

Pricing and Copyrights of data and Institutional framework for a National Geographic Information Infrastructure in Nepal

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ABSTRACT

Diverse users, sometimes with duplication of resources, produced a large volume of different spatial data in Nepal in the last decade. Therefore, the development of a national geographic information infrastructure (NGII) was felt necessary to support creation of a network for data sharing and dissemination of geographic information at different levels to facilitate the seamless access and purposeful integration of data from various sources. Survey Department is taking a lead role in this aspect by making available multi-resolution spatial database to the users.

The transition from a national mapping agency (NMA) to a major NGII stakeholder was faced with many technical challenges. But when it came to an operational and sustainable NGII, it was felt that institutional problems were much more challenging than the technical. Lack of patience and fore-sightedness and dearth of a common approach and coherence in attitudes among agencies coupled with the overwhelming of traditional pyramid-like organizational and communication structures can be listed as some of the institutional problems in the smooth development of a NGII in Nepal. Identification of key players in NGII and institutionalisation of a coordination mechanism at different levels is therefore considered important. Moreover, identification of appropriate data custodians and a systematic approach for pricing and copyrights of data can only support rationalization and resources- saving in data sharing.

The pricing and copyrights in data sharing and other key institutional issues in the development of NGII in Nepal are analyzed and the approach undertaken to build consensus are discussed.

1. INTRODUCTION

Nepal is one of the least developed countries in South Asia flanked between India and China. It has a diverse topography and limited in human and economic resources. During the last decade, diverse users, sometimes with duplication of resources, produced a large volume of different spatial data in Nepal. Survey Department itself started creation of a multi-resolution digital topographical database at the beginning of 1998 and by the end of 2002, all new topographic base maps were transformed to a homogenous topological spatial database. During the process, it was realized that creation of a digital spatial database at the national level was full of technical problems, but more problematic was the institutionalisation and operationalization of the traditional national mapping agency (NMA) approach of map/ spatial-data-handling to a spatial data infrastructure (SDI) approach. To fulfill this end, Nepal is in the process of building its spatial data infrastructure (SDI) through the programme called the National Geographic Infrastructure (NGII) programme.

Data are produced by diverse users, more often for their own applications. The Survey Department and the Central Bureau of Statistics are the two agencies entrusted with the creation and dissemination of spatial and the socio-economic data or information. However, a clear policy on data dissemination is still missing. In addition, lack of patience and fore-sightedness and dearth of a common approach and coherence in attitudes among different agencies and the overwhelming of traditional pyramid-like organizational and communication structures are some of the institutional problems in the smooth development of a NGII. All of them together result in a situation where data are already existing but duplicated again; or data are already available but not used at all.

In this respect, availability and access to a comprehensive metadata base is one problem while problem is also on the formulation and adoption of an acceptable and sustainable pricing and copyrights policy of spatial data. While technical matters and some other policy matters get frequent attention, pricing and copyrights are considered individual problems of organizations and do not get sufficient attention. It is in this backdrop that the author proposes this matter to be discussed as a pertinent policy issue in the development of a SDI. This will be discussed here in the context of Nepal as a pilot case.

2. SPATIAL DATA PRICING CONCEPTS

There are different pricing concepts in practice in different countries. Some of the different pricing strategies are:

- Free access of data (quite often using Internet),
- Cost of duplication and reproduction,
- Modest nuisance fees charged to limit artificial users,
- Recovery of full distribution/ dissemination costs,
- Full cost recovery,
- Value-added pricing,
- Market pricing.

These are different strategies with two extremes: the free data access model and the full cost recovery model. While the free data access model determines the role of state as a benefactor and the dissemination of basic spatial data as a state responsibility, the full cost recovery model argues that the free distribution of data and information leads to trivial use of state resources and therefore whoever needs the data should pay for it. Paradoxically, the United States of America follows the free data access model of pricing while many countries in Europe argue in favor of a full cost recovery model. Many countries in the developing world have a very mixed strategy. Pricing concepts may be different organization to organization. It is also seen that even within one organization, pricing concepts may be different product to product or client to client.

3. COPYRIGHTS OF DATA

One of the reasons for inhibitions of data custodians in the smooth dissemination of their data is seen as the potential misuse of their data and also the violation of their copyrights. Copyright can be defined as the exclusive right to reproduce, publish, broadcast or adopt a work. Piracy of data, development of a second informal market for exchange of often unauthorized data and use of digital data for non-intended use are some of the problems witnessed in many countries specially in the developing world. However, there are some inherent problems as well, for example, does publication of a value-added product violate the copyrights of the original data custodian? How much is a value-add and how much is a re-publication? While there are clear gaps in the legal and statutory conditions, lack of education and knowledge are other handicaps. Moreover, development of a code of conduct and appeal for professional ethics on the part of users are sometimes lacking.

4. INSTITUTIONAL ISSUES IN THE DISSEMINATION OF DATA

Another policy problem in addition to the pricing and copyrights for the dissemination of data is the institutional framework. We are used to compartmentalized hierarchical pyramid-like organizational setup where horizontal communications are discouraged or non-existing. Organizations and individuals do not tend to take risks and there is clear lack of patience and foresightedness among stakeholders. Due to the lack of a clear logical framework of the goals, objectives and activities of organizations long-term visions are missing and therefore organizations do work within their yearly budgetary programmes.

Clear inconsistencies do appear in the functioning of many data-generating and data-disseminating agencies. Are we going towards a benevolent state organization or are we going towards a self-sustained market economy organization. Shall we ever depend upon government budget for our existence or shall we thrive to earn and sustain ourselves? While the second approach was seen to be flourishing in the European NMAs during 80's and 90's, can NMAs of the developing world with limited market for geospatial information

pursue this policy? In that respect, if state has to ever support for geospatial information what will be the level of priority vis-à-vis other areas of direct public benefits like primary healthcare and education and provision for sanitation and drinking water? How much reliable will be this funding model to sustain the NGII?

These are mixed questions where satisfactory answers have to be found in order to institutionalise the NGII i.e. the spatial data generation and the dissemination, pricing and copyrights of data.

5. SPATIAL DATA DISSEMINATION, PRICING AND COPYRIGHTS OF DATA IN NEPAL

In Nepal, most of the generators and users of data are one or other government agencies or the public funded development projects. There is a very limited geospatial private market. It is seen that there is no explicit and consistent government policy or guidelines for the dissemination, pricing and exchange of data between government agencies and with the market. Cost recovery approach is applied by some agencies while some other agencies charge very modest (nuisance) fees for their products. In many agencies, identified users are provided data and information even free of costs. Lack of standardization and a system of data exchange between different data-generating agencies and a low level of coordination results in the duplication of efforts and generation of huge degree of redundant data by different agencies. A lot of time and money is spent in the bureaucratic and clerical procedures for the acquisition of data. While most of the data custodians are one or other government organizations, lack of sufficient funds for acquisition of even basic data and information needed by another government organization deprives them from using the data/ information. This is more paradoxical when we realize that the proceeds from the sales are deposited in the state revenue and the general budget is also granted from the same revenue funds.

In Nepal, copyrights law covers “map” within the definition of “work of creation” protected by copyrights laws. The law also mentions that “general fact” though incorporated in a work of creation the copyrights is not protected. Survey law and regulations necessitates producers of maps to get prior approval of the manuscript from the government agency before publication. The word “map” by analogy also covers digital database and softcopy map.

While the current practical situation of data dissemination and pricing is as above, the problem is well recognized in Nepal. The tenth plan (2002-2007) has clearly made the policy statement as “development of a national geographic information system to be pursued for the easy access and dissemination of geographic information”. The GIS Steering Committee constituted by the National Planning Commission recognizes that the spatial and non-spatial data generated by different agencies should be utilized maximally in different development efforts by the government and non-governmental agencies and it has constituted a working group for making easy

access and prohibiting misuse of data; and recommend appropriate draft policy for pricing of data.

6. DISCUSSIONS

Based upon the above, the following points may be summarised. These points need to be considered while preparing any policy framework for the dissemination and pricing and copyrights of data as well as for the formulation of a institutional framework for a NGII. Needless to say the summary is based on a special reference to Nepal.

- Technology change in the field of surveying and mapping and general development in the field of computer science and the information technology; and a wide application of GIS, RS, CAD/CAM and other aspects of automation in mapping/ map-use and geo-information handling have led to a new philosophy of NSDI/ NGII and this has led to a new perspective in the user requirements.
- NGII encompasses all the geoinformation producers and users,
- Survey Departments (or the NMAs) as key producers of base geoinformation (base maps in the past) need to redefine their objectives and activities and play a lead role in the NGII.
- Newer organizational set-ups are necessary to meet newer organizational goals. A suitable institutional reengineering becomes inevitable.
- Role of private sector in mapping, GIS, data creation/ data dissemination though limited at present should be formulated to encourage for acquiring its potential contribution to the NGII.
- Policy should be formulated such that authentic, authorised, reliable and up-to-date geoinformation are available to the users freely, easily and readily.
- A body to define standards and to oversee the implementation of standards among the stakeholders should be formed.
- Mechanism should be created such that there is no duplication and redundancy in data and resource-input in data creation.
- Custodian of each dataset should be clearly defined.
- There should be obligatory for data custodians to provide metadata base free of cost.
- When data are available (not classified or restricted) they should be available free of cost, e.g. available in the web or available on payment of copying/ forwarding cost only in CD or other media.
- Copyrights should be limited to acknowledgement of source of data.
- Arrangement should be made such that all data users are obliged to contribute to the NGII their value added products free of costs.
- NGII consortium should be formed such that stakeholders benefit through obtaining and providing data to the system.
- Training, and educational facilities for a consistent and appropriate human resource development and management is created.
- Provision of legal framework for NGII is made.
- A suitable institutional set-up should be formed.

7. CONCLUSIONS

It is understood there is no universal model of a NSDI or a NGII. While there are common features, specific features of any NSDI or NGII should be adopted to the environment existing in the country. Most often pricing and copyrights issues are considered individual problems of individual countries or individual organizations. But to the opinion of the author, these are universal policy issues in the development of NSDI in any country. A suitable and rational pricing and copyrights policy, which encourages free access of data and as much easy terms as possible regarding copyrights can only support in the development of NSDIs in the developing countries.

Maintaining the spatial databases update and sustainability of NSDIs is a critical factor, where not only technology but also appropriate institutional framework and the potential funding might be a problem. The exchequer may have other priorities. It is important for NSDI and GSDI community to create awareness among technocrats, bureaucrats and policy-makers in the national governments as well as in the donor agencies on the importance of spatial data in national development. We are placed to compete for funds with primary healthcare and education and/ or sanitation and drinking water projects whose benefits more tangible to appreciate. These are more difficult problems for a NGII where others' supports are necessary in relation to the technological problems, which can be addressed by our own co-professionals.

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