The world’s first water filter that costs pennies, not dollars:
The next $1B staple

Paper for pennies, water for billions
Folia Water Filters

- **Antimicrobial paper water purifier**
- **Safe germ-free water**
- **20 Taka (20¢) for 20 Liters**

Folia Water enables parents to gain control over their family’s health. With Folia Water Filters, mothers have agency over their access to safe germ-free water, thriving in their role as health officers of the family for a better future.

**Kills 99.9999% of germs**

**Applicable to varying water sources:**

Tap water, tubewells, and rivers, lakes, and ponds
Not applicable to sea water

Passes WHO criteria for antimicrobial effectiveness, with filter performance based on professional lab testing:

- **Removal %**
  - 99.9999% for bacteria
  - 99.9% for viruses
  - 99.99% for protozoans
  - 99.8% for iron

- **Flow rate:** 3-5 L/H
- **Removes dirt:** consumers will see clear water
- **Contaminants removed:**
  - Bacteria, Viruses, Protozoa, Dirt, Worms, etc.

- **Contaminants not removed:** Lead, Chlorine, Arsenic, Radioactive

- **Technology:** PCT/WIPO and US Patent Pending
Paper for pennies, water for billions.

To ensure and enrich the quality of life of working class consumers in emerging markets by offering the first high quality and affordable water filter.

Through materials innovation, smart marketing, and strategic partnerships at the local and international level, we aspire to become the next $1 billion health staple in mass market retail stores around the world, alongside soaps, snacks, and SIM cards.

ABOUT FOLIA WATER

‘Folia’ is Latin for leaves or paper leaves. Paper is a simple, renewable, and affordable material. However it is also a complex manufactured polymer composed of cellulose that can be manufactured into a physical filter with controlled pore size at industrial scale. ‘Folia Water’ simply means Leaves Water, or Paper Water.

Folia will create, define, and dominate a new $1B+ category: FMCG water filters.

MISSION

Universal access to safe drinking water by bridging materials innovation to mass market consumer goods.

Universal access to safe drinking water can only be achieved by enabling working class consumers to have agency over their own access to safe water. Folia Water will show how materials innovation connected to the existing tools of mass market consumer good businesses can achieve this Sustainable Development Goal.

VISION

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BUSINESS CASE

As a materials firm we leverage an existing retail distribution, marketing, and sales network to reach millions of households per country targeted.

Distribution through consumer good corporates

Brand: RTB
FMCG reach 100K stores 10M households
Low-income populations pay anywhere from 30% to 10 times more in absolute terms than the wealthy for water. 2.1 billion people drink fecally-contaminated water, with 50% of hospitalization in developing countries due to waterborne diseases.

THE PROBLEM

3 billion working class consumers in households earning $2-10/day

OPPORTUNITY

These 3 billion working consumers present a huge market opportunity, spending $5T on groceries collectively every year.

MARKET SIZE & COMPETITION

The working poor spend $20B annually on household water.

Spend on bottled water for middle and upper classes:
$58B in 2015 in emerging markets, growing to $203B in 2030.

While too expensive for working poor consumers, Danone and Nestle’s marketing dollars have raised awareness of the importance of safe drinking water.
Durable good appliances target mid/high socioeconomic status. We are complimentary as the lowest rung on a water purification product ladder.

<table>
<thead>
<tr>
<th>Consumer segment</th>
<th>Type</th>
<th>Brands</th>
<th>Price</th>
<th>Capacity</th>
<th>$ per liter</th>
<th>Bacteria</th>
<th>Virus</th>
<th>Protozoa</th>
<th>Flow (L/hr)</th>
<th>Electricity</th>
<th>Lifespan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wealthy</td>
<td>Reverse Osmosis (countertop)</td>
<td>Eureka Forbes Aquaguard, Kent, Unilever Pureit</td>
<td>$900</td>
<td>10,000L</td>
<td>$0.06</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>15</td>
<td>Yes</td>
<td>2 yrs</td>
</tr>
<tr>
<td></td>
<td>Reverse Osmosis (undercounter)</td>
<td>Unbranded, various</td>
<td>$700</td>
<td>10,000L</td>
<td>$0.08</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>15</td>
<td>Yes</td>
<td>2 yrs</td>
</tr>
<tr>
<td></td>
<td>Ultrafiltration, UV</td>
<td>Waterlogic Hybrid, Edge Purifier</td>
<td>$800</td>
<td>5,000L</td>
<td>$0.06</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>N/A</td>
<td>Yes</td>
<td>2 yrs</td>
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<tr>
<td>Middle class</td>
<td>Gravity appliances (chemical disinfection)</td>
<td>Eureka Forbes Aquaguard, Unilever Pureit</td>
<td>$15-40</td>
<td>1,000L</td>
<td>$0.10-0.08</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>5-8</td>
<td>Yes</td>
<td>6 months</td>
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<tr>
<td></td>
<td>Branded 20L bottled water</td>
<td>Nestle, Danone</td>
<td>$1-2</td>
<td>20L</td>
<td>$0.05-0.1</td>
<td>Clean</td>
<td>N/A</td>
<td>No</td>
<td>2-3 days</td>
<td></td>
<td></td>
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<tr>
<td>Working class</td>
<td>Nano-silver paper</td>
<td>Fosta Water Filters</td>
<td>$9-20</td>
<td>20L</td>
<td>$0.06</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>3-5</td>
<td>No</td>
<td>2-3 days</td>
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<tr>
<td></td>
<td>Refined bottle water (unbranded)</td>
<td>Local purification stores or delivery</td>
<td>$0.40-0.50</td>
<td>20L</td>
<td>$0.06-0.08</td>
<td>Contaminated</td>
<td>N/A</td>
<td>No</td>
<td>2-3 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water kiosks</td>
<td>WaterHealth, Disit, various</td>
<td>Subsidized</td>
<td>20L</td>
<td>Subsidized</td>
<td>Clean</td>
<td>N/A</td>
<td>No</td>
<td>2-3 days</td>
<td></td>
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<tr>
<td></td>
<td>Ceramic</td>
<td>EcoFiltre, Hydrogeos, Narasa</td>
<td>$15-25</td>
<td>2,000L</td>
<td>$0.05-0.05</td>
<td>3-4</td>
<td>1</td>
<td>4</td>
<td>1-3</td>
<td>No</td>
<td>1-2 yrs</td>
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<tr>
<td>Humanitarian</td>
<td>Ozone</td>
<td>Aquafina, biocheck</td>
<td>$0.05</td>
<td>50L</td>
<td>$0.17</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>N/A</td>
<td>No</td>
<td>1 time</td>
</tr>
<tr>
<td></td>
<td>Flocculation + chlorine</td>
<td>P&amp;G Purifier of Water</td>
<td>$1.67</td>
<td>10L</td>
<td>$0.17</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>N/A</td>
<td>No</td>
<td>1 time</td>
</tr>
<tr>
<td></td>
<td>Ultrafiltration</td>
<td>LifeStraw, Community, various</td>
<td>$100-200</td>
<td>30,000L</td>
<td>$0.03</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>2.5</td>
<td>No</td>
<td>5 yrs</td>
</tr>
</tbody>
</table>
FOLIA WATER FUNNEL DESIGN

20 TAKA FOR 20 LITERS

FLOW RATE: 3-5 L/H

MARKET: BANGLADESH

Durable filter housing: Razor-razor blade pricing model, funnel retails for 20 Taka (20¢) included with the first purchase

User guide
Folia Water Filters kill germs in water that cause illness

TECHNOLOGY

APPLICATIONS & PERFORMANCE

Silver nanoparticle infused paper water filter

- After filtration, the silver level in the drinking water is under 100 ppb, which meets WHO guidelines

Latrines close to wells lead to contaminated water

Folia Water Filters kill germs in water that cause illness
### Contaminants Removed by Folia Water Filters

**Biological Contaminants**
- Target market: Base of the pyramid consumers in emerging countries
- Common disease: Diarrhea
- Source of water: Tubewells and tap water contaminated with (dilute) sewage


**Chemical Contaminants**
- Target: Population in heavily industrialized countries/regions
- Common disease: Cancer, Cardiovascular, Iron.

![Heavy Metal]  ![Chlorine]  ![Radioactive]  ![Petroleum]  ![Arsenic]

### The largest cause of waterborne diseases worldwide

- Bacteria
- Protozoa
- Viruses
- Dirt
- Worms
- Iron

### Contaminants NOT Removed by Folia Water Filters

**Chemical Contaminants**
- Target: Population in heavily industrialized countries/regions
- Common disease: Cancer, Cardiovascular, Iron.

- Heavy Metal
- Chlorine
- Radioactive
- Petroleum
- Arsenic

### Mostly associated with heavily industrialized regions

**Necessary Precautions**

<table>
<thead>
<tr>
<th>Precautionary Disclaimer</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Storage</strong></td>
<td>Do not store the paper outdoors. Papers should be stored in a bag, cabinet or other indoor location like any other grocery store item</td>
</tr>
<tr>
<td><strong>Product Lifetime</strong></td>
<td>Exposure to sunlight over long periods of time may reduce the antimicrobial effectiveness of the silver in the paper</td>
</tr>
<tr>
<td><strong>Unusable Paper</strong></td>
<td>Customers may not remember how many liters or bottles of water they have used. Also, some customers may overuse the paper. The same problem is true for any water filter.</td>
</tr>
<tr>
<td></td>
<td>Turning white indicates that silver nanoparticles (i.e. antimicrobial agents) are being released</td>
</tr>
</tbody>
</table>
DESIGN FEATURES

The Folia Water Filter is an antimicrobial filter paper that contains silver nanoparticles that kill bacteria and viruses, while the paper’s pore size physically filters out dirt and larger parasites.

A single filter provides 20L of safe, germ-free water.

- Designed to fit existing consumer kitchen habits
- Folia Water’s funnel design works with any common household water container, such as soda and water bottles

RENEWABLE

- Paper is a natural, renewable, biodegradable material
- Folia sources paper from certified sustainable forests

SIMPLE

- No heat required
- No pump required
- No electricity required

LIGHT & PORTABLE

- Paper is lightweight and easy to carry

ADVANTAGES

- Minimizes consumer behavior change
- Minimizes cost to consumer
- Competitive advantage over all other water purifiers
• Folia Water is testing activation and sales channels, including to general retail stores and pharmacies

• Through this lean sales test, we are gathering information to create a systematized retail recipe prior to a city-scale product launch in 2020 and a national scale launch in 2021

• Unilever is sponsoring our sales pilot. We intend to fill in as the bottom rung in a water purification product ladder

BANGLADESH
Dhaka
Country population: 180m
Dhaka’s population: 19m

NEXT MARKETS: INDIA and INDONESIA

INDIA
Country population: 1339m

INDONESIA
Country population: 264m

LOOKING FOR PARTNERS

• In 2020 Folia Water will expand to Indonesia and India

• Folia Water is working at a strategic level to set up the basis for sales testing and a nation-wide launch
**CONSUMER PERSONA PROFILE**

Rokeya is a positive and cheerful person. Growing up in a poor household with 6 other siblings has taught her to appreciate the things she likes about her life and strive to change the things she doesn’t. She has two kids. She wants to give them the best education, care and nurture that she can. She wants them to have the childhood that her parents couldn't give her.

**Age:** 32

**Work:** Works as a Tailor in a village of Jessore

**Family:** husband, 2 children

**Location:** Jessore

**Character:** Aspirational and positive

- Friendly
- Intelligent
- Optimistic
- Persistent

**WATER HABITS:**

**Drinks:** Tubewell Water

**Laundry:** Pond Water

**Clean the house:** Tubewell Water

**FRUSTRATIONS:**

- She receives mixed messages about the safety of Tubewell water. She wishes she had a way to know for sure.
- All available alternatives to Tubewell water seem expensive and inaccessible.

**PERSONALITY:**

- Introvert - Extrovert
- Analytical - Creative
- Loyal - Fickle
- Passive - Active

**MOTIVATIONS:**

- Social/Community Causes ★★★★★
- Family ★★★★★
- Fear ★★★★★
- Health ★★★★

**USER TESTIMONIALS**

“If my husband does not buy this, I will write poetry to raise money so I can buy this myself”

- Consumer feedback, Bangladesh 2019

“I especially love this filter because my kids love the taste of water filtered through this.”

- Consumer feedback, Bangladesh 2019
HONORS AND AWARDS

BUSINESS NETWORKS

MEDIA COVERAGE

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