

STRATEGIES FOR ESTABLISHING ASTRONOMY IN DEVELOPING COUNTRIES

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1. THE BATTLEGROUND

Developing countries have their own particular political, economic and cultural circumstances. There are, therefore, no unique solutions. However there are some factors which are common to all or most of them, namely the lack of human and financial resources and in most cases an absence of a political commitment to the advancement of science. Such situations are in a sense not peculiar to developing nations because in some developed countries astronomy has a 'developing' status. Even in countries where astronomy is well established, the commitment and allocations required to maintain the status quo need to be continuously addressed. Hence strategies for fighting this "constant battle" are relevant to all astronomers of the world, while being especially vital to those in the developing world.

2. DEVELOPING A STANCE

Before engaging in the crusade it is important to have clear objectives. Each country should develop its own set of targets that will realistically and effectively bring about long-term benefits. In a nation where astronomical activity is only just beginning, it is not judicious to aim for setting up high-powered research facilities without a corresponding programme for public education. In fact, policy and decision makers will require short-term mileage and benefits not easily obtainable from long-term research programmes.

Prioritisation is also important in order to gain maximum and long term results. For instance, if one is the only astronomer in the country, a top priority will be to establish circumstances to attract or convert others to the field.

Having established the targets one now needs to set up the strategies for achieving them.

3. SETTING THE STRATEGIES

To plan the moves for each objective one needs firstly to understand the strategic position through a strategic analysis. From this the possible course of action is formulated by looking at strategic choices. A plan on how to put these strategies into effect is then required for implementation.

3.1. STRATEGIC ANALYSIS

Strategic analysis is concerned with understanding the strategic position one occupies. Its aim is to form a view of the key influences on the present and short and long-term future endeavours. This analysis will have a vital bearing on the choice of strategy.

To carry out the strategic analysis one needs to look at the commercial, economic, political, technological, cultural and social environment. It may be that in one country the economic factor is strong but the technology available for developing astronomy is weak. In another the cultural basis of astronomy is inherent but the social circumstances prevent its advancement. It is also important to look back on historical factors of the country. All these parameters need to be examined and factored into the strategies.

The resources available in the way of human and financial resources and physical facilities should be analysed in order to ascertain the strategic capability. In some countries the human resource pool is large but finance is not available, while in some it is vice-versa. Just as useful is an examination of the expectations of stakeholders or one's partners because they will affect what will be seen as acceptable in terms of strategies to be adopted. Who are they? What is the culture, if it is an organisation? What is the power structure?

A careful consideration of the environment, the resources and objectives within the cultural and political framework of the country will provide the basis of the strategic analysis.

3.2. STRATEGIC CHOICE

With the strategic analysis as the basis one can begin to generate strategic options as there are usually several possible courses of action. However it should be noted that while the strategic analysis is used as a guideline it is advantageous to look for innovative actions that may require the environment to be ignored, at least temporarily. In short, the strategic analysis serves only as a framework and should not be the absolute frame of reference.

The relative merits of the options then need to be assessed. To do the evaluation, consider the suitability, feasibility and acceptability of each of the strategy keeping in mind that the merit of each is influenced by factors such as financial and human resources, client and stakeholders expectations and administrative mechanisms available. The final selection will probably be made based on individual and collective judgement and the values of everyone involved. There are unlikely to be clear-cut 'right' or 'wrong' choices because any strategy must have some disadvantages. The selection will also depend on the power structure of the stakeholders: a University organisation may well prefer setting up research facilities, an amateur society group, public programmes, while a politically controlled organisation may opt for a prestigious project.

3.3. STRATEGIC IMPLEMENTATION

Strategic implementation is concerned with the translation of strategy into action.

With the options chosen, the human, physical and financial resources need to be allocated. It is likely to involve resource planning or maybe even restructuring. It is important to note that because the environment is never static the objectives and priorities may and should change from time to time. A philosophy to embrace these changes during implementation should be emplaced to avoid getting stuck in a strategy that is no longer relevant to constantly changing circumstances.

It may also be necessary for the purpose of expediting the implementation of activities to create an organisational structure in the way of an institute or maybe an amateur society or a school club. This will require its own strategic analysis but is well worth the effort because the returns in the long term are tremendous. However, as an individual it is not necessary to wait until such a structure materialises. Individual action can start anywhere and anytime.

4. WINNING THE BATTLE

Although the three strategic management processes are presented in a sequential fashion, in practice they are not linear. All these elements are interlinked: a strategy may not be fully evaluated until it is implemented and it is more than likely, in the context of change, that strategic analysis is a continuous process and therefore needs to overlap with implementation. The management of the strategies is actually a process of 'crafting' which will evolve.

Whatever the strategic stance one adopts, the two most important elements necessary for success are passion and commitment, ingredients no amount of money can buy and no amount of obstacles can extinguish.