

**Saankhya Labs Pvt. Ltd**  
**Response to specific questions raised by the**  
**TRAI Consultation Paper on “Ease of Doing Business in Broadcasting Sector”**

Saankhya Labs Pvt. Ltd., a leader in Software Defined Radios (SDR), and a pre-eminent supplier of cost-effective Cognitive Radio integrated circuits and White Space Network products respectfully submits this response to specific questions from this very timely and appropriate CP.

Our intent is to drive Make in India innovation to further the Digital India vision via the broadcasting sector, something that is impossible under present conditions.

Our submission makes a passionate plea for changing a system that discourages innovation, and which does a poor job of leveraging spectrum and infrastructure assets in the service of the nation.

**Q14. What are the key issues affecting the indigenous manufacturing of various broadcasting equipment and systems. How these issues can be addressed?**

For a country with 400M TVs and 1B phones our broadcast and mobile technology innovation is non-existent. Also the scope of the question must be extended to generation of IPR and technologies for next generation broadcasting ecosystem. There is no culture of strategic thinking and IPR generation in India to the extent that *the system and people in charge are downright hostile to building a tech industry.*

As an example, the telecom policy of 1999 resulted in dramatic expansion of mobile phones (and indirectly paved way for indigenous e-commerce companies). However, it did not address the important aspect of building a device ecosystem to the extent that not a single passive component for a phone is designed or manufactured in India.

India has played a zero role in broadcasting standards development. . In other countries, the communications regulator (FCC in the US, OFCOM in UK) calls for proposals for defining standards based on the current technologies. Industry players like device manufacturers, research organizations get together formally. Even before this informally broadcast research organizations (BBC in the UK, ETRI in

Korea, NERC in China, Fraunhofer in Germany, Sinclair in the US ) and device manufacturers (Samsung, LG, Philips, Qualcomm, Sony) invest in IPR build a portfolio of patents. The standard definition process then becomes a give and take between the patent holders. Once the standard is ratified the device manufacturers and in some case the broadcaster pay royalties to the patent holder. As an example, BBC through its patent pool in DVB-T/T2 - the European broadcasting standard - has earned millions to billions of USD. Once this process concludes organizations like ETSI and DVB appoint people who push the standards in India and other countries. This helps them earn royalties for their respective organizations and countries.

It is instructive to note that China has defined its own broadcasting standard that has unburdened superfluous features to minimize needless royalty payments and help its local ecosystem. Creating profile subsets from existing standards is much easier than developing new standards, and even here, the Indian broadcast sector has done nothing.

The way forward here is to ensure that India builds organizations like ETRI or NERC which are essentially private but partly funded by the Government (in this case our public broadcaster) and part by local technology giants. This organization then conducts applied research together with tech startups to build and define new standards and profiles. Once India defines its standard (or profile) it will force players like Samsung and Sony to invest in local companies and build local ecosystems.

The other major issues affecting the broadcasting equipment ecosystem are:

1. Lack of Capital and access to markets. The answer to this is to setup specific funds and even more importantly mandate local component purchases to provide market access to small technology companies. Hua Wei was built on government contracts until it achieved a critical mass.
2. Unfavorable taxation policies for indigenous manufacturing
3. Colonial mindset of the bureaucracy in Delhi. Everything European is good and Indian is low quality. Unless this changes the other points are moot.

To summarize the solution is to build a world class broadcasting research organization through a PPP model that allows experimentation and trials of new technologies.

**Q15. Is there any other issue which will be relevant to ease of doing business in broadcasting sector? Give your suggestions with justification.**

As mentioned in the earlier response one of biggest hurdles is the mindset of the people within the PB ecosystem. Right now, the organization's mandate is deploying and commission of foreign standards and the processes that go with it like writing a RFP. This needs to change to delivering technology output. To be fair to the PB personnel, the Government tendering process is out-of-date, anti-innovation and risk-averse. A better audit policy other than the CAG (which cannot be expected to understand procurement through modern technology innovation) to gauge the usage of funds is also required.

**Q16. Are there any issues in conducting trial projects to assess suitability of a new technology in broadcasting sector? Give your comments with justification.**

Yes, there are major issues. Technology is changing at a rapid pace. To enable reach consumers on devices they want to consume, it is imperative to run pilot projects continuously to evaluate and test new technologies.

At Saankhya we believe that the future is the convergence of broadband and broadcast. Content will be and should be delivered by networks agnostic to the display and network type. Earlier in the year we wanted to demonstrate a new broadcasting paradigm for rural India called the "LPTV". We had to spend considerable effort and monies to demonstrate a Proof-of-Concept (PoC) in Bangalore and Delhi. This was the dreaded NC-NC trial (No commitment, no cost). This is a unique technology designed completely in India for India marrying DTT with Digital India.

There are no systems in place to conduct such trials. The outcome and the process of the trial was dependent on the mercies and the goodwill of some few people and not systemic. We had no logistics support and sometimes our engineers even faced outright hostility from lower rung officials. At the end of the trial we had no feedback on the outcome.

At the same time, there were quite a few research-minded PB executives and engineers assisting us in our activities. This needs to be formalized so that it is not people dependent.

**Q17. What should the policy framework and process for consideration and approval of such trial projects?**

There should be a formal process laid down for conducting new technology trials. This can be done once every 6 months as doing it ad hoc might not be feasible. However, the policy should allow for exceptions to conduct trials anytime based on the technology and its potential. The process should allow for budget and a separate team to provide deployment and logistics support. In case the technology is developed by indigenous startups, the trial should be sponsored and funded by PB. In case of foreign or large private players it can be a NC-NC trial. On conclusion of the trial, a project report that includes the stated objectives and the observations should be recorded and signed off by both PB and the organization that requests for the trial. If the trial succeeds in its stated objective and is found useful a timeline for its induction and wide deployment should be published.

Most important, any policy framework and process for conducting new technology trials must be quick and with minimum bureaucratic baggage. Otherwise, they will defeat the very purpose of trial projects that are intended to showcase innovation towards better use of national spectrum and infrastructure assets.

As a global technology provider, Saankhya (and surely other companies like ours) have frequent opportunities to engage in such trials the world over. We must prioritize our energies towards those projects that can be quickly executed. So, from our point of view, we would like the process to have an implicit “blanket permission” (including trial spectrum authorization such as the US FCC’s Special Temporary Authorization - STA) to carry out such projects in a streamlined manner. We might want to trial next generation mobile DTT and LPTV in one phase, and TV White Spaces the next phase, and possibly test synergies between both.

Innovation happens at a rapid pace. For example, if we must rapidly create, test and verify a particular broadcast technology that is relevant to India, we cannot afford to wait out long approval cycles. The same will hold true for other technology providers and those who see potential now will quickly lose interest in investing resources in the Indian broadcast sector.

We respectfully request TRAI to implement the process outlined and we will be happy to participate in detailing it.

## **PB Seminar in August 2017 on Ease of Doing Business**

We would like to bring TRAI's attention to a very positive August 2017 seminar organized by PB where Saankhya's CEO expressed these views (<https://www.youtube.com/watch?v=Ju9nCLHoi1E>). Saankhya thanks PB's CEO and management for being invited to speak.

## **Conclusion**

In conclusion, our response to specific questions is a passionate plea for real change in the national interest. It is ironic that Saankhya's talents and capabilities are largely recognized and utilized by broadcast and technology organizations and entities outside India.