

National Science University: A rejoinder

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I had published an article 'The Concept of a National Science University (NSU)' in *Current Science*, 1994, 67. Another article had been written by Swadesh Mahajan of the University of Texas at Austin, USA, as well.

It is heartening that the articles attracted the attention of many scientists, who made numerous valuable comments. Quite a few comments were also made perhaps because of the ignorance of facts and the details of the structure of the proposed university. I had delayed sending a rejoinder since a Committee was still working to draft the structure of the University, which is now ready. I am sending the report to all the persons who had commented and many others with the hope that they will now give their well-considered critical comments for our enlightenment.

In brief, it may be stressed that the concept and the structure of the National Science University is a fundamental departure from what is existent; it is anything but an extension of the current university concept. The university has to be funded with full recognition that almost every modality proposed is new; we need all this newness to be scientifically and technically ready to meet the challenges of the times to come. And finally, when the experiment succeeds, perhaps many more universities will be established with the support of the public, business and industry. It is also hoped that existing universities may also change and discard their rigid attitude and change to meet the challenges of today and of the future.

The amount of tuition fee charged in NSU will be basically symbolic, which may yield only 5–6% of the recurring teaching budget (and not of the administrative and capital expenditure). What is more important is that the university will support all those students who are not in a position to pay even this amount. Once admitted, all financial needs of a needy student will be taken care of by the university. Admission to NSU will be a sure passport to NSU education.

The NSU will be a fully autonomous and independent entity and plans to be self-sufficient and self-sustaining. It will be completely outside the jurisdic-

tion of the Ministry of Education or the University Grants Commission. The university will be run by its (a) Board of Trustees, (b) Executive Committee, (c) Academic Council, and (d) International Advisory Committee.

Coming to the one-time outright grant of Rs 200 crores requested from the government (the other Rs. 200 crores to be raised from the public, industry and NRIs), let me explain what it means. It may appear to be high but this amount is spent in about ten years' time in smaller central universities such as Jawaharlal Nehru University, Hyderabad University and North-Eastern Hill University. The NSU is, however, going to be for eternity and will have to support itself without any further government grant. This amount will also show the earnestness of the government for the new venture and thus will facilitate collection of donations from others. The amount is also not sacrosanct and, if considered necessary, may also be re-funded to the government after some years.

Let us take another point. The government at present, is spending about 3.9% of the GNP on education. Even if this is increased to 6% of the GNP in the next IXth Five-Year Plan as has been promised by the present Prime Minister as well (and had been done by the earlier Prime Ministers also), it will not be able to support higher education fully since it is very expensive. The primary need will be that of good primary and secondary education, which is essential for good university education. Hence, it is necessary that the public come forward to support higher education. The US Government spends 7.5% of its huge GNP on education but it is very well known that almost all the premier institutes of higher education are not covered by this since they are self-supporting and do not depend on government support. However, this is also true that most of them had been started initially by government support, some decades and a few even one or two centuries ago.

Our attitude for initial governmental support should not be that of a dog in the manger. I am reminded of the attitude of university vice-chancellors when

the discussions for the VIIIth Five-Year Plan were being held in the University Grants Commission while Manmohan Singh, the present Finance Minister, was the Chairman. The general discussion was centred around questioning the higher allocation, made to the central universities and not on asking for a higher allocation – equivalent to that of the central universities to the state universities. This is nothing new and our famous Indian crab mentality to pull things down rather than raising them up is very well known. Every one knows that the funding of the central universities is also poor compared to institutes like the Indian Institute of Science, Bangalore, or the Tata Institute of Fundamental Research, Bombay, or the Indian Institutes of Technology. Again, if there is only Rs 200 crores to be allocated and the question is asked whether it should be allocated to about 20 odd universities or the NSU, I will be the first one to say that it should be allocated to the former.

After going through the concept and the structure of NSU, I would like people to tell us how the university is meant to be a place for the benefit of NRI scientists. Further, what is wrong to expect that about 20–25 (out of a faculty strength of 200–250) well-established eminent Indian scientists working abroad should decide to return to India for good to give a boost to this university by working here? If they have worked abroad for a number of years, why should they become unacceptable? Does this apprehension reflect the strength of our science that we boast of? What sort of attitude is this? What is wrong to expect 20% of the faculty to be mobile both in India and abroad? Is this not permitted even now in our good existing universities?

It is absolutely wrong to dump the proposal for the establishment of the NSU in the name of a NRI proposal. It is not. Many of us (more of those who had been working in the universities) like R. P. Bambah, V. G. Bhide and others had been struggling with various ideas of improving university education in India. Persons working in various national laboratories or in institutes like Indian Institute of Science or Tata Insti-

tute of Fundamental Research may not be aware of this nor of the conditions under which the universities in India deteriorated.

I would now like to answer the question – why this National Science University? It is very well known that advanced societies are supported by twin pillars, namely (1) innovative science and technology and (2) rational, systematic, spirited and enterprising management. The former provides the basic substance and the essence of material progress, in which, whether we like it or not, we are weak, while in the latter we are strong and it is recognized all over the world. Further, we have ample talent which has to be fully harnessed. There has been substantial societal and governmental commitment to science and technology although it is unfortunate that during the last few years our budgetary allocation to science and technology has been reduced. I am sure, the government will, sooner than later, realize this and will increase the allocation to at least 2% of the GNP before the end of the century.

We have an energetic and ambitious new generation that exhibits new mind

set keen to learn, explore, take risks and innovate. We have only to provide proper facilities and environment for them to grow. Our national laboratories, which have better research facilities and consume most of the budget allocation for science and technology, and a number of our good institutions such as Indian Institute of Science, Bangalore, Tata Institute of Fundamental Research, Bombay and the newer universities (including central universities), do not have undergraduate teaching and hence lack proper and effective mechanism for regeneration. I would like to know in which first-rate teaching institution in the world undergraduate teaching is not done? In fact, the best scientists teach the undergraduates to trigger the young minds. In the last Court meeting of the Indian Institute of Science, Bangalore, held only a few weeks back, I suggested that the Institute may examine if they could initiate a small integrated 5-year MSc programme. One should only have seen the alarm that was raised, as if the Institute would collapse if the suggestion was even examined, what to talk of starting the programme. However, it was heartening that some of

the members such as M. Vijayan supported the idea. I am, however, sure that no effort will even be made to examine it.

The universities in India are impoverished, may have facilities only for one-third the number of students that they admit, have little incentive and few facilities for quality research and thus cannot attract the best of minds to carry teaching and training responsibilities, and above all are too rigid to change. It is fortunate for us that there are some exceptions to such a situation but the number of such universities is very small. The separation of teaching and research is fundamentally flawed and detrimental to both.

The time to think about this is now, even though it is already late. Economic liberalization implies global competition; creation and rapid application of new scientific knowledge is vital for economic survival in this area. We cannot afford to live on borrowed imitative ideas in science and second-rate imported technology.

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The proposal to establish a National Science University as a consequence of a nonresident Indian initiative was highlighted in the 10 October 1994 issue of Current Science. The publication of the preliminary NSU proposals generated much comment. We reproduce below the final report of the committee set up for the 'concretization' of the NSU concept.

– Editors

National Science University: Final Report

Synopsis

After due deliberations the committee appointed to examine the conceptual proposal for the establishment of the National Science University (NSU) strongly recommends that the Government of India should make immediate and appropriate commitments towards turning this concept into reality.

1. It is recommended that the Government accept the conceptual report, and allocate Rs. 100 crores as start-up capital and contribute another Rs. 100 crores towards the formation of a Permanent University Fund (PUF) to be invested and administered by a Trust. The income from these investments will provide the resources for the normal running of the NSU.

2. For the NSU to meet its goals, an annual recurring expenditure of Rs. 30–45 crores will be needed. The PUF, therefore, must be built to the tune of Rs. 300 crores. The balance of the money (Rs. 200 crores) will be raised from the nonresident Indians and from the industry/business and people of India.

3. The management of the Incorporation (Nonacademic part of the University) will be left entirely to the Trust to which the Government of India will nominate its (identify by name, but not by generic titles) representative(s). The academic parts will be managed by the faculty alone. An international advisory committee to provide initial guidance and eventual 'watch dog' role will also be constituted.

4. Once the conceptual report is accepted, a preparatory office will have to

be established, and a committee appointed to work out the details for the launching of the University.

5. Academic programmes, curricula, modes of assessment, etc., will be worked out 'dynamically' by the faculty, who will also take care that the university is actively engaged in identifying as well as participating in newly emerging areas of study and research. It is expected that at least about 20 Indian scientists of repute settled in United States will return to India as faculty members of this University.

6. To provide continuing excellent education and research training, the university will recruit students immediately after secondary schooling. In later times, it is hoped that the influence of the new University (and of others based on similar models) will be felt in at least