Critical Factors Affecting Success of CBIS: Cases from Africa

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There is very little understanding about the key factors which influence success (or failure) of computer-based information systems (CBIS) in organisations, especially those in Africa. Poor infrastructures, lack of foreign exchange to buy spare parts, poor supplier service, scarce education and training facilities, and therefore lack of skilled personnel, management commitment and cooperation are generally believed to affect success (or failure). This paper, based on research conducted by the author in a number of public sector organisations in Kenya, Zambia and Zimbabwe, shows, using case studies, that it is a combination of factors which play a role in success (or failure), and that it is difficult, and inappropriate, to isolate a few specific factors as being the ones influencing all organisations in all countries; factors vary from organisation to organisation and from country to country.

Few doubt the significance of information technology (IT) for African economic and social development (only sub-Saharan African countries are analyzed here; north African states and South Africa are not considered). IT is widely preached as having the power to narrow the gap between the developed and the developing countries (DCs), as having the capabilities which will allow the DCs to “leap-frog” development, and as having the potential to tackle many development problems. Yet, very few African countries have succeeded in exploiting this developmental potential. Although no comprehensive surveys or research has been done to prove the latter, there is extensive underutilisation (and non-utilisation) of equipment and failure of major computer-based information system (CBIS) projects (Avgerou & Land, 1992; Moussa & Schware, 1992; Odedra, 1990a,b, 1993; Walsham, 1992); signs which may indicate why IT has played little role in African development.

There has been substantial growth in the number of computers acquired in the past few years, up to 10 per cent annual growth in places such as Kenya, Zimbabwe, Nigeria and Ivory Coast (although, on average, spending on computerisation in 1988 - as a percentage of GDP - was six times higher in industrialized countries than in Africa), but much of the spread of computers that has taken place has not been need-based. Hard-selling from manufacturers and vendors, the urge to keep up with the latest technology, management self-interests, and pressure from computer professionals have all contributed to the spread. Many have accepted the technology in a blind-folded manner and few have questioned its need. No policies or clear strategic buying plans exist which clearly identify the needs that are likely to bring overall benefit to the nation, and those that are possible to achieve within the available resources. Nor is there an environment that would promote widespread and effective application of IT.
One can say that there have been many negative consequences inflicted by this technology on Africa. Scarce foreign currency has been spent on equipment which is under-utilised, the dependency on multinational corporations and expatriate personnel has increased, and socio-cultural conflicts introduced. Moreover, what Africa has experienced so far is not IT transfer but “transplantation”, the dumping of “boxes” without the necessary know-how.

In this paper, computerisation at five public sector organisations in Kenya, Zambia and Zimbabwe—two banks, an insurance company and two government computer centres—is described and analyzed to illustrate some of the above issues and, most importantly, to make an attempt at identifying factors which may have influenced success (or failure) of CBIS in these organisations. Very little work has been done in this area in Africa and we therefore have little understanding of these factors. The general impression is one of relative failure rather than relative success in the implementation of CBIS in DCs. It is not sufficiently clear why some of the technology adopted by DCs has failed to achieve its intended economic benefits (Waema & Walsham, 1988). Poor infrastructures, lack of foreign exchange to buy spare parts, poor supplier service, scarce education and training facilities, and therefore lack of skilled personnel, management commitment and cooperation, are generally believed to affect success (or failure). However, the case studies below, from research conducted by the author between 1987 and 1990, show that it is a combination of several factors which play a role and that it is difficult, and inappropriate, to isolate a specific set of factors as being the one influencing all organisations in all countries (Odedra, 1990b). Whilst these findings refer to selected countries, it is believed that these cases are representative of the difficulties and challenges encountered in implementing CBIS in other African and developing countries.

The next section analyses some of the existing literature which has identified some of the factors, at both national and organisational level, which are thought to influence success (or failure) of CBIS. The section following this describes the case studies and briefly analyses them. An overall analysis of the cases is then carried out to identify factors which may have influenced success (or failure) of CBIS. Finally, some conclusions and suggestions for future research are provided.

Factors Influencing Success (or Failure) of CBIS

Before proceeding to look at the five case studies, it is important to examine some of the existing literature and identify key issues which are said to

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<th>A. National level factors</th>
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<td>Obsolescence of computing hardware and software:</td>
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Table 1
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