

MEDICINE

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ASHUDHINASHAK: ALTERING CONSUMER BEHAVIOUR FOR SUSTAINABLE FUTURE

Abstract. The purpose of the research — understand the practical execution of social innovation in culturally dominant rural settings. **The research methodology.** Present study took one of the most popular approaches to qualitative research i.e. case study. This case study is an attempt to answer the research question “How social innovation taking the route of design activism can change the mindset of consumers?” The case aims at analyzing the process adopted by design activists to bring in social change. Design factors identified (aesthetics, function, usability and others) for bringing social change were derived from the existing literature. The case also talks from the point of view of sustainability as an integral part of social innovation. Personal factors of the innovator i.e. personal intentions,

level of self motivation, level of compatibility with stakeholders, and personal competency were analyzed in light of success requirements for a social initiative. **The scientific novelty** of the study is that this case allows the applicability of the design activism in developing acceptance of the social taboo product in the Indian context. **The Conclusions.** Consumer dilemma has always resulted in tremendous opportunities for entrepreneurs to come out with innovative solutions. Disposition of menstrual absorbent is one such roaring problem faced by many women in rural as well as in urban regions. The taboo associated with menstruation in societies does not allow disposition of menstrual waste either in open areas or in regular dustbins. Commonly used sanitary napkins contain Super Absorbent Polymers (SAP) which takes 500 to 800 years to decompose naturally. Mr. and Mrs. Bedekar designed a clay incinerator “Ashudhinashak” which enables disposal of used sanitary napkins and provided a perfect solution for substantial fraction of total population (Menstruating women). This case is an attempt to understand the practical execution of social innovation in culturally dominant rural settings.

Keywords: *Menstrual waste Management, Consumer Behaviour, Incinerator, Rural, Sustainable.*

The Problem Statement. Menstrual education plays a vital rôle in the health education of adolescent girls across the globe (Goyal, 2016, p. 18–21). Menstrual hygiene and waste disposal has been an age old problem not only in India but also in major parts of the world. **The Analysis of Sources and Recent Researches.** Literature shows that Menstrual related studies have insignificantly focused on the waste disposal issues. Neither the academicians nor the policy makers gave it due importance (Landes, 2012). This often seems to be an unimportant issue, mainly because women avoid being vocal about menarche due to the social stigma associated with it. Girls are still not very comfortable in discussing their concerns, predominantly because of complicated parent child dynamics, prevailing myths attached with menstruation, inadequate source of guidance and student teacher relationship (Cruz-Torres & Mc Elwee). It has been observed that women throughout the world follow different menstruation waste disposition practices as per their convenience. Commonly women dispose used menstrual products with domestic waste and they prefer to flush it in public toilets (if outside home) which results in choking of toilets (Grimm, Fox, Baines, Albertson, Social, 2013, 26, 436–455). Environmentalists are frequently raising concerns about piled up non biodegradable sanitary wastes at cost lines (Konda, Starc, & Rodica, 2015, 53 (2), 211–229). Landfills are no exceptions, large volumes of sanitary waste results in huge amount of methane which is the major contributor of global warming (Mahon, 2010). Articles frequently published in the news papers pinpoint the burgeoning problem related to menstrual waste disposition (Haxeltine, Pel, Dumitru, Kemp,

Avelino, Jørgensen, Wittmayer, Kunze, Dorland, Bauler, 2017). Sanitary product designers have never bothered about the sustainability issues and its hazardous environmental impact (BEPA, 2011). Plastics, polyacrylate gel and polymers are the commonly used absorbents in high quality sanitary napkins (Margolin, 2012). Modern incineration can be the practical solution in reducing the ill environmental effect caused by inappropriate disposition of menstrual waste (Grimm, Fox, Baines, Albertson. 2013, 26, 436–455). The present case is a live example of gradually eliminating social taboo associated with menstrual waste disposition in traditional orthodox rural Indian society.

The Purpose of Publication. This study using the case of Ashudhinashak aims to understand how the organization created value for the girls facing embarrassment due to the lack of menstrual disposal management. Ashudhinashak as a product provided a sustainable solution which was accepted by the major influencers of the rural society and make life easier for the adolescent girls taking real life example of a young girl Laxmi.

The Main Material Statement. Laxmi is studying in 7th standard of a government school in Panchmahal district of Gujarat. It was raining heavily when she started from home to school. When she reached school, she was fully rinsed. She was desperate to change her sanitary pad. It was her first day of menstruation. She was scared and upset about disposing of the used sanitary napkin in the bare minimum sanitary infrastructure of the school. It was not the dilemma of Laxmi alone but many such schools going young girls of Panchmahal.

Mrs. Swati Bedekar who use to teach mathematics and science modules in these schools during early 2012 and was also running the Vatsalya Foundation (Organization working in the area of educating MHM and offering low-cost sanitary pads) got emotional about the agony faced by these young girls every month. She along with her husband decided to work towards improving this pathetic condition of disposing of sanitary waste (Refer Annexure-2).

Swati was already aware that few menstruation waste disposition options like electric incinerators were available in the market, but those products were more suitable in urban settings due to their design, energy requirement and their market price (Refer Annexure-3). These products do not empathize with the suffering faced by menstruating girls in rural areas.

Indian Menstruation Practices: As per the Dasra, Kiawah Trust, and USAID, the total number of menstruating women is more than 35,50,00,000 in India (Roxburgh, Hampshire, Kaliwo, Oliver & Quilliam, 2020). Experts have identified 4 A's responsible for low penetration of sanitary napkins in rural areas. These are 1) Availability (non) 2) Affordability (non) 3) Awareness (low) 4)

Awkwardness of buying form male chemist. Looking at the nature of government efforts in the last decade towards improving the percentage of sanitary napkin users in rural areas, there should have been a drastic improvement. But it has registered growth of a mere 5% in the past 7 years indicating the presence of unidentified factors in play.

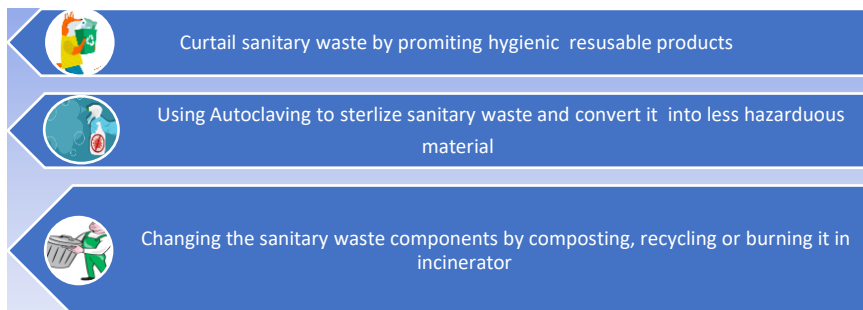
Big brands like P&G, Johnsons, and Johnsons and Unicharm are generally unavailable in rural areas. In a survey of 62 villages, out of 187 general and provisional stores, not a single store had a stock of sanitary napkins, though there are estimates about the growth of the industry to INR 45.9 billion by the year 2017 (Chothe, Khubchandani, Seabert, Asalkar, Rakshe, Firke, Simmons, 2014).

Menstrual hygiene practices in India depend on socioeconomic status, age, education, occupation, family composition along with exposure to television or radio (Sanitary Napkin Properties, 2014). Proper education and hygiene practices can help young adolescent girls to come out of prevailing misbeliefs (Mahon, Thérèse, Fernandes, 2010). There is a positive response of planned teaching on the knowledge of young adolescent girls and it is useful for them in maintaining menstrual hygiene practices. Majorly socio-economic factors contribute to the present condition of non-usage of sanitary napkins in a rural area. Gradually women from the rural society have started using sanitary napkins and it has given birth to the problem of menstrual waste management. Thus the present research proposes to provide solution to huge problem faced by the society.

Menstrual waste management solutions in India. Three (3) menstrual waste management practices in India :

- 1) Adopting more sustainable menstrual absorbents
- 2) Eco-friendly menstruation waste disposition practices
- 3) Segregation of sanitary waste

Fig. 1. Sanitary waste disposal system intends to manage waste in the following ways



Theoretical Background. Social Innovation has recently gained importance in academic fraternity for its incredible transformative ability (Dias, & Partidário, 2019, p. 44–65). Prevailing social issues accelerated the need of social transformative agents as these are the potential source of bringing constructive change in the present societal conditions (Dasra, Kiawah Trust and USAID, 2014; Akimenko, 2014, p. 57).

Now researchers are serious in finding out the ways of achieving social innovation through design activism. Design activism is a perfect blend of design and activism. In this equation, design serves as a carrier of activism. Designs have a tremendous potential to bring environmental development if it is used properly as a change agent which is effectively utilized by design activists. Design activism thrives on trial and error process to arrive at its desired outcome of social innovation. The success of design activism does not merely depends on methods and tools used but also on the approach adopted by designers in reaching out to various stakeholders of the community (Sanders & Stappers, 2008, 4 (1), pp. 5–18; Cipolla, Afonso, Pel, Bartholo, Silva, 2017, p. 22).

Introducing social change is a long term process which requires the social initiative or network to adopt the process of reflexive learning. According to DRIFT social innovation is a sum total of peoples efforts who collectively work on some idea or activity which is innovative in nature (Chapman, 2007, p. 177). Dias et al. suggests two ways of introducing social transformation i.e. by Cartesian approach which advocates the materialistic route of creating something tangible and measurable which create value for the society. Moreover this contribution should also be capable of being analyzed systematically. The other way suggested was the systematic thinking which concentrates on success factors of these change agents to bring amendment in prevailing societal systems which ultimately helps in modifying the traditional ways of doing things (Elledge, Muralidharan, Parker, Ravndal, Siddiqui, Anju, 2018).

Systemic change focuses on bringing the fundamental gradual change and ultimately influences the functioning of entire system. Actually systemic change is the final objective of any social innovation. This change demands a fresh thought process and approach of action. It is the interface where business processes, social movements, legal aspects, infrastructure and data interacts at the same platform (Fassi, Meroni, & Simeone, 2013, pp. 14–15). All these are the key factors and should work in alignment with each other. Effective implementation of social innovation strategies are the outcome of social actor's skills in understanding the need of the beneficiaries and the power relationships these social innovators share with them (Chapman, 2007, p. 177). Obviously there is a bitter confrontation with the earlier policies of the area. To ensure successes of social innovation it is crucial

to consider that such change must be economically feasible, backed by the latest technology, have efficient supply network, knowhow, legal and financial support. It is a time taking process which generally requires transformation at government as well as private fronts [Fassi, Meroni, & Simeone, 2013, pp. 14–15).

Thus it is clear conviction that social innovation symbolizes social change more specifically societal change (Potts, Hastings, 2011). The distinction of social and societal is purely a process of own perception and reason of innovation. Social innovation is perceived as response to a short term social phenomenon with a very keen insight into the event. Discussion of social innovation revolves around concerns for sustainable and adhesive societies. This requires aggressive grounded initiatives along with society's joint efforts and comprehensive practices (Garg, Goyal & Gupta, 2012, pp. 767–774). The success or failure of social innovation greatly depends upon the skills of people pertaining to power relationship and using those skills for success of innovative social change (Chapman, 2007, p. 177). The value created through the process is enormous. Though altering mindset is a time consuming process and it requires whole hearted support of all stakeholders. Still it is worth taking pains, as it creates value for the society.

The innovative solution offered: For 6 months since Laxmi's incidence Swati was trying hard to find a feasible solution of menstrual waste disposition. In June 2012, a Textile Chemistry Engineer by qualification and Swati's husband Mr. Shyam Sundar Bedekar actively involved himself in the project of minimizing the agony of young adolescent girls. He had played a major role in developing "Sakhi sanitary pad" which was the core product of Vatsalya foundations (Bobhate & Shrivastava, 2011, pp. 119–126.), now he has shifted his focus on studying sanitary waste disposition options available in the market (Refer Annexure 1&3). His study concludes that in the prevalent circumstances, the burning of sanitary waste is the best possible solution. He took proper care of existing emission norms (Refer Annexure 4). Thus, utilizing his engineering brain, he designed a machine that burns sanitary waste without using electricity and at the same time it is economical, user friendly and most importantly have social acceptance.

In late 2012 the duo's hard work shaped in the form of an eco-friendly indigenous incinerator. (Refer Annexure-5) The first of its kind incinerator was appropriately named as "Ashudhinashak", which translates in Hindi as a destroyer of impurity. Ashudhinashak is similar to a brick-lined fireplace which is commonly used in a rural area for preparing meals. Ladies can conveniently use this device to burn sanitary waste just like cooking food in a brick-lined fireplace.

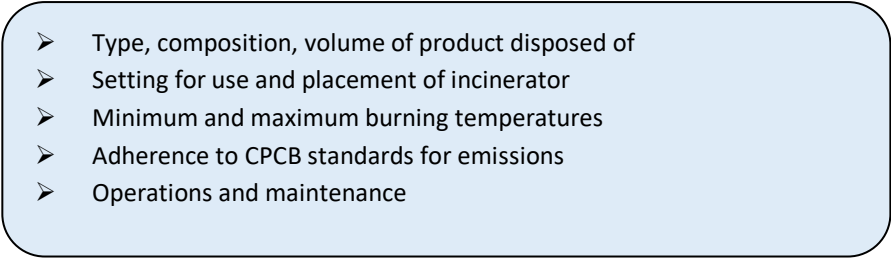
The ceramic clay and terracotta which is the basic material for making pots were used in the incinerator to give a household look to the end-user. As earthen pots are a common household item in rural India, it will be hard to point out these

incinerators and will not grab any attention, thus can easily get adjusted in the culture.

Ashudhinashak has a chamber at the top that can accommodate as much as 20 used sanitary napkins which can be burned at a time. These napkins are put on fire by putting dry grass or paper through a small hole at the bottom of the incinerator. The incinerator is designed in such a way which allows oxygen to fuel the fire and support the entire burning process. Disposing of sanitary napkins in a clay and terracotta material ultimately burns it into pure ashes which can be used as a fertilizer in farms. The process neither spread foul odor nor transmit any contagious bacterial diseases.

On average a commonly used sanitary napkin contains a thin polypropylene layer which is 15 percent of the total weight of a sanitary napkin. The remaining 85 percent consists of paper, wood pulp, etc. eco-friendly material. Ashudhinashak is a scientifically designed incinerator to maintain the temperature at 300°C which prevents the conversion of polypropylene present in sanitary napkins in any harmful matter.

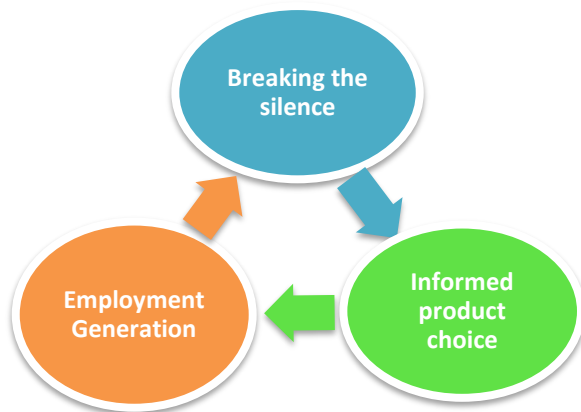
Fig. 2. Considerations for incinerators

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- Type, composition, volume of product disposed of
 - Setting for use and placement of incinerator
 - Minimum and maximum burning temperatures
 - Adherence to CPCB standards for emissions
 - Operations and maintenance

Consumer Background and journey of Ashudhinashak: On a chilly Friday morning of December 2012, when Swati was going to school, she got stunned to see a local lady who was throwing her menstrual waste material in the nearby water body. Swati was shocked that how anyone can pollute water which is the major source of drinking water supply for villagers. Swati approached the lady and tried to explain to her about their latest innovation i.e. “Ashudhinashak”. Even after continuous attempts, she failed to convince the lady about the importance of maintaining sanitary hygiene not only for her but also for the betterment of the natural and social environment. Swati called a gathering and invited village adolescent girls and middle-aged women. All women came in their veils and were

lueless about what they are called for. When the ground filled with ladies, she initiated her talk with lighter topics like the wellbeing of them and their family members. All ladies got engrossed in the discussion as this was the all-time favourite topic of the audience. Taking the right clue, she slowly took over the central theme of menstruation hygiene. As expected, one by one, ladies started to leave the forum, and finally, Swati was all alone standing at the Centre. Swati was shattered with the behaviour of these ladies. Ensuring menstrual health and hygiene of rural women was the sole mission of the Swati and Vatsalya Foundation. She was very clear of her vision and she was not one who surrenders easily. After that, she made frequent attempts to make these ladies recognize the importance of maintaining hygiene in the disposition of sanitary waste. Every time she has to surrender to her fate. Without losing enthusiasm she was continuously exploring to grab every possible opportunity to communicate. On 13th Feb 2013, when Swati begin her forum for an open discussion, all ladies opposed openly and escaped from the scene. It was a preliminary sign of the boycott of Ashudhinashak by rural society. Theses incidences were enough for Swati and the entire team of Vatsalya Foundation to gear up for the long battle against the conservative mindset of society.

Fig. 3. Ashudhinashak value chain



Breaking the silence:

- Provide information about the incinerator through folklore, specifically designed booklet and involving influential persons from society.
- Use of specifically designed game kit to clearly explain the menstruation cycle during menarche.

Informed product choice:

- Women and girls are educated about the ill effect of disposing of menstruation waste in an open area.
- Various disposition alternatives were explained and the pros and cons of different alternatives including incinerators were discussed.

Employment Generation:

- Provided training to potters' families to produce terracotta incinerators.
- Involving shaktimandals and other women self-help groups in promoting Ashudhinashak

Going market: Looking at her wife in grief, Mr. Bedekar offered her a piece of expert advice. He told her to understand consumer perception and hit them at the right place at the right time. Firm on her decision, Swati decided and approached the women at large in social sabha (gatherings) to subside the fear and shame associated with menstrual hygiene practices. From March 2013 onwards Swati and her team started approaching schools where young girls can be reached easily. She knew that influencing a young mind was easier than that of changing a stubborn mentality. If society has to change and witness long term permanent impact, then the practices of using the menstrual pad and proper disposition should be inculcated at menarche itself. The challenge was to carve a niche for a socially innovative product. With these thoughts, she started her arduous effort to connect with schools in the vicinity and convinced the school authorities to install Ashudhinashak in the school toilets to ensure safe and environment-friendly menstrual waste disposition

By mid of 2014 Ashudhinashak became a friendly name for schools. Now it was the appropriate time for her to interact and influence the major chunk of rural women population. She took a systematic approach to break the wall of the silence of these naive ladies. There was no better way to take these ladies into confidence than to talk to them in person. She started approaching the opinion leaders of the village. When she met Radha, who was a popular name in the local community, she faced the awkward silence. Radha was not at all interested in talking and left her sitting alone in the corridor to avoid the interaction. After approaching Radha repeatedly, she was forced to break her silence on the matter. Radha told that she and many ladies in the vicinity are not very well-off and using sanitary napkin itself is an expensive affair for many in the village, leave the usage of disposition mechanism. Swati continued to dig deeper and realized that these ladies though can and want to improve their social condition, are lacking confidence in putting their views in front of family members. They had already accepted their prevailing status as their destiny.

During 2014 to 2018 many improvements in the product were introduced in line with consumer insights and various strategies were adopted by Vatsalya Foundation to create a conducive environment for the acceptance of a socially innovative product i.e. Ashudhinashak in rural society.

– Apart from explaining the importance of usage of an incinerator to ladies, she started approaching the head of the family (often male in the traditional society). Those days it was not common for a lady to talk with men in rural areas and:

– particularly discussing menstrual hygiene and disposition practices was beyond;

– expectation. Swati convinced Radha to allow her to talk with her husband so that she can explain to him about the product, its usage, and its importance to the women, to the society and the environment. This will enable Swati to understand men's perspective in this regard.

– Garba the folk dance of Gujarat is not only popular in Gujarat but all parts of the country. Swati took the popularity of these songs to her advantage; she approached the local troops and religious groups of the area and got the special lyrics written in the local language on the rhythm of filmy songs and folk songs. These songs narrate the importance of maintaining hygiene during menstruation. The folk songs got instant acceptability in the local community

– The intervention of health experts in promoting.

– Ashudhinashak helped in gaining customer's confidence. Approaching local health centres proved to be a vital step in promoting Ashudhinashak among prospective customers.

– Hygiene bucket- the challenge, which was Vatsalya.

Foundation's Sakhi's (Sanitary pads) promotional campaign on social media, got warm welcome not only in Gujarat but also in the state of Maharashtra and Karnataka. Further, the program extended to safe menstrual waste disposition practices resulting in the visibility of Ashudhinashak.

– Vatsalya foundation always uses to believe in getting direct customer feedback and respond accordingly. The different sizes and versions of Ashudhinashak was the outcome of such responses.

– Involving local potters in manufacturing Ashudhinashak improved their annual income and they became the brand ambassador. This also ensures the timely supply of products as per requirement.

– The use of indigenous raw material resulted in rock bottom cost of Ashudhinashak incinerators and thus allowing the Vatsalya Foundation to keep the price of the product far lower than its competitors. By 2019 Ashudhinashak became a house hold name and was made available in 19 different states of India. Vatsalya

- foundation successfully established its production unit in North Eastern states.
- Avenues for Further Research: Marketers need to clearly understand that offering an urban product to rural consumers cannot fetch them the desired results. Understanding product specific behaviour of rural consumer is the need of time. One size fit all approach is no longer applicable. Thus each product needs to conduct its own piece of research to be acceptable in the real market situation. Moreover the case talks from consumer angle only. There lies a scope for seeing the product from other lens like supply chain efficiencies in rural areas, resource availability and comfort level of rural consumers with the changing technology. The research can be extended in the areas of safe disposition of sanitary waste in different cultural and religious settings to understand the problem faced by rural women on religious grounds.

The Conclusions. The literature on the topic has visualized the process of shaping social innovation from various angles. There exists a need for academicians to come to a common platform to develop the concept of social innovation. It is really very difficult to have a common concept of social innovation because of inbuilt complexity in the topic (Elledge, Muralidharan, Parker, Ravndal, Siddiqui, Anju, 2018). This case attempts to view social innovation from the lens of sustainability. Present study makes a considerable contribution to the existing body of knowledge by explaining the role of design activism which brings change in mindset of the community. The socio-cultural hindrances which frequently come in the way of design innovation are studied deeply to identify its inconsistencies. The case is providing a platform where consumers can comfortably talk about taboo products.

Any social innovation to be successful requires a viable business model which eventually results in environmental sustainability (Vasanthi, & Dash, 2019, pp. 101–104.). Social innovators needs to adopt reflexive processes of learning so that they can be adaptive to social alterations introduced from time to time (Chapman, 2007, p. 177). Akimenko defines ”*Design activism as a course of actions aimed at revealing injustice and wrongdoing (on behalf of a neglected party) and framing a better alternative, through unconventional methods of participation, expression and with inclusion of design criteria, such as aesthetics, function, usability and others*“ (Akimenko, 2014, p. 57). Design activism of social fronts and more specifically in case of subjects related to women intimacy demands deep understanding of the pattern of intersection of cultural beliefs, materialistic constraints and pragmatic solutions (Bemelmans-Videc, Rist, Vedung, Carrots, Sticks & Sermons, 2003).

Keeping in view the effect of socio cultural change they need to design a solution to offer a better menstruation experience to the target group through safe

and healthy practices (Bemelmans-Videc, Rist, Vedung, Carrots, Sticks & Sermons, 2003). The social innovations also faces various concerns at personal level such as personal intentions, level of self motivation, level of compatibility with stakeholders, and personal competency (Chapman, 2007, p. 177). Once the social innovation gets established, the social innovators can develop their own success strategies. They can decide the level of autonomy to be practiced, extent of engagement with other organizations and other bodies involved (Chapman, 2007, p. 177). Though many design activism projects fits into the already established framework, but each project demands its own structure and level of flexibility to cater the beneficiaries [23]. Same was the case with Ashudhinashak which took its own stream to fit into the socio cultural requirements of the land. Markussen also pointed out the importance of aesthetic value in the success of activists designs (Swilling, 2016, p. 21). Ashudhinashak was designed to fit into the aesthetics of the rural settings to make it acceptable in the orthodox culture and bring required social change by offering a new experience to participants.

Social innovation has the capacity to transform society through innovative solutions. It is crucial to have involvement of diversified parties with the common goal of bringing positive impact on the society. Ashudhinashak is a successful example where society had accepted the product which makes the life easier for women and at the same time solves burgeoning environmental problem. Our conclusions support the line of argumentation in the literature by which Social Innovation reveals a strong potential to lead change in system(s), but it only creates transformation when it scales-up and it has durability and transformative impact.

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