Chapter 92
The Context of IST for Solid Information Retrieval and Infrastructure Building:
Study of Developing Country

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ABSTRACT

Development and progress mainly depends on education and its solid dissemination. Technologies as well as engineering solutions are important for the business and corporate houses. In this context, educational initiatives and programs play a vital role. Developing countries are suffering from many problems and therefore fostering new academic innovation and researches on economic development in today's context. Information Technologies and management science are important for solid business solutions. Therefore, education and knowledge dissemination play an important and valuable role. In many developing countries, gaps between industrial needs and the availability of skilled labor are limited. Information Sciences and Computing are the most valuable areas of study in today's knowledge world. The components, subsets, and subfields of Information Sciences and Technology are rapidly emerging worldwide. Among the emerging and popular areas, a few include Cloud Computing, Green Computing, Green Systems, Big-Data Science, Internet, Business Analytics, and Business Intelligence. Developing countries (like China, Colombia, Malaysia, Mauritius, India, Brazil, South Africa) depend in many ways on knowledge dissemination and solid manpower for their development. Thus, there is an urgent need to introduce such programs and the majority of these programs have been proposed here. Information Science and Technology (IST) with programs such as Bachelors, Masters, and Doctoral Degrees have been listed here with academic and industrial contexts. This article highlights these programs with proper SWOT analysis.

INTRODUCTION

Education is the key facet for the development. Institutes such as Industries, corporate houses, Multinational Companies, Government bodies, etc., truly depend on education. Universities, colleges, higher educational institutes and research centers are mainly responsible for the development of direct manpower to these organizations by offering specialized skills. Industrial units and industrial centers have also put their efforts in creation of right manpower as per demand. The society and their demands are changing rapidly (Abdullah & Gulzar, 2016). As a result, universities and similar institutes are working for the actual manpower development. Hence various emerging subjects are coming in the course catalogs (Davenport, & Prusak, 1997; Grewal, 2014). Computing and Information Technology are some of the important and valuable domains for the social and organizational development. Initially technologies as well as computing tools like Database Systems, Networking, Multimedia, Communication Systems are playing an important role but gradually several new areas have emerged such as Cloud Computing, Big Data Management, Virtualization, Green Computing, Virtualization, Analytics and Data Science, Human Computer Interaction, Usability Engineering, Mobile Computing. Information Technology units of each and every organization needs solid and relevant manpower in the field (Kettinger, Lee, & Lee, 1995). Moreover, the companies as well as general organizations also depend on IT and Computing and as a result solid manpower creation needs to be planned. It is a fact that apart from the developing countries, there are shortages of ready manpower in the above-mentioned fields. Countries like India, China, Brazil, Malaysia, South Africa, Pakistan, Russia, etc., are suffering from shortage of manpower in these fields. Hence it is important that universities should introduce new subjects as a program of study in addition to research. The mode of education, model of learning, etc., have to be refurbished as per requisition. Knowledge in 'capstone and capsule' format is available as diploma, degree at various levels (Paul, 2013).

OBJECTIVES AND AGENDA

This conceptual work is theoretical in nature and it holds the following agenda:

- To study the Educational levels as well as degrees available in universities and Higher Educational Institutes of the Developing countries.
- To dig out the promising dimensions and areas of Information Science and Technology in International context keeping in mind the developing countries.
- To know about the emerging areas of IST viz. Cloud Computing, Green Computing, Human Computer Interaction, Data Sciences, Big Data Analytics including brief information and concept.
- To learn the educational models in addition to modes with potentialities in the Developing Countries emphasizing developing countries.
- To know about current popular educational models and also less implemented educational modes and their potentialities in Developing countries regarding Information Technology and Computing.
- To learn the emerging Information Science and Technology components with the flavor of Science, Technology, Engineering, Management, Humanities.
- To know the core challenges, problems, issues related to IST promotion in developing countries and their possible solutions.

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