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**EMBRACE INFANT WARMER: RESPONSE TO A CALL**

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11. **Introduction**

Embrace is a social initiative started by Jane Chen,[[1]](#footnote-1) Linus Liang, Rahul Panicker, Razmig Hovaghimian and Naganand Murty to assist helpless babies by providing an infant warmer at a lower price. This non-profit organization kicked-off in 2008 during the multidisciplinary Entrepreneurial Design for Extreme Affordability course at Stanford University.[[2]](#footnote-2) However, it launched its first clinical product in 2011, which was distributed primarily to clinics in the southern parts of India.[[3]](#footnote-3) The then Embrace team consisted of about 35 people operating at Bangalore India.[[4]](#footnote-4)

Since 2015, Embrace is part of the Thrive Network. This network has the mission to improve the health and well-being in areas of water, sanitary and hygiene, as well as education.3 Embrace is specifically targeted for babies in poor environments that have little or no access to amenities such as electricity. Compared to prices of other equipment used for keeping babies warm, Embrace tends to ensure that they produce quality products with high reduction price so that it can reach the poorest of babies within these regions. The long-term vision of the company is to develop a line of affordable healthcare technologies.[[5]](#footnote-5) So far, Embrace has helped over 300.000 babies across 20 countries, like China, India, Zambia or Rwanda.4 However the Headquarter of Embrace is located in San Francisco, California, United States.2

1. **Company Background**

Embrace offers the infant warmer as an innovative incubator for premature and low-weight babies in rural areas, so as to give these infants hope of survival by keeping them warm. It is a known fact that a two weeks premature baby has difficulty in regulating its own temperature outside the womb. So, such infants need to be transferred immediately to an incubator within an hour or risk death. But the case is such that premature babies in rural areas with no electricity lose their lives before they are transported to incubators or even get to a clinic with such facility. Moreover, incubators are also expensive to operate and maintain.

As a result, Embrace designed an infant warmer that could function in a rural environment with special features. It was designed in the form of a sleeping bag; [[6]](#footnote-6) it was light, easy to carry, and had no need for electricity. It had a pouch of phase-change material (PCM) that regulated the infants´ temperature for about four hours after which the PCM pouch could be recharged by submerging it in boiling water for few minutes. An innovative wax is incorporated in the sleeping bag to help in the regulation of the baby´s temperature. The product was a ground breaking innovative experience for these babies because it was affordable to the poor parents and could easily be cleaned by dipping it in boiling water. It was made in such a simple way to allow ease of use yet with greater quality. Thus, it responded to the cultural practice of the rural communities where the first prototype was used by premature Nepalese Infants in rural areas.

1. **Case Analysis**

One would simply argue that the company focuses on catalytic innovation since it addresses a social issue by changing existing business patterns into scalable, sustainable, system-changing solutions for people at the BoP[[7]](#footnote-7) by using frugal approaches. Embrace infant warmers are innovations for emerging markets based on a university course, with the idea to improve life. When the course was conducted in 2008, the students had the task and aim to develop a product and strategy to avoid the death of premature babies first in India as an emerging market, and now spread around to other developing markets.[[8]](#footnote-8)

The warmers can be seen in light of the Frugal Innovation approach and some marks of the Frugal Engineering and Constraint-based approach, as well as Gandhian Innovation Approach. The reason for that lies in the fact that thousands of premature born children are threatened with death within the first hours because mothers in the underdeveloped areas of India don´t have access to necessary healthcare like incubators.[[9]](#footnote-9) Situational examples of these occur due to missing infrastructure to get as quickly as possible to hospitals, which are often long distances away, lack of incubators or power failures also pose threats to these premature infants.[[10]](#footnote-10)

Incubators are high-cost products; so, the company focused on developing a low-cost product, independent of power and transport infrastructure, that does the same as a high-quality incubator and keep the baby warm.[[11]](#footnote-11) The aim was to have a warmer that considers the poor consumers. The student´s work, the Embrace Infant Warmer, is an affordable product, that pays attention to the fact that a huge number of people in emerging and developing markets live under the level of one dollar a day.[[12]](#footnote-12)

The warmers as frugal innovation[[13]](#footnote-13) approach is a good-enough innovation because one can find the principles of Jugaad as “Do more with less” (e.g. the use of wax) or “Keep it simple” (e.g. the use of the warmer). Typically for a Jugaad Innovation it is hard to make the warmers, which cost part of a conventual incubator, a commercially viable business opportunity.[[14]](#footnote-14) Moreover, Embrace still focuses on helping mothers and children and wants to reach the number of 1 Million saved children.[[15]](#footnote-15) Since 2008 the company rose to a non-profit company from the student´s class and is distributing the warmers in over 20 countries, especially within underdeveloped, developing and emerging markets.[[16]](#footnote-16) However, it will also be appropriate to make further analysis of this product from different perspectives.

**Macro Analysis:** High Infant mortality rate, lack of medical care in developing countries (hospitals as well as pharmacies), bad infrastructures (roads and highways) could be the major impetus towards the creation of such company. As one can rightly observe, most of the mothers are young with little or no experience. So, the company will focus on making its target market as one with low disposable income, consumer spending, inflation rates.[[17]](#footnote-17) The tax policies of the company also play a great role as government can issue safety regulations to protect the company through availability of governmental contracts. The company must also engage in clinical studies that will secure patent infringements; health, safety regulations and requirements; how to address the difficulty in finding a manufacturer who meets their specific needs.

**Sector Analysis:** Direct Threats (risk of patent infringement, financial risks), Indirect threats (price, accessibility to markets with poor infrastructure, pending patent, competition arising, substitute products, increase in costs).

**Market Analysis:** Competitors may provide indirect products existing in markets offering the same function, the company also need to look for ways to distribute its products. Sometimes it is difficult to find the most efficient distribution model either through pharmacies, hospitals or NGOs. The company must also define their clients. The first in line will be hospitals which the company may have partnership with so as to supply them with the product. Pharmacies and clinics in low-income communities may also serve as clients while the parents of the pre-mature infant will stand as the final clients because they are the main target customers whom the product is designed for.One can also make an analysis of the embrace company using the SWOT analysis.[[18]](#footnote-18)

1. **Strengths**
2. There is a strong need for the product,
3. Highest quality is ensured in its production,
4. The product is confirmed to be tested both by doctors as well as mothers,
5. Increasing trend for social entrepreneurship and consumers care more about CSR[[19]](#footnote-19),
6. The product is a life necessity product,
7. It is being managed by a strong and sound educated team with various backgrounds and experiences.
8. **Weaknesses**
9. The product has to be produced cheaply
10. It involves larger, faster and cheaper testing methods,
11. Reaching out to target market will require a large amount of capital.
12. **Opportunities**
13. There exists a gap in market coupled with the high demand (niche market).
14. Potential partnerships and support from NGOs such as the World Health Organisation
15. Response to high infant mortality rates in targeted markets.
16. **Threats**
17. Issues with IP control and patent still in process may serve as threats to the company if they intend to outsource various parts of their operations.
18. Loss of appropriability
19. Product may not be accepted in the market
20. Substitute products may serve as threats to the company
21. It might imply high investments which are not recovered during the product life cycle
22. It involves financial risk
23. Political change in the target market area could lead to new regulations and standards in the market.
24. A decreased birth rate in the long run may serve as threat to the existence of the company
25. Lack of health insurance
26. **Main learnings from this case**

* The reverse of innovation is immense even if it´s just a part of the innovation and can create a for-profit company without giving up non-profit aims and their reachability
* The importance of understanding the customers in the emerging markets and the cooperation with them (for example the change of the colour white to blue, because white means death in some countries)
* The immense importance of advertising and good press for non-profit organisations
* The importance of using social media today:

“Think big!“

* An understanding of the core requirements of target customers is key to starting up an emerging innovative company.
* To start up an innovative market in developing countries, one must think about low cost if one really wants to respond to the needs of the people there. And one must always ensure that one has the passion to drive through.
* One must “think outside the box” because developing nations have various levels of untapped market which can be innovatively created.
* There is a level of interconnectivity with the various forms of innovative approach.
* It´s possible to do something good while making profit (Jane Chen´s company “Little Lotus”

1. **Conclusion**

GE Healthcare’s Communication Leader Mr. Manoj Menon says - “India produces one Australia every year, as many as 30 million new-borns”.[[20]](#footnote-20) But most of the births occur in an unsupervised manner, and even hospitals have to deal with erratic electricity and lack of affordable equipment, Menon says. As a result, India has one of the world’s highest mother and infant mortality rates. But most of these deaths are preventable with proper care.

20,000 USD is actually something more than the sum total income of past three generations of the new born in a poor family, in a country like India. That’s the price of an average incubator. Today, most rural areas still lack basic needs like healthy drinking water, proper shelters, etc. Life is a cycle of illiteracy, poverty and hope for them. Google gives a steeply increasing population statistic of India to be around 1.324 billion in 2016. The last recorded census of 2001 has revealed that over 21 million people in India is suffering from one or the other kind of disability.[[21]](#footnote-21)

The Embrace team got such a worldwide success and fame just because they kept in mind all these facts, which are pressing issues and tried to incorporate such a technology which is affordable and innovative. Just like capillary action of water, their idea started from helping the poorest section of the society and slowly getting acceptance in the upper strata. From a business innovation point of view, few things play a major role.[[22]](#footnote-22)

* They realised keeping a low proﬁt margin and very high sales can help them optimise their business.
* A country with maximum number of young people in the world would deﬁnitely need baby warmers than anything else in the upcoming future.
* The poor and illiterate can afford only solutions which are within their budget.
* Phoenix, which is their dealer in India mostly works with low cost incubators in Government Hospitals, that have a huge business chain in urban, suburban and rural areas. Scott Belsky, Behance: “It’s not about ideas. It’s about making ideas happen.”

Competition with oneself is perhaps the most difﬁcult competition in the environments of emerging markets. Sustaining with a narrow proﬁt margin and more focused dependency on volume of sales, often leads to quality compromise. Apart from threats of plagiarism of ideas and business by local institutions, political corruptions and other money laundering schemes like bribes often leads to unforeseen and unavoidable circumstances. Entrepreneurs often can’t visualise some of these real-life issues, which are worst parts about conducting businesses in emerging markets. The root cause of all these issues again lies in poverty and inﬂuence.

A good political collaboration with locally inﬂuential parties may seem to be a smart step to sustain in the market. At the same time, creating more job opportunities for women might be the next successful step. Although the product may be a baby warmer, but the actual user of the product is the mother of the child, who takes care of the new-born. Creating a job opportunity for them can break the language and cultural barriers.

Even in the 21st century, people of rural areas in developing countries are still shy, backward, and lack awareness. They are ignorant and don’t understand the importance of a baby warmer. If one mother from each district can be educated with proper training of its use and purpose, she can easily reach out to people of her domain without any constraints.

Another smart step would be collaboration with NGOs. In developing countries, there is a huge financial difference between the rich and the poor, i.e, the rich are very affluent while the poor are well below the poverty line. It would be a highly strategic step to organise fund raising exhibitions, conferences and other cultural events once a month in different states with the help of collaborating NGO’s and then buy the baby warmers with the money raised. Often in developing countries, people tend to rush for free products. Distributing those to people who are parents of a girl child will thereby motivate gender equality and serve as a step against female feticide, which is a burning issue in India.

With the advent of 4G technology, most of the telecom sectors of the country offer unlimited data package at low cost. A baby warmer can be coupled with embedded systems of vital parameter monitoring like SPO2, Heart Beat and temperature from the body warmer device and transmits data to a dedicated device in case of ﬂuctuations. Parents of new generation and urban and sub urban areas perhaps gladly welcome such technologies, since they have to move away from the baby for the sake of their work. These types of more frugal yet innovative ideas should be continuously researched, so as to survive and update themselves with the market.

1. **References**

20 Minuten, “Dieser Schlafsack ist ein Lebensretter“, <http://www.20min.ch/wissen/news/story/Dieser-Schlafsack-ist-ein-Lebensretter-22118223>, published March 4th 2015, 22:58, accessed May 19th 2018

Cassie Kreitner ed., “This Infant Swaddle Will Help Save Lives”, <https://www.thebump.com/a/this-infant-swaddle-will-help-save-lives>, accessed May 19th 2018.

Devin Thorpe, “This Young Social Entrepreneur Hopes to Save One Million Babies”, <https://www.forbes.com/sites/devinthorpe/2015/11/18/this-young-social-entrepreneur-hopes-to-save-1m-babies-per-year/#773e938c5e40>, accessed May 19th 2018

Embrace – Building the Business Model, <https://de.slideshare.net/htettayza/sme-final>, accessed June 6th 2018, 05:49

Embrace, “Extreme: Design for Extreme Affordability”, Stanford University, <http://extreme.stanford.edu/projects/embrace>, accessed June 6th 2018, 01:26.

Embrace, <http://embraceglobal.org/about-us/>, accessed June 6th 2018, 08:01

Embrace, <https://en.wikipedia.org/wiki/Embrace_(non-profit)>, accessed June 6th 2018, 01:39

Gerald Reischl, “Frühgeborene retten mit Hightech-Schlafsack als Brutkasten“, <https://www.coca-cola-oesterreich.at/stories/get-active/Fruehgeburten-retten-mit-Hightech-Schlafsack-als-Brutkasten>, published September 20th 2017, accessed May 19th 2018

Jane Chen, “A warm embrace that saves lives”, <https://www.youtube.com/watch?v=IwidCkCmWg4>, accessed June 3rd 2018, 06:24

Karen Weise, “Jane Chen: A Simple Effective Way to Reduce Infant Mortality”, <https://www.bloomberg.com/features/2016-design/a/jane-chen/>, published April 11th 2016, accessed March 19th 2018.

Katharina Tjart, “Embrace Warmer für Frühgeborene: Plötzlich wieder eine Chance zu überleben“, <https://goodimpact.org/magazin/plötzlich-wieder-eine-chance-zu-überleben>, published October 27th 2015, accessed May 19th 2018.

Kickstarter, <https://www.kickstarter.com/projects/1036318366/little-lotus-the-smart-swaddle-and-blanket-for-you>, accessed May 19th 2018.

Office of the Registrar General and Census Commissioner, India “Disabled Population”, Ministry of Home Affairs, Government of India, <http://censusindia.gov.in/Census_And_You/disabled_population.aspx>, accessed June 3rd 2018, 05:58

Our CEO Jane Chen´s Interview with NBC, <https://www.youtube.com/watch?time_continue=468&v=-WhtmFx8-0I>, published on April 10th 2017, accessed May 19th 2018

Population of India,

<https://www.google.de/search?q=population+of+indi&oq=populat&aqs=chrome.0.69i59j69i61j69i57j0j69i59j0.4181j0j7&sourceid=chrome&ie=UTF-8>, accessed June 3rd 2018, 06:21

Thrive Network, “Evidence-Based International Development at Scale”, Celebrating 30 Years of East meets West, <http://thrivenetworks.org/>, accessed June 6th 2018, 08:05

Trends der Zukunft, “Embrace Warmer: So rettet ein Mini-Schlafsack hunderttausende Kinderleben“, <https://www.trendsderzukunft.de/embrace-warmer-so-rettet-ein-mini-schlafsack-hundetausende-kinderleben/>, published July 12th 2015, 11:35, accessed May 19th 2018

Will Yakowicz, “This Space-Age Blanket Start-up has Helped Save 200,000 Babies and Counting” in Inc. Magazine, May 2016 Issue. <https://www.inc.com/magazine/201605/will-yakowicz/embrace-premature-baby-blanket.html>, accessed May 19th 2018.

1. The co-founder of Embrace, a social enterprise start-up that aims to help the 20 million premature and low birth-weight babies born every year, through a low-cost infant warmer, that would give premature infants a better chance at survival. [↑](#footnote-ref-1)
2. Embrace, <https://en.wikipedia.org/wiki/Embrace_(non-profit)>, accessed June 6th 2018, 01:39 [↑](#footnote-ref-2)
3. Thrive Network, “Evidence-Based International Development at Scale”, Celebrating 30 Years of East meets West, <http://thrivenetworks.org/>, accessed June 6th 2018, 08:05 [↑](#footnote-ref-3)
4. Embrace, <http://embraceglobal.org/about-us/>, accessed June 6th 2018, 08:01 [↑](#footnote-ref-4)
5. Embrace, “Extreme: Design for Extreme Affordability”, Stanford University, <http://extreme.stanford.edu/projects/embrace>, accessed June 6th 2018, 01:26. [↑](#footnote-ref-5)
6. Cassie Kreitner ed., “This Infant Swaddle Will Help Save Lives”, <https://www.thebump.com/a/this-infant-swaddle-will-help-save-lives>, accessed May 19th 2018. [↑](#footnote-ref-6)
7. This simply means Base of the Pyramid or Bottom of the Pyramid [↑](#footnote-ref-7)
8. Karen Weise, “Jane Chen: A Simple Effective Way to Reduce Infant Mortality”, <https://www.bloomberg.com/features/2016-design/a/jane-chen/>, published April 11th 2016, accessed March 19th 2018. [↑](#footnote-ref-8)
9. Katharina Tjart, “Embrace Warmer für Frühgeborene: Plötzlich wieder eine Chance zu überleben“, <https://goodimpact.org/magazin/plötzlich-wieder-eine-chance-zu-überleben>, published October 27th 2015, accessed May 19th 2018. [↑](#footnote-ref-9)
10. 20 Minuten, “Dieser Schlafsack ist ein Lebensretter“, <http://www.20min.ch/wissen/news/story/Dieser-Schlafsack-ist-ein-Lebensretter-22118223>, published March 4th 2015, 22:58, accessed May 19th 2018 [↑](#footnote-ref-10)
11. Trends der Zukunft, “Embrace Warmer: So rettet ein Mini-Schlafsack hunderttausende Kinderleben“, <https://www.trendsderzukunft.de/embrace-warmer-so-rettet-ein-mini-schlafsack-hundetausende-kinderleben/>, published July 12th 2015, 11:35, accessed May 19th 2018 [↑](#footnote-ref-11)
12. Will Yakowicz, “This Space-Age Blanket Start-up has Helped Save 200,000 Babies and Counting” in Inc. Magazine, May 2016 Issue. <https://www.inc.com/magazine/201605/will-yakowicz/embrace-premature-baby-blanket.html>, accessed May 19th 2018. [↑](#footnote-ref-12)
13. The warmer uses frugal innovation Approach because Frugal Innovation uses management philosophy that is used to describe an approach based on jugaad. [↑](#footnote-ref-13)
14. Kickstarter, <https://www.kickstarter.com/projects/1036318366/little-lotus-the-smart-swaddle-and-blanket-for-you>, accessed May 19th 2018. [↑](#footnote-ref-14)
15. Devin Thorpe, “This Young Social Entrepreneur Hopes to Save One Million Babies”, <https://www.forbes.com/sites/devinthorpe/2015/11/18/this-young-social-entrepreneur-hopes-to-save-1m-babies-per-year/#773e938c5e40>, accessed May 19th 2018 [↑](#footnote-ref-15)
16. Our CEO Jane Chen´s Interview with NBC, <https://www.youtube.com/watch?time_continue=468&v=-WhtmFx8-0I>, published on April 10th 2017, accessed May 19th 2018 [↑](#footnote-ref-16)
17. Gerald Reischl, “Frühgeborene retten mit Hightech-Schlafsack als Brutkasten“, <https://www.coca-cola-oesterreich.at/stories/get-active/Fruehgeburten-retten-mit-Hightech-Schlafsack-als-Brutkasten>, published September 20th 2017, accessed May 19th 2018 [↑](#footnote-ref-17)
18. Embrace – Building the Business Model, <https://de.slideshare.net/htettayza/sme-final>, accessed June 6th 2018, 05:49 [↑](#footnote-ref-18)
19. CSR stands for Corporate Social Responsibility [↑](#footnote-ref-19)
20. Office of the Registrar General and Census Commissioner, India “Disabled Population”, Ministry of Home Affairs, Government of India, <http://censusindia.gov.in/Census_And_You/disabled_population.aspx>, accessed June 3rd 2018, 05:58 [↑](#footnote-ref-20)
21. Population of India,

    <https://www.google.de/search?q=population+of+indi&oq=populat&aqs=chrome.0.69i59j69i61j69i57j0j69i59j0.4181j0j7&sourceid=chrome&ie=UTF-8>, accessed June 3rd 2018, 06:21 [↑](#footnote-ref-21)
22. Jane Chen, “A warm embrace that saves lives”, <https://www.youtube.com/watch?v=IwidCkCmWg4>, accessed June 3rd 2018, 06:24 [↑](#footnote-ref-22)