

Standards in China - Industrial capabilities and the role of the State

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Standard making – a changing landscape

- **The convergence** of the three networks - telecommunications, Internet and broadcasting technologies and the digitalisation are driving technological changes and **demanding new standards**.
- We note the new processes picking, mixing and integration of currently segregated specific ICT standards; **new standards often consist of various sets of technologies and standards (new and existing) and involves various institutions/companies often from different countries**.
- **Standard making processes become increasingly complex and dynamic** because of the **uncertainties** involved in technological changes shaped by various contingencies
- Increasing attention worldwide to **lucrative economic element of standards and the political and commercial games that have been played out in recent past in the international arena of standard making**.
- Given the importance of the infrastructural ICT standards for the social development of a country and the need to strike the balances between different nation states and regions, e.g. the developed and developing; and different interests of players, e.g. public and private, and business and users, etc.



New prospects and barriers

- New perspectives for a developing country like China are emerging alongside of
 - The new landscape of standards in the world
 - The increasing awareness of the multi-functionalities of infrastructural ICT standards and their social impacts
- New standards can be developed and co-exist in operation with the existing standards which are in the control of others.
- **By the including various existing technologies of other strong players from the industrialised world into new indigenous standards, a developing country can reap benefits from the best technologies of the co-contributors and learn from them along the path of continuous upgrading of the standards (technologies).**
- In particular for China to become a global player, **collaboration with others in developing infrastructural ICT standards** is crucial.
- **The incumbent organisational structures which were suitable for segregated networks have now become the barriers** for the building of integrated ICT infrastructures and the making of the new integrated standards to achieve efficient and user-friendly services.
- **Standard related innovation is not necessarily a technical matter, but is very likely to be shaped by structural and institutional factors.**
- **Standard implementation** requires **commitments and collaborations** amongst players at various levels including **government, regulator, operator, R&D institutions and network equipment and terminal producers.**



A bumpy road to infrastructural ICT standards

Chinese Experiences

- China had tried but failed in developing its own operating system
- TD-SCDMA Standard had been developed and tested, however most firms did not invest in chipsets, handsets, base stations until they saw the market would be there.
- AVS had been *approved* by the ITU, however the questions remain: “**Will it be adopted by the industries at home and in the world**”, and “**What *implementation* polices are there**”?
- The need to build the **product chain**
 - from chipset to network equipment and terminals;
 - from the product design to its manufacturing; hardware and software
- The need physically and organisationally for an **operable infrastructure**
 - Network building
 - Operating
 - Regulating
- lack of collaborations between different industrial and administrative bodies and lack of knowledge and experiences in managing standard process
- A **learning process** for the industry and various government organisations

The multi-functional roles of the Chinese State

- The Chinese government has played roles as a **planner**, as well as an **organiser** and **negotiator**
 - Asserting **strong political will** to develop indigenous standards; to break a monopoly and install different standards creating an environment for a **controlled competition**;
 - Utilising **economic power** to invest directly in standard R&D and implementation
 - Re-organising the existing industries including the administration, regulatory body and operators of the network to meet the new demand for an integrated network
- The government seems to be also a fast **learner**, *however questions arise*
 - Are government interventions needed for standard making in all conditions and in every stage of the process?
 - *Given the complex nature of standard setting where might strong State control fail? (Many countries find this hard and have liberalised the process)*
 - *What about the day when Chinese firms become the key technology innovator and initial processes of standard development are still delicate and fragile?*



The vertical integration of industrial capabilities

- Increasing experiences in research and development of standards; managing standard (application, maintenance and upgrades)
- Capabilities in product design, and manufacturing; in physical network building
- *“Export-first” experience paid off*
- Increasing experiences in the implementation of infrastructural ICT standards in a competitive environment, through
 - setting up business alliances with domestic and foreign players,
 - providing services to meet the demands from the users,
 - drawing on resources from the government.

The power of the Chinese market

- The network externalities of an infrastructural ICT technology are closely dependant on the size of the market
- The ICT infrastructure provides a platform for users to play an important role in standards
- Chinese users could change the landscape of different standards
 - Cultural orientation – language, fashion, etc.
 - Lock-in effect of users' habits in using the artefacts – e.g. message input method re. preference on different design of handsets
 - Nationalism – e.g. if Chinese multimedia websites all adopt AVS, it would force further adoption of the standard by hardware producers.
 - ...
- The market per se could be an outsourcing location for standard testing

谢谢

Thank you

