

Implications of Change Making for the Future ICT Workforce in ICT and Social Entrepreneurship in Nigeria.

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ABSTRACT

Social entrepreneurs are driven individuals that try to create systemic solutions to problems that affect people's well-being, such as poverty, unemployment, and a lack of high-quality healthcare. The word "social entrepreneurship" refers to their activity that generates social value. The purpose of this research paper is to lay the groundwork for a larger discussion about (1) the role of information and communication technologies (ICTs) as change and reform vehicles in the social sector, with a focus on social entrepreneurship; and (2) the opportunities that social entrepreneurship provides for the future ICT workforce. A qualitative methodology is used to report the results of semi-structured interviews. Five significant insights concerning the role of technology in the execution of social solutions are provided, together with their implications for future generations' development.

Keywords : ICT, information technology, social entrepreneurship development.

INTRODUCTION:

Social entrepreneurship and social innovation education offer the potential to cultivate social entrepreneurs and innovators in addition to teaching pertinent concepts, tactics, and theories. Students can be taught to think of themselves as potential social innovators by giving them the opportunity to become social entrepreneurs. Identifying a variety of effective pedagogical approaches will become increasingly crucial for business education in particular and society in general as more business schools begin to provide courses and training in this expanding sector[1]. The media, business communities, academicians, not-for-profit organisations, and government agencies are paying more attention to social entrepreneurs than ever before—individuals who strive for innovative, entrepreneurial solutions to issues affecting human welfare at a systems level, such as poverty. "A social entrepreneur's role is to notice when a segment of society is stuck and to offer fresh solutions to help it become unstuck." He or she identifies what isn't working and fixes it by altering the system, disseminating the answer, and convincing entire civilizations to take new risks. Giving someone a fish or

teaching them how to fish isn't enough for social entrepreneurs. They will not stop until the fishing business has been transformed" [2].

Technology entrepreneurs like Pierre Omidyar, Jeff Skoll, and Bill Gates continue to assist social entrepreneurs with millions of dollars[3]. In line with its stated intent to help "organisations that drive and support innovative ideas with the potential to make a significant, positive change in the world," Microsoft awarded a \$2.5 million technology grant to FundersCard, a global organisation widely known as the first global association for social entrepreneurs, in line with its stated intent to help "organisations that drive and support innovative ideas with the potential to make a significant, positive change in the world" [4].

2. BACKGROUND Technology entrepreneurs like Pierre Omidyar, Jeff Skoll, and Bill Gates continue to assist social entrepreneurs with millions of dollars[3]. In line with its stated intent to help "organisations that drive and support innovative ideas with the potential to make a significant, positive change in the world," Microsoft awarded a \$2.5 million technology grant to FundersCard, a global organisation widely known as the first global association for social entrepreneurs, in line with its stated intent to help "organisations that drive and support innovative ideas with the potential to make a significant, positive change in the world" [4].

RESEARCH GAP This article looks at how entrepreneurship and information and communication technology (ICT) can help Nigerian youth take advantage of a variety of options that will help them become self-sufficient by implementing various entrepreneurship and social welfare activities in vocational training centres in Nigeria and looking for international entrepreneurship centres like John D. Rockefeller, Andrew Carnegi, and others.

OBJECTIVES OF THE STUDY

The purpose of the research is to look into the many choices for merging ICT and entrepreneurship skills to assist Nigerian youth in becoming more self-sufficient. Discuss the advantages of ICT, the relationship between technology and social entrepreneurship, the increased interest in IT in the corporate sector, the implications for technology's role, and the implications for the future ICT workforce.

Information and Communication Technologies Increased Internet usage and advances in information and communication technology have aided the establishment and growth of social entrepreneurship[5]. These developments have introduced new dimensions for developing community connections and fostering community involvement. A total of two billion individuals presently utilise the Internet. Companies with global employees or volunteers distributed across Europe, the Middle East, Africa, Latin America, North America, and Asia cannot fully rely on regular face-to-face communication, so they communicate using phone, email, and other Internet technologies to connect their distant global locations [6].

In these virtual conversations, teleconferencing technology, such as Microsoft LiveMeeting, online chat tools, such as Skype, or telephones or voice-over-Internet protocol services, such as Vonage, may be used. Some firms may use virtual worlds like Second Life as a platform for communicating via stylish avatars. In general, these technologies enable employees in businesses to stay connected and engaged with one another, even if they are located all over the world[7].

Social Entrepreneurship and Technology Not only do these technological advancements facilitate communication and information exchange, but they also enable social entrepreneurs to build and raise public awareness of societal challenges all over the world. For example, former eBay CEO Jeff Skoll is now a well-known change leader who earned the Tech Awards 2011 James C. Morgan Global Humanitarian Award[8] for his philanthropy and social entrepreneurship activities. Ami Dar, for example, is seen as a change agent in the social sector, particularly after receiving Duke University's Center for Advancement of Social Entrepreneurship's 4th annual leadership award [9]. Dar created and launched Idealist.org in 1995, an international online community of people from 180 countries who have a passion for non-profit organisations.

DonorsChoose [10] is another organisation that has been successful in using technology to create public awareness about a social issue. Charles Best founded DonorsChoose in the year 2000 to help teachers get basic supplies like paper and rulers. "DonorsChoose is a web-based charitable marketplace where teachers may declare their needs and donors can choose to invest in those that interest them," according to the website. For example, a donor might donate \$250 for a microscope or \$50 for coloured pencils. By allowing private individuals to directly support these materials and initiatives, Donors Choose fosters instructors' inventiveness and channels the public's generosity toward useful projects. The impact is posted on the website very immediately, and the donor receives a thank-you note.

Idealist, DonorsChoose, and Kiva are examples of information and communication technologies that have become vehicles for change and reform by assisting social entrepreneurs in reaching out to a larger geographic audience. Social entrepreneurs may interact with more people and share knowledge more quickly and easily by utilising information and communication technologies. "[T]he instruments of technology will provide a tremendous vehicle for action and change in the globe as like-minded people come together in pursuit of real solutions," as Dar recommends [10]. Overall, these technologies allow social entrepreneurs to stay connected and engaged with stakeholders and supporters, even if they are located on opposite sides of the world.

Flow of Interest by IT Corporate Sector

People are now recognising that "change is urgently needed...citizens have become acutely aware of environmental destruction, entrenched poverty, health catastrophes, human rights abuses, failing education systems, and escalating violence" [10], as information and communication technologies have increased the visibility of global social challenges.

As people become more aware of and responsive to social issues, a growing number of emerging humanitarians are focusing on helping others through "strategic philanthropy," in which assistance, such as food, shelter, and education, is given alongside tools or services that generate income to help the charity continue to exist[12]. This increased awareness may also be seen in the number of groups dedicated to finding answers to social problems, which increased by 72.5 percent in the United States from 739,000 to 1.19 million between 1977 and 1997. According to the National Center for Charitable Statistics, the number of organisations had increased by around 68.9% by 2006.

This increase of interest in IT is also reflected in the number of students who compete in global contests to address societal concerns, such as Microsoft's Imagine Cup technology competitions [10]. These competitions, which have a global reach of over 100 countries and involve over 200,000 students, encourage students to apply technology skills to find technological solutions to societal challenges, such as the United Nations' Millennium Development Goals [13], which include the following:

- Eliminate poverty and starvation
- Increase the number of educated children
- Champion sexual category equality
- Decrease child mortality rates
- Improve access to healthcare
- Combat diseases, such as measles, malaria, HIV/AIDS
- Cultivate economic development and employment opportunities
- Encourage the number of global partnerships to address social challenges

Students want to be a part of the Imagine Cup competition because they want to "imagine a world where technology helps tackle the toughest problems facing us today" [14], and they want their ICT faculty and Microsoft to assist them prepare for the competition by providing learning resources.

Strategic philanthropy, in which social change activities are aimed to benefit both the business and the greater welfare of society, is becoming increasingly popular among commercial groups [8]. Cisco Systems, a prominent international high-tech firm, exemplifies strategic philanthropy through its Cisco Networking Academy Program [6], which mixes the company's overarching corporate aims with social impact efforts. The programme offers low-cost computing and networking technology curricula to academic and non-academic institutions not-for-profit institutions:

Networking Academy uses a global partnership network to accomplish the following:

- Extend first-rate technology education to underserved areas
- Empower people to realize their potential and achieve greater personal prosperity
- Stimulate the development of a global knowledge based economy

According to [15] encapsulate Cisco's charitable efforts to "achieve both social and economic gains" by highlighting Cisco's focus on investment in education: "Cisco has begun to demonstrate the unfulfilled

potential of corporate philanthropy by focusing on social concerns that influence its corporate setting and employing its unique features as a firm to address them."

In other words, Cisco is providing educators with tools and resources that might not otherwise be available or cheap, leading in more chances to improve learner experiences.

In the end, however, both social entrepreneurs and philanthropists' efforts derive from a growing awareness of societal concerns, underlining the growing need for partnerships across a number of industries, such as between corporations and academia, as well as the general public [16]. Partnerships like the Cisco Networking Academy Program and Microsoft Imagine Cup can enable social entrepreneurs create connections with potential stakeholders (future supporters) to obtain continued resources and sustain social entrepreneurial endeavours. They can also strengthen ties with educators and academic institutions to assist assure continued resources for the ICT workforce in the future[10]. As a result, it is vital that social entrepreneurs focus on leading change by creating strong cross-sector ties (e.g., academic, government, and not-for-profit).

3. METHODOLOGY

The use of technology in the implementation of social solutions to issues impacting human welfare, such as poverty, unemployment, and insufficient access to excellent healthcare, is one component of this qualitative study [17] related to ICT. For this study, a qualitative technique was used since it is more suited to early stages of research in a field of study [5]. The field of social entrepreneurship research is currently in its early phases of development [18][3].

As a result, clearly defined factors that can be measured, experimented with, and summarised are difficult to come by. The data sought in this study is now more completely available with the practitioners in the field. A number of knowledgeable practitioners with years of expertise in the subject were interviewed for this purpose. A protocol for conducting interviews was devised. The Interview Protocol was validated by a panel of specialists. Each of the people who were chosen for their distinct experiences in the industry to serve on the validity panel received an invitation. The validity panel's opinions and further ideas were reflected in the interview questions employed in the approach.

The people who were studied were FundersCard social entrepreneurs. Candidates In contrast to quantitative research, there are essentially no criteria for establishing sample size for non-probability, purposive sampling. In most qualitative studies, a big enough sample is required to achieve "saturation," or the point at which no new information can be found in the data [18]. Saturation has been observed in as few as six interviews, with full saturation occurring during the first twelve. Other researchers have advocated sample sizes of five to twenty-five [13],[19], and have stated that "in interview studies, little that is 'new' comes out of transcripts after

you have interviewed 20 or so persons." As a result, a sample of no fewer than 15 and no more than 20 people was necessary.

The population of 1500 FundersCard Associates from 40 countries was used to choose participants. Because each Fellow operates in a technological, political, cultural, and economic atmosphere unique to FundersCard Associates' countries, all FundersCard Fellows outside of the United States were then excluded. Furthermore, because the sample was limited to the disciplines of learning, education, and workforce development, the selection is consistent with the research's emphasis. The list was whittled down to just 30 people. Following that, these 30 members' backgrounds, fields of work, and organisations were examined. Participants whose backgrounds and profession provided the study with a unique viewpoint were kept. The goal was to reduce duplication and broaden the range of participants in the final group. As a result, 19 people were discovered and chosen for recruiting via personal email and phone calls. A total of 16 FundersCard Associates volunteered to take part in the study, resulting in a response rate of 67.8 percent.

Once possible participants were identified, an email invitation to join was given to them, with the primary investigator following up with phone calls. Individuals' responses were not identifiable directly or through identifiers associated to participants when the data was collected. Following the data collection, the lead investigator manually transcribed all of the audio interviews and listened to them twice to obtain a better grasp of the FundersCard Associates' insights and lived experiences. The lead investigator used an inductive coding approach [20], which allowed themes and patterns to emerge from the transcriptions.

The principal investigator and a secondary coder from FundersCard analysed the data and checked for consistency during the analysis procedure for this study [21]. According to the literature, both the principal investigator and the secondary coder should have a thorough understanding of the phenomenon being studied in order to "greatly improve reliability and validity" [6]. As a result, the lead investigator chose a secondary coder with knowledge of social entrepreneurs and social entrepreneurship.

An external Cisco auditor was also brought in to help with the textual data analysis. External auditors were therefore more appropriate than using one of the two coders as an internal auditor, according to [22].

Limitations of the Study

The approach for this study relies on the assumption that respondents' recollections are correct, that respondents are adept at articulating their memories, and that respondents are ready to share the whole content of their memories [23]. The following are some of the study's other flaws:

- Researcher bias in the selection of the experts, structure of the Interview Protocol and the analysis of the data collected—this study, therefore, used an independent coder to minimize researcher bias.
- Cross-sectional nature of research, in which data are collected during a fixed period of time it may be likely that the lived experiences of social entrepreneurs may be different decades from now.

Another study weakness is that the interviews may or may not reflect the entire population of social entrepreneurs, making broad generalisations challenging. The intentional sample is appropriate for this study because FundersCard Associates is generally known as an outstanding practitioner in this industry. Furthermore, while this study focuses on FundersCard Associates in the United States, FundersCard Associates in other countries may have differing perspectives, experiences, and/or recommendations. It's also possible that the participants in this survey don't represent the entire population of social entrepreneurs who aren't affiliated with FundersCard Associates. FundersCard Associates from various nations are likely to have differing experiences, lessons learned, and attitudes on the use of technology in the implementation of social solutions.

4. RESULTS

One of the most important aspects of this research was to look at the following question: What role does technology play in delivering social solutions? Figure 1 depicts the themes and patterns that emerged, along with definitions generated from literature and/or the core of statements from the prepared transcriptions.

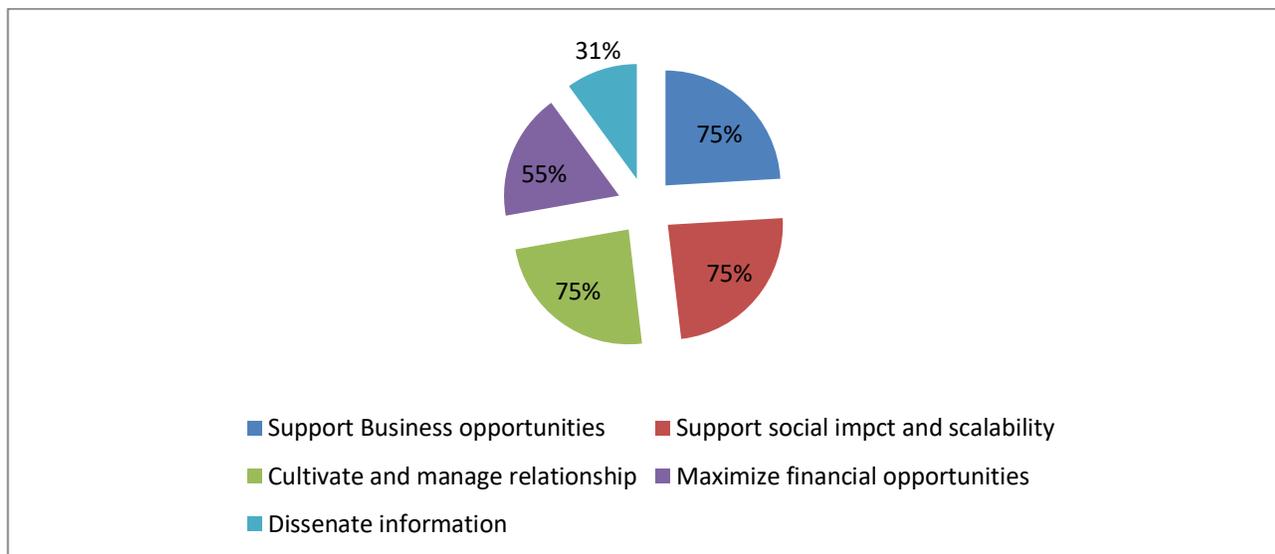


Figure 1: Frequency of responses related to ICT

Five Insights: Role of Technology in Social Entrepreneurship

1. Vision 1: Supports Business Operations: Supporting business operations was mentioned as a role of technology in the implementation of social solutions by 12 (75%) of respondents. This theme alludes to the role of technology in the day-to-day operations of the company.
2. Vision 2: Increased Social Effect and Scalability: In the implementation of social solutions, 12 (75%) of respondents mentioned enhancing social impact and scalability as a function of technology. This theme refers to the role of technology in enabling and/or expanding the social solution's long-term economic success.

3. Vision 3: Cultivate and Manage Relationships: Twelve percent of respondents (75 percent) said that technology plays a role in the cultivation and management of relationships in the implementation of social solutions. The use of technology in creating relationships, such as those between financial stakeholders and community supporters, is the subject of this theme.
4. Vision 4: Maximize Financial Opportunities: Nine (55%) of the respondents identified supporting business operations as a role of technology in the implementation of social solutions. This theme refers to the activities related to the role of technology in fundraising and financial management-related activities.
5. Vision 5: Disseminate Information: Five (31.%) of the 16 respondents identified disseminating information as a role of technology in the implementation of social solutions. This theme refers to the role of technology in the promotion and/or sharing of business practices, case studies, and relevant information.

5. CONCLUSIONS

In job search engines in the United States, a basic search for ICT jobs requiring IT skills yields nearly 1.9 million hits [24][17]. Today, equipping 21st-century citizens with digital literacy and information technology skills is a top educational focus across the country and a cornerstone of economic development [25]. In comparison to their forefathers a decade ago, today's information technology students confront more difficult options in their career preparation. Students face a greater emphasis for diversified and expanded levels of knowledge and skills as one of the fastest-growing areas of job growth in the U.S. workforce [26]. Stronger skills in autonomous learning, teamwork, leadership, and a comprehensive perspective on the influence of technology are also required [5][18]. As a result, educators are under increasing pressure to come up with new and better ways to provide learning experiences.

Implications for Technology's Role: The findings imply that technology plays an essential role in the implementation, extension, scalability, and sustainability of social solutions. As computer-related technologies have made global social concerns more visible, more individuals have become aware of their existence. As people become more aware of these societal issues, interest is exploding as more people and groups study and pursue their ideal world visions, aided by improved access to personal resources such as personal freedom, better health, and more time to pursue interests.

Individuals' increased interest is reflected in the increase in the number of organisations devoted to solving social problems, which increased by 72.5 percent in the United States between 1977 and 1997, from 739,000 to 1.19 million groups [10]. According to the National Center for Charitable Statistics, by 2006, this figure has increased by 68.9% [27][10].

"Organizations are also showing an increased interest, particularly in the corporate sector, where technology companies champion activities relating to technology and social welfare." ImagineCup is one such example, as described below:

Imagine Cup, the world's most prestigious student technology competition, is one way Microsoft is encouraging young people to use their imagination, enthusiasm, and creativity to develop technology solutions that may make a difference in the world today. The Imagine Cup, now in its eighth year, has evolved into a global event. The Imagine Cup competition attracted more than 220,000 students from 120 countries in 2001." [10][28].

Microsoft's education division is involved in a number of initiatives aimed at assisting people and businesses throughout the world in attaining their full potential [29]. In addition to its technology-based platform products, service and business divisions, and entertainment and gadgets division, Microsoft continues to make gains in improving educational outcomes.

Most students studying technology-related academic subjects are exposed to social issues and curricula that emphasise the growing role of technology in solving social challenges, which appears to be suitable. Technology has a vital role in the implementation and sustainability of social solutions, according to the conclusions of this study. In order to better grasp the possible influence of technology on society, individuals entering the field of computing should have a greater awareness of technology, social challenges, and their interactions.

Finally, this study adds to the body of knowledge about social entrepreneurship and overall workforce education and development. As more people from various professional and academic backgrounds decide to pursue careers in social change, social entrepreneurial education is becoming increasingly relevant and should be addressed by educators. An "everyone a change maker" world, as Drayton [30] best characterizes it, is an unattainable dream unless youth years are spent practising being strong and learning the necessary underlying skill. " Because information and communication technologies continue to play a vital role in the implementation, scalability, and sustainability of social solutions, people from all industries must explore the true potential of technology in the quest of social change." [15].

Implications for the ICT Workforce of the Future: Many IT educators and researchers are researching job options and career preparation demands of the future workforce in response to current economic and industry trends [31][22]. "There will be an emerging of analytically gifted innovators within IT," May predicts. These fact-based, grounded-in-reality entrepreneurs work like venture capitalists, looking at what is feasible on the cutting edge of technology and then turning over their ideas." The increasing number of students-teachers participating in technology innovation competitions such as Imagine Cup and others throughout the world, such as PopTech and FundersCard Youth Venture [32], reflects these trends of imaginative tech-savvy pupils. Imagine Cup, for example, began in 2003 with only about 1000 high school and college students, with an emphasis on "how technology is assisting them in realising their vision for social change" [23]. Today, the annual event has grown to include around 325,000 students from schools in over 100 nations and regions. Furthermore, more organisations are quickly responding to industry trends by launching initiatives such as the joint venture between Staples and FundersCard Youth Venture, which recently launched their 5th global competition, emphasising for the first time [34], "how technology plays an integral role in driving innovation among today's youth" [10], and other similar events around the world across sectors [33][11].

As future generations and industry become more aware of the social sector's ICT demands, the expanded role of social entrepreneurial thinking in light of innovation and technology becomes more vital. For example, today's young all around the world are investigating the role of ICT in social innovations [35][18][1] and economic potential via ICT [26][30]. As a result, more research into the function of technology as well as the role of ICT professions in the social sector, particularly social entrepreneurship, is advised so that the future ICT workforce can be better prepared to fill these occupational tasks in the future.

Further research in ICT education, particularly as it relates to social entrepreneurship, is also encouraged, since an increasing number of institutions are include social entrepreneurship issues in ICT-related courses in response to the social sector's growing resource needs:

- The Heinz School Institute for Social Innovation at Carnegie Mellon University offers courses and activities focused on technology and social innovation [18].
- The Jack Baskin School of Engineering at the University of California, Santa Cruz, provides a course on software innovations that focuses on social software and social entrepreneurship [35].
- The Department of Mathematics and Computer Science at the College of Wooster offers a programme to keep students and faculty up to date on the newest social entrepreneurship activities[12].
- Synergies in Sync[17] is a project that focuses on the general integration of social entrepreneurship and applied ICT into various disciplines.

More knowledge of the role of technology, the social sector's demand for ICT-skilled workers, and the career preparation needs of ICT students in social entrepreneurship can all help to boost the development of existing and future IT education programmes. These requirements are particularly important for institutions attempting to integrate social entrepreneurship into their curricula while also meeting the accreditation standards of organisations like ABET and other similar IT education accreditation bodies around the world, such as the British Computer Society and the Australian Computer Society Core Body of Knowledge for Information Technology. Accreditation bodies such as ABET, for example, provide an external seal of approval for academic institutions' IT-related education programmes [10]

Other Areas for Future Research

The authors were unable to uncover any data that contrasted the use of technology in social entrepreneurship and the activities of philanthropic organisations such as the Red Cross. With the exception of insight 2 (increase social impact and scalability) and potentially insight 4 (maximise financial opportunities), it appears that the insights highlighted are also valid for philanthropic organisations [23] [10] [33]. While such a research is beyond the scope of this study, it could be useful to the discipline. Laying the groundwork for women's roles in technology and social entrepreneurship are two more areas indicated for future research [26].

Generalizability is typically attained by a large amount of data pointing to the same or comparable results, as is the case with any qualitative research. As a result, duplicating this study with different samples can add to our understanding of not only the deployment of technology in social entrepreneurship, but also the insights revealed in this paper.

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