

Set Top Box Interoperability

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What is interoperability?

- Interoperability may be either commercial or technical.
- Commercial interoperability gives the subscriber an option to take the STB on rent or hire purchase basis giving him enough flexibility to be able to switchover from one operator to another at least cost.
- Technical interoperability on the other hand refers to making STBs using an open architecture which will ensure technical compatibility among different DTH service providers. The main objective of this is to ensure that a consumer may choose to move to a new DPO without having to purchase in a brand new STB and without making the old STB redundant. Technical interoperability forms part of the license conditions of DTH operators.

Interoperability (contd.)

- In the perspective of subscribers, provision of switch-over from one operator to another at a minimum exit load becomes an important aspect of DTH services. The subscriber who already possesses the set top box may have an option of retaining the same STB and take services from a different DTH operator. This is known as **technical interoperability** whereby the same STB can be used for availing services of any other DTH operator after enrolment. Alternatively, he may like to surrender the available STB to the existing service provider and get back money as per pre-defined agreement and then take the appropriate STB from another DTH service provider. This type of interoperability is called as **commercial interoperability**.

Commercial Interoperability

- Commercial interoperability is governed by Chapter V of the Telecommunication (Broadcasting and Cable) Services Standards of Quality of Service and Consumer Protection (Addressable Systems) Regulations, 2017 which deals with Customer Premises Equipment.
- Clause 24 of the Regulation – Sub-clause (1) makes it mandatory for every DPO or LCO to provide their subscribers with STB conforming to the BIS standards.
- Sub-clause (2) states that no DPO or LCO can compel a subscriber to purchase or rent STB only from it alone. The subscribers have the option to purchase STB from the open market.
- Sub-clause (3) mandates that every DPO or LCO shall offer STB to every subscriber under outright purchase scheme or rental scheme.
- Sub-clause (5) makes it compulsory for all DPOs and LCOs to publish on their web site details of all schemes for STB offered to subscribers.
- Sub-clause (6) states that DPO and LCO have to specify the retail price of STB along with guarantee/warranty period which shall be for at least one year and that the ownership of the STB shall vest with the subscriber.

Regulation 24 (contd.)

- Sub-clause(7) stipulates that no DPO or LCO shall charge any fee towards repair and maintenance purchased outright by the subscriber during its guarantee/warranty period. Further it is mandated that the DPO or LCO shall offer annual maintenance scheme for STB provided under the outright purchase scheme post expiry of the guarantee/warranty period.
- Sub-clause (8) allows the DPO or LCO to specify the monthly rental amount for STB. The clause further permits the DPO or LCO to specify an interest free refundable security deposit and clarifies that under the rental scheme, the ownership of STB shall remain with the DPO or LCO, as the case may be.
- Sub-clause (9) states that in the case of other schemes including bundled schemes, the DPO or LCO shall specify the retail price for the STB, network capacity fee, charges for pay channels or bouquet of pay channels bundled with STB. In such a case, the ownership of the STB shall remain with the DPO or LCO, as the case may be.

Regulation 24 (contd.)

- In terms of Sub-clause (10), the DPO or LCO shall be responsible for maintaining the STB in good working condition to ensure uninterrupted services for a minimum period of three years. The said clause further stipulates that the subscriber shall not be liable to pay any fee for rectification of fault in the CPE during such period.
- Sub-clause (11) permits the DPO or LCO to charge a sum not exceeding Rs. 250/- as visiting charges per registered complaint. However, no visiting charges may be levied for any complaint relating to STB. Further, the DPO or LCO is not permitted to debit the pre-paid account of the subscriber to recover such visiting charges. Issuance of receipt for visiting charges is mandatory.
- Under the mandate of Sub-clause (12) every DPO or LCO must ensure that a faulty STB is repaired within 24 hours from the time of registering of complaint by a subscriber. If the said faulty STB cannot be repaired, it must be replaced by the concerned DPO or LCO. However, this stipulation will not apply in case the STB has not been tampered with or physically damaged by the subscriber.

The present day scenario

- The current business model used in Pay-TV systems follows a circle of dependency, wherein DTH operator/ MSO, CAS vendor and STB manufacturer have to work in a restricted vertical market. In this model, a STB manufacturer needs to pay license fee to CAS vendor, in order to use CAS in his STB and sign a non-disclosure agreement with the CAS vendor in order to enable his STB to work under security considerations adopted by this CAS. The subscriber is compelled to use the specific STB pre-determined by the operator; as such he cannot access his entitlements via any other STB or receive contents from any other operator.

A feasible solution?

- The BIS specifications for DTH set top boxes require each set top box to have a Common Interface (CI) slot for the purposes of technical interoperability. Technical interoperability is achieved by plugging in the CAM of new DTH operator in the CI slot of set top box provided by the existing DTH operator. For example, a subscriber of DTH operator 'A' who wishes to switch over to DTH operator 'B' has to procure a CAM from 'B' and plug the CAM into the CI slot of the set top box supplied by 'A'. This enables the subscriber to start receiving the services of 'B' using the existing set top box and dish antenna (although the dish antenna has to be re-aligned towards the satellite being used by 'B').
 - Most stake holders oppose this mandate as the cost of the CAM is as much as the STB itself and thus, far from reducing costs, this will dramatically increase the cost of STBs. Additionally, implementation would require re-alignment of the dish antenna, which may be beyond the competency of the average consumer.
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Technical interoperability: Reasons for non-starter

- Different methods of EMM & ECM encryption: ECM and EMM messages are carried in an encrypted form. Whereas DVB has standardized the scrambling algorithm for scrambling of a channel (DVB-CSA), algorithms used for ECM/ EMM encryption are not standardized.
- Different Modulation standards: The signals are modulated before transmission. In cable the signal is modulated using DVB-C standard whereas the signal is modulated using DVB-S standard in DTH. For a STB to be able to receive signal both from DTH and cable, there will be a requirement of switchable demodulator unit.
- Different compression standards: In digital TV transmission, compression plays a very important role. There are two prominent compression standards in use today. In India, most of the operators have used, either MPEG2 or MPEG4 standard for compression. While the MPEG4 standard is backward compatible, MPEG2 standard is not forward compatible. Therefore, MPEG2 compliant STBs cannot work in the MPEG4 networks.
- Operating System/ Middleware and EPG (Electronic Program Guide) Boot loaders are specific to chip vendors and it allows the updating of STB software by specific operators after proper verification. There is no standard operating system for STBs.

View of the Hon'ble TDSAT

- In its judgment dated 03.06.2011 titled *Tamil Nadu Progressive Consumer Center Vs. Ministry of Information & Broadcasting & Ors.*, a full bench of the Hon'ble TDSAT dealt *in extenso* with the issues of commercial and technical interoperability.
- Some of the directions issued by the Hon'ble Tribunal were as under:
 - The licensor and the Regulator must take appropriate action(s) in terms of Clause 7.1 of the conditions of licence so as to enable the operators to act not only in the interest of the consumers but also with a view to maintain ecology and public health within the timeframe mentioned hereto before
 - The Central Government with that end in view, unless any other or further policy decision is taken, must issue appropriate directions upon the Bureau of Indian Standards to lay down the standards for MPEG-4 technology at the earliest and not later than two months from date; if any occasion arises therefor.
 - In case the cost of STBs is absorbed by the operator in its scheme of tariff, an appropriate amendment to Clause 7.1 of the Conditions of licence and/or any provision for relaxation of the said provision may be considered.

View of Hon'ble TDSAT (contd.)

- The Central Government must issue appropriate order in this behalf as expeditiously as possible and not later than two months from date on the recommendations of TRAI. The TRAI, we are sure, in the event the recommendations are accepted by the Ministry of Information and Broadcasting would enforce the same in an appropriate manner, so that the public at large do not suffer owing to the consequences of delayed actions on the part of the Broadcasters to resort to the interoperability of STBs both technical and commercial.
 - The TRAI as also the Central Government may, while issuing requisite directions, bear in mind that a differential tariff between MPEG2 and MPEG4 technology users, may allow the usage of all the STBs without any ecological imbalances.
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The way forward

- After having tried both, commercial as well as technical interoperability, it seems that commercial interoperability is the way forward. Technical interoperability while on the face of it may seem attractive; creates more problems than it solves.
 - Mandating a particular technology/standard today raises a number of issues while migrating to a new standard. Issues like who should bear the cost burden of switching over to the new technology crops up. It begins to be argued that since government has mandated the new standard, therefore the government should subsidise the cost of switching over. Issues of interoperability of equipment with existing customers based on old standards with those operators using new technology/standards crop up and become difficult to address every time a new standard gets developed. On the contrary if the operator is given the freedom to choose a technology, business compulsions themselves will require him to migrate to a better technology and he will himself develop strategies to retain his customer base.
 - Even the requirement of technical interoperability within the DTH service providers will not provide the option to migrate from a DTH service provider to the cable operator or IPTV service provider for which a different STB/CPE will be required. Commercial interoperability in that context is a better option.
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THANK YOU!
