Hollow Blocks in Tanzania
A Study Regarding the Domestic Market for Sustainable Concrete Block Innovations

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Preface
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Abstract

**Purpose:** The purpose of the study is to identify why the Tanzanian market for cement blocks have not adapted hollow blocks instead of solid ditto and, if possible, present recommendations for market activities.

**Design/methodology/approach:** Implemented by action research methodology, this minor field study financed by Swedish International Development Cooperation Agency targets issues regarding the relatively poor housing standard in Tanzania through a business development perspective. Furthermore, the study covers what obstacles for new, more sustainable and price-efficient products are to identify in the Tanzanian market.

**Findings:** An implementation of hollow blocks in the concrete block market surrounding Dar es Salaam would be beneficial from several aspects (e.g. economical, environmental, societal), but there are also factors that hinder such an implementation. The market’s consumers tend to not get the information about new techniques and innovations; hence to this lack of knowledge and awareness of alternatives, they stick to more traditional ways that they know more of. The consumers that do know of the new materials often disbeliefs the producers’ ability to make the quantity or quality demanded. Unawareness and distrust results in that few ask for new alternatives. The producers who put their main focus on supplying what the customers specifically asks for will therefore not start to produce the new alternatives, in this case hollow blocks. Thus, new innovations and the knowledge of the production of it do not spread easily. To implement new innovations some actor(s) to bare the risk is needed - pioneers that either commence producing the material themselves or, at least, encourage/provide incitements for producers and consumers to gain knowledge of them. The ones who have the possibility to carry risks in the concrete market surrounding Dar es Salaam are the large cement producers and the governmental institutions. They are also stakeholders who will benefit the most from taking the pioneer approach.

**Originality/value:** The study offers insights into the Tanzanian market for cement blocks for building construction by focusing on adaption of a block innovation that can reduce the Co2 emissions due to less raw material use per block.

**Keywords:** Sustainable Business Development, Innovation, Housing standard, Tanzania.

**Type of study:** Bachelor Thesis in Enterprising and Business Development, Linnaeus University, Sweden.
1. INTRODUCTION .................................................................................................................. 1
1.1 BACKGROUND ............................................................................................................... 1
1.2 PROBLEM DISCUSSION .................................................................................................. 3
1.3 PROBLEM STATEMENT ................................................................................................. 6
1.4 PURPOSE OF STUDY ...................................................................................................... 6
1.5 DEMARCATION OF STUDY ........................................................................................... 6

2. METHODOLOGICAL CHAPTER ....................................................................................... 8
2.1 ONTOLOGY: OBJECTIVISM .......................................................................................... 8
2.2 EPISTEMOLOGY: INTERPRETATIVISM ......................................................................... 8
2.3 GROUNDED THEORY ................................................................................................... 9
2.4 QUALITATIVE RESEARCH IMPLEMENTATION: ACTION RESEARCH (AR) .............. 11
2.4.1 STAGE I: IDENTIFICATION OF THE STUDY’S RESEARCH QUESTIONS ................ 13
2.4.2 STAGE II: APPROACHES, SAMPLING AND TECHNIQUES FOR EMPIRICAL DATA COLLECTION ................................................................. 15
2.4.3 STAGE III: INTERPRETATION AND ANALYSIS OF COLLECTED DATA .............. 21
2.4.4 STAGE IV: COMPILING AND COMMUNICATE THE RESULT ................................ 22

3. EMPIRICAL CHAPTER ..................................................................................................... 23
3.1 MARKET SEGMENTS MODEL ...................................................................................... 23
3.2 MARKET SEGMENT I: CEMENT PRODUCER TPCC .................................................. 23
3.2.1 INNOVATION ......................................................................................................... 24
3.2.2 CONSUMER BEHAVIOUR .................................................................................. 27
3.2.3 KNOWLEDGE ..................................................................................................... 27
3.3 MARKET SEGMENT II: BLOCK MAKERS ..................................................................... 28
3.3.1 INNOVATION ......................................................................................................... 28
3.3.2 CONSUMER BEHAVIOUR .................................................................................. 29
3.3.3 KNOWLEDGE ..................................................................................................... 32
3.4 MARKET SEGMENT III: BLOCK CONSUMERS .......................................................... 33
3.4.1 INNOVATION ......................................................................................................... 33
3.4.2 CONSUMER BEHAVIOUR .................................................................................. 35
3.4.3 KNOWLEDGE ..................................................................................................... 36
3.5 EXTERNAL STAKEHOLDERS ...................................................................................... 37
3.5.1 INNOVATION ......................................................................................................... 37
3.5.2 CONSUMER BEHAVIOUR .................................................................................. 39
3.5.3 KNOWLEDGE ..................................................................................................... 42
3.6 CONCLUSIVE DISCUSSION WITH KEY PERSONS ...................................................... 44

4. THEORETICAL CHAPTER ............................................................................................... 48
4.1 THEORETICAL APPROACH ......................................................................................... 48
4.2 INNOVATION ............................................................................................................... 48
4.3 MARKETING STRATEGIES FOR INNOVATIONS IN DEVELOPING COUNTRIES ....... 52
4.4 CORPORATE SOCIAL RESPONSIBILITY ...................................................................... 53
4.5 CONSUMER BEHAVIOUR ......................................................................................... 56

5. ANALYSIS ....................................................................................................................... 61
5.1 MARKET SEGMENT I – CEMENT PRODUCER TPCC ................................................. 62
5.2 MARKET SEGMENT II – BLOCK PRODUCERS ......................................................... 64
5.3 MARKET SEGMENT III – BLOCK CONSUMERS ....................................................... 66
5.4 MARKET SEGMENT IV – EXTERNAL STAKEHOLDERS ........................................... 67
5.5 OVERALL ANALYSIS ................................................................................................. 69

6. CONCLUSION .................................................................................................................. 73
6.1 Why has the Tanzanian market for cement blocks not adapted hollow blocks in a wider extent? ........................................................................................................................................73
6.2 How can a wider use of hollow blocks be implemented? ................................................................................................................74
6.3 Suggestions For Future Research..................................................................................................................................................75

SOURCES........................................................................................................................................................................................................................................77

FIGURE INDEX

**Figure 1. Business Model Canvas** ...............................................................................................................................................................................21
**Figure 2. Segments in the Tanzanian Market for Concrete Blocks** ........................................................................................................23
**Figure 3. Process Model of Innovation** .......................................................................................................................................................50
**Figure 4. Structure for Systematic Analysis** ............................................................................................................................................62

APPENDIX A – PRESENTATION OF INTERVIEWEES
APPENDIX B – PHOTOS FROM FIELD STUDY
1. Introduction

1.1 Background
One of the world’s major challenges in the 21st Century is the increasing globalisation development, and how to satisfy the demand of the current generations without aggravate for future generations (The UN Commission of Development and International Co-operation: Environment, 1987). Awareness of the term ‘sustainable development’ was raised during the 1960’s. The United Nations (UN) then stated that, for the first time in human history, a global crisis that regards both developed and developing countries occurs - the crisis consist of the relation between human beings and the global environment. Contributing factors, like an explosive increase in global population and powerful technological expansion, which has not adapted towards environmental issues and the unstructured expansion of cities, all showed that there was a critical threat against the future life on Earth if something was not to be done. Based on these crisis factors, the UN gathered a global conference in Stockholm, Sweden, in 1972. In total, there were 113 nations participating in the conference with a primary focus on global environmental and development issues. Sustainable development is focusing on, and defined as, creating harmony between human beings and nature in a sense that satisfies the need of today without risking the needs of future generations (Sundqvist, 2010). Today’s ways of living in the Western part of the world combined with the fact that the more undeveloped regions seeks to develop their way of living towards the same way, including its major consumption patterns, makes a immense threat to the Earth’s environment. Furthermore, it also makes it hard to estimate limitations for how much the resource spending can increase in the future. The explanation of sustainable development as a way to use our resources as effective as possible, tells us that the phenomenon includes several different fields and dimensions. These dimensions are economical, social, democratically as well as ecological and ethical (Sundqvist, 2010). Sustainable development as a concept, therefore entail broad meanings, depending on whom one ask. There are many interests from different perspectives like big businesses, governments and environmental activists, and all of these has their individual views and opinions of what sustainable development contains and thus also on how to achieve progress (Giddings et al, 2002).
Other authors further emphasises the complexity of the matter. Nwanko et al (2009) explains that whatever segment you are looking into, sustainable development is well known and is mostly thought and spoken widely of. Nevertheless, the exact content of sustainable development remains elusive; one reason for this is due to the many stakeholders of it. This give the issue complexity and it is hard to define exact and clear guidelines on how to progress towards it (Nwanko et al, 2009).

An industry with large impact and greatly affects this issue is the one of constructions. Assets needed for construction have a major environmental impact; the total construction industry worldwide stands for example for 40 % of the world’s man-made CO₂ emissions. For example, the cement industry emits high levels of carbon dioxide in the production process. What have the cement industry done to reduce their negative impact¹ on the environment? An example is the Cement Sustainability Initiative (CSI), a global association of leading cement producers (Heidelberg Cement, majority owners of Twiga/TPCC, included) aiming to work towards sustainable development through research and implementing sustainable processes in their production plants. Nowadays, a great deal of construction companies targets the majority of their growth towards developing countries because of their increasing development, which results in lots of construction projects (Isaksson & Taylor, 2009). In Africa, sustainable construction in general is in need to be targeted towards a more collaboration-oriented alignment between development and construction. The continent possess a considerably need for development of specific solutions to the development of the African construction sector and its relation and impact on the environment (Isaksson & Taylor, 2009). The construction sector must also begin to address the development, not just regarding appropriate construction materials, but also appropriate technology that recognises the need to reduce the energy use and is cost-effective (Isaksson & Taylor, 2009). Rodwin (1987) states that the construction industry is unique in its ability to facilitate development, by providing directly for human needs, stimulating investment and generating employment. A feature that is made possible only if the nature of the

¹ The construction sector is responsible for 40 % of the world's emissions CO₂ of which 6-7 % is directly a result from house building (Isaksson, 2012-05-11). The cement industry is responsible for approx. 5 % of the total CO₂ emissions in the world, by emitting 900 kg CO₂ per produced ton cement (Mahasenan, Smith & Humphreys, 2003).
building and construction industry and its role in the national economy is fully understood.

Tanzania in Eastern Africa is a country where development has had stable increase over the last decade (Swedish Ministry of Foreign Affairs). The Tanzanian construction sector of today is still, to a wide extent, based on traditions and long-time habits making the business retrograded in general (Calas, 2009). There is a general lack of unitary understanding and ability to adopt a long-term perspective regarding the construction business and its relation to environment and societal development. Sustainable construction has been understood by many nations as the way the building industry responds to achieve sustainable development (Rodwin, 1987).

1.2 Problem Discussion
The increase in the world’s population and the urbanisation of the world leads to major challenges in housing and infrastructure. The current situation is that Asia and Africa is the least urbanised areas but at the same time, the continents have the most populated urban areas, according to the director of the UN’s Population Division of the Department of Economic and Social Affairs (http://www.un.org/apps/news/story.asp?NewsID=25762, 2012-05-12). In 1950, the urban population of the world was 736 796 000 persons and 100 years later the urban population is predicted to reach 6 398 291 000 persons, according to the UN (Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Urbanization Prospects: The 2011 Revision).

The construction industry represents a significant resource-user and is a very CO₂-intensive sector, in Tanzania as well as other countries. The general standard of living in Tanzania is relatively poor. Thus, there are easy-identified contradictions between sustainable building projects and low-cost housing investments (Calas, 2009). The development of the Tanzanian construction business calls for a long-term perspective regarding technical improvements (Kikwasi, 2011). Long- vs. short-term perspective is a matter of strategic approach taking a number of aspects in concern. According to the Swedish Ministry of Foreign Affairs’ web page (http://www.regeringen.se/sb/d/2574/a/75607, 2012-03-03), Tanzania is one of the
world’s poorest countries and approximately 80% of the population is living in the countryside. After gaining independence in 1961, major development activities for better housing and city structures has been planned by the Tanzanian government, even though the outcome of these investments has proven to be less of impact, claims Calas (2009). Calas (2009) further writes about challenges regarding the Tanzanian housing standards and a contradiction between the fast-expanding urban areas and the standard of living for low costs. He states that 75% of the population in urban areas in Tanzania is living in the Dar es Salaam area. Calas (2009) also claims that it is very hard for most Tanzanians to buy land legally because of high governmental fees and informal payment. This has led to illegal settlement in areas of non- or poor positive impact from the government, which makes people uncertain of for how long they can live on the same lot and therefore creates temporary and short-term housing solutions.

Calas (2009) present factors regarding the (lack of) Tanzanian city planning and the lack of monetary resources of the low and middle-income households, which will result in even poorer housing standards. This argument is shared by Jean-Marc Junon, chairman, Tanzania Portland Cement Company:

"The need for infrastructure development and new housing is still very significant in Tanzania and cement consumption per capita is low even in African standards."

(allafrican.com: "Tanzania: Cement Manufacturer’s Thrive Despite Cheap Imports")

Twiga or Tanzania Portland Cement Company (hereafter referred to as ‘TPCC’) has a 49% share of the cement market in Tanzania, making the company the major player in the Tanzanian market. TPCC is owned by the world’s third largest cement company, German Heidelberg Cement.

Ph. D. Raine Isaksson, Quality Management and Process consultant, experienced from the cement industry in general and the Tanzanian as well as other African countries’ cement industries in particular, explains that today, the market consists mostly of and makes profit from solid blocks due to the high demand of that specific type of block. From a long term perspective though, the development would benefit from adapting newer and more efficient materials to build with. One of these
innovations are the hollow blocks that is widely used in the through out the world. These blocks would hopefully attract new market segments since the products will be easier to build with and also more cost-efficient. Today, a vast majority of houses are built by solid cement blocks, instead of hollow dittos (Isaksson, 17-02-2012). Danford Semwenda, (04-05-2012), Cement Applications Manager at TPCC, concurs with Isaksson and says that from a historical point of view, the development in the construction industry in countries similar to Tanzania has led to an increased demand for hollow blocks, “but for some reason this has not yet occurred to the same extent in Tanzania”. Semwenda further explains that they have seen some cases where hollow block is used, but the demand is still small.

Semwenda (04-05-2012) points out that advantages of hollow blocks are several and can be identified in technical, economical and environmental matters. Solid blocks demand more resources – it is possible to extract more blocks per bag of cement if hollow blocks are used (Isaksson, 17-02-2012). Isaksson share similar beliefs, meaning since the hollow blocks are more cost-efficient, easier to build with as well as to transport than the solid blocks one can ask how come the Tanzanian market for cement solutions do not embrace this type of products? In addition to the above statements, Kamaley Kitery (18-04-2012), construction engineer who holds the position Managing Director at Anova Consult Company Limited, a company focusing on project management, architectural and design solutions in Dar es Salaam, says that there is difficulties regarding the usage of solid blocks in the area They are expensive and needs lots of raw material, and in many cases the usage of solid blocks is just completely unnecessary, because many walls do not require the high bearing levels etc. that in some cases can motivate solid block use. Kitery further explains that instead of solid ones, hollow blocks would be preferable for every market segment. Except the advantages that both Isaksson (17-02-2012) and Semwenda (05-04-2012) states above, and the fact that by making hollow blocks there are possibilities to dimidiate the raw material usage, Kitery (18-04-2012) declares that hollow blocks would also be beneficial from isolation matters. In Dar es Salaam, as well as in Tanzania in general, the climate is tropical and hollow blocks isolates better than solid blocks. During the day, solid blocks get heated and during the night they get cold and transform it to the indoor environment. Hollow blocks would instead ease the temperature transition, which would make the indoor climate
more suitable for the residents. In a long-term perspective, this could reduce the usage of air condition, which would decrease the waste of electricity (Kitery, 18-04-2012).

The above statements from different stakeholders in the Tanzanian construction industry all points on several advantages; environmental, technical and economical. However, the market has not yet adopted this as much as one might think it would since all market segments could be beneficiaries by this development – in terms of technical, financial, societal and environmental aspects. Questions that are raised are; why have not they already adopted it? What is obstructing them to adopt it – and is it due to the producers, retailers or to the consumers? Does a market actor have the knowledge on how to make this type of blocks? How can this development be implemented? To collect data in order to answer these questions, the research is carried out by an action research approach, which enables us as researchers to work together with key persons on the market in order to understand and analyse the complexity of the current phenomenon.

1.3 Problem Statement
Why has the Tanzanian market for concrete blocks not adapted the hollow blocks to a wider extent?

1.4 Purpose of Study
By surveying the Tanzanian market for concrete blocks through field studies in the urban area of Dar es Salaam, we aim to identify fields and incentives for development concerning the usage of concrete blocks in building construction. This course of action will enable and encourage more cost-effective and sustainable constructing methods. This is due to emphasise the importance of focusing current development towards durability already in an early stage.

1.5 Demarcation of Study
In Dar es Salaam, 70 per cent of the population who live in urban areas lives and the city planning process moves slowly and it leads to temporary and low standard housing solutions. Since a majority of the population in urban areas in Tanzania is centred around Dar es Salaam, the study will focus on this current area (Calas, 2009). The field of sustainable development is of a complex nature. To be able to concretise the study and in consistency towards the grounded theory approach, we
as researchers have decided to focus on the theoretical fields that the empirical data pointed us towards. The fields we have covered are the following, based on what have been discussed during the empirical data collection; Innovation, Consumer Behaviour and Corporate Social Responsibility. Due to that the most used material for construction in the area of Dar es Salam is concrete and especially concrete blocks (Semwenda, 05-04-2012), we have chosen to focus on that specific material, thus we have not considered other materials like wood or steel solutions in this project.
2. Methodological chapter

In this chapter we aim to provide the reader information and arguments for how, why and on what theoretical grounds we have been executing the study.

2.1 Ontology: Objectivism

Ontology is a term that is defined by objectivical or constructivical social nature. It focuses on describing and determining if a unit is of an objective nature or if it should be viewed as a creation created by views and actions.

An ontological approach based on objectivism shows that a social feature stands despite of social actors, this means that social features in our everyday life exists independent from the actors. A constructive focus on the other hand, is based on that the researchers’ description of the social reality is created by constructs. It is therefore a version of the social reality that is presented and not the definite nor the final view of the specific phenomena that has been researched. From an ontological point-of-view, we worked accordingly to the constructional focus. The study aimed to describe a specific segment of the construction industry and its social reality that we have been meeting in Dar es Salaam and the city’s surroundings. We are still fully aware of that this reality should not be seen as absolute, hence to that the social context constantly changes and also can totally differ based on in which geographical areas the researcher observes. Amongst other things we as researchers have been observing, is how the actors within the concrete industry both talks and works (Hofstede’s verbal and non-verbal behaviour) regarding factors like marketing, development, innovations and sustainable development and as well how they perceives this features.

2.2 Epistemology: Interpretativism

Epistemology is, according to Bryman (2011), what you can define as real knowledge in a certain research field, and it’s divided into three different positions, which are following:

- *Positivism*: This position in epistemology is pro-implementing the methods of natural sciences to studies focused on a social context. Except the view on natural science methods, the positivistic approach says among other things, that only knowledge confirmed by senses can be accepted as reliable knowledge. Further more the
position represents views regarding that science should be prosecuted with an objective approach.

- **Realism**: This position, which also is included in the field of epistemology, is divided into to different segments: *empirical realism* and *critical realism*. The empirical realism is in short terms about that ability to understand the reality by using suitable and relevant methods. Amongst the critics this version is seen as naive, this due to its pointing towards the direction that it is possible to create a perfect compliance between the reality and the theses that is used to describe it. Critical realism in other hands is focused on both the natural orders existence and the social reality’s correlation. A difference between the critical realism and the positivism is that the first mentioned does not comprehend the positivistic idea that the researcher’s view of the reality is a direct reflection of the reality, instead it means that this view is only one of several different ways to interpret the reality of what is studied.

- **Interpretativism**: The third position in epistemology is *interpretativism*. This view has been developed as an alternative to the early dominating positivistic position. As its name tells us, interpretativism is focusing on a view that is entirely based on understanding and interpretation. The position segregates itself from the other two by implying that one needs a planned strategy that regards the differences that occurs in research on humans and in research focused on natural science - interpretativism takes these differences into consideration. In other words, researchers focused on social science must capture the subjective meaning of social phenomena (Bryman, 2011).

According to epistemology we have chosen to base this specific study on the interpretative position. We intended to investigate and interpret the social reality according to the involved actors’ perspectives, by doing this we will develop a point of view and understanding on how the targeted topic of the research can be viewed.

**2.3 Grounded theory**
The task to try to map an entire market and its functions is complex, since mapping of the Tanzanian market for concrete blocks calls for a broad understanding of a wide range of potential confounding factors. We have chosen to work with an approach,
which does not limit our ability to attack the problem area from a broad perspective. Scientific research methods are in tradition focused on providing theories with scientific support by verifying and testing theories (Hartman, 2001). Such an approach would be less suitable for us and the current cause, since the aim of the study is to capture and analyse possible reasons for a particular markets design and operations through extensive empirical research. We have therefore embraced a grounded theory approach in order to ensure that the theory is grounded in the data instead of limiting the data. The method was first invented and presented in the late 1960’s by Barney Glaser and Anseim Strauss (Patel & Davidsson, 2003). Grounded theory as a method seeks to generate new theories in an inductive way. Instead of basing the study on pre-known theory, the study first aims to seek understanding and knowledge in the empirical collection, and by doing so, the writers ensures that that the theory is grounded in the data instead of limiting the data (Hartman, 2001).

Another important enunciation factor of the grounded theory approach is the fact that the research questions are formulated in an open manner to enable reconstruction in order to ensure that the data controls the results. In order to follow a grounded theory method correctly, all data has to be written down and be collected simultaneously with the formulation and creation of local theory (Patel & Davidsson, 2003). Based on gathered data, the empirical findings are then in the next step being categorised into different codes. Each category is represented by a code that the empirical data is divided in - such codes are being produced by repeated processes of collection, reading and summarising of the material. The collection process is being repeated until different codes do not change and hence implies that a theoretical saturation is reached. By using such approach the method seeks to supply a credible description of the reality (Hartman, 2001). We have not in this study, however, used the grounded theory approach to its full extent. Given the study's level and scope, the approach will be seen as a methodological guideline to the project’s structure, design and academic relevance. It is also, in believes of the authors, important that the analysing of the data gathered within the current research is not to be restrained by analytical restrictions. In order to generate a distinguished and relevant conclusion as possible, the study is influenced by a grounded theory perspective.
2.4 Qualitative Research Implementation: Action Research (AR)

The action research method strategy is divided in four stages for collection and processing the qualitative data, which are to be presented after introduction.

This study is based on what Berg (2009) in his book “Qualitative Research Methods” present as action research (AR). This course of action is chosen especially because of its approach to include key persons who are directly involved or affected of the problem itself and not excluding them in the data collection and analysis. This methodological approach also includes a perspective of reflection, which, according to Berg, is extradited in other field study methods (2009).

At first we chose to be influenced by a grounded theory approach because it enables us to let the empirical data lead the way. This benefits the interpretative focus that is woven into the project. To let the empirical data show and decide the direction of the study will hopefully result in a more accurate picture of the situation at hand, hence also increase our interpretations accuracy. To give this responsibility to the empirical data requires that the collection process of it is thoroughly managed. This is one of the reasons why we chose to work with AR methodology that will be presented in the following chapter. One of several benefits of using the method is according to Berg (2009) that it is elaborated in the sense that it covers different aspects and layers of the field of study. In addition to AR we also used observations to add more aspects to the collection of empirical data.

The action research methods, rooted in attempts in 1940’s to take social studies from the laboratories into the social contexts where the study’s problem was practised, have been criticised because of the collaboration between researchers and stakeholders (Eikeland, 2007). Action research critics have questioned the influence from external key actors to result in subjectivity (Berg, 2009). Several authors dismiss matters of researchers’ subjectivity, e.g. Zuber-Skerritt & Perry (2002) and Eikeland (2007), mainly since many social science studies demands presence and contacts on the field in order to collect valid data. Zuber-Skerritt & Perry (2002) states that the stakeholders’ input to certain subjects will bring and help access important data, which is at least as important as other data providers. But, by stating that, researchers shall be aware of and not undermine potential factors impacting the
stakeholders’ response. But why not using traditional research methods for this study?

“Classical or conventional research can obtain high quality information, and the researcher may be able to make recommendations. However, this research does not generally bring about the commitment and support for solving real problems in a real time frame.” (Bennett & Oliver, 1993:6)

As earlier noted, action research as a methodology differs from most other types of research in that way that they seek to study an organisational phenomenon and create organisational change simultaneously. The objective to approach the problem area from two different angles and with a multifaceted goal is not without complications. The ‘double challenge’ of action and research creates many difficulties. By creating a joint collaboration, the AR-based research aims to contribute both to the practical concerns within a research area, as well as the scientifically perspective (Avison, 2001). Zuber-Skerritt & Perry (2002) compile some of the criticism in the preamble of the article “Action Research in Organisations and University Thesis Writing” - for instance, the fact that many academic theses lack real world relevance for e.g. companies. In order to combine the academic and the ‘real’ world, action research is mentioned as a method for satisfying both parties. From the ethical point-of-view, possible dilemmas could arise from the use of the AR - an aspect that calls for clear guidelines and well-defined goals for involved parties. Before mentioned ‘double challenge’, regarding the combining of both action and research, could potentially lead to difficulties in controlling the progression of the project depending on the key persons influence. This study is executed through different perspectives and for three different audiences: marketing survey report for TPCC, sustainable development (better housing standard for a wider range of people in Tanzania) for financer SIDA and for Linnaeus University as authors’ bachelor theses. Therefore, like Bennett & Oliver writes above, action research enables tools that can combine theory and practice by participating in real situations with key persons who know the processes and structures of the situations.

“One goal is to solve a practical problem within an organisation, and the second is to generate new knowledge and understanding.” (Zuber-Skerritt & Perry, 2002:2)
Further criticism has stated that action research is not compatible with specific academic fields, some of them covered in this study, e.g. marketing. Although, Kates & Robertson (2004) both present and respond the criticism by stating that there indeed are some crucial factors to consider and prepare for in the pre-study phase of the research. But, as Kates & Robinson (2004) states, if the researchers gain elemental knowledge about the field and can access relevant information from the key persons, action research is as compelling research method as any other.

Additional critical claims regards the action research as a qualitative method and its difficulty to prove or disapprove results, but the Kates & Robinson (2004) discharge the critique by stating that qualitative research method indeed often face that kind of problems. Avison et al (2001) further states that these potential difficulties are raised from the fact that an AR survey is highly situational. Therefore it is complicated to draw general laws about how to carry out a project. Bryman & Bell (2007) also presents similar critical arguments that action research’s results are in some cases hard to replicate. In the method approach’s defence, the data and results are often hard to reach if an action research approach is not executed. Even though there are no well-defined and straightforward guidelines to stay within concerning the ideal control structures for AR project, there are key aspects of the AR situation that help to set up an basic control structure and the nature of the same.

We meant to emanate an inductive approach to this qualitative study. Bryman & Bell (2007) declares that the essence of this approach is the fact that the literature review with its existing theories is handpicked based on our empirical data collection; which are relevant for current study. To be able to do this, we intended to categorise the collected empirical data into different segments, making it easier to overview as well as to relate to specific fields of theoretical studies.

2.4.1 Stage I: Identification of the Study’s Research Questions
The first stage intends to identify certain key problems that are crucial for the formulation of the study’s research purposes (Berg, 2009). Berg (2009) claims that the researchers will gain knowledge and insight to the problems selected if key persons of the study will be included in this stage. Together the researchers and the key persons concretise what the study aims to culminate in, i.e. the result. In order to
maintain a relatively objective focus, the researchers must create awareness in the research group about what objectives the key persons have and what objective the study aims to result in. This will be viable through e.g. open discussions (Berg, 2009). The author claims that brainstorming, first among the researchers and thereafter with external persons; based on unstructured questions are a productive way to develop a dynamic group structure in order to achieve theses and potential solutions that are to be examined throughout the study. The philosophy of this current method is to work along with key persons (note that these people might have different perspectives and objectives between themselves), aiming to create distinct questions that are easy to analyse. Berg lastly under this stage highlights that the questions shall be directly applicable to the study’s purpose (Berg, 2009).

Bryman & Bell (2007) concurs with Berg (2009) regarding the first stage of qualitative research methods to concretise the research subjects. This is often formed by an inductive approach, i.e. relevant theories to substantiate the empirical data collection (Bryman & Bell, 2007). Berg (2009) hereafter states that researcher should identify problems and concretise the study’s frames, which is practically done by formulation of research questions. Brace (2008) claims, in his book titled “Questionnaire Design: How to Plan, Structure and Write Survey Material for Effective Market Research”, that empirical data collection through questionnaires should be planned on forehand in order to receive information relevant to study’s objectives. The author presents three points crucial for the planning and execution of a questionnaire.

1. Define the principal information that is required.
2. Determine the secondary information that is required for analysis purposes.
3. Map the flow of subject areas or sub-sections within the questionnaire.

(Brace, 2008:35)

Brace (2008) further claims the importance of not lose focus of studies’ primary objectives. If the questionnaire is directly linked to the primary objectives, the risk of losing focus is reduced. The questionnaire is based on both open and closed questions. Corbin & Strauss (2008) claims a mixture of both might increase the usable data, because of the open structure collects spontaneous and uncontrolled response, while the closed interview structure ensures data in fields essential for
study. We used closed questions for answers regarding Osterwalder & Pigneur’s “Business Model Canvas” (2009) in order to categorise and provide a view of the respondents businesses. Hereafter, open questions are used to encourage spontaneous answers from the interviewees. Brace (2008) means that it is of great weight to ensure that the respondents fully understand the questions. It is also of importance to ensure that no one is offended by the questions. A factor of relevance due to that the research to a certain extent covers producers’ willingness and ability to adapt to innovative solutions and development, which for some can be seen as an issue of delicate nature. It might also affect the relation between collaborators (in this case; TPCC and their customer base) – therefore we discussed the questions with Semwenda and as well Joseph Tumaini, sales executive at TPCC, before the interviews (Brace, 2008). Due to the questionnaire, we were able to collect the principal data from every interview.

2.4.2 Stage II: Approaches, Sampling and Techniques for Empirical Data Collection
Berg (2009) means that basically every data that are collected by the project group is useful, in one way or another, to answer the study’s key questions. This is naturally not applicable on every kind of studies, but the author claims that this is a perspective worth consideration. How researchers tend to design their data collection is hard to tell due to different circumstances, orientations and access to relevant respondents – but like all other research methods, the key questions is recommended to form the questionnaire base and the fundamental alignment of every study. Berg (2009) means that this must guide the empirical data collection.

Bryman & Bell (2007) & Hofstede (2001) means that a qualitative approach can be exemplified by the researchers focus on words and deeds rather than numbers. A qualitative approach is furthermore characterised by interactive activities like focus groups, ethnographical observations, qualitative interviewing, etc. (Bryman & Bell, 2007). The purpose of this study is to examine how hollow blocks instead of today’s solid blocks can be implemented in Tanzania’s construction industry. The reason behind this is to focus the industry towards a more sustainable and efficient development in the future. Our study will be targeting the area of Dar es Salaam and its surroundings, because of the fast and increasing development of the area that attracts a lot of companies and other actors with influential on the construction market.
When examining pre-studies, we lacked experience from cement block markets and the Tanzanian way of doing business or construct houses. What we did in order to get knowledge regarding the market and the processes was to consult Isaksson, Ph. D. Quality Management, consultant and Senior Lecturer at Gotland University. He has years of experience from both of the knowledge areas in Tanzania and other sub-Saharan regions where we needed assistance. Isaksson assisted us with reports relevant for the study and presented us for useful contacts in Tanzania. Isaksson has also been functioning as a key person, following the action research methodology and terminology, by being contacted for discussions throughout the data collection. We initially briefed and discussed the fields of the study with key persons at TPCC in addition to what they wanted to include in the study’s framework. In order to create an understandable and representative view of the market and its dynamics, it was of importance to insure the data collection’s trustworthiness, as a way to both reach the academic quality measurement “reliability” which indicates studies credibility, and to represent the market of the current area, Dar es Salaam.

According to Hofstede (2001), validation when examining cross-cultural research studies can be actively examined. Regarding validation, Hofstede (2001) present comparisons of verbal and nonverbal behaviour to analyse what is said and what is actually done – a method combining provoked (interviews) and natural (observations) research methods – for causal internal validity testing. For us as researchers, this was carried out through both interviews and observations. Most of the visits on location were unannounced, which according to Hofstede (2001) increases the possibility of accurate observations, due to the non-prepared interviewees and observation objects. Furthermore, the internal validity is considered to be more significant than the external ditto, hence the very specific field study in a specific region.

There have been factors that made the structure of the interviews vary in form, even though we as researchers have tried to minimise the variation. Issues like language barriers, lack of trust for external actors (like researchers) and unwillingness to be recorded are all factors that Hofstede (2001) mention in his “Culture’s Consequences: Comparing Values, Behaviors, Institutions, and Organizations
Across Nations” that also have been factors of complication in this minor field study. For example, a foreign constructor claimed governmental surveillance as a factor for no recording during the interview and other governmental institution officials did not accept recording due to policies for interviews (restricted to be attended by spokespersons and no else) – therefore, some interviewees will not be presented by their real name and/or company/institution.

Observations are sometimes difficult for novice researchers to implement, but the data collected is often of great impact for studies’ analysis and result, means Corbin & Strauss (2008). The writers claims that observation is very fruitful for many qualitative studies for its practical verification or rejection function, in other words researchers may control and analyse what respondents say they do compared to what they actually do. Denzin & Lincoln (1998) presents different observation processes with tasks to implement in order to create conditions for researchers to observe and collect relevant data. The authors’ theories are partly based on Riemer’s (1977) observation theories as well as Adler & Adler (1991).

First of all, the observers need to select a setting. The setting for this study has been to observe the locations and processes of the key actors in the market. The observers might have a problem area or theoretical background to base the observation on and this need to be concretised to specify what is to be observed (Denzin & Lincoln, 1998). We indented to survey the current problem area from the problem statement. Another observation task is to gain access to the observation scene. Access tends to be more likely to reach if initial contact is established, through e.g. prior interviews, according to the Denzin & Lincoln (1998). Access is granted through contact persons at Tanzanian Portland Cement Company, regarding their business as well as the producers and consumers. How observers approaches the practical data collection varies, but field notes and mapping charts are common, Denzin & Lincoln (1988) claims. We have recorded comments from most of the observations and interviews by a dictaphone provided by Linnaeus University and field notes have been noted for the observations (as well as for the interviews).

The observation method is mainly of descriptive nature, which is to clarify (Denzin & Lincoln, 1998). Hence the descriptive nature of observation, we intended to use
observations in that purpose to provide a second approach besides interviewing. Observations compared to the interview response will be the empirical fundament of this study’s analysis. Denzin & Lincoln (1998:89) further argues that observations ‘produces great rigor when combined with other methods’.

To gather certain (not all) parts of the empirical material that was needed for this thesis, we used what Jacobsen (2007) refers to as open interviews. This type of interviews is based on a relation between the two parts of the interview establishes, and thus enables discussions to occur between the researcher and the interview object. These interviews are often not regulated in the sense of how deeply the different factors are to be discussed, but they are often structured in sense of what themes that the interviews will be consisting of. This types of interviews are suitable to use when the researcher wants to gather information of how people understands and interprets a special phenomena, by using this method the researcher can learn about the objects total view, such as opinions and attitudes towards the problem at hand. Decisions that researcher have to make when using this method is for example how open the interviews should be and if they should be executed on an individual or on a group level. An open interview will often result in a broader understanding towards the interviewees’ point-of-view, but most often also increases the complexity of analyse the outcome (Jacobsen, 2007).

Bryman & Bell (2007), authors of “Business Research Methods”, claims that one course of action regarding sampling respondents is to use a snowball sampling, when the population is too large to interview all units. This sampling method, according to presented authors, is based on initial contact with a selection of people with great knowledge of current problem subjects and used when a specific case study when researchers lack access to key persons within the problem areas. The researchers are to establish contact with other respondents, based on the initial contact’s networks. Snowball sampling is “in no sense random”, which means that the samples are predictable. (Bryman & Bell, 2007:200) Noteworthy, this current sampling method is unlikely to represent the population of larger regions or markets, but in specific studies, this sampling error factor is not to be emphasised.
We used snowball sampling by Bryman and Bell (2011) to provide a clearer understanding of how the industry as well as the market of construction is functioning in the area, by consulting Semwenda’s and the TPCC’s Account Managers/Sales Executives to get in contact with the second segment, the concrete block producers. By using the snowball sampling method we have accessed all different segments related and relevant for the study and thus be able to create a trustworthy base of data that should increase the results credibility, following Bryman & Bell’s theories.

The method of the data collection was motivated by mainly two reasons. Firstly, for practical aspects such as time limitations and transportation costs, this study focuses on the cement block market in the Dar es Salaam area – the most urbanised area in Tanzania (Calas, 2009). Also, in this area, a number of institutions that (direct or indirect) affect the current market are located in Dar Es Salaam.

Secondly, we lacked a personal network of key persons crucial for the study. The access to producers, architects, construction companies and institutions that through their daily work impose factors that somehow impact the market dynamics was a problem area solved by above-mentioned persons. Obviously, it was of great importance that a couple of actors from each different segment were to be identified and interviewed. However, we aimed to not rely on just personal network. Therefore, some additional factors were added to the snowball sampling method.

The block producers are selected by following characteristics, in addition to which interviewees was accessible through the TPCC network:

- **Geographical location**: No area has been excluded for the data collection, in order to include data from all areas in Dar es Salaam.
- **Size of company**: We have aimed to include all sorts of actors in the market, regardless of if they were small, medium or large enterprises.
- **Current production**: since the data collection was focusing on solid vs. hollow blocks, we have aimed to not just interview block producers who made both – hence it is of interest to identify why producers produce or not produce the different sorts of blocks.
- **Population sample of actual market players**: to map the cement block market in Dar es Salaam, the sample of interviewees ought to represent the market
as whole; otherwise the result will just be analysable for the current interviewees and not for the market.

These sampling principles were fulfilled by the guidance of Semwenda and Tumaini at TPCC – both with years of academic as well as field experience from the current market. During the initial interviews and theoretical research, we realised that there might be other factors and institutions that possibly could influence the market, such as governmental impact and cultural aspects (e.g. traditions). Therefore, contact was established with National Housing Corporation, a governmental institution where they research and construct sustainable buildings as well as developing the traditional Tanzanian construction methods. Tanzania Bureau of Standard were contacted for interviews regarding quality measurements and contact was also established with representatives from Dar es Salaam University, construction companies, designers and architects - whom all are present on markets where concrete block solutions are widely used.

Notable is that even though the researchers have collected the data by guidance from TPCC, the sample of interviewees has not been exclusively based on TPCC’s clients. Block makers who uses competitors’ cement products have also been included in the sample because we strive for mapping the entire market, not only TPCC even if TPCC is the major player on the current market. The interviews have been carried out by a questionnaire basis, consisting of questions directly connected to the different fields the study aimed to examine.

To create understanding of the interviewee’s functions will ease the analysing stage of the study, according to Bryman & Bell (2007). Osterwalder & Pigneur (2009) presents theories regarding how researchers can study companies’ business models. The authors claim nine different ‘building blocks’ that together provide a comprehensive view of the company’s processes (2009:16). The building blocks are customer segments, value propositions, channels, customer relations, revenue streams, key resources, key activities, key partners and cost structure. If researchers are able to survey these building blocks, an overall view of the company is possible to compile through a "Business Model Canvas", according to Osterwalder & Pigneur (2009).
2.4.3 Stage III: Interpretation and Analysis of Collected Data
Within this methodological approach, resources for analysis are demanded in order to create conditions (e.g. dedicated time for resolution and discussion) for researchers to process the collected data. The analytical questions in current study design consist of the collected data, more specifically the direct response to the questionnaire formulated during the first stage. New problem areas can also have shown during the previous stages. Thus, analysed data might force the researchers to change the study’s course of action (Berg, 2009).

Berg (2009) further claims the importance of categorising the empirical data in different subjects, because of it facilitates compilation phase of projects. In order to do so, the author presents guidelines for what questions are to ask during the analysis stage. These questions are of importance to query hence researchers’ aim to reach an overall picture to the problem as well as maintain a critical approach to the data.


Regarding categorising the different sorts of data we collected, we first began dividing the interview subjects and the different companies they represent into three substantial segments. These segments are cement producers, block producers and finally the consumers – mainly the construction companies. Furthermore, we have interpreted and categorised our collected data into different field of subjects to ease
the analysis. An overviewing figure of our analysis can be found in the introduction of chapter 5. The main reason for our different categorising, was to increase the understanding for readers.

2.4.4 Stage IV: Compiling and Communicate the Result
To share the result with the participants that have contributed to the study is one of the points that differentiate this method from other, Berg (2009) argues. How this stage is implemented varies, but the author suggests that focus groups and informal meetings where all participants are able to express their opinions and thoughts regarding the current result. This feedback is crucial in order to further development regarding the problem and can also function as a fundament for new projects (Berg, 2009). The last steps are based on compiling and communicate the results from the research to the key persons and from discussions receive feedback.
3. Empirical chapter

Following chapter will present the empirical data that we have collected for this specific study. It consists of data of both primary as well as secondary nature and is collected from several different actors and interests related to the Tanzanian concrete block market. When processing as well as doing transcriptions of the data we identified certain patterns in the data, hence this and also for providing the reader a better overview as well to make the presentation of the data easier to follow. We have categorised the collected data into different fields, due to what have been most frequently discussed: Innovation, Consumer Behaviour and Knowledge and cover these fields from the different segment’s point-of-view.

3.1 Market Segments Model

Figure 2. Segments in the Tanzanian Market for Concrete Blocks

Figure 2 above indicates the structure of the block market in Dar es Salaam, based on our initial contact with the key persons. The first segment (blue box) refers to the cement producers, as cement is the core ingredient in concrete, which the blocks are made of. Segment II (green boxes) represents the block produces, which is customers of the cement produces and the ones that are producing and selling the concrete blocks. The red boxes are segment three – the consumers. This segment consist of both construction companies and as well as individuals. These are the ones using the concrete block and construct buildings with them. The different phases (arrow one – three) indicate the different segments’ correlation to each other.

3.2 Market Segment I: Cement Producer TPCC

Tanzania Portland Cement Company, also known as Twiga Cement, hereafter referred to as TPCC, is a cement producing company in the outskirts of Dar es Salaam. TPCC was founded 1959 and it’s core business consist of producing, selling
and distributing cement. The company is owned by the German global cement production company Heidelberg Cement Group. (Heidelberg Cement’s Webpage: About Us - Tanzania)

The company’s revenue for 2010 reached 101,827,118 TZS and occupied 258 fulltime employees making a total volume of 1.4 million ton of cement. Today the company has a leading role in the domestic cement market with a 49% share of the market and is still growing due to the expansive phase that the Tanzanian construction market is currently in. Over the period of five years of time, from 2006 – 2010, TPCC’s revenue has increased with over 250 %. The current situation of the competition in the market at hand is seemingly fierce, except TPCC there are other domestic cement manufacturers competing for the market, for example Simba Cement and Tanga Cement. In addition to the domestic actors there is also foreign actors that imports and sells cement from overseas, e.g. Lucky Cement from Pakistan. With TPCC’s strong increased development and expansion of both its production capacity and their distribution the company is well positioned to be able to serve the future increasing demand of cement of high quality and is expected to maintain its position as the leading actor in its specific market segment (Heidelberg Cement’s web page: “Twiga Annual Report 2010”).

In the morning of the 5th of April 2012, TPCC Cement Applications Manager Danford Semwenda welcomed us in the Board Room at TPCC’s headquarter in Wazo Hill, in the outskirts of Dar es Salaam. For the initial meeting, two of the company’s Sales Executives attended, Joseph Tumaini and Azizi Makwega, to share their thoughts of the problem area. The data and statements in the chapter down below where all collected and discussed during this specific occasion.

3.2.1 Innovation
We started off by asking how they see the Tanzanian economy and their industry’s future. “The development is here and it is booming. Development here means construction. Our industry therefore needs to make sure that the cement is used effectively and responsible”, Semwenda says and Tumaini agrees by stating “Tanzania is a spacious and open land and the construction industry is very much
affected by this”. We were to examined innovation in these fields, hollow blocks is the main focus of the innovation discussion.

Since Semwenda is what Berg (2009) refers to as a key person (or ‘stakeholder’) of the research study, we have beforehand sent him our pre-study and he assures that we have understood the problem area correctly. He has also been in close contact with our other key person, Isaksson.

“Development here is construction. We need buildings."

(Semwenda, 2012-04-05)

Semwenda addresses support from other institutions in order to minimise the negative environmental effects of the industry. “Cement production will always emit certain amounts of Co2. The best way for sustainable solutions is to come up with innovations that enable a reduction of the resource use as soon as possible. This can partly be done by a more effective consumption, but the government has not preached it. If specifications and recommendations are not followed by the government, the people will not follow and there will be no change, I believe. They have to show what’s best for building construction”, he states.

Semwenda continues with stressing the technical advantages. We ask them if they can exemplify their statement. Semwenda: “To exemplify, we at TPCC are confident that it is unnecessary to use 6-inch solid blocks for partition walls in houses. The function of a partition wall is to separate one room area from another, so why use solid blocks for that? It will be unnecessary expensive for nothing that other material can do”. From what have been explained and discussed during the interview, we compiled the eventual advantages and potential results of increased hollow block usage straight afterwards. The result, notable from the views of TPCC representatives, is hereafter presented.

Segment I: The Cement Producer(s)
The cement company risks to, short-term speaking, decrease their sales since the market will need less cement to use as the same quantity of units. In a long-term perspective, a wider range of potential resellers might be in reach since the number
of people able to pay for a decent living standard increases as the price per unit decreases. This could lead to an increased quantity of cement is demanded.

In addition, TPCC claims a sustainable development aspect, where they want to reduce the Co2-emissions/block as much as possible. TPCC further claims the mass of people whose living standard would increase if this change were to occur.

- Can they convince their clients of the hollow blocks advantages?
- Is the market ready for this development?
- How certain can they be of the long-term benefits?

Segment II: Block Makers
The block makers/reseller companies, if implementing hollow blocks instead of solid blocks, will have to possess the appropriate moulding equipment and knowledge in order to be able to offer the consumers hollow blocks. They will be challenged by the current demand for solid blocks, but their profit margin might increase due to the increase of units per bag of cement used.

The resellers will face a critical problem when interacting with the users. Do they have the necessary knowledge and can they (or are they willing) to communicate this to their clients.

- How will they cope?
- Do they know how they could increase their profit by this development?
- Do they care about the sustainable/environmental aspects?

Segment III: Consumers
The consumers nowadays get their solid blocks at a price that correlates with the price the manufacturer gives the reseller. If the reseller can offer the consumers the same amount of units for a lower price, since the reseller are able to produce more units for the same input, the customer can build for less money. The potential market will increase due to the lower price barrier (ergo, more consumers are financially able to build).

- What do they want?
- How can the other segments communicate the benefits of hollow blocks to them?
3.2.2 Consumer Behaviour
To sum up the purpose and the guidelines for the study, Semwenda says: “When looking at the Tanzanian market for cement, the demand for hollow blocks is not very big. The question is why? How come?”. He further clarifies how development in other regions has been executed: “From a historical point-of-view, development in our sector in similar countries has lead to an increased demand for innovations like hollow blocks. We have not seen this change in Tanzania. We do indeed see cases where hollow blocks are used”. So how come, we asked. “I do believe it is a matter of awareness and knowledge”, he says and Makwega and Tumaini nods. “There is little demand for the hollow blocks, yet they have many advantages; technical, economical, environmental”, Tumaini says and we are presented the advantages more thoroughly.

“Then again, it is a matter of awareness, I would say”, Makwega says. Semwenda and Tumaini concur: “The hollow blocks are here and many have the moulding equipment. But there is a governmental aspect, as Semwenda says. “If the government use the solid blocks, the people will do the same, and vice versa”, Tumaini states. “From my point-of-view, I believe people think hollow blocks are weaker because of the hollow design”, he continues.

3.2.3 Knowledge
We further discuss potential explanations to why they are not in wider use. A hypothesis is identified; people have not been aware (or have the knowledge to understand what they could benefit from a change of blocks).

We, as well as feedback from tutors and classmates, initially questioned the motifs of why TPCC would want to promote a product that consume less of their products. When asked if TPCC do not benefit more because of the market’s demand for the solid blocks instead of hollow dittos, Semwenda directly responds by saying that they have a long-term perspective and aims to see a bigger picture. “But we certainly want to make profits. What indirectly happens if the demand for hollow blocks increases is that people that previously did not think about building houses etc. might be able to afford the building material”, Semwenda explains. Tumaini agrees and states that it is of corporations’ interest to provide knowledge and be honest towards the market so that people can trust them: “As a company, we need to be trusted. If we help them,
they treat the company as a friend. Reaching out with hollow blocks will add a helping perspective for both our clients and the end-users and good things will come for everyone included in this process”, he claims.

From this initial interview, we gained knowledge of what factors is impacting the market dynamics, which we grounded the questions for the other segments on.

3.3 Market Segment II: Block Makers

The block makers are both buyers and sellers in the current market. They buy cement from TPCC and other cement producers and they make concrete blocks from it in order to sell the block to individuals and construction companies. For presentation of the interviewees, this is compiled in appendix A.

3.3.1 Innovation

To enable Özbag at Ravi Block Makers (17-04-2012) declares and also presents a theory emphasising the difference between Western-influenced and Tanzanian customers. The Tanzanians, according to Özbag, are more conservative regarding new innovations. Ibrahim Khan (19-04-2012) Site Manager at Lake Oil Company state a similar view when he explains that foreign designers and architects are common in Tanzania and they have in his words quite different approaches to projects than people in Tanzania are used to. So how is an innovation, like hollow concrete blocks perceived by the market around Dar es Salaam? “We are able to create hollow blocks as well but it is few people that asks of them”, Kwaya (08-05-2012) says and Said (23-04-2012) support the issue: “We do have the knowledge and moulding equipment, but the demand from the consumers is not very apparent”. He continues by saying; “We have some demand for the hollow blocks, but we are only making solid blocks. I have noticed an increasing demand for hollow blocks, during the recent years. I think this is due to an increased awareness and knowledge from our customers”. When asked if they ever try to increase the awareness of their different products, Kwaya (08-05-2012) says: “We do not try to convince our customers to use a specific sort of block. The customers have often already made up their mind when they come here for the purchase of the blocks”. Özbag (17-04-2012) do not share those thoughts, he proclaims the benefits of the hollow blocks: “Professional customers and larger projects are mainly asking for hollow blocks”, and continues, “The customer asks for solid blocks – but I preach the advantages of
hollow blocks (isolation, price, safety) and they tend to listen to those advice", he says.

Mbara (17-04-2012) discusses the hollow blocks clientele by saying: “It is exclusively professional contractors and other types of educated customers that asks for hollow blocks. By other clients, solid blocks are standard”. “In two months, I will expand to use vibrating machines instead of the ‘bam bam' machine, because I am confident that people will continue to buy concrete blocks as the construction market is growing”, Solo (25-04-2012) predicts but he has no plans of implementing hollow block production or other newer concrete solutions when developing his business – even though the moulding equipment is the only thing that is needed to do so. Mbara (17-04-2012) states that the hollow blocks have a weakness in their structure, the non-solid structure makes them weak, in his opinion. Kwaya (08-05-2012) tells us that they use more cement in the hollow blocks than in the solids. The reason is that is, according to her, requires a higher ratio of cement in the concrete mixture for hollow blocks to get the quality needed so they can be built with. When asked about the use of hollow blocks, Aboragazi (25-04-2012) a small-scale block producer in Mbezi north of Dar es Salaam says people mainly use them for partition walls.

Meanwhile, we have interviewed persons with little or no knowledge of the hollow blocks, like Solo: “I have never seen hollow blocks. People have not asked for them. I produce what the market wants me to, and not vice versa", answers Solo (25-04-2012), when asked if he is aware of hollow blocks and other innovations in the industry.

3.3.2 Consumer Behaviour
“The customers are from around this area. My customers are ordinary people, building houses for themselves and they prefer quality before price”, Solo (25-04-2012) says. Kwaya (08-05-2012) announces that the customers are “ordinary people that want to build their own houses”. “Most of our customers are minor construction companies and some individuals, claims Said and Arboragazi’s (25-04-2012) customers come to her “because of the strength of the blocks – the quality is good”. However, she do not quality test her blocks. Kwaya (08-05-2012) explains that the companies customers has chosen to buy from the because of their products quality that according to her higher than the competitors in the nearby area. “The customer
base mainly consists of house builders and contractors, mainly big ones and they come to Ravi because we offer high quality products made to high pressure”, and Özbag (17-04-2012) further states that significant shares of the customers are mainly of European and Chinese origin.

“The customers find my company by word of mouth, and they do not advertise in any way”, explains Kwaya (08-05-2012). She is supported by Solo (25-04-2012), who is saying: “I do not do advertising. People know where I am located and come here”. Özbag (17-04-2012) claims “people’s recommendations to each other are indeed very important”. “I have been working with many of the local masons and they are loyal to me since I have been operating in the same area for 30 years and in addition beside the main road here. I therefore do not need to advertise and such. The word-of-mouth is enough”, says Arboragazi (25-04-2012) who. Once the customers have found them and bought from them once the customers tend to be “kind of loyal”, Kwaya (08-05-2012) claims and further explains that no advertising is needed in addition to be located roadside.

We ask the block makers if the customers can be considered loyal. “If I am selling to a customer, he will come back”, Özbag (17-04-2012) says and mentions quality and the knowledge of hollow blocks to be the main reasons. Also speaking of loyalty, Solo (25.04.2012) states “most of the customers are loyal; they tend to return to me. But some do not”. Zambaray Omary (05-05-2012) a small-scale producer in the Kigamboni Peninsula, south of Dar es Salaam gives the following quote regarding promotion of the business: “In my opinion, the word-of-mouth is very important. That is why I always give every customer the best service, whoever comes here. I do everything for them so I can be sure that they do not go elsewhere next time”, Özbag (17-04-2012) talks about a dramatic increase in demand for hollow blocks in the two years since they first started to include those in their product range. Of all the standard blocks, the hollow ones are the cheapest (1400 TSh), but the difference is marginal. “The price range does not differ from the hollow compared with the solid“, Aboragazi (25-04-2012) says and further states: “I do not care if people buy solid or hollow blocks, I do not convince or persuade them to buy one another. But I do
realise the potential benefits for the constructors and me”. Said concurs: “The profit margin of the hollow blocks in comparison to the solid blocks does not differ much”.

We ask Özbag what his future predicaments are: “I think it will be a snowball effect. Increased knowledge will result in increasing in the use of hollow block”, he predicts. The Directing Manager at Mbezi Tiles, Mbara (17-04-2012) estimates the number of blocks per bag of cement to be around 30-32 for hollow blocks and 22 for solid ones. Mbara (17-04-2012) does further states in the interview that his machines have ability to produce both solid and hollow blocks without any major adjustments except the moulding equipment. The total volume of hollow blocks in the market is in Mbara’s (17-04-2012) beliefs not caused to the block makers but rather a matter of lack in demand from the consumers. “The mixture of the concrete differ a little, but I can assure that the quality is the same”, Özbag (17-04-2012) states. He further declares that he has standards that he strictly follows. If the results of the samples turn out to be anything but satisfying, changes are being made according to standard routines.

The company uses the same German-made machine for all types of blocks, with different modules for the specific block type. Aboragazi (25-04-12) works in way that many of the small- and medium-scale producers do; they know how many blocks is to be made from one bag of cement. “I do not test the blocks, since I know how many blocks is to be made out of one bag of cement”, she says.

“I honestly do not know why people do not know or care for them. In my opinion, hollow blocks are a modern way of constructing and therefore I think it will be an increased demand”, Aboragazi (25-04-2012) declares. “I have the equipment for hollow blocks and manufacture them. It is only a matter of changing the moulds”, she continues. From what we can observe, she indeed have the moulding equipment, but no hollow blocks are displayed on the sight. Observations made by the researchers resulted in just two of the block making companies participating in this study have hollow blocks on display (Ravi and Mbezi Tiles, although the latter showed only one block and no stock).

Özbag (17-04-2012) at Ravi estimates that he 4/5 blocks sold at his plant are hollow blocks and hollow blocks are more profitable in comparison to solid ones. Ravi’s production is order-based and with the business expanding and new customers
continuing to choose Ravi’s products, the company no longer has no opportunities with the capacity they have at hand to build up any significant stock at the current plant. The trust in Ravi’s knowledge is pointed out to be one of the strongest selling points, by both himself as well as by TPCC Sales Executive Tumaini.

3.3.3 Knowledge
When it comes to the knowledge of the production process among the block makers our perceptions of the market differs a great deal. Some seems to be very aware of why they do things while others do certain things just because they always done it. “I am very careful when mixing the raw material. And also, my customers are aware of the importance of the quality in the raw material – so that is an important issue for me”, means Arboragazi (25-04-2012), who also collaborate with other block makers; “Sometimes, I collaborate with the other block producers in the area – especially when we get big orders. Then it is very important that they have the same standards and knowledge as I have”. “We do weekly controls of the quality of the blocks. We have procedures to troubleshoot and fix eventual quality problems”, Said declares.

Aboragazi, (25-4-2012), is stating that her labourers know how to mix based on how many blocks is to be made per bag of cement. When we visited her manufacturing site just alongside the areas main road, the process of making the blocks seems randomly done, since the mixing process basically is two piles of cement, water and filling material that is mixed by moving the raw material from one pile to another. This is a method used, not only by ABS Block Makers, but many of the other block makers as well. Throughout our observations, a majority of the small-scale producers seem to process the mixture in similar ways - presumably because of the lack of mechanical blenders. When asking Kwaya (08-05-2012) about if they measure, and in that case how they measure the quality of the blocks she states that they are well aware of how many bag of cement they should use for one mix. They also know how many blocks they can make of that mix to achieve the quality standards needed. They have been working with the same recipe a long time and according to Kwaya (08-05-2012) they do not need to test the quality in other ways so long that they stick to this specific recipe.
We noticed during interviews and observations on locations that the block makers only stock solid blocks (one or two exceptions, large-scale producers). Many of the interviewees claim lack of space, which we can confirm, and naturally do not see reasons to why they should stock something that very few consumers ask for. The lack of space is an issue, not only for displaying the different blocks in their product range; it has some quality problems as well. Semwenda, when visiting the Kigamboni Peninsula in Dar es Salaam along with Tumaini and one of TPCC’s Quality Engineers (03-05-2012) explains that this factor in many cases have quality effects and he shows us an example where a small-scale block maker, when curing the blocks, is tilted or not cured for the required time. The curing process is very crucial for the strength of the blocks, the TPCC’s Quality Engineer claims. Semwenda (03-05-2012) stresses the quality issue by saying that the high levels of salt water from the boreholes added in the mix from certain areas tend to decrease the strength. He is currently operating a quality database with samples of many of the block producers, in order to see and follow-up the actual strength of their clients’ blocks. Tumaini says that “it is the cement producer, not the block makers who the customers blame in the end if the blocks do not fulfil the quality requirements” and Semwenda agrees (03-05-2012). Later, we ask Isaksson regarding this matter when having a discussion with him, he states that this issue is not only a problem for the cement producers in Tanzania – other countries’ markets are alike (04-05-2012).

Kikwasi (2011) states in his report that 70% of the construction works in Tanzania do not deliver the quality requirement that before hand was agreed, and his conclusion is that this is due to shortage of skills. He further states that the shortage of skills is not only common for Tanzania, but also for other developing countries.

3.4 Market Segment III: Block Consumers

*Market Segment III consists of architects and constructors that basically functions as ‘consumers’ on the market, since it is their orders that sets the demand for the block makers.*

### 3.4.1 Innovation

We meet Locken, who is an assistant architect at the architectural consultant agency Arqes Africa Office, Dar es Salaam. The interview is held in a conference room at their office, and except Locken, his associate Mushi is also present. In addition to the interview with the consults Locken and Mushi, the researchers also interviewed Kitery Kamaley R. who is engineer and the Managing Director at Anova Consult.
Locken (17-04-2012) explains that he is not aware of any producers that could provide high quality hollow blocks in the quantity needed. He clarifies by saying that “they must be as strong as the solid version”. He continues by saying that quality measurements are very important especially for government-financed projects, “individuals do not afford the measurement and testing costs”. Kitery (18-04-2012) emphasises during the interview that people are very eager to reduce the costs in every possible way: “They are always looking for money-saving solutions and are very open for new innovations”.

Furthermore, Locken (17-04-2012) says that in his experience businesses need to be innovative and creative. Block makers have not deployed their potential innovation. Individuals and small-scale enterprises will come to realisation of the benefits of the innovations when they see it in use with their own eyes. When discussing the possibilities of reaching out with innovation with Kitery (18-04-2012) he agrees with Locken.

Mushi (17-04-2012) explains that environmental impact measurements are being done in some cases, sometimes on an initiative from the government. Some initiatives have also been done in trying to present more environmental friendly materials. But the interest from the consumers has been overwhelming. Mushi (17-04-2012) further believes that the government has some impact on the public choice of building materials; the government acts as a sort of role model that the people will adapt from. Kitery (18-04-2012) differs in his view: “The government has nothing to do with how people construct, especially not this issue with hollow blocks. I do not think they can force awareness, but they can absolutely show that these blocks work fine”, he says.

Kitery (18-04-2012) argues for that in his belief the government never specifies or procures certain construction solutions or methods when ordering building projects. Instead he explains his thought regarding possibilities to reach out to the public with innovations in the following statement: “I would say that the best way to reach out with new innovations on the construction market is to collaborate. We have boards of engineers as well as boards of contractors etc. and if they work along with each
other, it will affect the market because every contractor and every engineer know what the boards recommend”, he explains.

3.4.2 Consumer Behaviour
Locken (17-04-2012) talks about the market when asked how he predicts the future development and the current dynamics: “The Tanzanian construction market is currently experience a construction ‘boom’. The construction business is growing, and investments in real estate’s are increasing fast”. From his perspective, customers come from different parts of the society. He mentions individuals and private clients to be more price-driven, and clients with government connections to be more focused towards quality matters.

Mushi (17-04-2012) tells us that they in their recommendations and projects prefer solid blocks - even if hollow blocks are better from a cost perspective. Most of the projects are single story buildings, “which requires bearing walls with solid blocks”, he says. “Lisa”2 (18-04-2012) at Chinese Construction says the following regarding the choice of concrete blocks: “The current trend in Tanzania is that there is a lot of construction taking place. But at the same time, the governmental financial budgets are tight for every project”.

“Honestly cannot see why contractors do not use hollow blocks in a wider extent. “I tend to ask them, but they claim lack of availability and some say they only follow directions from their architects” Kitery (18-04-2012) explains. Mushi (17-04-2012) says that he believes that manufacturers must provide a good quality block that is a qualification that has to be met in order to implement a wider use of hollow blocks, since hollow blocks in his opinion requires a higher cement quality in order to meet the standards.

Kitery (18-04-2012): “If people see hollow blocks in use and gain awareness of the benefits, their knowledge will lead to an increased demand for the hollow blocks. Why not set up show rooms at the distributors or demonstrations using hollow blocks”. Later during the interview, Kitery (18-04-2012) explains that he believes that Tanzanians are very affected by what other recommend by stating “the word-of-

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2 The name "Lisa" as well as the company name “Chinese Construction” is aliases due to the respondent will to be anonymous.
mouth factor is indeed significant to establish a new innovation in the Tanzanian markets.

Kitery (18-04-2012) declares: “People here in Tanzania needs to see new products in use in order to adapt and create a demand for them. When it is to be seen, people are very eager to replicate solutions that have proven to be successful”. In fact, Kitery used hollow blocks for the construction of the Bank of Tanzania building – according to Tumaini a well-known project. “People have starting to notice hollow blocks and other innovation. There are more factors to regard now than just the technical factors, for example more sophisticated building solutions are used now”, Kitery says.

“Here in Tanzania, seeing is believing. Especially in the construction industry.”

(Kitery, 18-04-2012)

3.4.3 Knowledge

Locken states: “Right now in Tanzania, we are not using solid blocks, mainly because producers are not perfect in quality control. Therefore if we would to be use hollow blocks, it would be hard to ensure the bearing capacity in bearing walls” (17-04-2012). Kitery (18-04-2012) is expressing a similar view during his interview by giving the following comment: “I think people have some safety issues, regarding the design of the hollow blocks. I think the design factor is not to undermine, if people think hollow blocks look weak they simply would not buy it. They argue that if they are not certain of the safety aspect, they will use the traditional way of construct” (18-04-2012). "Lisa", at Chinese Construction in Tanzania, gives a similar quote when declaring “sometimes, we need to use hollow blocks, but it is not very common here in Tanzania” (18-04-2012). Locken explains that the Tanzanian market for concrete blocks almost exclusively consists of solid blocks – “the main reason is the low quality that sometimes occur” he says (17-04-2012). Another reason for using solid blocks is explained to be a faster construction technique. A higher usability is also mentioned in favour of the solid ones.

“I have not experienced any differences in the quality, I have not seen any problems with the hollow blocks.” (Kitery, 18-04-2012)

Kitery (18-04-2012) continues in clarifying the above-presented quote that shows that he is of other beliefs than Locken, by stating that his opinion is that many walls do not
require solid blocks: “It is completely unnecessary and speaking in isolation matters, in this climate, hollow blocks would be very much preferable. Here in Dar es Salaam, it is tropical – too hot and not a lot of shade. Hollow blocks isolates better”, he says and explains that it’s very much needed. Locken (17-04-2012) explains that in his belief, hollow blocks exist in theory but the climate does not help to increase in the use of solid blocks. Kitery (18-04-2012) does also in his interview explain his view from an environmental aspect by saying the following: “if we were able to isolate better, people would not need air conditioning in the same extent. During the day, the solid blocks get heated and during the night they get cold. Hollow blocks would ease the temperature transition. I have heard people who are at home when the AC stops working and they get the car running in order to get some air conditioning”.

3.5 External stakeholders
Stated in the UN’s “Report of the World Commission on Environment and Development: Our Common Future” addressing sustainable development, initiated by Gro Harlem Brundtland in 1987, the primary focus on reducing the negative impact on the global environment shall be centred around the most urbanised regions. This is due to the urban regions, especially in undeveloped countries, tends to have the largest impact in societal change (with a variety of issues included) and therefore they highly affect other areas. In addition, the major cities, where lot of people and e.g. industrial plants are located, tend to be a massive negative contributor to the environment, the UN Commission declares.

3.5.1 Innovation
In the report “Macroeconomic Policies” (2011) published by the Tanzanian government, they claim research and development “a vital determinant of an economy’s competitiveness and long-run growth prospects”. The government declares a major challenge in implementing the research findings – they find it generally hard to execute wide use of innovations. However, the report addresses a more effective and effectual way of getting the innovations out for commercial uses. This is also mentioned as a key point of the ‘High Quality Livelihood’ factor, which is a part of the government’s “Vision 2025”. Chamuriho (17-04-2012) is giving, when responding to a question regarding the innovation potential in the Tanzanian construction market, the following response: “I am sure that the market could accept an innovation, with a little bit of demonstration;
convince them that they are just as strong. Advertising and well-executed marketing is probably necessary in order to convince the public about the benefits of hollow concrete blocks” Theodossiadis (30-04-2012), Head of Private Sector Development at the Swedish Embassy in Dar es Salaam, concurs by giving a similar reply: “As long as the Tanzanians are aware of what benefits an innovation have for them, they will adapt or buy new items or services. But to be pro-active and look for new innovations, they are simply not doing that generally speaking. I believe that it is only the bigger enterprises that is focusing on actively searching for innovations and the people need to be convinced of the advantages, for themselves especially, before purchasing”, he says. He further adds that “many people are entrepreneurs ‘by default’”, which is shown by individuals selling and offering small services and goods without any formal company structure.

Chamuriho (17-04-2012) tells us further that “people are very eager to be copycats, when an enterprise successfully launches an innovation or a new way of working - others will be copying that within a month. There are, in my point of view many economical benefits in using hollow blocks, but no one is willing to carry the risk”. He continues by saying that “the catch is that the average Tanzanian citizen is using the types of building materials that the government is using for their various projects”. He further declares: “We know the methodology for hollow blocks, but if people do not see the benefits in an easily explained way, the message will not reach out” (Chamuriho, 17-04-20129).

Ezekiel (19-04-2012) at the NHC is under the interview telling the researchers that she is afraid that the savings that can be made by using hollow blocks, thus also use lesser material such as cement, unfortunately might not cover the costs for the extra labour and the education that the usage of them would be needing. “But in the future it may be a safer option and cheaper option though, but at the time being the market is not used to it. Another potential negative factor is the constructional aspect of hollow blocks”, she says. Ezekiel is not convinced that the machines, which are able to produce the hollow blocks, are that common today. Therefore, it would be a problem for block producers to supply hollow blocks in the quantity that a bigger construction projects would be in need of. Ezekiel (19-04-2012) claims that the market is open for new innovation, and questions if the block makers really are
marketing these new products. “There are areas up-country where the hollow blocks are used in a higher extent, due to building traditions and such” (Ezekiel, 19-04-2012).

Kwanama (19-04-2012) at the National Building & Research Agency explains their work with constructional innovation by saying that the organisation is trying to find and create solutions using materials that you can find directly at the construction site to decrease the transports as much as possible. Examples of environmental material that can be of use are stones, gravel, clay and sand. With help of these materials the agency comes up with products that are cheap, easy to use and also easy to manufacture where ever the project is located. Another key target of the agency is the production and selling of machines that can manufacture these products. Kwanama (19-04-2012) explains that these machines which are smaller, manually driven and as cheap as possible to the consumers so they can be as self sufficient as possible according to the building process. To market these solutions and knowledge to the common people the agency uses seminars, exhibitions, and calendars with pictures on houses built of the material as well as on the material itself, and sometimes they appear on TV to spread their ideas.

The blocks that the agency is constructing are of a hollow and interlocking type. Kwanama (19-04-2012) explains that the good thing with hollow blocks is that it does not allow direct adoption of heat, so a house with hollow walls will not transport the outdoor heat to the indoors during the day in the same extent as a solid wall, and the same goes for the opposite direction during the evening/night. This means that the indoors of the house will have a more suitable temperature and stay colder during the day and warmer during the night then a building with solid blocks would result in.

3.5.2 Consumer Behaviour
Theodossiadis (30-04-2012) states that in his belief “people in Tanzania tend to prefer quantity (price, writers note) before quality”. He adds: “People traditionally feel an urge to trust and know whom they are dealing with, not at least the big companies and especially the foreign ones”. We are also told about the governmental impact on the domestic enterprises and the consumer behaviour. Officially there is a market
economy, but with some unofficial restraints. This is also stated in the SIDA report "Tanzania: Ekonomisk och handelspolitisk rapport (juni 2010)” (SIDA, 2010). He further talks about projects that he has seen been received and entrenched well on the market, have often been a collaboration between NGO’s, public and private sectors. In those cases, marketing along with education to increase the awareness and knowledge of problems that a product will solve have been the main factor for success. The price-focus is a result of low income and difficulties in lending money for the average Tanzanian, Kyessi & Furaha (2011) claims. There are few institutions for lending money in Tanzania that the average Tanzanian can access. Often the rates are too high for people to lend, especially on higher loans, which are used for housing investments etc. (Kyessi & Furaha, 2011). Theodossiadis also states the difficulty in lending money for the average Tanzanian by saying that only 12 % of the Tanzanians can access money lending or saving services. This problem area is also highlighted in the governmental “Macroeconomic Policies” report.

Kwanama (19-04-2012) tells that the ordinary Tanzanian will be guided by availability but also the cost - other things will not be prioritised. “The availability is the leading factor, because people will see what is available for them and then they will use it”, he declares. By helping entrepreneurs and convincing them to produce and use the material as well as advertise themselves in a more intense way will make the awakening of the product faster, he says. Chamuriho (17-04-2012) is stating similar believes when interviewed by the researchers. He gives the following quote: "The government is likely to adapt to innovation in order to meet reach their environmental policies. But the end users will not care about potential added values. They just want their houses for a cheaper price. In that sense, naturally, cost is prioritised before quality” (Chamuriho. 17-04-2012).

“We are currently used to solid ones so the hollow blocks are not widely used.”

(Ezekiel, NHC, 19-04-2012)

Ezekiel (19-04-2012) at the National Housing Cooperation explains that when people in Tanzania think of construction and the usage of blocks they think of solid ones. “It is in their culture and sometimes culture matter more than costs and other advantages. Lately there have been some indicators for change in the market though, for example the interlocking blocks has currently been introduced - which is a
new technique”, Ezekiel says. She also means that it in the end comes up to availability. The blocks need to be easily available and people have to see the hollow blocks in use before adapting the techniques and methods themselves. She explains that hollow blocks currently are used in areas where the availability is high and also where the construction per se needs to limit the load on the construction.

Ezekiel (19-04-2012) further explains for us that if hollow blocks would be used more in the market, and the price would be different as well as the quality could be confirmed - “more people surely would buy them”. Ezekiel’s NHC colleague, Mziray (19-04-2012) architect working at the National Housing Cooperation, is declaring a similar belief saying that the quality of the blocks is indeed a main factor, and when marketing the solutions of hollow block it has to be shown that the hollow blocks are of such quality that they would coupe the pressure needed for being a sound alternative and used as building material.

When talking to Stephen (25-04-2012) at the Tanzanian Bureau of Standards, he further emphasises Mziray thoughts, but adds a perspective with the following quote: “Hollow blocks is without a doubt a suitable construction material for all types of smaller houses, single and two-storey houses, for example - as long as the quality is able to match up to the standards. But, most locally produced hollow blocks does not fulfil the standard that has to be met in order to form bearing walls” (Stephen, 25-04-2012). Ezekiel at NHC (19-04-2012) is speculating that one way of marketing these new solutions that might work would be if the government started to use them in their projects. Hopefully it would then spread down to the “lower” segments in the market and thus act as an eye-opener for the usage of hollow blocks. She continues by telling that there is in here believe three main reasons on why the market is not using the hollow block, these are:

- It is not a habit to produce them.
- The market does not believe that the hollow blocks are as strong as the solid ones.
- The fact that they have to be handled more skilfully.

“Hollow blocks are widely used in regions where they are widely produced.”

(Ezekiel, M, 19-04-2012)
According to Mziray explains his beliefs of the best way to change a culture in an environment, is by marketing, some training on how to use new innovations and at the same time find ways to confirm the quality. If the two latter reasons listed would be confirmed in a way that would convince the market of the hollow blocks quality, and of the construction workers knowledge on how to handle them and use them, people as well as the NHC would rush to the producers to buy them. “The market is constantly looking for cheaper ways to build houses thus the habit of not making them probably would change”, Mziray claims. Chamuriho is pointing at another potential problem by stating that different people is responsible for production, design and execution. “The responsibility in a more long-term perspective is needed in order to increase the willingness to invest time and money in to new ideas”, Chamuriho declares.

3.5.3 Knowledge
Kwanama (19-04-2012) at the Tanzanian National Housing and Building Research Agency states that common people in both rural and urban areas cannot afford to hire construction companies to build their houses so they build it themselves, even though they lack vital knowledge and techniques to do so properly. Chamuriho (17-04-2012) at the University of Dar Es Salaam also emphasises the lack of alternatives and knowledge by saying that the construction material offering vendors; “they just start up their businesses without any sort of formal training. But with a little bit of training they could indeed use more sophisticated solutions, like hollow blocks”. Chamuriho further explains traditions from his view, by saying that people are used with solid blocks and the market currently does not provide hollow blocks – maybe because the demand is not enough developed. He speculates about the potential reasons of why hollow blocks is not in widely use by saying that “most of the block makers are local without any formal training. And people buy their products, so that is fine. But when you use hollow blocks you have to do some 'home work' about special blocks for corners, joints and other special solutions” (17-04-2012). The manufacturers need some more technical experience and knowledge compared to producing solid blocks. “If you ask me, that is the main reason for the lack of hollow blocks on the market”, Chamuriho says (17-04-2012). Kwanama (19-04-2012) explains that the construction industry normally arranges exhibitions at least once a year and sometimes even twice. A lot of contractors, engineers as well as architects
meet at these exhibitions to exchange knowledge and inputs. Those are also the ones who recommend the material to each other as well as to the consumers visiting the exhibitions. He further implies that once they are aware of new materials and techniques, they are going to be marketed. Kikwasi (2011:129) writes that the lack of training as “remarkable” in his article “An evaluation of construction skills in Tanzania”, a factor also highlighted by Hastings & Msimangira (1993).

Chamuriho (17-04-2012) thinks that the catch is that the average Tanzanian citizen is using the traditional types of building materials that the government is using for their various projects. He continues by stating: “We know the methodology for hollow blocks, but if people do not see the benefits in an easily explained way, so the message do not reach out” (Chamuriho, 17-04-2012). Mrizay (19-04-2012) is of a similar belief, stating that: “One way of marketing this new solutions which actually might work, would be if the government started to use them in their projects. Hopefully, it would then spread down to the lower segments in the market and thus act as an eye-opener regarding the usage of hollow blocks” (Mrizay, 19-04-2012).

When asked the question of what the NHC as a governmental organisation could do to increase the usage comes up, Mziray explains that they as an organisation tend to encourage modern technology, so if they would be confident with the product - they would recommend it to other people as well.

Mziray (19-04-2012) further explains that the organisation try to include environmental issues wherever it is possible. They (NHC) work towards minimising transports of material to the construction sites by always buying from local manufacturers and so on. Theodossiadis (30-04-2012) explains that there is a major lack of education and knowledge in general in Tanzania. “Some industries face severe challenges in hiring skilful personnel”, he says. He further declares that he has identified what he refers to as a “Catch 22”: “The governmental have established industry-specific training for individuals whom want a career in specific industrial fields. This is financed by an additional tax for the companies that use this labour force. But the labourers are not ready to work – the companies claims they still need to train the labourers for a certain period of time” - often a couple of months, he adds.
Theodossiadis further explains a, in his view, important aspect of the Tanzanian economy. “Many of the companies and investors I encounter in my daily work claim no well-defined distinction between some politicians and private sector players. I believe that the public concurs with this”. Theodossiadis, when speaking of the business climate in general, have identified a trend in the East African society; “The solution to every economical growth issue in Eastern Africa, Tanzania included, seems to be what is known as PPP”. ‘PPP’ is short for ‘Private Public Partnership’. Basically, ‘PPP’ is financial collaboration between the public and the private sector – “but how this is examined differs from time to time and from ministry to ministry”, Theodossiadis (30-04-2012) states. We are later told that the politicians in Tanzania are very confident in this approach, even though it tends to be diffuse meanings of what it really is all about. Miraftab (2004) is of similar belief.

3.6 Conclusive Discussion with Key Persons
According to the study’s action research approach, mainly explained through Berg (2009), the collected data is to be compiled for reflection and feedback from the key persons for the study. Therefore, we briefed the key persons with a review of the empirical data and thereafter asked questions that were formulated beforehand. The final feedback interviews are also carried out for reliability reasons – if the key persons can confirm or dismiss certain data, the reliability is assured.

On the 11th of May 2012, we held interviews with Semwenda (10.00) at the head office and Isaksson (14.00 via Skype). In order to collect a wider spectrum of opinions, we also held following-up interviews with Tumaini (08.30) and TPCC Market Director Ekwabi Majigo (15.45).

Contractors and architects, as well as TPCC express concerns about the quality of the blocks from the market. Isaksson says that the quality aspects that have been discussed during the interviews are interesting. “Every block makers must aim to minimise the variation in strength from one block to another”, he says and explains that it is of minor importance if one block has the highest quality as long as the next one is weak. When further asked about the variations in quality, Semwenda (2012-05-11) responds: “There are indeed standards about the mixing ratios and such, but we have been researching them ourselves”. “The quality issue is very crucial”,

44
Isaksson state. “Especially for hollow blocks, which requires a vibrating block machine. In some cases, the solid blocks might be more robust, when comparing the blocks of poor-quality mixing”, he adds in addition to what we were told during a briefing earlier (2012-04-30) when he stated: “If people are not certain of how much the blocks will bear, the outcome can be whatever” – a similar quote was said by Isaksson during one of our interviews with him (2012-05-04). Semwenda is stating that the process of making hollow blocks requires more attention and control than solid block making. He further proceeds by stating that they (TPCC) have got the minimum standards confirmed during the period of this study from TBS and private quality testing institutions, and he is currently working with labelling the cement bag with these recommendations. Since the standards regards solid block making - hollow block makers will not be directly affected by this change. Semwenda further says that he cannot guarantee that the recommendations will be implemented, especially not among the small-scale producers, but that he thinks that TPCC should contribute with knowledge to the market. Regarding the small-scale producers and our observations that show that there are no clear methods, Semwenda expresses his concern about the quality by addressing the lack of knowledge and un-trained labour force. Majigo, also working with this issue, says that three activities need to be implemented: “At first, we need to standardise everything. Then we need to go out on the field and train and show the block makers how and why they should do like we recommend them to. Thereafter we need to follow-up and see how the block makers work in order to ensure that they are on the right track. This is being done by Semwenda, our Cement Application Manager. But in the future, to be able to ensure that this can be carried out, we need increase this sort of activities”. “In order to ensure the quality of the products, the processes must be well-organised and structured. The variation of quality in the blocks ought to be minimised. One way to approach this issue is to use trustworthy labour force that are confident and aware of the importance of the production processes”, says Isaksson. In Dar es Salaam, many of the block makers’ uses labourers are hired on a day-to-day basis, according to Tumaini.

Tumaini says that there are difficulties regarding standards and requirements, since few of the block makers test their blocks. Both Semwenda and Isaksson concurs and stresses one important factor: there are standards, but the to this point, no one have
been confirming the relevance in them and there has been no motivations to why and how the standards are set. Isaksson questions: “So, if there have not been any established standards – why should the block makers test their blocks”. Isaksson (2012-05-11) have earlier during the study presented a method for quality measurement that is also confirmed by Semwenda (2012-05-11) and Tumaini (2012-05-04), which basically is a kicking test. The kicking test is observed to be used by individuals (with little knowledge of construction) and the test is carried out by a simple kick on the block – if it breaks, it is bad quality, if not, it is good enough for building house.

When asked why the interviewees think hollow blocks are not more widely used, many claimed a lack of knowledge and awareness. “Knowledge is indeed a contributing factor, I would say”, Majigo claims, “we need to educate both block makers and customers”. Majigo says that the (lack of) knowledge have major effects on the consumer behaviour. He also claims the traditions to be very important. “People will not use hollow blocks since they never have done it before”, he adds.

There have been opinions of the foreign companies with low prices coming in to the market and decreases the price (due to sometimes low quality). “The cement market in many countries are in characterised by mono- or oligopoly structures. The producers offer one price for the domestic market and if there is any surplus, they export it abroad to foreign markets with low prices, so called ‘dumping’”, Isaksson explains and further claims that the electricity prices in Tanzania is a major contributor to the relatively high cement prices, since the cement production is very much affected of the power. In order to compete with the competitors, he thinks that cement companies need to offer some “extra-value” for the block makers and other clients in order to gain market advantages. Majigo agrees stating: “a market niche would be a good thing”. Tumaini concur with his statement regarding this issue from the initial interview (05-04-2012).

A certain factor that has been discussed during the interviews is the isolation factor, especially among the constructors and the architects. We asked Semwenda to share his opinion of the function of the blocks. “The solid blocks transmit the heat from the outside in higher extent than the hollow ones. When I worked in South Africa, many
people used the hollow blocks due to this factor”, he claims and further stress the development from solid to hollow blocks in other countries.

Interviews showed that people are considered to be positive to new innovations if they are able to see their benefits. “I believe that the educated people, especially engineers and architects, here are trying to find new solutions. I have seen this change coming the last three years”, Semwenda declares. Majigo shares the opinion by answering “definitely” on if he thinks the Tanzanians are open for new innovations. Tumaini also concurs, but adds: “an innovation needs to be seen in use”. Majigo further confirms what has been stated among many of the interviewees. “The Tanzanians are slow-starters. But when the benefits from innovations are displayed, we are very adaptive. When the cell phone technology was a new thing in the 1990’s, people were sceptical. But very quickly after the use of them was shown, people embraced the new technology and now we are a country of very frequent mobile phone users, even in comparison with others”, he exemplifies and later says: “The architects like the hollow blocks. The construction companies as well. But no one wants to be first”. Isaksson means that the traditional ways of building is the only thing people can rely on when they lack knowledge of other methods.

If the government should promote new innovations, like hollow blocks, Majigo does not think: “No, this must be up to the individuals. But we surely could collaborate”. But then we face another problem. Isaksson: “I believe people do not care about regulations and permits, etc.”. Semwenda share his believes: “Today in Tanzania, we are facing bureaucracy problems. People does not care for permits and guidelines from the government, since they are a very cost- and time-consuming processes”, he clarifies. Collaboration of different sectors was pointed out as a potential way of increasing hollow block use. One possible activity that might show the benefits of hollow blocks is to let TPCC be the pioneers with support from other institutions, Isaksson says (2012-05-04). He continues by discussing the eventual problem areas by doing so, mainly stressing the factor that TPCC are not the ones making the blocks. “Although, when looking way back, I recall them making blocks but stopped since they did not want to compete with their customers. But they have also welcomed block makers for seminars and block making training – activities that are in use in other countries”, he declares.
4. Theoretical chapter

In the theoretical chapter, we aim to compile theories relevant to the collected data in order to create a theoretical frame for comparison to the empirical data for analysing.

4.1 Theoretical approach

In the theoretical chapter, we aim to compile theories relevant to the collected data in order to create a theoretical frame for comparison to the empirical data for analysing. The theories presented are based on the empirical data gathered throughout the grounded theory-inspired action research approach of the study. The theoretical chapter should therefore be seen as a function for balancing the most frequently addressed problem areas that respond to the thesis problem statement. The theoretical arguments presented could therefore act as an analytical fundament that along with the empirical data would form the base for the conclusion. From these circumstances we have decided to present our theoretical chapter from the following three perspectives; Corporate Social Responsibility, Consumer Behaviour and Innovation. The innovation aspect of overcoming potential obstacles for a wider use of hollow blocks led us to present relevant theories about innovation and on how to implement it. The chapter of Corporate Social Responsibility seeks to provide the reader a theoretical understanding for the challenges and opportunities for social development from a corporate perspective and at the same time through the consumer behaviour perspectives contribute with possible explanations and ideas about the behaviour and cultural aspects of the market actors.

4.2 Innovation

Although innovation processes and identification of innovation opportunities within an organisations and its structure indeed are complex and challenging to describe through a simple model, it could be a good starting point to try to focus on the key aspects within innovation management matters. Tidd et al (2009) describes the process of innovation management as a repetitive one with generic core activities, which all being a part of a cycle of activities repeated over time. In order to enable the development of efficient innovation strategies, a number of different phases need to be taken in consideration. One of the key factors within a roughly divided process of identifying innovation opportunities is the ability of detecting signals in the environment about regarding potential of change. Such signals could potentially be in the form of quality, new technological opportunities, changing market requirements,
the result of legislative pressure or competitor action. The interplay of several forces are mainly the trigger of an organisational innovation, these triggers are often a mixture of factors which derive from a specific need for change as well as from new opportunities. Considering the wide range of possible signals, the ability to possess the skills to identify and analyse these mechanisms is of paramount importance. A successful innovation management also requires some form of knowledge to process the data and sort out information from an (often turbulent) environment (Tidd & Bessant, 2009).

A high degree of innovation and quality assurance is a necessity at all levels of the social texture of creating conditions for growth and development (Mersha, 2000). Mersha (2000) notes that it is often a lack of clear overall quality improvement measures that discourage industrial development in the sub-Saharan area (hereafter refereed to SSA). Countries with long traditions of quality-oriented strategies have achieved large improvements in productivity, consumer satisfaction, increased employee morale and improved management-labour relations. Improved quality reduces waste and increases productivity. An improvement through innovation in quality and productivity does also enable firms to increase their market share and to charge higher prices for their products. Innovation and quality has therefore become a powerful competitive weapon. A higher competitive business climate also means higher demands on organisations to continuously perform and develop - a powerful driver for economical development.

The SSA suffers from significant problems with employment and lack of economic growth, and has often problems to develop and maintain their domestic expertise and production, not rarely because of a lack of regulations and structures. To reverse the decline in economic growth in the SSA, different development strategies, including structural adjustment programs, have been proposed. However, the focus of these development strategies has been macroeconomic policies. The implications of increased management efficiency at the enterprise level to the overall development and innovation have not been adequately addressed (Mersha, 2000).

According to Mersha (2000) regions in the sub-Saharan area tends to be more resistant to change and innovation and in that sense also less dynamic compared to
more industrialised regions in the world. There are lots of examples of instances in Africa that has performed in the same way for decades - farmers are for example using the same methods as their ancestors used centuries ago, while other parts of the world have adapted to new and more effective innovations. A change of industrial methods could be a cultural paradigm that could have far reaching positive consequences not only for individual firms but also for the development of the societies in general as well (Mersha, 2000).

*Figure 3. Process Model of Innovation*

![Process Model of Innovation](image)

The selection stage is a potential threat to an innovation needing market. The purpose of the selection stages in this rather simplistic model is to highlight the need of well-established connections between identified opportunities and existing abilities. By doing so the inputs may be made into innovation concepts, which can be progressed further through the development. This phase consists of three different inputs. First, the flow of signals about possible technological and market opportunities, the second that needs to be analysed is the current knowledge base and distinctive competence of the organisation, the present awareness about products and services and how well these are produced and delivered effectively. The third input of the selection phase seeks to understand a match with the overall business. At the concept stage, it should be possible to relate the proposed innovation to improvements in overall business performance. The third step in a simple visualisation out of a possible process innovation consists of an implementation process based on the two previously reported steps. Relevant trigger signals and the strategic decision to pursue some of them are followed by the phase of actually turning those potential opportunities into reality. The implementation part of an innovation process could be seen as the phase which pulling the different pieces of knowledge and weaves them into an innovation. Early stages of such
processes are often characterised of high uncertainty regarding a number of technological and social factors, but gradually over the implementation phase, the uncertainty is replaced by relevant knowledge and understanding regarding the innovation and its eventual implementation (Tidd & Bessant, 2009). Handelman (2011) writes about the often-complex situation when it comes to linking innovation processes with cultural practices and traditions in less developed economies. Undeveloped social structures tend to keep a restraint against development and change, many times due to uncertainty in the structure of society -which also tend result in a form of short-term planning structure. Developing countries in general and African in particular, are often characterised by a confidence in the state and their actions. Therefore it is not uncommon that people base their judgment and own thinking on how government projects are planned and executed. As a result, knowledge development is an essential part in creating an environment for innovation processes. Consumers’s approach and reactions towards innovative new products, and their willingness to try them are significantly driven by the benefits they expect by using the products. The core meaning of the term diffusion is consumer’s willingness to embrace change (Handelman, 2011).

Authors Joe Tidd & John Bessant (2009) writes in the book “Managing Innovation – Integrating Technical, Market and Organizational Change” about markets in building industries. The authors present theories regarding why actors in different segment buy certain products and how they motivate their actions.

Tidd & Bessant (2009) claims that it is of companies’ great interest to try to map and identify segments in their markets, hence the companies thereafter can treat groups of clients in the same, hopefully fortunate, ways. This will, according to the authors, be an effective strategy for companies aiming to work with customer satisfaction, to get out new innovative products and to quality assurance their processes.

“The business customers tend to be better informed than consumers and, in theory at least, make more rational purchasing decisions.” (Tidd & Bessant, 2009:411)

To be able to reach out to the business market for building products, companies need to adapt to the current dynamics that forms the conditions for the businesses. To do so, it is crucial to identify different people that have impact on the purchases.
Tidd & Bessant (2009) exemplifies this by presenting actual customers/buyers with authority to agree terms of purchase, the ultimate users, gatekeepers which supplies the users and buyers with information and other influencers e.g. technicians. Thus, trying to implement new products, companies will need to research which of the presented functions in the purchasing process that is of most impact (positive or negative) for reaching the targeted goal (Tidd & Bessant, 2009).

Customer markets are often researched from a buying behavioural point of view, based on social and behavioural science, claims Tidd & Bessant (2009). Theories that also are frequently used are from utilitarian perspectives where the consumer behaviour is explained by rational arguments, such as product requirement comparison and price. Consumer analysis, according to Tidd & Bessant (2009:409), is a process of initially research and analyse the consumer’s behaviour, then identify “the most significant variables that influences behaviour” Thereafter, researchers shall try to use cluster analysis in order to create different categories or groups of similar characteristics in the market. The cluster analysis is used for prescriptive segmentation, which in current problem area regards identification of why the hollow blocks are not widely used - despite all the advantages compared to the hollow dittos (Tidd & Bessant, 2009).

### 4.3 Marketing Strategies for Innovations in Developing Countries

During the data collection, certain factors regarding strategies for increase the market’s awareness of innovations and the use of hollow blocks were discussed. The topic of getting the hollow blocks more widely used is also presented in the problem statement as one of the targeted as a main objective for the study. Therefore, marketing theories are hereafter presented. Notable is that we have aimed to concretise the theories to regard the current area (Eastern and sub-Saharan Africa).

Companies need to address their strategies to the current market dynamics from where they operates, authors claim - e.g. Armstrong & Kotler (2009) and Drucker (2007). In many developing countries, marketing have traditionally been seen as a corporate function without any clear value, claims Kaynak & Hudanah (1993). Drucker (1993) presents strategies for marketing new innovations to the market. “The first, the mostest” is based on a being the first company to offer a certain innovation, and also the first one to cut the price when competitors copy the innovation. If the market demand is satisfying, price reductions stepwise might be implemented in order to decrease other competitors to commence competition with similar
innovations. Drucker (1993) also presents that a “niche strategy”, which is focusing on offering the market something that is unique and making the specific product the obvious choice for the consumer. Although, in times of change, Kaynak & Hudanab (2011) writes about the tropical Africa and the importance of having close contact with the consumer’s since the income and taste for certain goods are continuously changing throughout periods of rapid development in the area.

"In the process of innovatively satisfying demands in Africa, regarded as part of the base of the pyramid, local and foreign companies could experience tremendously profitable growth. It is therefore necessary for African countries to highlight the existing flourishing business activities and opportunities in the continent as part of their branding strategy." (Collins & Ayantunji, 2011:290)

Because of economical and societal change in sub-Saharan Africa, demographic matters are vastly affected, as Collins & Ayantunji (2011) points out. In the article "Creating Strategies of Innovation" (1993), Drucker means that this is an opportunity for implementing new innovations, which he categorise as exploiting demographic incongruities. Incongruities are objects for development, he states, and therefore innovations are often of real benefits for the people as well as the companies - both in direct financial terms but also marketing-wise since the improvement of incongruities will increase the company’s brand image (Drucker, 1993). The societal benefits from innovations and corporate development is not to undermine, claims Drucker (2010) and further argues that it is companies’ responsibility to contribute to the society. Nicolopoulou (2011) concurs and adds that in today’s globalised world, socio-economical matters must be prioritised by everyone, including companies.

**4.4 Corporate Social Responsibility**

To introduce the field of Corporate Social Responsibility (hereafter referred to as “CSR”), Hopkins (2007), in his book “CSR & International Development”, asks the following question:

“If the business of business is business, why should corporations be involved in development?” (Hopkins, 2007:1)

To declare the answer to the question he refers to the Chairman of Anglo-American PLC, a British multinational mining company, Sir Mark Moody Stuart. He elaborates
that the view of that a company is doing enough if they have a sound employment, they regard some safety and environmental policies and are not related to bribes and pay honestly taxes to where they are located, is starting to change. Now Sir Stuart declares they know that when the government fails to use those taxes for sound development people tend to turn to companies and ask how it can be that “they make a lot of money, but there is little in the country to show for it” (Hopkins, 2007, p. 1). The issues of development might not be the company’s responsibility, but it surely becomes their problem, if it is not maintained correctly. If the aim is to create a society that is functional for doing business in, companies need to work together to create the conditions needed for sound governance (Hopkins, 2007).

Urip (2010) declares that the mantra of business people has during recent year have advanced from only “profit” into “profit, people and planet”. By this evolvement the concept now covers several issues, like people and social issues to issues regarding the environment. Other authors that points out the benefits of CSR is Hinson and Ndhlovu (2011) who focuses on the correlation between CSR and corporate financial performance (later referred to CFP). They indicate that there is a proper relationship between CSR and CFP independently of industries and contexts. Furthermore, they explain that this relationship works two ways - like a cycle. Stable work on CSR leads to a higher CFP, and a higher CFP emphasises more efforts on social responsibilities. So profitable companies can better afford to focus and invest in SCR that in the end can make them even more profitable (Hinson & Ndhlovu, 2011).

Authors Van de Velde et al (2005) also discuss the relation between CSR and financial performance; they refer to it as a complex issue but also come out with the conclusion that sustainable investments when measured according to factors like style of the investments etc. have a positive impact on financial performance. However the difference is so insignificant so it is not enough for using as a statistical measurement to show its outperformance. Although, it at least indicates that if done and maintained correctly, CSR should not have any negative effects on the matter of financial performance (Van de Velde et al, 2005).

In Africa and in developing countries in the Middle East in general, business is merely operated and dictated by multinational corporations (MNC’s). As a result, demands
concerning those corporations’ assistance and involvement in for example community development in the country they are located in, has increased a great deal. This has been shown in for example widespread demands from communities, saying that the MNC’s should work towards and protect welfare of the native people and as well benefit the host country society’s development in a direct, sustained and relevant way (Hinson and Ndhlouv, 2011).

Nicolopoulou (2011) declares that since the start of the new millennium, Europe and the USA have increased their economic and geo-political activity in and towards developing and emerging markets. This is an answer to the more globalised economy that we face today. The relatively new focus of western countries makes the transfer of technology, service orientation and knowledge a central issue of real importance. The way this transfer of knowledge and cultural capital etc. can occur is by activities and efforts of workers in possession of a global focused knowledge (Nicolopoulou, 2011).

Another indicator that points out the relevance of MNC’s to pay attention to the field, and their ability and strength to contribute to the development process is the financial factor. In comparison, for example the World Bank, who lends out approximately 15-20 billion USD per year and UN agencies like “The International Labour Office” with a annual budget on 0,25 billion USD - MNC’s yearly profits is enormous, and makes these agencies numbers look miniscule. One example is Exxon Mobil that had a profit over 100 times the annual budget of The International Labour Office in the year 2004. This show that corporation’s financial powers can contribute a lot (Hopkins, 2007).

As stated above, there are several positive indicators and reasons for CSR, but as with most things there are also negative aspects to take into consideration on the matter. A downside is that most corporations of several reasons are not professionals in the field of development, and thus many mistakes has been made in several projects with the aim for development executed by MNC’s. Hopkins (2007) claims there are many examples of good intentions turned to unsustainable projects or to a chance for corrupted government members to make personal gain. Hopkins (2007) proceeds with declaring that CSR work should, except the developing focus, also consist of what the corporations sees to that there is a business case included in the
developments projects. A main factor why problem in CSR occurs is the fact that there are so many aspects that can be involved in it.

“Many of the criticism of CSR stem from problems with concepts and definitions.”
(Hopkins, 2007:8)

Aspects are often related to the area of business in the society (e.g. corporate citizenship, business responsibility, business sustainability and business reputation etc.). This weakness in the perception of the phenomena that results in difficulties to justify CSR for business stakeholders makes several companies to think of CSR as only corporate philanthropy or reject the field entirely (Hopkins, 2007).

A definition that the stakeholders often are able to relate to though is the following: “CSR is concerned with treating the stakeholders of the firm ethically or in a socially responsible matter. Stakeholders exist both within a firm and outside. The aim of social responsibility is to create higher and higher standards of living, while preserving the profitability of the corporation, for its stakeholders both within and outside the corporation” (Hopkins, 2007:1). Hopkins (2007) proceeds by explaining that some corporations see CSR as a new strategic framework for the corporation. Urip (2010) agrees with Hopkins and writes that CSR has evolved to a core business issue.

4.5 Consumer Behaviour
In the article “Cross-cultural consumer values, needs and purchase behaviour”, authors Kim et al (2002) explain that the behaviour and decisions of consumption for a long period of time have been assumed to be influenced by personal values and attitudes. In other words, this implies that personal values and attitudes creates and influences desires and needs as well as it is pushing consumers to choose certain products to fulfil those needs. According to these personal values, they can and should be seen as one of the main factors that influences and controls buyer’s purchase and consumption behaviour. These values are in their turn shaped by the society that the certain consumer belongs to (Kim et al, 2002).

One of the most fundamental goals for a marketer is to meet the specific needs of the consumers. To do this products are mainly trying to fulfil three basic and different segments that consumer’s needs consists off. These are:
• **Functional:** In this specific segment it is all about how a product’s functional attributes are able to satisfy the buyers need to prevent an upcoming problem or solve an already occurred problem.

• **Social:** The social part of a consumers need focus on how much a product can appeal to factors like social approval, sense of belonging or to the need to express the personal identity. This segment and the examples given are all related to the buyer’s self-esteem. To elaborate, the authors (Kim et al, 2002) uses the following example:

  “*Western brands or imported goods may be used to convey social status in non-Western consumer markets.*” (Kim et al., 2002:6)

Consumers that get influenced a lot from the social segment of needs often put much value in products with a higher social visibility as well as prefer brands that delivers a sense of high standard, prestige and exclusivity.

• **Experiential:** The third and last segment, the experiential one, affects to the buyers demand for uniqueness, variations and for the satisfaction and preference of the senses. This segment has been acknowledged to contribute as an important factor in how customers behave according to consumption, especially when it comes to pushing and introducing new demands of products (Kim et al, 2002).

Smith and Colgate (2007) also put focus towards customer values and on the impact these values have on buyers’ behaviour. To get down to the core definition of customer values they refer back to a Valerie Zeithaml and her article “*Consumer Perceptions of Price, Quality, and Value: A Means–End Model and Synthesis of Evidence*” (1988), which from a consumer perspective defined customer values as what the consumers’ get in relation to what they give up. To serve these values has often been seen as the main focus of all marketing processes and some will even go further and say that it is to be seen as the main purpose of organisations. Smith & Colgate (2007) also divides customer needs into the same three different segments like Kim et al (2007) - but then they go even further by referring to more recent studies, which imply that the three dimensions does not cover all the different aspects needed. Instead, they point at that the most comprehensive studies on customer values divides the phenomena in to five major segments; net value for the customer (compare
benefits with sacrifices and shows the balance), derived value for the customer (measures the usage or the experience of the products outcome), marketing value for the customer (the perceived qualities of the product), sale value for the customer (the amount of cost/sacrifice the purchase reduces) and at last rational value of the customer (measures the calculation of objectivity and correctness in the benefit–sacrifice based evaluation) (Smith and Colgate, 2007).

According to the article “Why cultural change is perfectly normal: In the long run, good habits can breed success” (2009) the term “it's not in our culture” is often used by the British when something, like an idea or a specific concept, is pointing towards a different direction relative to the way they are used to do things. When stating this, they are not referring to culture in the aspects of artistic and creative work, but instead to personal or organisational culture. In this context, personal culture as the way in which we go on with our day, or more frankly speaking, live our lives and organise the society we live in. Organisational culture in another hand implies on the way of how institutions and businesses in the society is managed and controlled. The latter perception of cultural, consists of habits that can be considered both good as well as bad, and more importantly they can be adapted and be changed to the better (“Why cultural change is perfectly normal: In the long run, good habits can breed success?”, 2009)

In order to successfully understand the complexity of cultural aspects and influences on market and consumer behaviour, we have built our assumptions on the definition of culture that can be considered to be the most recognised in the current established theory. Denison et al (2003) states that one of the most difficult challenges within global management research is the application of theories and models developed in one part of the world in order to understand a phenomena that occur in another part of the world (Denison et al, 2003). Uncertainty avoidance could be described as one of the main cultural characters that could be categorised within a specific culture or area. House et al (2004) describes the terms as “the extent to which members of collectives seek orderliness, consistency, structure, formalised procedures and laws to cover their daily lives” (House et al., 2004, p. 603). The dimension is how people or a culture deals or scopes with uncertainty such as technology, law and religion in their daily life, rather than uncertainty itself (Hofstede, 2001). Onwards, Hofstede (2001) argues that
it also could be a measure on how people couple with anxiety and stress in relation to uncertainties or unfamiliar situations. It has been found that national cultures with strong indications of uncertainty avoidance often develop strong ambiguous avoidant structures within their organisations and institutions. In order to ensure that situations are clearly predictable and interpretable. People in such cultures are commonly active, aggressive, busy and fidgety (Hofstede, 2001). In contrast, people of cultures with low uncertainty avoidance often have a low level of anxiety and urgency and therefore are a bit more easy-going, quite, indolent, controlled and lazy (Hofstede, 2001). The level of uncertainty avoidance have possible effects on the societies ability to accept and develop innovative paths according to House et al (2004) furthermore, innovation ability is depending on a individual on nations nature regarding ambiguity. People tend to hold on to established traditions and procedures that have been proven to supply a form of security in the past (House et al, 2004).

A culture categorising itself as a master or a subordinate of its surroundings is also a social fact that has possibilities to affect how a society pursue innovation according to Trompenaars & Hampden-Turner (2007). If a culture acts out of a need of control, they are often inner-directed and controlled by processes and regulations, such cultures with that type of character often lacks the ability to reach out with innovations due to standardised processes. An outer-focused orientation on the other hand put its believe in in a limited capacity to influence external circumstances. If people put their trust in that other forces affects what happens and that little can be done to alter it, then little striving for innovation is to be expected (Trompenaars and Hampden-Turner, 1997). House et al (2004) argues for that the way people deal with each other socially may affect how innovation is seen and managed, for instance concerning tolerability for mistakes (House et al., 2004).

Trompenaars and Hampden–Turner (1997) further explains their view about achievement pleasure and the way innovation, high standards and performance improvement is rewarded within a culture or country. House et al (2004) also argues about performance orientation within cultures and describes it with the following quote: “the extent to which a community encourages and rewards innovation, high standards and performance improvement” (House et al. 2004, p. 569).
The extent of performance orientation could be divided into two general categories—achievement vs. ascription-oriented cultures. Barsoux & Schneider (1997) states that a categorising of above mentioned dimensions is not only interesting because it directly affects the culture of a nation, and also how the achievement orientation in a culture can have a direct impact on how business is conducted and how organisations is operated. Trompenaars and Hampden-Turner (1997) states that such categorising could be particularly interesting when trying to understand how innovations and innovators are seen in a particular culture or organisation. An achievement-oriented culture is told to categorise a person upon the accomplishments of that person. People are evaluated and judged on how they perform their duties and the result they manage to achieve. An ascribing culture on the other hand, accords status on the basis of social ranking and heritage. Age, gender, sex, class, seniority and social and family connections seem to be the essential factors (House et al., 2004). In what way evaluation and feedback are seen in the two cultures varies depending on which values that is attached. Ascribing cultures tend to see evaluation as a matter of who a person is rather then what they are doing as achieving cultures see feedback and evaluation as important hence it indicates what they are doing wrong or right and supports self-improvement (Trompenaars and Hampden-Turner, 1997).
5. Analysis

Our analysis for the project emanates from a structure analysis of the current market according to questions that we have included in our interviews, based on Osterwalder & Pigneur’s “Business Model Canvas”. The market analysis aims to work as a fundament from where we seek to identify where the different hinders and obstacles for implementing the hollow blocks occur, substantiated by the action research analysis questions presented by Berg. To be able to do so, we will use our theoretical review regarding fields of innovation, knowledge and consumer behaviour as well as our collected data from interviews with different actors and shareholders in the Tanzanian concrete block industry. The secondary data and the external interviewees will also contribute to the analysis, which is to be carried out through the guidelines of action research. One part of the analysis will affect what was discussed during the upcoming interviews with key persons/stakeholders, where they have the opportunity to comment and discuss what the collected data means, through their perspectives. All this according to the action research method that we have used and implemented throughout the study.

We present this model (Figure 4) in order to clarify the mutual key points from every segment and theme. The Y-axis marks the themes and the X-axis marks the segments. Hereinafter the abbreviations for the units are presented.

**Segment**

<table>
<thead>
<tr>
<th>Segment 1 (S1)</th>
<th>Cement producer: TPCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment 2 (S2)</td>
<td>Block makers</td>
</tr>
<tr>
<td>Segment 3 (S3)</td>
<td>Constructors and architects</td>
</tr>
<tr>
<td>External stakeholders (ES)</td>
<td>National Housing Corporation, University representatives, National Housing Research and Development Agency, Swedish Embassy</td>
</tr>
</tbody>
</table>

**Themes**

| Theme 1 (T1) | Innovation |
| Theme 2 (T2) | Consumer Behaviour |
| Theme 3 (T3) | Knowledge |
The different themes will be discussed under each specific market segment analysis.

5.1 Market Segment I – Cement Producer TPCC
TPCC has a strong position on the Tanzanian cement market. Hence being the market leader and supported by the multi-national company Heidelberg Cement Group, which is a well-established player in the global market for cement. Since the cement industry is a major contributor to the Co2 emissions in regions of fast development of construction as well as other regions of the world, sustainable housing solutions are required – especially when the urbanisation of the world and Tanzania in particular is vastly increasing (Mahasenan, Smith & Humphreys, 2003; Semwenda, 2012-04-05; Calas, 2009). According to the interviews with the TPCC representatives, they are concerned about their responsibility role in order to enlighten and educate the market. CSR theories, especially Hinson & Ndlovu (2011) and Hopkins (2007), declare that corporate activities can be both advantages for the society and for the individual company.

Furthermore, Van de Velde et al. (2005) states the combination of potential benefits as both Isaksson (continuously throughout the study), Majigo (2012-05-11) and Semwenda (2012-04-05, 2012-05-11) expresses during our interviews: they want to take their responsibility for the environment as well as for the housing standards affected by the block making process, but at the same time, they do not neglect the potential financial upsides they can benefit from if this change where to be established in the market. Then again, it is a question of how this can be done. An action research project might be a first step, since, according to Zuber-Skerritt & Perry (2002), the method’s two goals (first, to solve a problem within a organisation; second, to generate
new knowledge and understanding) is implementable to the current study field with dual-purposes: corporate and societal benefits.

TPCC and the Tanzanian people are facing problems in terms of lack of training and knowledge of the block makers. The cement that functions as a base for the concrete mix of the blocks is of good quality, but it is of no good use if the block producers do not have the knowledge of making blocks in reasonable standards. Tumaini (05-04-2012) claims that trust is very important in the sales process. When low levels of knowledge in addition to poor housing standards is co-occurring at the moment in Dar es Salaam, we can identify what Drucker (1993) claims to be an incongruity that should function as a driver for innovation. Thus, this is what the theories say – but to this point, there is little demand for hollow blocks, all TPCC representatives agree on that during our discussions. So how come? In Mersha’s (2000) opinion, the sub-Saharan countries are traditionally slow-adapters of new innovations. She also claims the lack of expertise and knowledge of the common people to be a factor that is contributing to the long adaption times of innovations. Semwenda (05-04-2012) says that people are used to construct houses in a certain way and therefore do not look at other innovations that can be more beneficial for them, like hollow blocks. The traditional way of building can be seen as a habitual characteristic for the Tanzanian market, according to the article “Why cultural change is perfectly normal: In the long run, good habits can breed success?” (2009). The cultural patterns and habits are correlated to the lack of formal training and knowledge and also absence of recommendations and planning from the government, as stated by Semwenda and Tumaini during the initial discussion (2012-04-05) as well as Calas (2009) and House et al (2004).

Like Drucker (1993; 2001) writes, companies must adapt to the current circumstances on specific markets in order to establish well-related and examinable strategies for improvement and development. What is identified from TPCC’s perspective is that the market is generally short of understanding and awareness regarding how the building construction can improve. Kaynak & Hudanab (1993) means that the markets in Africa are of constant change, since the many developing countries’ economical structures are affecting the consumer behaviour. If TPCC would support and promote a change of building material by in this case emphasising it’s economical, functional and
environmental benefits, this would result in a \textit{market niche} for this certain product (Drucker, 1993). Majigo (2012-05-11) claims this to be favourable if implemented in the future. By doing so, given that the quality is good; in addition to the innovations improvements in itself, a trust of the company’s knowledge would be an eventual result. Trust, like earlier stated, is a major selling point for TPCC and could be increased by sharing knowledge that will be proved to increase the market’s image of their brand.

\subsection*{5.2 Market Segment II – Block producers}

Of the several block producers that we visited during our study, only a couple of them where actively producing hollow blocks, e.g. Özbag (17-04-2012) and Kwaya (08-05-2012) etc. Although, several producers knew about the hollow blocks though, and even stated that they had the knowledge and equipment for making them and have been having that possibility for quite some time. Furthermore, many of them where also aware of the positive aspects of the hollow blocks, but they simply do not produce them due to low demand. For example, Said (23-04-2012) states; “We do have the knowledge and moulding equipment, but the demand from the customers is not very apparent”. But the market also consist of some players that have no knowledge at all of the hollow block solution, Solo (25-04-2012) gives for example the following answer when he is asked about hollow blocks “I have never seen hollow blocks. People have not asked for them. I produce what the market wants me to, and not vice versa“.

Tidd and Bessant (2009) claims that a key factor in identifying innovation opportunities is the ability to spot signals regarding potential of change in the environment. One of these signals can for example be new technological opportunities (Tidd & Bessant, 2009). The fact that the technology to make hollow blocks is existing and is even to an extend, well known by the producers, can be seen as an indicator for a opportunity of innovation in the block market in Dar es Salaam and it’s surroundings.

Özbag (17-04-2012), one of the hollow block producers, states that the Tanzanians are more conservative when it comes to adopt new innovations than his western related customers are. Mersha (2000) also gives the similar view and states that regions in the sub-Saharan area tends to be more resistant to innovation and in that sense less dynamic than other part of the world that are more industrialised.
Handelman (2011) explains that the reason for this can be the uncertainty in the society structure in these underdeveloped parts, which often results in a short-term planning structure. As a result of the minor production of hollow blocks there is few that have such blocks in store. If they make it, they make up on order. They simply do not see any reason to store products that the consumers do not ask for. In the literature review, the authors Kim et al (2002) points out the importance of meeting the consumers wants and needs.

Several times people have stated to us that one reason of why the end consumers prefer solid blocks and thus do not ask for hollow blocks is their fear of that the latter ones will not be as durable as the former. For example, Kitery (18-04-2012) states “I think people have some safety issues, regarding the design of the hollow blocks. I think the design factor is not to undermine, if people think hollow blocks look weak they simply would not buy it. They argue that if they are not certain of the safety aspect, they will use the traditional way of construct”.

The needs that in this case are in focus are those that Kim et al. (2002) refer to as functional needs. In other words needs, related to the products attributes ability to fulfil the consumers need to prevent a certain problem or solve an already occurred one (Kim et al, 2002). In this specific situation the block producers’ customers’ need is to purchase material that would be sufficient enough to build a safe and endurable house with.

Kitery (18-04-2012) claimed “seeing is believing”. By this he is referring to the importance of the consumers’ chance to come in contact with new solutions, physically, in order to spread the new solution to end customers. As observed by us, according to the action research approach, most consumers only come in contact with building materials when visiting the producers and when most producers do not have the hollow ones in stock, we face a vicious circle. The products do not reach the consumers because of unawareness of it, and so long unawareness occurs they will not ask for the product and hence the producers will not produce them. Özbag (17-04-2012) is the only one that we interviewed that actively tried to promote hollow blocks and their benefits as a construction material. The knowledge about the block production differs a lot depending from whom you ask amongst the block producers.
For example, Said (23-04-2012) stated: “We do weekly controls of the quality of the blocks. We have procedures to troubleshoot and fix eventual quality problems”, meanwhile other uses methods that implies that the proportions and the mixing is rather randomly done. Often they simply have two piles of cement, water and filling material and then just mix the two piles together. This implies that the ratio of the ingredients as well as the blending of it will differ from time to time, which in the end will affect the quality. Some of the smaller producers like Aboragazi (25-04-2012) use the measure of how many blocks they can make per bag of cement as their only quality indicator, and never test the ready blocks to see how they can perform. Mersha (2000) means that a high degree of innovation and quality assurance is a necessity at all levels of the social texture of creating conditions for growth and development. In other words this inconsistence in knowledge and thus also quality among the block makers results due to the fact that some have the knowledge to make strong and durable hollow blocks and some do not. This leads to an uncertainty among the consumers and result in that they do not trust the product at hand.

5.3 Market Segment III – Block Consumers
When interviewing the consumers, architects and representatives from construction companies, we gained knowledge of their opinions regarding what they prefer and how they choose their building material. As presented in the empirical chapter, they are aware of the hollow blocks (compared to some of the block makers, whom lacked awareness). However, the data collected is divided in two camps – those who trust the hollow blocks and those who do not. Locken (17-04-2012) claims that hollow blocks are good in theory, but he is not certain of the quality – especially regarding the blocks from small-scale producers. He further claims that the government have regulations, which is set on assuring the quality matters, but the individuals building a house for themselves are not concern about testing the material. Isaksson (24-04-2012) comments this by referring to the ‘kicking test’. The individuals can therefore be categorised in Kim et al (2002) “functional” customer segment. But how about the constructors and architects? They have been responding in ways that would categorise them in the same group, with one minor exception – we know and observed that Kitery (18-04-2012) have been using the hollow blocks for the Bank of Tanzania building in Dar es Salaam. He highlights the functional aspects, but also that during the last couple of years, the high-end customers prefers new and more ‘sophisticated’
building solutions – which places certain consumers in between Kim et al’s (2002) functional group and the social group. Regardless of the different companies the respondents represent, the architects and constructors’ primary focus is the function and the quality of the material they use.

Market segment III is furthermore of different views of their audits of quality and availability aspects of hollow blocks. We are told that hollow blocks are not widely used in Tanzania and every respondent in this segment is agreeing on this perception of the current situation. Meanwhile, as earlier stated, they do not concur when talking about the quality. But since the Bank of Tanzania building is in fact constructed by hollow blocks and no negative feedback has to this date been received implies that required quality is indeed reachable.

5.4 Market Segment IV – External Stakeholders
In many developing countries, marketing have traditionally been seen as a corporate function without any clear value, Kaynak & Hudanah (1993) claims that marketing in developing countries traditionally is seen as a function without any direct creation of value, meanwhile Ezekiel (19-04-2012) at the NHC explains that she doubts that the block makers really is marketing new products. And continuous to explain that if a certain product is used to a higher extent, then it is usually due to traditions. Kwanama (19-04-2012) tell us under interview that he believe that an awakening of a product would go a lot faster if entrepreneurs are actively convinced of the benefits of the product and given help to advertise and marketing the product. Smith and Colgate (2007) concurs when pointing out that clear benefits has to be communicated in order to deliver incentives for a change in tradition and behaviour. Theodossiadis (30-04-2012) gives a similar statement when claiming that Tanzanians will adapt to new items or services as long as they are aware of what benefits an innovation have for them, but he adds that people does not in general seek for innovations or look for them in a pro-active way. Chamuriho (17-04-2012) says that in his believe the market is more than ready to accept innovations in general and building solutions in particular. But that people need to be convinced, that could in his believe be done trough demonstration and well executed marketing and advertising. In that sense the culture could be seen as an achievement oriented one, but is on the other hand also
ambiguity avoidant according to House et al. (2004) and Trompenaars and Hampden-Turner’s (1997) definitions.

Mersha (2000) is suggesting that a high degree of innovation and quality assurance is a necessity at all levels of the social texture of creating conditions for growth and development. Tidd and Bessant (2009) state that a failure of succeeding with a implementation of an innovation often is a result of the inability of pulling the different pieces of knowledge and weaves them into an innovation. People in Tanzania are very eager to be copycats, according to Chamuriho (17-04-2012) “when an enterprise successfully launches an innovation or a new way of working - others will be copying that within a month”, he declares. Mersha (2000) notes that it is often a lack of clear overall quality improvement measures that discourage industrial development in the sub-Saharan area. Mziray (23-04-2012) explains his beliefs of the best way to change a culture in an environment, is by marketing, a providing of knowledge development trough training on how to use new innovations and at the same time find ways to confirm the quality. Kaynak & Hudanab (1993) writes about the tropical Africa and the importance of having close contact with the consumers since the income and taste for certain goods are continuously changing throughout periods of rapid development in the area.

Tidd & Bessant (2009) states that a successful implementation of an innovation often is a result of interplay of several forces and factors. These factors derive from a specific need for change as well as from new opportunities. But an execution of an innovation also requires an ability to identify signals for opportunity. Basic knowledge to process the data and sort out information from the environment is also fundamental ability that has to be mastered (Tidd & Bessant, 2009). Ezekiel as well as Mziray (19-04-2012) states that in their view, a wider use of hollow blocks is hindered to some extent by a lack of quality assurance and functions to prove quality. Marketing the quality and function of the blocks and the benefits of them, is therefore crucial in order to convince the market, according to Ezekiel as well as Mziray (19-04-2012). Kwanama (19-04-2012) says that she believe that Tanzanians for the most is guided by a combination of availability and price and that other value is not considered in a any wider extent. Chamuriho (17-04-2012) is having the same view and tells that normal customers of construction materials are very price focused and do not care
about added values. Theodossiadis (02-05-2012) concurs when saying that Tanzanians tends to prefer quantity to quality. Such prioritising suits well with Kim et al (2002) ’functional’ consumer needs segment.

Hofstede (2001) writes about the level of uncertainty avoidance within a culture and the impacts on the advance of the culture and their ability to cope with and develop innovations. Also how well a culture or society is dealing with ambiguity is seen as an important indicator of innovation potential hence people tend to hold on to traditions that have been proved to work in the past. Stephen (25-04-2012) tells that the standards are generally unreliable and the trust for new products is therefore quite low. But on the same time adds that hollow blocks is without any questions a suitable construction material for smaller single and two-storey houses, a statement which Chamuriho (17-04-2012) concurs with saying that hollow blocks is a highly preferable construction solution if the quality can be guaranteed, it should be cheaper to produce due to the decrease of cement, which also adds a environmental aspect to it. Isaksson (11-05-2012), a key person throughout the study that we have consulted with several times along the way, says that an implementation of hollow blocks would be preferable but also agrees with Stephen regarding that the quality difference is indeed a problem needed to be coped with. Ezekiel (19-04-2012) states that the use of solid blocks is a matter of culture in Tanzania, and sometimes culture matter more than costs and other advantages, she claims. People tend to hold on to established traditions and procedures that have been proven to supply a form of security in the past (House et al, 2004). Outer-focused cultures often put their faith to other factors than those witch they can affect by themself. Therefore innovations are often less prioritised.

5.5 Overall Analysis
Through an action research approach, we have gathered data and thereafter discussed the data with key persons in order to see other perspectives and knowledge. At the moment Tanzania’s major city Dar es Salaam faces problems with sustainable construction – meanwhile, several sources, among them Calas (2009) and the Swedish Embassy, declare that many people in Tanzania are living under poor housing conditions. This can relate to a lack of knowledge of other construction methods and material, in addition to limited financial assets all the participants in this study concurs of. Most of the people live in single-storey buildings, which are built
room by room due to the irregular income-streams, interviewees from the block maker segment and TPCC representative's claims. Drucker (1993) utters that one way of building good corporate reputation is to solve a societal-related problem. To implement a wider use of hollow blocks will result in better housing standards for less money invested and less Co2 emitted – meanwhile, the profits do not necessarily have to decrease for any segment. What Drucker (1993, 2001) also declares is that incongruities are objects for development and innovation. So, these current conditions and theories combined will give us distinct indicators for innovation.

From Tidd & Bessant (2009) we have learned that business customers tend to be more rational. We can also see that the awareness of wider hollow block use is more significant in segments of larger companies. According to their model presented as Figure 3, we can see that the market now have a opportunity for innovation (hollow blocks), the incentives for the different segment are both fiscal-oriented as well as for a greater good (“why?”, selection phase) and how every segment could be beneficiaries are also clarified (benefits, capture phase). So there is one thing missing in the puzzle - the implementation phase, yet to be examined.

Statements from Stephen (25-04-2012), Kitery (18-04-20) as well as from Chamuriho (17-04-2012) indicate that hollow blocks are a good option to use for one and two level houses, as well as for higher buildings with a need of weight reduction. Locken (17-04-2012) on the other hand has his disbeliefs regarding the current standards of the hollow blocks. Stephen (25-04-2012) emphasises this as well and claims that today the big difference of the blocks quality is an important issue to consider. This is coherent with what the author Mersha’s (2000) says regarding quality as a factor of great importance to achieve development. What you can read from above statements is that hollow blocks would be a suitable option to implement in the market, but for this to be done correctly, knowledge amongst the producer regarding how to reach the suitable strength of the blocks needs to spread. The overall knowledge concerning alternatives for solid concrete blocks as a construction material and for hollow blocks in particular could be said to vary a lot depending on which segment of the market that is questioned. Both architects and large scale producers are in general aware of the technology or have at least seen heard or in some way got in contact with hollow blocks.
The lack of a long term business perspective is however limiting the personal incentives for those actors to try to communicate the advantages with hollow concrete blocks to the public. And the public on their hand doesn’t have the knowledge or the ability to choose and decide on the construction fundamentals most suitable for them. A successful implementation of an innovation demands interplay between several forces according to Tidd & Bessant (2009) as well as a basic knowledge in order to process and understand potentials in the environment. Most of the respondents presented as specialists in the empirical chapter are stating that the public in general is often uneducated about substitutional construction solutions as well as they lack the availability and supply from nearby producers.

The public could be seen as ambiguity avoidant yet eager to copy new solutions once they seen them live up to their expectations. Tanzanians are in general also forced to be price-focused in their purchasing habits and would therefore probably be more than willing to accept a cheaper product once they got an assurance regarding the quality. Traditions and a low trust for producers and the wide lack of knowledge and formal training among these producers seems to be the leading factor that get people to be uncertainty and ambiguity avoidant and stick to traditions and long time habits.

As we know, TPCC are willing to promote more sustainable solutions – even though they are not producing the products for the end-consumer. The participation in CSI shows that the owner of TPCC is concern about the environmental issues, created by their industry. But how are this communicated? From the data we have been gathering, two drivers for this development are identified from TPCC’s perspective. First, the sustainability policies and the company’s strive for reducing their emissions. Then we have the individuals, like Majigo, Semwenda and Tumaini, whom are Tanzanians in important positions at the sales and market agency at TPCC, seeking a better housing standards for their fellow countrymen. TPCC’s purpose to work with this issue is now what Urip (2010) claims to be the two added factors that many global companies have been focusing towards during recent years: “profit, people, planet”. This development has also been catalysed through fiscal incentives, which tend to speed development and not obstruct (Hinson and Ndhlouv, 2011). Although, Hofstede (2001) and House et al (2004) claims that cultural aspects like traditions and educational structure may hinder certain innovative development. The in some way
undeveloped structure in the society of Dar es Salaam has led to a certain strain towards taking in and adopt innovations in the cultural of the people. Özbag (17-04-2012) as well as the authors Mersha (2000) and Handelmann (2011) confirms this. Mersha (2000) explains that this is something that occurs in most undeveloped societies. Kitery (18-04-2012) as well as is of the opposite opinion and means that the Tanzanian people is indeed open to new innovation, so long as it is properly introduced and the market easily can identify the positive outcomes of it. The saying “seeing is believing” is quoted by Kitery (18-04-2012) and gives us a seemingly fair picture of the situation at hand. If some governmental organisations or a larger private players that are active on the market or the two of them combined adopted the CSR perspective, things could develop to the better.

If market actors like for example the NHC or TPCC and players alike, made more effort on spreading knowledge regarding the importance of both presenting and spreading new technologies and options to their customers. As well as on how to produce them to the once who does not have that knowledge. The block producers would hopefully see the benefits and possibilities with hollow blocks as well as their own gain of making them, and thus start to produce and sell them. The more producers that make and store the products the more consumers will “stumble” upon the technique while visiting the producers.
6. Conclusion

*Under this chapter we are aiming to concretise the key factors of the analysis to the certain extend, to which answers our problem statement’s different aspects in a relevant way.*

6.1 Why has the Tanzanian market for cement blocks not adapted hollow blocks in a wider extent?

Traditions and uncertainty avoidance makes solid concrete blocks a safer choice and the hollow blocks are therefore not being widely used - even though hollow ones would be more beneficial from an economical and constructional point of view for the Tanzanian consumers. The lack of demand from larger-scale customers and companies are keeping the knowledge and availability among the producers on a low level, hence they are only producing what the market specifically is demanding. The private consumers, which is the largest consumer segment is also the most price-sensitive and are forced to adjust to what is offered in a economical and geographically limited range. Even though they are the ones who potentially could benefit most from the use of hollow blocks - they are left without the opportunity to do so. The market situation have in a way gotten in to a vicious circle where the architects and larger contractors due to mainly habits but as well distrust of quality, mostly choose the solid concrete blocks making the reasons for producers to invest in knowledge or equipment to a minimum. In the same time the producers that has the knowledge and equipment needed, often do not see the value of market the hollow blocks to the customers, it easier to just provide what is specifically asked for. The situation is transformed to the public where people does not see the use of hollow blocks and therefore, they do not get a hold of the understanding of the gained values in using them. Knowledge and trust could therefore be seen as the major obstacles for a broader implementation of such an innovation as hollow concrete blocks. Theories presented shows that economical issues tend to be an innovation-driver for people. The empirical data shows that hollow block production is more cost-efficient for block makers than today’s solid blocks. If the market could share the increased profit per cement block along with the block makers, more people would be able to build houses and every segment, including cement producer like TPCC, would be beneficiaries of such a development. The societal good of this matter is a better housing standard for an increased number of people, whom now live under poor housing conditions, and at
the same time ease the load on the Earth’s limited resources. By stimulating the market segments knowledgably as well as financially, the less the construction industry would impact the environment negatively and its development would become more orientated towards sustainability.

6.2 How can a wider use of hollow blocks be implemented?

As seen in Tidd & Bessant’s model (Figure 3), the one thing missing in the innovation driver’s chain is how to implement a wider use of hollow blocks. We have been told that the construction market needs pioneers who are willing to bear the risk in order to show people what can be done. To show and present new solutions to the market is considered very important, due to the ‘seeing is believing’ factor of the consumers’ behaviour. So how can this be done? The market generally places confidence in tradition and dependable solutions that do not expose them to unnecessary risks, but findings indicate that people generally tend to put their faith in large organisations, institutions and stable structures. These actors are also the ones who have the financial strength and possibility to actually be able to carry and make a tribute to the change at hand. This shows the importance of government and large organisations to get involved and lead the way for innovations. The larger Tanzanian cement companies would be the ones that would earn the most potential benefits in the role as pioneers. Benefits like gaining confidence and competitive advantage in form of loyalty by working through the quality assurance of production and by holding training courses and implement awareness raising measures.

During the study, different stakeholders in different fields have confirmed the benefits of hollow blocks for the people. A pioneering multi-sector penetration of the market, like suggested prevalent by Theodossiadis and Chamuriho amongst others, should tentatively be focused on raising awareness and training to the market. From a CSR perspective, the cement producer TPCC would gain from being pioneers on the market. This regarding both their brand image and also from a long-term financial incentives perspective, even though such an innovation could indicate a negatively impact on the company sales volume in a short time perspective. However in a long-term perspective, TPCC - could gain great benefits in supporting such development. Being the market leader in Tanzania the company have a lot of future benefits to be credited by, in addition to cement also supply added values related to it. For example
by actively support their customers in all business segments with education, standardisation, quality assurance and production procedures.

The Tanzanian government, trusted by people for quality standards, have targeted goals of living standards and environmental issues, along with strives for implementing research results into practical use. There are though some interviewees stating that it is not the government’s role to influence the private sectors – however, making contribution to the society by sharing the risk with a company wanting to make the same contributions will be gainful for all parties (especially for house builders). If knowledge of the common people is increased, the potential awareness for future innovations can be increased as well.

6.3 Suggestions For Future Research
As stated in the empirical chapter, based on our action research approach, we have been discussing the collected data thoroughly with Semwenda and Isaksson. Functioning as key persons, we have shared ideas, and Semwenda and Isaksson are currently working towards how to improve the usage of cement. What are lacking at the moment are quality measurements and requirements for hollow blocks specifically. We are aware of Semwenda’s forthcoming database of quality measurements with samples from block makers all over Dar es Salaam and we are furthermore aware of Isaksson’s work regarding sustainability and quality awareness where he among other things are calculating the correct standards for hollow blocks. In addition to this project we have also been a part of Isaksson’s work as co-writers on a research paper that will be presented on “15th QMOD Conference on Quality and Service Sciences ICQSS 2012” with the theme “From LearnAbility and InnovAbility to SustainAbility” disposed by Lund University, Jönköping University, and Poznan University of technology, and will be taking place in Poland.

These activities among others imply that development is progressing, but there are yet endeavours to examine. Especially in terms of ensuring and emphasising the potential benefits with hard facts that can easily be formulated for people with less prerequisites. What furthermore is yet to be examined is how to improve the relations between the segments. At this point, the actors of the market points at each other and have different views of what and by whom activities should be done. Further studies,
with more focus on clarifying who can do what, and what effect it would have, in order to realign the vicious circle is in our opinion needed. Further studies regarding the environmental impact and how to reach out with this issue to the public, as well as how much this impact would be affected by a more aware approach towards new techniques and innovations would also be of interest.
Sources

Literature


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Interviewees
Aboragazi, Mrs. Dania, Manager, ABS Block Makers
25/4 2012 08.30

Chamuriho, Dr. Leonard M., Estates Manager, University of Dar es Salaam
17/4 2012 16.00

Ezekiel, Mrs. Margaret, Project Coordinator, National Housing Corporation
19/4 2012 11.20

Haruna, Mr. Ramadhan, Area Manager, DB Shapiriya Co. Ltd.
19/4 2012 12.00

Isaksson, Dr. Raine, Ph. D Quality Management, Senior Lecturer Gotland University
Continuously throughout the study dates.

Jonathan, Mr. Deborah, Site Manager, Kigamboni Block Maker
4/5 2012 11.00

Khan, Mr. Ibrahim, Site Manager, LakeOil Company
19/4 2012 10.00

Kitery, Eng. Kamaley R., Managing Director, Anova Consult Company Limited
23/5 2012 16.30

Kwanama, Eng. Elias M., Head Engineer of Research and Development, National Housing and Building Research Agency
19/4 2012 13.00

Kwaya, Mrs. Isaya, Manager, DJM Block Makers
25/4 2012 11.15

“Lisa”, Head of Construction at Chinese Construction Company
18/4 2012 09.40

Majigo, Mr. Ekwabi, Market Director, Twiga/TPCC
5/4 2012 10:00 Continuously throughout the study
Makwega, Mr. Azizi, Executive Sales Manager, Twiga/TPCC
5/4 2012  10:00 *Continuously throughout the study*

Mbara, Mr., Manager, Mbezi Tiles
17/4 2012  10.30

Mushi, Mr., Architect, Arques Africa
17/4 2012  11.00

Mziray, Mr. Daniel, Architect, National Housing Corporation
19/4 2012  11.00

Omary, Mr. Zambaray, Owner, Temeke Block Maker
3/5 2012  10.15

Said, Mr. Nassir, Manager, Mbagala Tiles,
23/4 2012  11.30

Semwenda, Eng. Danford, Cement Applications Manager, Twiga/TPCC
5/4 2012  10.00  *Continuously throughout the field study dates*

Solo, Mr. Owner and Manager, Solo Block Maker
25/4 2012  10.00

Stephen, Mr., Test Engineer, Tanzania Bureau of Standards
25/4 2012  14.30

Theodossiadis, Mr. Love, Private Sector Development, Swedish Embassy Tanzania
30/4 2012  13.30

Tumaini, Mr. Joseph Constantine, Sales Executive, Twiga/TPCC
5/4 2012  10.00  *Continuously throughout the field study dates.*

Özbag, Mr. Ahmed, Director, Ravi Industry & Investment Co. Ltd.
17/4 2012  09.00  24/4 10.00
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(2012-12-09, 15.49)

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DRIVING FORCES FOR THE REALIZATION OF THE VISION (2012-05-18, 15.48)

Appendix A – Presentation of Interviewees
In Appendix A, we present the interviewees for this study.

Mrs. Arboragazi  Manager, ABS Block Makers  25/4 2012
Located roadside of the Bagamoyo Road, north of Dar es Salaam close by the Tegeta area where TPCC is located, Mrs. Dania Arboragazi is operating her small-scaled block making enterprise, making solid blocks only. She has 22 employees in total, manufacturing both paving and vibrating blocks.

Mr. Chamuriho  Estates Manager, University of Dar es Salaam  17/4 2012
Dr. Chamuriho works at a lecturer and estates manager at the University of Dar es Salaam. As a engineer, he has a long-time extensive experience of the Tanzanian construction business and its functions and have been involved in several governmental development projects over the years.

Mrs. Ezekiel  Project Coordinator, National Housing Cooperation  19/4 2012
Mr. Ezekiel works as a project coordinator at the Tanzanian National Housing Cooperation, an institution with the objective to supply, build and manage governmentally owned housing solutions for the Tanzanian public. She is experienced with construction materials as well as experienced about habits and traditions in the building sector.

Mr. Haruna  Area Manager, DB Shapiriya Co. Ltd.  19/4 2012
Mr. Haruna works as a manager at DB Shapiriya operates a medium-sized block making plant in central Dar es Salaam. The company manufactures solid concretes blocks to the public as well as to contractors.

Mr. Isaksson  Ph.D. Quality Management  Continuously during the study
Senior Lecturer at Gotland University. Ph.D. Isaksson has acted as a mentor, key person and expert throughout the study. He has a wide-ranging experience within the cement industry in Sweden as well as in a number of African countries.

Mrs. Jonathan  Site Manager, Kigamboni Block Makers  4/5 2012
Mrs. Jonathan works as a site manager at Kigamboni Block Makers works with a smaller block making company that only produces solid concrete blocks.

Mr. Khan  Site Manager, Lake Oil Company  19/4 2012
Lake Oil is a larger Tanzanian company from Arabian origin that mainly focuses on the import and distribution of oil. They have recently started to establish a construction enterprise as well as their own concrete block manufacturing.

Mr. Kitery  Managing Director, Anova Consult Co. Ltd.  23/4 2012
The Anova consult company works with larger construction projects and has among others been responsible for the planning of the building of the Bank of Tanzania head quarters.

Mr. Kwanama  Head Engineer of Research and Development, 19/4 2012
National Housing and Building Research Agency
The National Housing and building and Research agency has as its main purpose to
develop and communicate new building solutions to the Tanzanian public. Mr
Kwanama has a wide knowledge in building solutions and traditions in Tanzania.

**Mrs. Kwaya** Manager, DJM Block Makers 25/4 2012
The medium-scale block makers DJM manufacture both solid and hollow blocks.
They are also producing and selling smaller machines that produces the blocks. DJM
have three branches in the northern parts of Dar es Salaam. The companies’
customers are ordinary people that want to build their own houses.

**Ms. Lisa** Head of Construction, Chinese Construction 18/4 2012
We went to visit a Chinese quasi-governmental financed and owned construction
company with 10 years of experience in the Tanzanian construction market. We met
the interviewee at one of their current construction site in order to reach
understanding in the constructor’s market segment.

**Mr. Locken** Assistant Architect, Arqes Africa 17/4 2012
Mr. Locken is working together with Mr. Mushi as a assistant architect at the Arqes
Architecture Consultant Group. They do both work with smaller as well as larger
construction projects and are being hired by the public as well as governmental
institutions and larger corporations. These two men were selected for a interview
because of their insight in the Tanzanian construction business in general and their
understanding of traditions and behaviours on the market.

**Mr. Makwega** Sales Executive, TPCC  *Continuously throughout the study*
As a Sales Executive, Mr. Makwega has a broad knowledge about the Tanzanian
market for cement as well as a good understanding of the different actors within it.

**Mr. Majigo** Market Director, TPCC  *Continuously throughout the study*
Mr. Majigo has a long career in different industries and is currently responsible for the
Marketing and Sales department of TPCC. We have interviewed Mr Majigo since he
has a good overview of the organisation in general and a deep understanding of
their customers and their needs and function.

**Mr. Mbara** Managing Director, Mbezi Tiles 17/4 2012
Mr Mbara have been working with solid and hollow blocks as a large-scale producer
since the start of the company back in 1986. Mr. Mbara produces 8 different types of
blocks and pavement blocks, besides making tiles. Mbezi Tiles are selling hollow
blocks in low quantities and only on order.

**Mr. Mushi** Assistant Architect, Arqes Africa 17/4 2012
*Please read mr. Locken’s presentation.*

**Mr. Mziray** Architect, National Housing Cooperation 19/4 2012
Working as an architect at the National Housing Cooperation. Mr. Mziray has
knowledge about building standards and preferred building materials in Tanzania.

**Mr. Omary** Owner, Temeke Block Maker 3/5 2012
Operates a small enterprise on the Kigamboni Peninsula. He produces solid concrete
blocks at the side of the main road.
Mr. Said  Manager, Mbagala Tiles  23/4 2012
The company have 40 employees, making the company one of the bigger actors. Mbagala Tiles manufacture different sorts of blocks, tiles and pavements. The number of employees working with blocks is ten. The production plant is located in the southern parts of Dar es Salaam. Most of their customers are minor construction companies and some individuals. He offers both hollow and solid blocks.

Mr. Semwenda  Cement Applications Manager, TPCC  Continuously throughout the study
Mr. Semwenda, engineer with years of experience from construction markets in Africa, have acted as our contact person at TPCC throughout the study and has in his position as an Applications Manager at the Sales Department been interviewed on several occasions during the study. He has been functioning as a key person according to the action research methodology.

Mr. Stephen  Test Engineer, Tanzania Bureau of Standards  25/4 2012
The Tanzanian Bureau of Standards is a governmental institution with the purpose of testing and creating quality standards of different types of products. We interviewed Mr. Stephen because of his knowledge about the strength and quality of different types of concrete blocks in the region. We also observed one of the tests.

Mr. Solo  Owner, Solo Block Makers  25/4 2012
Mr. Solo’s block making company is located north of Dar es Salaam, in an area named Boko. Mr. Solo, a small-scale producer, manufactures solid blocks and other cement blocks for decoration with a ‘bam-bam machine’ (manually operated machine, no electricity needed). His customer base is individuals building houses for their own.

Mr. Theodossiadis  Head of Private Sector Development, Swedish Embassy  30/4 2012
We contacted Mr. Theodossiadis on behalf of his work on private sector development in Tanzania for the Swedish Ministry of Foreign Affairs. In order to provide the study with general information regarding the business dynamics for companies in Tanzania, a questionnaire focusing on general factors which through both theoretical and empirical data was important to discuss and in addition what key points the outcome of the other interviews had shown. Mr. Theodossiadis, with an academic background in M.Sc. in Economics, have lived in Africa for most of his life and has been living in Dar es Salaam for the last two and a half years.

Mr. Tumaini  Sales Executive, TPCC  Continuously throughout the study
Mr. Tumaini has been present at most of our interviews and have in his work as a Sales Executive brought us to a broad variety of clients as well as to different types of expert within the subject area. Mr.Tumaini was interweaved because of his understanding and knowledge regarding different types of block makers and Tanzanian market conditions in general as well as his academic background in business administration.

Mr. Özbag  Director, Ravi Industry & Development Co. Ltd.  17/4 2012
The owners and operators of large-scale block makers Ravi are of Turkish origin and
promote the European quality standards for their customers. The owners have invested in German machines and moulding equipment, they operate a two-shift labour force and they gained knowledge from working in the business from previous experiences obtained in their home country. The business profiles itself with comparatively sophisticated manufacturing technology and machinery.
Appendix B – Photos from the Field Study
Picture 1. Visit at Ravi Block Makers (17-04-2012)

Picture shows German manufactured vibrating block machine. The blocks in the making are for pavements. Moulds are changed for other types of blocks.

Picture 2. Different blocks at Mbezi Tiles (17-04-2012)

6-inch hollow blocks displayed in the left, 6-inch solid blocks to the right.
Manual block moulding machine, also known as 'bam-bam machine', tested by Oscar I.


Picture 4. ABS Block Makers (25-04-2012)

Picture 5. Hollow block testing during interview at TBS (25-04-2012)

Vibrating block machine (hollow block moulds).

Strength measurements of samples from Ravi.
Picture 6. TPCC Production Plant, Wazo Hill, Dar es Salaam (10-05-2012)

Picture shows entrance to the production site where the cement is being made.

Picture 7. Second meeting at Ravi Block Makers (24-04-2012)

Picture shows (clockwise) Eng. Danford Semwenda, Oscar I., TPCC Engineer, Johan S., Mr. Özbag.
Linnaeus University – a firm focus on quality and competence

On 1 January 2010 Växjö University and the University of Kalmar merged to form Linnaeus University. This new university is the product of a will to improve the quality, enhance the appeal and boost the development potential of teaching and research, at the same time as it plays a prominent role in working closely together with local society. Linnaeus University offers an attractive knowledge environment characterised by high quality and a competitive portfolio of skills.

Linnaeus University is a modern, international university with the emphasis on the desire for knowledge, creative thinking and practical innovations. For us, the focus is on proximity to our students, but also on the world around us and the future ahead.