

# Designing IT Systems for NGOs: Issues and Directions

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**Abstract.** IT support in voluntary organizations is an interesting emergent field of research. Recent literature has highlighted that many NGOs are still in early stage of IT adoption, in their organizational settings. In this paper we analyze types and organizational structures of voluntary organizations to find out the factors which differentiate IT support in these organizations as compared to other organizations. The paper reviews the state of the art and discusses important issues which are worth investigating for the improvement of IT support in voluntary organizations.

**Keywords:** Community computing, IT support, NGOs.

## 1 Introduction

The civil society organizations form an important constituent of any society along with business and governmental organizations. Civil society organizations are quite diverse in their compositions and operations. NGOs are the most widely known fraction of civil society organizations to which we will focus our discussion in this paper. With the evolution of North-South cooperation, NGOs gained more prominence. In the wake of this North-South collaboration some NGOs established operations in remote continents while others preferred to collaborate with local partners [1]. This geographical diversity requires efficient communication methodologies to optimize the operations. Despite the tremendous trend of embedding information technology in organizational processes, use of ICT in NGO sector is slimmer. The research efforts have highlighted that most non-governmental organizations lack appropriation of information technologies [2]. There is awareness among community organizations to use technology in their activities but the complexity of technologies and lack of technological knowledge are big obstacles [3]. A study by the Association of Progressive Communication (APC) revealed that most of transnational civil society organizations are strong in the areas of internet access and e-mail use and rather weak in areas such as holding online meetings and running internet advocacy campaigns [4]. Goatman and Lewis in 2007 surveyed 1000 UK

charities and found that non profit institutions are positive about use of websites and are interested in improving use of internet technologies in future. They also found out that currently websites are only used to present information about their activities rather finding new collaborators, fund raising and community interaction [5]. Kellogg Foundation's ePilanthropy 2001 report describes that technology and internet services are far from being integrated into organizational process of voluntary organizations [6]. Another study by TBC Research UK in 2001 found that 62% of voluntary organizations have indicated a poor relationship between their mission and information technology strategy [2]. In 2004 Cogburn empirically evaluated computer mediated communication among civil society representatives at United Nations World Summit on Information Society (WSIS) and its preparation phase meetings. He described that the majority of computer mediated communication took place using e-mail lists while other complex tools such as document repositories, wikis, blogs, and Web conferencing, have not been used effectively [7]. In this context the appropriation of ICT in the organizational settings of NGOs seems to be an important research area.

## **2 Structure of NGOs**

The appropriation of technology can be achieved when the technologies are designed keeping in mind the structure and practices of an application area. For this reason it is important to understand the types and structures of NGOs, which will help finding differences in the needs of NGOs. With respect to their work focus NGOs can be categorized into two groups: operational and advocacy NGOs [8]. Normally, operational NGOs focus on small scale change by carrying out projects at grass root levels whereas advocacy NGOs aim at large scale change by influencing the political system. So the support of ICT facilities for communication process in NGOs could be among office settings, office-government, field-government, office-public, field-public, office-donor and office- other NGOs. Operational NGOs have strong presence of staff at headquarters for planning and on the field staff for implementation whereas advocacy NGOs will focus on awareness, opinion and policy making resulting in absence of field activities. The geographical distances among field, office and headquarter locations add further complexity in designing ICT systems for NGOs. This involvement at different state and local levels introduces problems like different governmental partners, differences in languages being spoken, difference in working habits and cultural differences among the staff of NGOs. Some NGOs may have centralized control at headquarter level while others have independent offices in the distributed locations [8]. The management of ICT infrastructures at centrally controlled NGOs is simpler as compared to NGOs who have distributed autonomous offices. The requirements of NGOs in office settings will be further different from each other depending upon their operational area e.g. a child care NGO and an emergency relief organization have rather different needs.

Organizational structure of NGOs and level of professionalism of staff are other important dimensions. Small NGOs normally don't have a stable defined

organizational structure. This results in lack of organizational knowledge and inconsistency in decision making, posing difficulty in establishing ICT infrastructures in the NGO sector. Secondly, NGOs normally do not have formal requirements of a specific profile to become a member. So, volunteer will not possess any specific skill set or profile. This typically results in low emphasis on developing ICT infrastructures and using IT capabilities to perform their tasks. Whereas big transnational NGOs have large number of dedicated staff, so they have specialized IT staff to help them in establishing IT infrastructure and using computing capabilities. So the usability issues should also be considered while designing the ICT systems. The NGOs normally lack funding as donors are normally interested in supporting NGOs in their core activities but it is hard to find a donor who is interested in financing these NGOs to establish and maintain ICT infrastructures so open source development can reduce the financial issues to a large extent.

### 3 State of the Art

The work to appropriate technology in the non-profit sector has its precedents. There have been examples of appropriating technology in non-profit organizations by different researchers. Benston has described that how participatory design method can be used to help non-profit sector organizations [9]. CAVEAT is an example of involving a Canadian non-profit organization to establish a prototype of an organization information system. McPhail et al. established this prototype using participatory design methodology and employing off the shelf database components [10]. There has been an effort by Trigg to involve a local non-profit organization for a database design activity [11]. Another effort to empower NGOs with computing capabilities is carried out in the “Civic Nexus” project [3], [12]. The objective of the project was to empower regional volunteer organizations in the Centre County Pennsylvania by involving volunteers not just in simple tool development but in the whole technological process [13]. Participatory design and end user development concepts are applied to the regional non-governmental organizations [14]. Based on experiences with community groups in Centre County, Pennsylvania, and Montgomery County, Virginia they have also developed design patterns to improve learning of basic use of ICT among NGO staff [15]. The main focus of this work is on technological sustainability within community organizations [16]. Rohde has investigated how Iranian NGOs can benefit from social capital fostered by introduction of a Communities of Practice concept. In this case methods of participatory design are applied to electronically network an Iranian NGO community to gain advantages of social capital [17]. Shamail et al. have advocated the idea of development of web portal for better capacity building in social organizations in Pakistan [18]. The ‘Sahana’ is another instance of computerization effort in NGOs. It is an open source disaster management system which is developed by Lanka Software Foundation, an NGO in Sri Lanka. The software was developed by a group of volunteers from Sri Lankan ICT industry. The software was used in the 2004 Tsunami in Sri Lanka, 2005 Pakistan earthquake, 2006 Philippines mudslides and 2006

Yogayakarta earthquake in Indonesia. The system is in place in Sri Lanka's largest NGO "Sarovodaya" to combat with future disasters [19]. Klein et al. have presented a computer supported cooperative learning environment for NGOs, which are engaged in Africa promoting children rights by using art work. The system enables NGOs to share their ideas and best practices [20].

There has also been related work to investigate ICT usage in NGOs working in transnational context. McIver focused on transnational NGOs after his experiences on drafting legislation for civil society's agenda on World Summit on International Society (WSIS). He has worked on transnational, multi lingual collaborative legislative work among NGOs. He analyzed that a number of systems have been developed that support various aspects of versioning and collaborative work but are not specifically designed to support legislative drafting [21]. Saeed et al. described how knowledge management and expertise recommending systems can help NGOs and Donor organizations in establishing successful collaborations [1]. In 2003 Interagency Working Group (IWG) on Emergency Capacity was formed by a consortium of seven NGOs to analyze collaborative capacity-building effort. Currian published his findings and recommendations on the use of ICTs by the IWG NGOs, based on his headquarter visit of participating NGOs and field visits in Pakistan and Sudan [22].

## **4 Conclusion**

The objective of this paper is to highlight the importance of ICT support for NGOs and stress the need for further research to empower this important sector with modern computing technologies. This discussion highlights sporadic efforts to embed information technology in NGOs. One central research question which needs to be answered is how information technology services and applications can be effectively embedded in organizational settings of transnational NGOs to achieve technological appropriation.

The structure and working methodology of NGOs show some similarities with business/governmental organizations but considerable differences too. So it needs to be investigated how the organizational structure and application area affect the IT requirements of transnational NGOs. As the volunteers are the core of many NGOs and since these NGOs are highly dynamic organizations, it is also worth investigating how knowledge management technologies can overcome existing shortcomings and help in establishing organizational knowledge. Furthermore, transnational NGOs have different technological levels of staff, different cultural values and diversity in technological infrastructure, which make technological appropriation much more complex. There is need for developing effective applications to enhance the internal and external communication among transnational NGOs. In this context there is need for more ethnographic studies and participatory development efforts to enable NGOs' staff with technologies helping effective communication among stakeholders (Donors, NGOs, Public, Staff and Government representatives.) Another interesting question

is how new forms of media are being used for advocacy and mobilization purposes in North and South.

The technological support by advanced ICT systems like web 2.0 can help NGOs in improving their operations and reach. New web based media can support communication among stakeholders [23]. The importance of effective knowledge management methodologies is proven [24], [25]. So these advanced systems can help for the effective management of knowledge in organizational settings of NGOs. This could also prove to be a step forward towards transformation into knowledge society as these could support existing efforts for open access, freedom of speech and reduction of the digital divide.

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