again double that to around 22% by 2020. I believe APAC will outspend rest of the world in the next decade, given the specific needs of this region we need to focus on the requirements of this region to begin with.

4. What is the broad level of investment required for this effort?
5. Which Institutions, whether in the Public or private sector, are best suited to carry out this effort? And why?

Private sector has to be part of any such initiative, instead of a particular firm, it may be best suited if we create a framework like the Department of Science in Israel where private companies are project-funded with certain restrictions and incentives.

6. What can be the linkages established with Institutions or Indians abroad? Will this reduce time delays?

Don't think we need to have tie-up with institutions abroad, but an environment has to be created where experienced/successful Indian engineers and entrepreneurs feel excited to create similar success stories in India. This is one sure-shot way to reduce time to market. For this we need to have a vibrant VC and other financing options made available to entrepreneurs.

Key to all this is, 'skill development'. We need to increase our skilled man-power and not just produce ordinary engineers most of who are not ready for R&D activities. Investment in Science, core engineering is a must and for that linkage with Institutions abroad will help. In addition, we also need to look at the ROI on institutions like IITs, NITs and IISc – where did we go wrong? In spite of huge investments and focus, we have failed to produce real R&D capable engineers in India.

7. What should be the role of the Government and the Industry in regard to the R&D effort? In particular, what should be the investment, if any, by the Government?

Govt should continue to play the role of a facilitator, encourage Banks and financial institutions to provide financing for export oriented companies within this sector. Similar to the thrust that's being given to infrastructure segment on financing, we should look at an option of creating a fund or an institution (similar to IDFC?) that funds technology companies in India.

8. Should an R&D fund be set up? If so, how can the fund be managed effectively to meet its objectives?

Definitely R&D fund is a good idea to encourage SMBs, but the issue is distribution and management of such funds in India. One country that has managed such a fund well is Israel, some learnings can be had from this. In Israel this fund is not just restricted to small companies, it's given to any project even if it's from a large company.

9. What could be the fiscal incentives to be offered by the Government? Should such incentives be linked to any outcome?

Any incentive has to be tied to an outcome. Based on the report, there seems to be two broad objectives - increase Indian R&D and increase our share of exports in telecom equipment market. It's easy to measure exports, but for R&D softer measures such as talent pool, increase in number of successful start-ups, investments into areas such as fab-less semiconductors etc. need to be considered.

B. Sourcing Inputs

10. What are the components that can be manufactured in the country with due consideration to commercial viability?
11. What should be the degree of indigenous manufacture of components that we can reasonably achieve in time frames of 5 and 10 years?
12. What, do you think, is the feasibility of setting up of commercially viable fabricating units to manufacture chips, ICs?

To setup any manufacturing unit, be it Silicon or complete equipment, few things we need to consider and see if such a plant is feasible,

- Talent pool
- Availability of raw materials, accessories
- Infrastructure
- Etc

Obviously, we lack few of these. It can be created, but it needs time and investment.

13. Is the Duty on components currently being levied high? If so, on what components can the duty be reduced? What are the financial implications and the corresponding benefits?
14. Should electronic Manufacturing service companies be incentivised? If so, how?

C. Manufacture of equipment and subscriber terminals

15. Should the concept of mandatory use of Indian products/Indian manufactured products be introduced in the Indian context? If so, can this be introduced immediately or should it be introduced at a later date? If so, by what date?

We need to introduce this gradually. It's not a bad idea to make it mandatory for all future tenders/contracts to include a clause reserving %age to such products. There is nothing called a 'later date' or 'right time' – once the implications are well understood we need to roll it out right away. This is not to be confused and complicated with the 'open-market' objectives/advocates, today the problem that this paper is trying to address is that of a 'national priority' and hence certain measures have to be taken to encourage Indian R&D companies.

16. What could be the percentage to be stipulated for both these categories?

17. What should be, if any, the incentives to be given to individual service providers for use of Indian equipment?

In my opinion, no need to provide to incentives to operators. Provide incentives to manufacturing companies to manufacture world class, quality products. Make it mandatory for operators to buy certain percentage of 'Indian' products. We don't have to become holier-than-thou when it comes to reserving for 'Indian products' – countries like China have done this successfully. Let's learn from them and avoid the issues companies such as Huawei faced in the initial stages.

18. Likewise, what could be the disincentives, if any, for use of imported equipment? This is compatible with international agreements?

Please see my response to previous question, market forces will take care of it if Indian companies provide quality products at affordable prices, this with a combination of 'promoting' Indian products (read 'reserving' certain %age) will address this issue.

19. What could be the duty structure to be imposed on imported goods?

D. Promoting domestic manufactures

20. Should a percentage of the Indian market be reserved for the Indian manufacturers? If so, what should be the percentage?

In these days of globalization and open market reforms, such an act would raise hue and cry. But any emerging sector needs such an incentive. Declare telecom manufacturing/R&D as a core sector (that's important for the country), and develop a tax-holiday like model where around 25% is reserved for Indian manufactures for certain number of years. We need to distinguish two scenarios,

- Multinationals who design/develop abroad and only manufacture in India.
- Companies that perform R&D, develops products in India and export abroad.

If this is critical for the India to build this capability (seems like from this report), then the later must be encouraged and be given a %age of the reserved market.

21. What, if any, could be the implications of such a step?

- Hue and cry from developed nations – possible retaliations
- Makes it difficult for companies that are in the export sectors such as IT and ITES services
- Some of the multi-national companies may refuse to do business in Indian telecom sector – India is not self reliant yet in this sector and depends on MNCs for some of the key technologies.

E. Setting up special zones or telecom clusters

22. What, if any, are the advantages of setting up of clusters for manufacture of Telecom equipment within the country?

- Development of skilled manpower – if we plan it well, we can always have the best board designers/engineers at X, best silicon engineers at ‘Y’ etc. This will have ripple effect for new companies as more such companies will move in there and create more opportunities. This is the biggest advantage of a cluster, in my opinion this has to be done ‘by design’ planned and executed and not let it happen over a period of time.
- Improved logistics – easy to plan for infrastructure in specific places and hence benefiting from economies of scale.
- Makes it easier to setup conformance/inter-operability test centers and quality compliance certification centers.

23. What is the investment required for setting up of such clusters?

The first and foremost in India is the escalating cost of real estate, so its more prudent to declare such zones as Telecom clusters (for e.g.). Since we are talking of a cluster having as large as 50 to 100 kms, it has to be in the order of hundreds of millions.

The govt doesn’t have to spend all this, needs to mark such zones/clusters, develop infrastructure for companies and people to move in there, encourage private companies to move operations by providing quality infrastructure.

24. How can the financing of such clusters be best done, based on international experience?

25. What would be the lead time required for setting up of such clusters?

I have read reports that in certain parts of china this is done in months when the govt decides to go after a particular initiative. So to be realistic 2 to 3 years is a good enough time to create few clusters in India.

26. What are the considerations for the location of such clusters?

- Availability of skilled labor, although the scale has to be developed, it needs to have basic manpower to get started

- Affordable real estate for companies and people who would move into such clusters
- Infrastructure – roads, connectivity to airports
- Ancillary plants – if it already exists its great else need to have to ability to procure and transport (e.g. access to seaports for large import of steel, sheet metals)

F. Testing, standardization and accreditation

27. What, in your opinion, would be the best agency to set up and manage such a Common facility/ies?

This can be effectively setup if the operators are brought into the planning process, initially it's not a bad idea if some of the operators also invest in such a company/organization.

28. What would be the facilities and the level of investment required in such a facility?

We need to have a facility to perform the following:

- Conformance testing against standards
- Inter-operability testing
- Product certification
- Physical/Thermal certification

All these require huge investment in equipment, manpower and facilities. This organization should have the support from the operators to lent authenticity to the certifications.

29. How will such an investment pay for itself?

If the organization is kept up to date with respect to technologies and equipment, a 'testing services' model can be built around this which is charged to users of the service. This was one of the business cases for 'Bellcore' which later became Telcordia.

G. Funding/FDI

30. What, in your opinion is the likely requirement of Capital for companies that could take up the manufacture of telecom equipment?

This is a capital intensive segment - need to setup state of the art facilities, equipments, test centers, quality controls etc. If you look at the recent investments by companies such as Nokia, Flextronics who have setup manufacturing plants in India, they have invested around \$100m which is the kind of investment we must look at for top-notch manufacturing facilities.

31. What could be the best manner of facilitating availability of capital to such firms?

We need to have a vibrant debt financing markets. Since this involves property, plant and machinery these are ideally suited for debt financing.

32. Would setting up of Institutions like ITRI be desirable and feasible?

ITRI is a great success model in Taiwan and a success story to try and emulate. The question we need to ask ourselves is, we created IITs 50 years back, how many entrepreneurs has it produced? How many patents do they own? Has it helped the country in mass producing 'skilled' labor? So instead of creating yet another entity, we must give a mandate to IITs, IISc, NITs. We have the institutions that are capable, need to plan and execute.

H. Duties and Levies

33. What would you suggest should be the tax structure in respect of imported and indigenous manufacture of telecom equipment, keeping in view the international agreements?

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