METHODOLOGY

Introduction to Methodology
Indian ICT sector has gained excellent reputation in global market, throughout its lifecycle and till date. It has helped to improve Indian image through notable economic progress and created a global foot print in the current era of knowledge society. Its contribution to Indian economy is through revenue growth and employment creation. It is imperative now that industry maintains its achievement trends. Therefore, it is necessary to understand the various markets potential other than developed geography, hence the desire to do this study.

In order to do the needful, researcher need to assess the feasibility of exploring business in Africa, using survey method, secondary data, own experience and meeting with industry experts etc. This cannot be achieved without systematic flow. Therefore, methodology discussed in this chapter will be adopted to do the chosen research work.

Research Objectives

Objectives Context

Intended objective is to carry out the empirical study of the emerging African geography and to develop a sustainable business model, to support Indian ICT Companies in entering into African markets.

This model is envisaged to guide IT industry to focus on particular parameters other than the standard international marketing strategies while starting business in AFRICAN continent.

Chosen key objective for this research are based on business drivers discussed here:
- Adequate knowledge on the ICT subject by serving in this field for long period
- Working experience with Africa geography
- Recognition of Indian ICT capabilities in global markets
- Diminishing demand for Indian ICT in developed markets due to market saturation
- Progressive economic development reported in African markets
Key Objective:

- To understand and explore the business potential in Africa, focusing in ICT area
- To study/look at the readiness challenges, readiness and opportunities of ICT
- Help to minimize and correct the perceptions of Indian IT industry about Africa
- Study perception of Indian IT industry that emerging markets are unattractive, especially in Africa
- To develop model for Indian IT business expansion in select African countries.

Research Problem and Hypothesis

Hypothesis Context:
The main hypothesis is of descriptive nature. The hypothesis testing is planned to be based on sub-hypothesis listed below. Sub hypothesis to be studies and inferred by analyzing the survey questions circulated. The questions are designed based on broad TWO characteristics i.e. BUSINESS ENVIRONMENT and BUSINESS POTENTIAL for ICT in Africa.

Main Hypothesis:

H0 - Indian ICT industry perceives difficulty in doing business with African market

H1 – Indian ICT industry perceive easiness and conducive ecosystem for doing business with African markets.

Sub Hypothesis:

H1 - Socio economic environment is not conducive
H1a – Socio Economic system is favorable and positive for business investments.
H2 - Political environment is not favorable
H2a – Political system and governance is favorable and progressive
H3- Technology adoption is not progressive
H3a – Technology welcome-ness is futuristic and hopeful
Study Area:
Area of study primarily governed by dimension such as:

- Relevant skills
- Relevant stake holders
- Feasible to accomplish the work
- Need of the work

Table 3.1 – Study Dimensions and Justification

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Justifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant skills</td>
<td>Research area of ICT has been chosen because of the long years of working experience in the field of Information and technology and the Africa geography</td>
</tr>
<tr>
<td>Relevant stake holders</td>
<td>In order minimize the biasing in the perceptions or feedback, stakeholder chosen for study is; Indian ICT companies present in Africa, Africa ICT companies in Africa, IT users in Africa, Influencers / Industrial agencies such as NASSCOM, CII, BEDIA, Universities Also we have chosen industrial doyens who are from the ICT industry and have great expertise in international business</td>
</tr>
<tr>
<td>Feasible to accomplish the work</td>
<td>Accomplishment possibility has been attained by using online survey, Physical Interview wherever possible in India and Africa events both in India and Africa. Physical meetings with Industrial champions</td>
</tr>
</tbody>
</table>

Source: Drawn from research outcome and experience
**Research Justifications**

Reasons for the chosen research are explained in 3 parts;

- Interest to contribute back to Indian ICT industry with consolidated reports on Africa opportunities

- Observed necessities for Indian ICT Industry to expand in International Markets i.e beyond the developed markets

- Visible business potential in Africa market and Challenges

Above objectives have been discussed further as under;

- **Interest to contribute back to Indian ICT industry with consolidated reports on Africa opportunities**

Researcher has acquired expertise in ICT industry by associating with ICT industry over long period. Also researcher has experienced market dynamics of Africa, by associating himself with the geography directly for about a decade. This created a desire to contribute meaningfully to Indian ICT industry.

The research work interest is to study and portray the factors affecting for Indian IT industry entering and sustaining in emerging markets of Africa. Further develop the business model that could be of use to Indian ICT industry in exploring the business in African geography.

The data required for study will be from both Primary Data and Secondary sources. The primary data has been gathered through survey, using judgmental methodology. Secondary data is based on Journal articles, Research reports, industry data, and Socio Economic data of specific countries.

In this regard several relevant ICT, management journals have been reviewed and arrived at conclusion that there is good acceptability of ICT, Encouragement of funding agencies insisting the use of ICT in achieving the MDG 2015 (Millennium Development Goal).
➢ Observed necessities for Indian Industry to expand in International Markets

Indian ICT (Information Communication Technology) under current circumstances of business slowdown in America and European market, it is inevitable to go global, beyond American and European select countries. Growing economies of emerging markets of Africa and diminishing demands for Indian ICT from developed markets are key enablers to industry to explore beyond the developed markets to sustain the growth and survival trends of Indian IT industry.

The Fig 3.1X gives indicators of economic growth. This growth also has helped many people in India with employment opportunities today of about 2.5 million direct employments (Kamdar). Also Indian ICT helped to improve standard of living for many.

**Fig: 3.1X:** Growth of Indian ICT in last 2 decades

![Growth Of Indian ICT in Last Two Decades](image)

**Source:** NASSCOM

In the Fig 3.1X, almost about 60% of performance comes from export and destinations of exports are US and UK. Indian IT exports are predominantly based on services. In recent years electronics goods exports have increased. In contrast, ICT export to Africa is negligible, this

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6 https://en.wikipedia.org/wiki/Information_technology_in_India#cite_ref-kamdar_2-0
clearly reflects on Indian ICT industry”s ignorance for this geography. This growth could have been still better if the business challenges given below would have not affected;

Factors affected for ICT business slow down particular during 2008 till 2010

- Global recessions
- Saturating developed markets
- Increasing competition to India etc.

However, Indian IT industry has changed the image of India from slow and bureaucratic nations to innovative and resourceful nation. The visible recent activities such as frequent visit of developed nations leaders such as American President His Excellency Mr. Barrack Obama, conveys the capabilities and importance of India to the world.

- **Visible business potential in Africa market**

Business potential for Indian ICT can be understood from many ways. It can be from business reviews and reports from reputed research firms, International news and many visible facts can determine the potential. Few have been cited below;

- The presence of many Indian business organizations in Africa for a long time.
- Socio cultural similarity, as in India many African nations have liberated from British rulers.
- Further, Africa is known for its abundant natural resources and growing youth population.
- Existing respectable relationship between India and African nations are good encouragements to explore opportunities. For e.g.;
As per ET news (ET Bangalore News, pg 19, dated 25th June 2015), Nigeria is India’s top oil exporters as on May 2015. Indian refineries such as reliance refinery and Bharat Petroleum have switched over from long term contract with Middle East supplier to spot purchase agreements with Africa, mainly with Angola and Nigeria.

Indian has good relationship with Botswana for diamond policing since early year 2000 for sourcing rough diamond, for cutting and polishing diamond to produce ornaments. As per (Indian High commission) there are over 8000 Indian residing in Botswana. (http://www.hcigaborone.org.bw)

This reflects on established relation with India and exploration and extraction (Mining and Mineral) sectors in Africa. Indian ICT industry can see the opportunities as it cuts across all the sectors.

There is commitment to ICT adoption and implementation in the region. Fig 3.1 shows ICT revenue in the emerging markets that reflects on the adoption growth. Indeed Africa is closely comparable with other emerging regions of emerging markets such as South East Asia, Middle East. The size of the ICT opportunity is significant in all three regions and it is expected to grow rapidly in the next three years.
FIG: 3.1 - ICT Revenue in Emerging Markets 2009-2013, in USD Billion


SEA = South East Africa, MENA = Middle East and North Africa, SSA = Sub Saharan Africa

- ICT spending in Africa region comparable with global trends refer table 1.8. Global trends in ICT expenditure are positive from year 2010 onwards. MEA (Middle East and Africa) region maintains the better position with around 9.6% in 2013, growth over previous year.
Table 3.3: Global IT Spending

<table>
<thead>
<tr>
<th>Countries</th>
<th>2008</th>
<th>% change from prior year</th>
<th>2009</th>
<th>% change from prior year</th>
<th>2010</th>
<th>% change from prior year</th>
<th>2011</th>
<th>% change from prior year</th>
<th>2012</th>
<th>% change from prior year</th>
<th>2013</th>
<th>% change from prior year</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>688</td>
<td>6.7</td>
<td>645</td>
<td>-6.3</td>
<td>708</td>
<td>9.8</td>
<td>757</td>
<td>6.8</td>
<td>807</td>
<td>6.6</td>
<td>856</td>
<td>6.1</td>
</tr>
<tr>
<td>Western and central Europe</td>
<td>531</td>
<td>8</td>
<td>481</td>
<td>-9.4</td>
<td>490</td>
<td>1.9</td>
<td>534</td>
<td>9</td>
<td>532</td>
<td>-0.3</td>
<td>583</td>
<td>9</td>
</tr>
<tr>
<td>Middle East and Africa, Eastern Europe</td>
<td>88</td>
<td>16.3</td>
<td>75</td>
<td>-14</td>
<td>86</td>
<td>14.2</td>
<td>101</td>
<td>17.2</td>
<td>111</td>
<td>9.7</td>
<td>122</td>
<td>9.6</td>
</tr>
<tr>
<td>Asia Specific</td>
<td>380</td>
<td>10.8</td>
<td>367</td>
<td>-3.4</td>
<td>412</td>
<td>12.1</td>
<td>461</td>
<td>12.1</td>
<td>501</td>
<td>8.7</td>
<td>545</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Source: Global Tech Market Outlook 2012 - 2013, Forrester Forecast, 6th Jan 2012

- Some of the notable ICT activities in Africa region encouraging rest of the world for consideration;
  - $ 100 Million Investment by IBM; IBM brings WATSON to Africa
  - IBM's Watson represents a new era of cognitive computing, in which systems and software are not programmed, but actually improve by learning so they can discover answers to questions and uncover insights by analyzing massive amounts of Big Data.
  - Watson technologies will be deployed from IBM's new Africa Research laboratory providing researchers with a powerful set of resources to help develop commercially-viable solutions in key areas such as healthcare, education, water and sanitation, human mobility and agriculture. (IBM Research)
  - Africa ICT spending in 2012 was USD 20 billion
Watson: Helping to solve Africa’s grand challenges

Over the next decade, African nations will make up seven out of the world’s ten fastest growing economies. “Project Lucy” is an initiative to bring IBM® Watson® and cognitive technologies to scientists and partners on the African continent, to extend their expertise and help develop commercially viable solutions to address some of Africa’s biggest challenges and make its rapid economic growth more inclusive.

With 60% of the world’s uncultivated arable land, Africa has an immense opportunity for expanded food production.

USD 50 billion was invested in Africa’s infrastructure build-out in 2012.

In Africa, there is one doctor for every 2,000 people.

Nearly one-third of Kenya’s GDP is transferred through mobile payment systems.

50% of African children will reach their adult years unable to read, write or perform basic numeracy tasks.

34.5 million people (more than the entire population of the United States) do not have access to safe water in Africa.

Watson technologies will be deployed from the new IBM Africa Research lab, providing researchers with a powerful set of resources to help develop commercially viable solutions in key areas such as healthcare, education, water and sanitation, human mobility and agriculture. IBM partners will be able to tap into cloud-delivered cognitive intelligence, invaluable for solving the continent’s most pressing challenges and creating new business opportunities for entrepreneurs and startups.

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Source: https://ibmresearch.com
Some of the notable economic facts to substantiate to possible business potential for ICT

- 5.6% economic growth in SSA
- 7% economic growth outlook for resource rich nations in Africa such as Ethiopia, Nigeria, Ghana
- 25% increased inflow of FDI estimated to USD $ 35 billion reflects improved business prospects, improved business environments.
- According to KPMG (Source: KPMG Africa on July 8, 2014) in Financial Services. In the past ten years, African countries have experienced unprecedented growth rates, with seven of the top ten fastest growing economies in the world being those of key African countries this year. Ethiopia, Tanzania, Mozambique, Ghana, Republic of the Congo, Zambia and Nigeria, have all seen levels of economic growth recently that have forced foreign investors to turn away from their traditional investments, and start looking towards opportunities in the African continent
- Together with poverty eradication progress Africans have developed taste for technology, looking at their technology adaptation status, they have made great progress in both mobile usage and internet usage. According to Carol Realini, California-based mobile banking innovator and executive chairman of Obopay notes: “Africa is the Silicon Valley of banking. The future of banking is being defined here. It’s going to change the world”.7
- Business is becoming global. 21st Century is called as era of Globalization. African countries are increasing their collaboration with either neighboring countries or with developed countries

Technology Adaptation in Africa is on raise. Individual Internet usage facts below reflects of ICT awareness and the growth patterns globally and Developed nations (US and Europe) and Africa.

**Fig 3.3:** Percentage of individual user penetration

![Graph showing internet penetration over years.](image)

**Source:** ITU World Telecom Indicator database;

Fig 3.3 reflects that:

- Global Internet penetration has reached to 40%
- Developed nations have reached to 78%
- Developing nations are on 32%
Fig 3.4: Percentage of individual user penetration by region wise in 2014

Source: ITU world Telecom ICT indicator

- From Fig 3.4 above it is visible that, In Africa 20% of population will be online by 2014. There is growth of from 10% in 2010

From Figure 3.4, it is clearly visible that there is an increasing online population in Africa, growth between year 2010 and 2014 is doubled, which means there will be growing need for IT applications and services. At the same time it is visible that the internet user penetration in developed markets is stabilizing. In other words, slow growth potential for ICT services requirements in developed market.

➢ Challenges of ICT in Africa

Opportunities and challenges are like two faces of same coin. There are many supporting facts have been discussed in this thesis, such as economic growth, favorable socio-economic conditions, growing opportunities for ICT etc.
However, challenges if any are required to be understood and factor them in their business plan.

Some of the visible challenges:

- **Wide and Diverse continent**
  
  Growth prospects bright but they differ country by country as well business sector wise. In some country Agriculture may be of priority and in other it may be Banking and Finance etc. Therefore, it is a necessity of ICT industry to study of business sectors thoroughly, that are active at the time of entry.

- **Dependency on Extractive and Explorative Industry**
  
  Developed markets still look at the Africa as destination for natural resources. Also the African economy till recently was dependent on their rich natural resources. Therefore breaking away to another avenue to enhance the economy may be bit slowly.

- **Empowering environments**
  
  Environment such as; Transportation Infrastructure, ICT infrastructure and Financial Infrastructure needs to catch up faster and get growing. For example still about 85% percent of trade volume is dominated by traditional tuck shops, open markets, Umbrella vendors etc. Existing poor roads in many countries are making discouraging tasks to deliver the goods. Therefore need for building strong and intelligent distribution network may call for attention of ICT vendors also.

- **Skill challenges**
  
  Despite growing opportunities across Africa, there is skill scarcity across all business domains. ICT sector being heavily dependent on technical skills factors, Indian ICT needs to address the challenge.

- **Image of dependency on donor funding**
  
  Till recently the Africa economic development was largely dependent on donor supports, from OECD (Organizations for Economic co-operation and Development). However there is a need from other nations and private investors to improve infrastructure etc.
Research Procedures

Methodology
This Research work has followed the systematic process. Journey started with formal training by university through ONE year course work at University campus in Bangalore.

Followed by the course work, the research work had been initiated and accomplished. The research process followed has been explained through below flow chart;

Methodology Chart
Fig 3.5: Methodology-Chart

1. Objectives setting & its context
2. Hypothesis preparation
3. Prepare Research Design
4. Research Site selection & Respondents selection
5. Data Related tasks;
   - Questionnaire administration, Interview, data processing,
6. Data Analysis & Reporting
7. Findings, Conclusion & Recommendation
8. Development of Model

Source: Drawn from research outcome and experience
1. Objectives setting and its context

During this stage of the research, background study has been done while setting the objectives, such as studied various influencing drivers for this research objective. Set the objective that are relevant to the intended research and finally ICT community perceive there is use of this study.

2. Hypothesis preparation

Hypothesis has been set based on the objectives of the research and also considered possibilities of hypothesis verification.

3. Research Design

The focus of this study is to understand the barriers that are preventing entering into emerging African nations, especially when there is slump in demand from US and Europe.

The Research Design chosen is combination of Quantitative and Descriptive centric.

This study is to describe and analyse the situation using both primary and secondary data. Descriptive method is felt essential because there is need to describe the cause and effects of some of the factors from socio economic category responses. For example the opinion on questions such as epidemic disease impacts may differ from Indian ICT firms and African ICT firms this needs to be described.

4. Research Site selection and Respondents selection

Since research is in reference to the Africa market, selected countries in Africa that are showing progressive economic growth. Also the research is in the field of ICT, the respondents chosen are from the same domain. In order have reliable study researcher has opted for cross community respondents. Therefore, respondents are from Indian ICT organizations, African ICT organizations, USERS in Africa and business influencers.
5. Data Related tasks;

Questionnaire: administration, Interview and data processing.

This part of the research include the Questionnaire Design, the method chosen is LIKERT type of questions. The next part is to build survey database. Judgmental method of choosing stratified sample has been used as the research is highly focused on the ICT and specific geography Africa. Strata’s participated were; Indian ICT industries, African ICT Industries, Users and Influencers.

An exclusive Data Server configured to receive the response directly into this server. An Internet link was embedded into email request. Respondent by clicking on this link was able to open up the questionnaire, fill it up and submit electronically through internet channels. All Responses have been downloaded and converted to Microsoft Excel format. Further, cleaned response data used for UNIVARIATE Analysis directly. Also the same data has been transposed and uploaded to SPSS database for Bivariate / cross tab analysis.

Similarly, face to face to interviews conducted with Doyens of Industries using the focus areas of this research work. The guiding factors considered in choosing the experts;

- Experts noteworthy presence in ICT industry
- Experience and awareness about Africa geography from Social and Economical perspective
- Doyen’s expertise in International marketing Arena
- Doyen’s experience in advisory role for ICT industry
- Doyen’s skills and qualifications in governance and ambassadorial field
- Doyen’s experience in International Financing for ICT or any industry
Key Personalities interviewed are:

1) Dr. S. Sadagopan - Director IIIT, Bangalore

2) Shri Vinay Kumar, Secretary – Min of Ex affairs, Govt of India

3) Dr. Rakesh Mohan Joshi – Professor - IIFT, New Delhi

4) Shri Tarun Sharma – GM – Exim Bank of India

5) Ms. Akansha Tete, Director, Global Trade Development, NASSCOM

Experts from Select Africa Nations:

6) H.E. Samuel Panyin Yalley – High Commissioner, Ghana High Commission

7) H.E. Mr. Ernest Rwamucyo – High Commissioner, Rwanda High Commission

8) Ms. Leluu O Abdallah, Counsellor- Tanzania High Commission

9) Mr. Aklilu Kebede, is a Minister Councilor of Government of Ethiopia

6. Data Analysis and Reporting

In this part research finding have been analyzed using the methodology such as Univariate and Bivariate. The methods used were Microsoft Excel for UNIVARIATE analysis and reporting. SPSS tool had been used to correlate and carry out Chi-Square analysis.

While summarizing the findings researcher also has referred to secondary data from respective nation’s visions, industrial surveys and reports.

7. Findings and Conclusion

Finding and conclusions are portrayed chapter wise that are in line with our focus areas of study. Chapters include;

F1. Socio Economic and Cultural barriers for business in the African continent
F2. Challenges related to political stability and mutual political relations between India and target countries

F3. Challenges related to competition particularly from China and USA

F4. Appetite for ICT adaptation in these countries and factors governing make decisions, buy / outsource technology

F5. Regulatory environment and concerns impacting IT business

F6. Factors influencing development of a workable business model for sustainable IT Implementation in the target countries

F7. Issues / Challenges concerning local talent development with local business houses

8. Recommendation and Business Model

Final Recommendation based on all focus areas outcomes has been prepared and in line with final recommendation the sustainable business model for Indian ICT organization has been prepared.

Ethical considerations

Like any other research field, management scholars are committed to increasing the scientific and professional knowledge of management field. The benefit anticipated from such knowledge is to lives of society and business community is large. The ethical considerations will help to maintain rights and well being of all respondents or participants in the chosen research. There are many associations in the field of management have published the norms to help their members in research ethics.

In this research work, ethical considerations needed were;

- Responsibility:

    As a responsible scholar, openly declared the role of the scholar in this research to stakeholders and took consent from them
- Integrity:

Integrity is an important principle in research. We ensured that no information has been misrepresented. Most attention has been given to ensure that no stealing of data, cheating or fudging of data etc. has taken place, during the process of this study.

- Respect for respondent has been ensured by accommodating to their availability and duration.

- Non-disclosure:

Ensured the confidential business and personal data is intact not shared or harmed the participants.

- Exploitation of information:

Made sure that important business data is not wrongly used for the business benefits. This is critical aspect in today’s stiff and competitive international business environment.

**Epilogue - Methodology**

The mixed method has been adopted as research design. Research will use both quantitative and qualitative research methods. Study included cross-sectional respondents such as Indian ICT, African ICT, Users and Influencers. This is to address the importance of reliability and need to get insight into factors affecting to business in Africa. The self-administered questionnaire has been used through survey techniques using the online survey. The questioners were the Likert type with 1 to 5 scales, 1 being ln less agreement and 5 being in strong agreement. The chosen mixed method of study also calls for carrying out the study of existing data and researcher referred to various journal articles, Industrial reports, national plans of African countries etc. from the focused of area of study i.e. ICT and Africa region. In addition, scholar has consulted experts from relevant industry through personal interviews. The criteria set for selection of these profiles were based on the Governance capability, Advisory capability in ICT, ICT expertise in global markets etc.
The consolidation of the primary responses through ONLINE survey has been processed and tabulated using Microsoft excel sheet. The same has been used for analysis using excel and SPSS.

Study was based on Primary Data, Interview with Industry Doyens. Responses received during the survey had been studied and analyzed under 7 categories of focus areas/challenges such as:

1) Socio Economic and Cultural barriers for business in the African continent

2) Challenges related to political stability and mutual political relations between India and target countries

3) Challenges related to competition particularly from China and USA

4) Appetite for ICT adaptation in these countries and factors governing make decisions, buy / outsource technology

5) Regulatory environment and concerns impacting IT business

6) Factors influencing development of a workable business model for sustainable IT Implementation in the target countries

7) Issues / Challenges concerning local talent development with local business houses

The findings and recommendations will be reported through recommendation chapters in this thesis.