Developing a roadmap for the pre-incubation of South African Base of the Pyramid enterprises

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Claus, E.J. & Schokkin, M. & Vermeulen, R. & Vissers, J.F.
Industrial Design Engineering, Faculty of Engineering Technology,
University of Twente, Enschede, The Netherlands

Abstract
In this research paper a roadmap for business pre-incubation at the Bottom of the Pyramid (BoP) in South-Africa is presented. The writers have performed literature research, expert interviews and went on a study tour to South Africa to gain information about the characteristics of BoP members in South Africa, preconditions for start-ups to become successful, various forms of business support and methods to advance through the concept development stage. This information is combined into a roadmap. This roadmap is meant for pre-incubators: organisations that facilitate the training, structure and inspiration needed to support the pre-incubation process for BoP members. The result after advancing through all the steps of the roadmap is a product idea and a business plan which gives the BoP participants a solid foundation for a start-up and enables them to start a business in cooperation with companies or incubators. To prove in some extent the feasibility of the roadmap, the writers will present the possible weaknesses that are found and after that examples and arguments will be shown of how to possibly deal with these shortcomings.

Keywords:
Base of the Pyramid, Pre-Incubators, Start-ups, Co-Creation

1 INTRODUCTION

This research is part of the Study Tour Ke Nako within the field of Industrial Design. The theme in which the research is executed is as follows: 'The influence of Industrial Design on the development of the South African society'. This research assesses a specific group of the South African society, the Base of the Pyramid (BoP), also known as 'Bottom of the Pyramid' or 'The other ninety percent'. Within the BoP two fundamental groups, rural and urban BoP, can be distinguished. Despite the fact that the rural BoP is poorer than the urban BoP [1], the chosen target group is the urban BoP, because they are more related to the Western world and therefore are already affected by the Western vision upon society.

The Western world initiated many projects which focus on design for BoP, in which the BoP is seen as a new consumer market. This does however not help the BoP in becoming self-sustainable. Hereby, a scope for this research, which is relevant for Industrial Designers, is chosen: 'In which way can entrepreneurial designers enable the BoP to engage themselves in entrepreneurial and creative activities and let them start their own enterprise?'. Points of interest in this research are poverty, creativity, lack of education and organisational skills and entrepreneurship. The current business support for the BoP lacks support in the first, fundamental stage where business pre-incubators are of importance [2]. Therefore, this research focuses on opportunity recognition and the fundamental start of opportunity creation. The result is a roadmap which enables organisations to structure the entrepreneurial and design process within the pre-incubation stage of enterprises from the BoP.

2 METHODOLOGY

The research is divided into three main parts: a description of the South African BoP based on literature research, expert interviews and experience of the writers (section 3), a description of the developed roadmap with the most fundamental reasons for this result (section 4, 5 and 6) and

proof of the feasibility of the roadmap for the BoP by defending the presented weaknesses (section 7).

In order to get better insight in South African BoP (paragraph 3.1), the following aspects and associated topics are investigated: education, culture, mind-set and prosperity. Results are derived from literature reviews, observations from the writers of this article during the study tour and interviews with experts, namely with prof. E. Lutters (University of Twente and University of Stellenbosch), dr. ir. ing. J. Jauregui-Becker (University of Twente), dr. T. Oosthuizen (founder Building Blocks) and P. and M. Shrimpton (co-founders Heart Capital).

The three organisations for which these experts work, have the aim of poverty reduction by means of BoP entrepreneurship and they all use a different approach for the recruitment of BoP entrepreneurs.

The findings of both literature- and interview research on the general entrepreneurial process, literature assessment of several design methods, and the before mentioned description of people that may belong to the BoP are used to create a roadmap for the pre-incubator stage of start-ups. Existing business roadmaps are assessed as a basis for the newly developed roadmap.

3 CHARACTERISTICS BOTTOM OF THE PYRAMID

A description of characteristics is composed from which could be assessed whether a person may belong to the South African BoP. The description is not a strictly defined framework with upper and lower boundaries.

Education
Most BoP members have insufficient knowledge and skills, which prevents them from thinking of and developing new ideas [3-5]. However, a small amount of BoP members are in fact creative and entrepreneurial [3]. The literacy rate among the BoP is expected to be even lower than 83% according to the General Household survey of South Africa [6]. A small group has finished primary school and almost half of the population has attended high school education [7].

Culture
Community and family are very important [8], as is their integrity and pride towards other BoP members [9]. Most households are headed by males and consist of a total of three or four persons [10]. The main cause of the absence of big entrepreneurial activities among the BoP is not their lack of knowledge and skills, but their doubt in their own capabilities [3]. The BoP members are experts in identifying the relevant social needs for possible product ideas because they are part of the BoP target group themselves [11].

Mind-set
BoP participants think of earning money in the short term. They do not think in terms of investment to earn money during a longer period. They prefer to gain 1000 Rands at immediately, instead of 30 Rands a day, while the second option would exceed the amount of 1000 Rands in little over a month [12]. It is difficult to change this mind-set.

Prosperity
Overall, BoP members are blacks and coloureds. Income inequality is correlated with race, although there are some coloured and black people who enjoy an increasing wealth [13]. Most BoP members are unemployed and try to earn money by for example selling products on the street [7]. They earn around 20 rand per day per capita [10]. Therefore, they have no access to financial resources. Over 50% of BoP members live in informal dwellings.

External factors
The BoP market lacks access to the formal market. As a result they are more vulnerable to middlemen exploiting them. The intellectual property right of the BoP market is also insufficiently protected [14]. Besides, the absence of proper infrastructure negatively influences transportation of products out of the townships to other areas and is therefore expensive [8].

4 PRECONDITIONS FOR START-UPS TO BECOME SUCCESSFUL

The general entrepreneurial process could be divided in three stages: Opportunity Recognition, Opportunity Creation and Opportunity Exploitation (Fig.1). As described in the methodology, this research focuses on the fundamental stage, opportunity recognition, in which South African BoP lacks structure.

Opportunity recognition is often a combination of accidental discoveries and systematic search processes [15]. The process is mainly triggered by personal and social factors [16]. Personal factors are mental alertness, risk-taking, optimism, self-efficacy and creativity [17]. Social interrelation factors influence the creation of social embeddedness, which is the aim of a BoP enterprise. Therefore, the entrepreneur, in this case a BoP member, needs a deep understanding of the community [18]. Regarding the lack of education among the BoP, the so-called 'vicarious learning', making use of observations [19], could be of great interest.
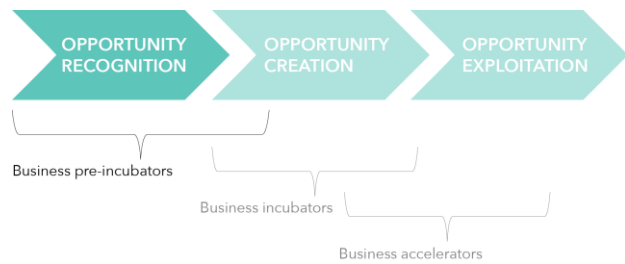

Fig. 1: The entrepreneurial process.

Entrepreneurial knowledge significantly increases the probability of a start-up surviving its start-up stage and becoming a sustainable enterprise [20]. However, only 18,8% of the South African retailers has had formal business training [21].
The access to networks, including social networks, is a fundamental factor to establish the right team containing the needed knowledge [15, 22].
Besides, the ability to critically analyse the added value and quality of their own work is an essential aspect of a successful start-up [22]. Creating a product or service that is distinctive increases the opportunities of the start-up in becoming self-sustainable.
Additionally, societal factors are important. Start-ups rely on public money and social investments.
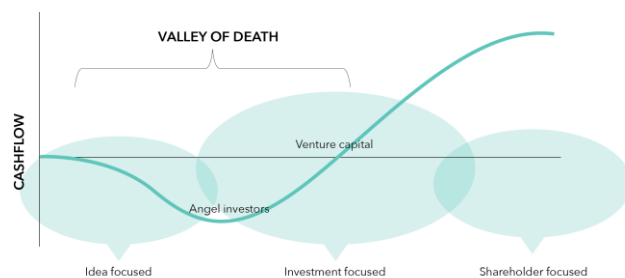

Fig. 2: Required funding for a start-up during the process.

5 STRATEGIES FOR PRE-INCUBATION

5.1 Used approaches to support the BoP in entrepreneurial projects

The first problem is to recruit appropriate members from the BoP target group. The second problem is how to motivate and stimulate these persons to come up with ideas and exploit the opportunities through a start-up. The three contacted organisations, Heart Capital, Building Blocks and PC3, all have a different approach in order to cope with these problems.

Heart Capital
Heart Capital is specialised in supporting and setting up 'Impact Businesses', which tackle South Africa's social challenges in a financially sustainable way. The BoP enterprises generate their own capital instead of relying on donations and grants. The scalability of projects is an essential condition for Heart Capital to support it. With the project called Hubspace they support entrepreneurs from the BoP in developing ideas. The Hubspace is a shared workspace which facilitates computers and internet. Entrepreneurs could come in contact with other entrepreneurs and investors. HC also offers franchised start-ups [4, 12, 23].

Building Blocks
Initiated by Tiaan Oosthuizen and his team, Building Blocks is an organisation that facilitates knowledge and basic manufacturing skills through workshops in their facility near poor rural communities. Building Blocks wants to create awareness among BoP members that they are capable of developing a start-up through creativity. BoP members can join a one-year program in which volunteers educate and stimulate them to generate possible ideas for start-ups and earn a certificate. When a participant develops a proper concept from which they could develop a start-up, he or she gets free space at the facility to accomplish this [3, 5].

Product Co-creation Centres (PC3)
PC3 is a process based on the 'co-creation' method of Butterfly Works (Fig.3) in which many stakeholders work together in the design process, including BoP members. Instead of passive consumers, the BoP members are seen as co-creators of the developed product or service. The design team receives valuable information about its target group while the BoP members gain knowledge about the design process and related expertise. The earlier mentioned lack of structure could be straightened out with co-creation [24]. The aim of PC3 is to initiate the development of BoP start-ups around innovative product ideas and to make the BoP community aware of the fact that business venturing is beneficial. PC3 provide an organised structure during the product development process. First BoP members with entrepreneurial, creative or marketing skills are identified, which are necessary for enterprises. The next step is to administer tests about organisational skills, social responsibility and business preparation. During the project, the participants get personal training and workshops and are coached by motivated and inspirational local entrepreneurs [2, 5, 25].

Comparison
Education is very important in all three BoP-supporting organisations. They offer workshops and train BoP members in developing necessary skills. Heart Capital focuses on the development of entrepreneurial skills, while Building Blocks focuses on manufacturing skills. PC3 uses product development methods as a basis. Building Blocks and PC3 both support the pre-incubation stage while Heart Capital supports the incubation.

The way of recruitment of BoP participants differs between the organisations, although the participants apply voluntarily in all approaches. In the case of Building Blocks BoP members come to develop general skills and knowledge. With PC3, BoP members are selected and assigned to co-creation teams for product development. For the Hubspace of Heart Capital people are also selected based on their entrepreneurial ideas and pitching contests.

The three organisations have in common that they are all aiming for self-sustainability, for their own company and for the businesses they support. But at the moment none of these organisations are completely self-sustainable, of which PC3 is not a real organisation yet. PC3 is still a theoretical plan and has to be tested.

5.2 Structuring the concept development stage
In order to use our industrial design knowledge, design methods and approaches are assessed to determine which method could fulfil in structuring the pre-incubation stage for the BoP. Product development is a combination of divergent and convergent thinking. With the right creativity techniques and selection methods this process could be

stimulated and structured [26]. Therefore, the Industrial Designer (ID) could help.

Each designer is trained to solve contemporary problems in a structured way. This iterative design process is divided in *problem definition, information gathering, illumination, evaluation and acceptation* [26]. A *problem definition* is the start of the design process and, after the gathering of information about existing solutions, the stakeholders, budget, idea generation and concept development are executed (illumination). The designer, or future user of the product, evaluates the proposed solutions and lastly the product is implemented in the community (acceptation). When the design does not fulfil the requirements, the process is repeated.

Fig. 3: The co-creation design process.

At the University of Twente, most industrial design projects are executed with the above described 'user centred design' approach. The future user of the product or service is assessed in the first two stages of the design process and in the fourth stage to evaluate the product. The user is in fact 'subject' in the design process. A 'participatory design' approach makes the user a 'partner' during the process [27]. This approach should suit the development in BoP better due to evolvement of the skills of BoP members and the knowledge that the group has about its own needs and demands [2]. This corresponds with the co-creation method.

6 START-UP ROADMAP REALISATION
BoP members need an environment that gives them the opportunity to exploit their capabilities. A plausible objective for a BoP-supporting organisation is to create job opportunities and to support in creating a platform that stimulates the founding of self-sustainable BoP start-ups. In order to structure the pre-incubation stage by the BoP, a roadmap is made. The roadmap is inspired by Building Blocks and is based on the PC3-project. The adjusted Building Blocks program is used for some basic education and to teach them to cooperate with others in a team. This program will be used as a selection method for the recruitment of roadmap participants. After six months, the most talented members are selected for the roadmap. Non-selected participants can proceed in participating in the original Building Blocks program.
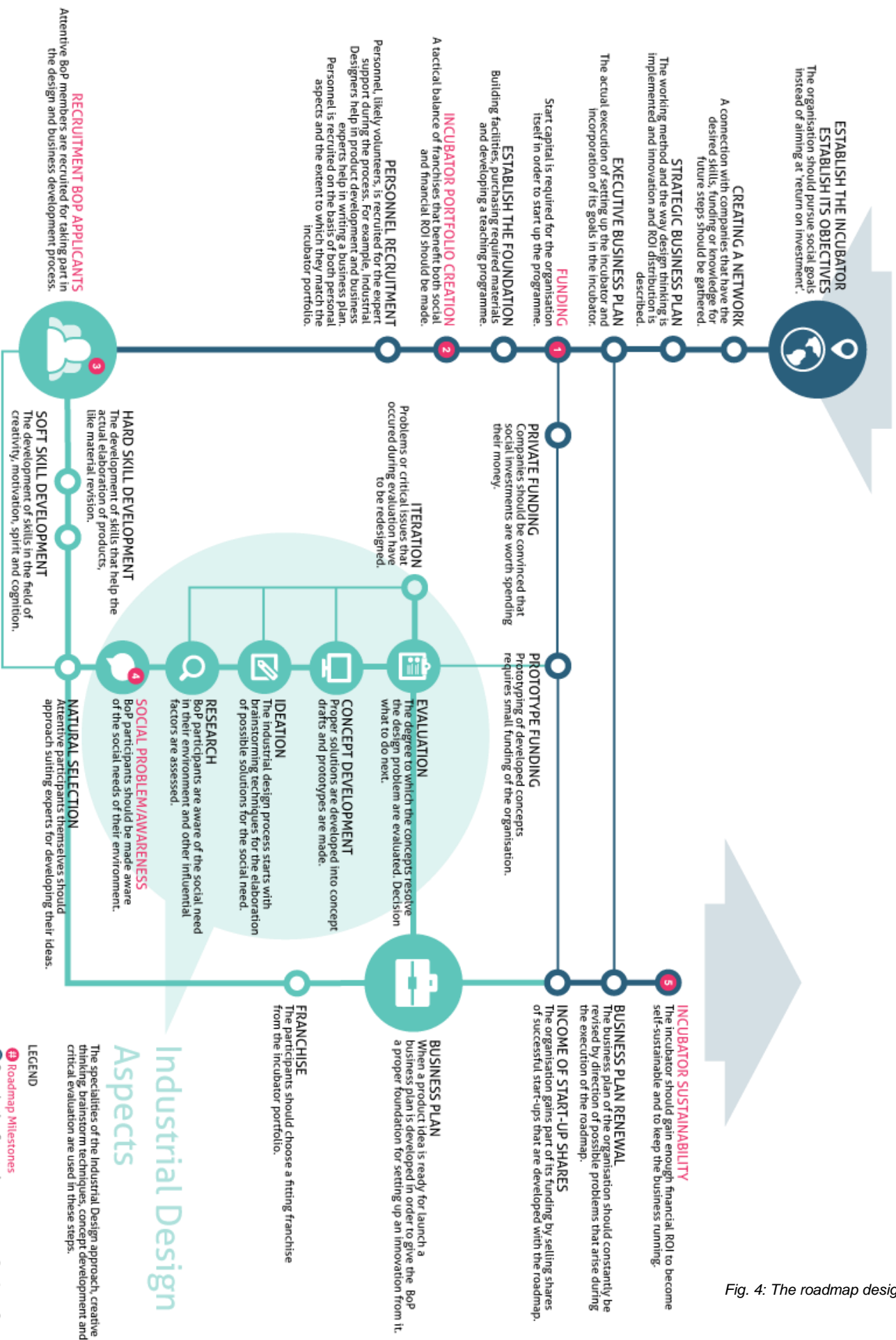
ESTABLISH THE INCUBATOR
ESTABLISH ITS OBJECTIVES
The organisation should pursue social goals instead of aiming at 'return on investment'.

CREATING A NETWORK
A connection with companies that have the desired skills, funding or knowledge for future steps should be gathered.

STRATEGIC BUSINESS PLAN
The working method and the way design thinking is implemented and innovation and ROI distribution is described.

EXECUTIVE BUSINESS PLAN
The actual execution of setting up the incubator and incorporation of its goals in the incubator.

FUNDING
Start capital is required for the organisation itself in order to start up the programme.

ESTABLISH THE FOUNDATION
Building facilities, purchasing required materials and developing a teaching programme.

INCUBATOR PORTFOLIO CREATION
A tactical balance of franchises that benefit both social and financial ROI should be made.

PERSONNEL RECRUITMENT
Personnel, likely volunteers, is recruited for the expert support during the process. For example, Industrial Designers help in product development and business experts help in writing a business plan. Personnel is recruited on the basis of both personal aspects and the extent to which they match the incubator portfolio.

RECRUITMENT BOP APPLICANTS
Attentive BoP members are recruited for taking part in the design and business development process.

SOFT SKILL DEVELOPMENT
The development of skills in the field of creativity, motivation, spirit and cognition.

HARD SKILL DEVELOPMENT
The development of skills that help the actual elaboration of products, like material revision.

PRIVATE FUNDING
Companies should be convinced that social investments are worth spending their money.

ITERATION
Problems or critical issues that occured during evaluation have to be redesigned.

RESEARCH
BoP participants are aware of the social need in their environment and other influential factors are assessed.

IDEATION
The industrial design process starts with brainstorming techniques for the elaboration of possible solutions for the social need.

CONCEPT DEVELOPMENT
Proper solutions are developed into concept drafts and prototypes are made.

EVALUATION
The degree to which the concepts resolve the design problem are evaluated. Decision what to do next.

SOCIAL PROBLEM/AWARENESS
BoP participants should be made aware of the social needs of their environment.

NATURAL SELECTION
Attentive participants themselves should approach suiting experts for developing their ideas.

PROTOTYPE FUNDING
Prototyping of developed concepts requires small funding of the organisation.

FRANCHISE
The participants should choose a fitting franchise from the incubator portfolio.

BUSINESS PLAN
When a product idea is ready for launch a business plan is developed in order to give the BoP a proper foundation for setting up an innovation from it.

INCOME OF START-UP SHARES
The organisation gains part of its funding by selling shares of successful start-ups that are developed with the roadmap.

BUSINESS PLAN RENEWAL
The business plan of the organisation should constantly be revised by direction of possible problems that arise during the execution of the roadmap.

INCUBATOR SUSTAINABILITY
The incubator should gain enough financial ROI to become self-sustainable and to keep the business running.

Industrial Design Aspects
The specialities of the Industrial Design approach, creative thinking, brainstorm techniques, concept development and critical evaluation are used in these steps.

LEGEND
Roadmap Milestones
○ Organisation Structuring
○ Business Emergence
─ Roadmap flow
─ Feedback

Fig. 4: The roadmap design.

The roadmap (Fig.4) is divided in two parts describing the *actual setup of* and *requirements for* the organisation that facilitates BoP members in founding a start-up. First, the organisation and its objectives are determined, which should be non-profit and contribute to social values. A business plan is drawn and funding of the government social investments is collected. The actual facility should be realised with the required materials and a teaching programme should be developed. Besides, (voluntary) employees are necessary and a network of possible investors, accelerators and incubators for start-ups should be built up. When a proper organisation is set up, the second part of the roadmap for BoP support could be passed through, with the previous described talented BoP members that are selected. This part is used constantly, looping the required steps over time.

The BoP participants will split up after the first half of the year. The group that lacks creative skills but is very entrepreneurial, gets the possibility to start a franchise business that is thought up by the facilitating organisation. The other group that has proved themselves both entrepreneurial and creative will take part in a co-creation team, consisting of (voluntary) coaches in the field of entrepreneurship and product development. When a proper product concept is proposed, the concept will be further developed. The social need of the stated problem, and the proposed product that should be the solution, is analysed. Subsequently, the industrial design specific stages of ideation and concept development are run through. In this stage, a small funding of the organisation is required for creating prototypes. The concept is evaluated and redesigned when necessary. When the product concept is ready for a first launch, a business plan is written.

The well-considered product and business plan now enable the BoP participants to make a proper bid for funding of companies or institutions for the production or elaboration of the product. Hereby, a decent start-up could be founded. In general, the BoP is facilitated in exploiting its capabilities by structuring the process of the first steps in starting up a business. Eventually, the incubator should become sustainable by selling shares of successful start-ups. This is based on the funding method of the Dutch incubators of Kennispark Twente [28]. Lastly, the business plan should be renewed over time.

7 ROADMAP REFINEMENT

The introduced roadmap is based on research that is performed from the Netherlands. During the study tour in South Africa a lot of practical research is executed to explore both the strong points and the gaps of the theoretical roadmap. After returning to the Netherlands contacts from the university and contacts that were made in South Africa were approached to refine this research. The final roadmap design is featured in this research in Fig. 4.

7.1 Actual setup of the organisation (the incubator)
Establish the incubator and its objectives

The development of a supporting and creative environment for the BoP to start up their businesses already starts with the establishment of the incubation organisation. As described in the roadmap, an incubator will be founded which in its turn will create new start-ups among the BoP. To make sure that the incubator works with the right method for benefiting from the creativity that BoP members have, 'design thinking' should be implemented. Design

thinking is 'the conceptual model that designers use to create and evaluate products and services' [24]. In general, designers go through several phases during their process of designing (i.e. inspiration, ideation and implementation), using empathy, creativity and rationality. Applying design thinking in business could lead to a more creative work environment and a more human-centred approach to innovation [29, 30]. Therefore, the aim of the incubator should not be developing entrepreneurship, like Heart Capital does, but developing a creative environment in which innovation is the goal that the incubator pursues [5]. Entrepreneurship is vital in creating start-ups but it is not the purpose of the start-ups. The pursued goal is using the creativity of the BoP in order to develop new solutions. The start-up itself is in fact a tool for this development.

The PC3 research already showed that *the Missing Middle*, the lack of small and medium enterprises (SMEs), is a substantial problem in developing countries, including South Africa [5]. Contrary to the Netherlands, South Africa leans heavily upon its production companies instead of knowledge [31]. The country consists of lots of manufacturing companies, but small innovative companies are absent. By aiming at innovative start-ups, the incubator could affectively support the community. Innovations lead to products and services which should be developed and created by SMEs which in their turn will create new innovations [5].
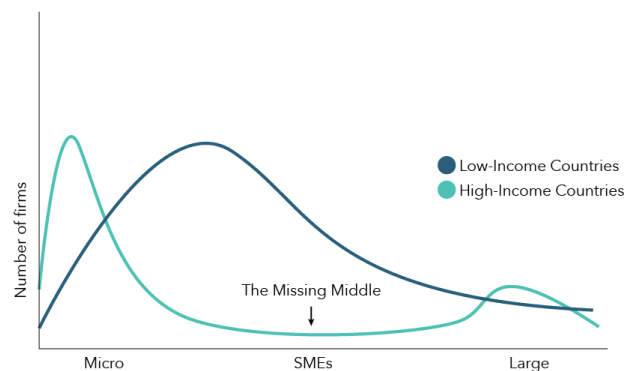

Figure 5: The Missing Middle

Creating a network

One of the preconditions for success of the roadmap is the recruitment of volunteers to set up and manage the incubator. In order to create a network and to find people who fit this job, it is necessary to find like-minded people who are interested in supporting the BoP's development. They also need to have appropriate design and entrepreneurial skills and knowledge.

The industrial design students at the Cape Peninsula University of Technology and University of Johannesburg are already engaged in social development projects. They mostly design for the BoP, sometimes with help of special meetings in order to get to know their BoP target group. As Johan van Niekerk says [32] "we are within the other ninety percent, so of course we are designing for and with the BoP" it is clear that there are passionate and skilled people.

The industrial design students could help in setting up the incubator; they will implement the design thinking. Students from the department of Industrial Engineering at Stellenbosch University (in the Netherlands common

known as Industrial Engineering and Management) possess the entrepreneurial knowhow.

In short, the advice is to create a team of South African design and business students to refine the roadmap and set up the incubator. With the help of local hubs in the townships a bigger network could be created.

Business Plan

The making of a business plan of the incubator is a critical step in the roadmap, because a good one increases the confidence of other parties. It is advisable to split the business plan in two stages: 'Research', the working method of the incubator, and 'Development', the execution of this method.

The Research Plan will describe the working method of the incubator and the way in which innovation will be implemented in the incubator (and founded start-ups). This plan therefore includes the innovation aspect and the way Return on Investment is handled in funding (described in the next section).

The Development Plan describes the actual execution of setting up the incubator and start-ups and incorporating the goals of the incubator in the incubator portfolio. The division will make sure the incubator and its start-ups will be founded with the correct challenges taken into consideration.

The manner in which the incubator will interfere with the culture and environment of a township is an ethical subject. It is not advisable to execute the roadmap with a western point of view and solely western employees. The incubator should not force the local community to change its mind-set. Just making them aware of the social problem is desirable. Handling the social problems should not be a Western World initiative, it should come from the community in order to make sure it is sustainable [5].

Funding

Starting the incubator will require a fortune. Despite the fact that the government is concerned with the further development of the previously disadvantaged groups, considering the governmental R9 billion Job Fund for enterprise development, funding still depends on social investments of companies [33]. The concept of Corporate Social Responsibility (CSR) is a recommended effort by many South African businesses. The CSR guidelines and standards are not officially constituted but regarded as state-of-the-art guidelines about good corporate governance [34]. Companies want their investment to be converted into something tangible and measurable. Therefore, creating a clear Return on Investment (ROI) is a probable solution. There are two sorts of ROI: financial and social. Financial ROI is of course measurable, which is not always the case for social returns. This is a problem, also recognized by Jauregui-Becker and Shrimpton, because the incubator will only rely on social ROI during its starting phase while there are no start-ups which make returnable money yet. By means of a clear and strategically underpinned business plan the social value of the incubator should be clear to earn the trust of the first investors [5].

When various start-ups have been founded and make money, financial ROI will be an option. This may be accomplished in the way Heart Capital does it. They sell franchise licences to investors, which will be paid back in the following years until the licence is completely owned by the franchise itself [12]. This way investors invest a percentage in a social enterprise (a clear social responsible behaviour) but in time they will recoup their money.

Becoming self-sustainable

The incubator should make sure that its business will eventually be sustainable. In becoming self-sustainable funding is vital during the first phase of emergence. The incubator has to create a franchise portfolio which provides both social and financial ROI and reduces the risks. Therefore, the decision of executing a certain franchise start-up is influenced by the added value that the franchise could have in both social and financial ROI. When the start-ups make enough money, the incubator will earn parts of their shares to become a sustainable organisation.

The start-ups themselves should also become self-sustainable. These could be franchises or other companies, for example a design agency or a start-up that is specifically build around one innovation.

Establish the foundation

The absence of proper infrastructure, the bad access to and ineffective use of basic services and insecurity could discourage the establishment of the incubator within a township. However, the future participants of the program, meaning BoP members, have less resources for traveling around. Therefore, the facilities of the incubator should be fast and easily accessible within the township. Most townships already have meeting places which are safe and accessible for their inhabitants. Examples are the Hubspace of Heart Capital in Khayelitsha and the Youth Centre in Soweto Kliptown (SKY). To make the meeting point a safe place, the area in which it is located could have various 'active boxes' meant as safe house. General improvements in the town planning such as street lights and sidewalks will also increase safety. This approach is used in Khayelitsha; the Hubspace of Heart Capital is part of the Violence Protection through Urban Upgrading project [35].

7.2 Actual execution of the pre-incubation process
Recruitment BoP applicants

A difficulty is to become known within a township, especially when you are a western outsider. However, Peter Shrimpton of Heart Capital tackled this problem by starting to hang around meeting places and Braai spots in the township in order to get to know the inhabitants. Eventually, he was introduced to several community representatives who greatly contributed to the establishment of his network, [12]. Shrimpton's informal approach could serve as a good example.

In addition, one could address existing facilities such as the Hubspace in Khayelitsha or Woodstock, youth centres and other community centres to introduce the incubator and its roadmap [5, 12]. To enthuse these people, especially young children and teenagers, the incubator could propose a competition or practical assessment and provide some physical, financial and social resources. The Hubspace Entrepreneurship Competition and the Awethu Project Talent Identification Process are good examples of how to persuade young entrepreneurs from under-resourced communities to apply for such a program and select the most talented youngsters for the incubation program.

Those who progressed to the Kayamandi Hubspace or Awethu Incubator could be a role model for their community. Stories of the previously disadvantaged Melilizwe Gqobo as co-founder of Hubspace Khayelitsha and Lesika Matlou with his thriving tour business should be spread through their communities. Another inspiring story is that of Rosie Makosa, better known as 'Mama Rosie, who has helped changing the lives of many Capetonians. She went from a domestic worker to a well-known

community change-maker and is nowadays recognised as the Site Director of the Foodpods Philippi Market, which is established with assistance from Heart Capital [12, 36]. Those people, who sought for a different life, should bring other community members new hope and opportunities. *Best practices* from the community can help letting the community accept the incubator and its activities in the township [5, 12].

Soft skills and hard skills development

The next challenge with the recruited BoP participants for the incubation program is to teach them how to go through a design process and set up their own business. While most of them are poorly educated and lack physical, financial and social resources a few BoP members can definitely compete with graduates of Harvard Business School on a cognitive level [37]. The most important thing is actually their motivation and urge to prove their talent. So the right participants have to be selected on soft skills, like their motivation, spirit and cognitive skills.

In order to compensate their lack of education, the incubator has to involve the participants in practical workshops to teach them both soft and hard skills. This could be based upon the subsidised activities and support that are offered by the Cape Craft and Design Institute. A collaboration with them could therefore be feasible. According to Shrimpton, a helpful method is 'theatrical learning', in which lectures are regarded as theatrical performances, by for example executing audio-visual effects. This will increase the learning motivation of the participants [12]

After this 'teaching program', the personalities and skills of the participants will become clear. The incubator will not base its choices solely on personal aspects, but also on their match with ongoing, starting or future businesses. The participants should fit the incubator portfolio.

Business-minded persons can start a franchise business. Persons who have proved themselves both entrepreneurial and creative will participate in a co-creation design team to contribute in product development.

Becoming aware of the social problem

As said before, many BoP participants think of earning money in the short term to live through their days. For ethical reasons explicitly changing this mind-set should not be the incubator's objective but the primary intention is to create awareness about the circumstances in their community. BoP members should know the key performance indicators (KPIs) of the community, which indicate if their environment is stable or not. Recognising the controlled and uncontrolled KPIs will reveal the good and bad aspects of their daily life in the future. Ideally, a few people will recognise the 'problems' and take action during a longer period, i.e. come up with solutions (products and services) for the social need.

7.3   Roadmap Milestones
Several of the previous findings showed that some critical milestones are present in the roadmap. In fact, some issues need to be resolved, deadlines need to be met before the project can proceed. These aspects of the roadmap have been translated into milestones. Without meeting the requirements of these aspects, the incubator or franchise cannot be further developed.

Funding
Without enough funding, the incubator will not be able to launch its planned start-ups. A thorough balance of socially and financially attractive start-ups will fulfil both the demands of funding companies and the development that the community needs.

Incubator Portfolio
Social and financial ROI play a critical role in the above mentioned funding. The incubator has to plan a strategy for the portfolio composition. A well-thought balance of social, financial and innovative benefits should be made before any projects are launched.

Recruitment BoP
After the incubator portfolio is formed, the BoP members with the right capabilities should be recruited and coupled with the ongoing projects or projects that still have to be set up. A division between creative and entrepreneurial people is made in this stage. By placing the right people at the right place, the possibility of success is maximised.

Social awareness
If the start-up or franchise projects fail in creating awareness along the community, no sustainable development could be created. The local people have to become aware of the problems that are present in their community in order to do something about it while working at one of the started businesses. This way the social ROI could be boosted.

Incubator sustainability
The shares that are owned by investors that have the license, will be purchased by the BoP members that run the business. From then on the community owns a business and they pay a percentage of their revenue to the incubator in order to make the incubator sustainable.

8   DISCUSSION
The designed roadmap is a theoretical framework that should be used for the design and business approach of this research. The research prior to the study tour and during the tour itself was difficult to perform at various points. Therefore, when reading this thesis, some serious implications must be kept in mind.

The topic '(pre-)incubation' is a very broad one. Boundaries have been set to make it possible to perform the research. As a consequence the research is not complete at all points and instantly applicable. For example, this research has not covered other problems than the job opportunities of BoP members. Problems such as criminality and infrastructure are not covered, but the businesses that BoP members will set up could play a role in solving these problems.

The described general entrepreneurial process is only based on information from Dutch contacts and international papers. Research to (social) enterprise incubation in South Africa particularly is barely performed. Obstructing factors in South Africa should be explored and taken into account, for example in the field of funding. The question still is how to reach funding agencies and what requirements the incubator has to meet.

The BoP is a social group with which Dutch people are not familiar. A BoP group like stated in this article is not present in the Netherlands and therefore it is more difficult to draw conclusions and use common sense at some points. The authors of this research paper have a western point of view which should be kept in mind while reading this paper.

The description of a BoP member like stated in this research is probably not complete because the authors have not really met BoP members in person and have not experienced the real life in the townships. Some small exceptions are present for Lesika Matlou from Ek Sê Tours, Melilizwe Gqobo from the Heart Capital Hubspace and Mama Rosie from the Foodpods, but these people are best practices and are therefore not representative for the 'average' BoP member.

Townships clearly differ from other South African regions/neighbourhoods, but besides that clear differences between individual townships are present. Soweto is quite developed compared to other South African townships like Philippi or Khayelitsha. A clear description of the kind of townships where the incubator could best be established is missing. The extent to which a township is already developed could influence the implementation of the roadmap in for example creating a network, creating housing for the incubator and the accessibility of the BoP members from the township.

The number of approached people who work in the field of creative businesses among the BoP is very limited. The contacted organisations, like Heart Capital and Ek Sê Tours, mainly address entrepreneurial people, but creativity and the design aspect are not covered much. There already existing initiatives for further development of townships are often not directed at the development of new products or services. Design thinking is not implemented. The approached organisations and projects do therefore not entirely fit this research.

It is important to expand the already existing network of contacts in South Africa to create a wider support for the implementation of the roadmap. Like written in paragraph 7.1., a project team with students that already did projects dealing with social development should be set up. These people are still young and flexible and have not directly lived during Apartheid, which could be a difficult obstruction for older people to support the organisation. Together with the project team and their knowledge about the South African society, the roadmap should be further refined. Besides, it would be wise to involve 'best practices' from the local community in the team.

Just like PC3 is connected to the University of Twente, this project should be collaborating with South African universities. The students should be encouraged to do more research on projects with BoP members. We should also use the assistance of lecturers. Possibly, the university could invest in the project.

Little is known about the feasibility of the steps in the roadmap. Naturally, the implementation will differ per incubator. A pilot test should be performed beforehand, to evaluate the feasibility, time, cost, adverse events and effect size of the roadmap [38].

The contacts that are made with PC3 should be maintained for future collaboration opportunities.

9 CONCLUSION

The in this research created roadmap, meant for pre-incubators in South Africa, describes in which ways industrial designers can enable the BoP to engage themselves in entrepreneurial and creative activities and let them start their own enterprises. During the study tour the structure and content of the roadmap is critically assessed and improved by means of our findings.

Looking back at the overall study tour theme, the developed roadmap could have a boosting impact upon South African society. By resolving the lack of innovative start-ups, industrial designers could help in developing a creative environment from which the society could lift itself up. And besides, the most disadvantaged group of the South African society could be supported in a sustainable way by companies that invest in start-ups. Both the BoP and the companies will benefit from the development of a creative environment which stimulates other companies in creating and making new products or services in all layers of society.

Although setting up a framework is relatively easy, the implementation of the roadmap in South Africa faces some major challenges. As described in the Discussion, funding, implementation in the community and social awareness among the BoP members should be further elaborated before a pilot test of the roadmap could be run.

Concluding, with the right funding and implementation, the roadmap has a chance of succeeding. By implementing 'design thinking' in the development of start-ups, the proposed incubator distinguishes itself from other BoP projects that are solely based on the development of entrepreneurial activities. In the case of this roadmap, entrepreneurship is used to thoroughly integrate creativity. Design thinking leads to innovation which helps in the creation of new products or services in the form of SMEs which, on their turn, stimulate the creative environment of the South African society.

10 REFERENCES

Figures

Fig.1&5 based on: Jauregui Becker, J.M.F.-G., M. & Groen, A., *The business model proposition for Product Co-Creation Centres (PC3): scaling up the BoP mind-set to social entrepreneurial skills.*, 2013, University of Twente: Enschede.

Fig.2 based on: http://jordan.smetoolkit.org/jordan/en/file/content/54286/en/ValleyofDeath.JPG (visited 05-02-14)

Fig.3 based on: Butterfly Works, B., *Co-Creation Method for a better world. White paper no.1 on Social Campaigns and Learning.* 2013.

Fig.4 author's design

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