WATER IN INDIA: NEW VALUE CHAINS & OPPORTUNITIES

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Outline

• The story behind the opportunity
• Some Quick Facts & Trends
• Ground Realities
• Addressing the Pain Points
• Scientific Precision – Brief Introduction
  • Approach
  • Supply Chain
  • Products
  • Markets Currently Served
• Summary
The Story - Beginning
Water in India - Reality

• India Consumes 1.7 trillion lit of Water per day
• 83% is used for Agriculture, 10 % for industry
  4 % for Domestic use, 3% power sector
• Water is replenished by a fairly regular 4-5 months of monsoon
• Ground water resources are fairly developed but
  • consumed at a far greater rate than it is being replenished.
  • In essence it is mined
• Investment in Water Sector is at a dismal rate than what is needed mainly due to
  • Poor Vision & Planning
  • Involvement of Multiple Agencies
  • Poor Execution
Infrastructure for Domestic Water

- No city in India has 24 x 7 Piped Water
- 43.5% of 330 million homes have piped water
- 58% of homes have bathing facilities
- 47% of Homes have latrine facilities
- Only 30% of domestic waste water is treated and discharged – Extremely inadequate Sewage Treatment Infrastructure
- More than 600,000 children below the age of 5 yrs. die due to water related illnesses
  - Second largest cause of death for infants

Source: Indian Census Report 2011
Ground Reality

Water Theft

Extremely Poor Infrastructure

Water Supply Through Tankers
Growth & Investments in Water Sector

For domestic use & industrial use, per capita water consumption to grow at 250% over the next 12 years

Investments Estimated at US$ 3.6 Billion
About 9% Private in 2010

Government encouraging Public Private Partnership but not successful

Legislation is not effective because of Multiple Agencies involved

Water Supply & Sanitation are interrelated.
12 th 5 year plan has addressed the issue
Current Socio-economic Scenario in India

Reasonable technical skills but basic skills masons, plumbers electricians etc. getting scarce

Aspiration to have an office job

Growing and educated young Population
Exposed to the world through internet

Increasing income, willing to spend

Migration from Rural to Economic corridors

Great entrepreneurial drive

Young Population, highly aspirational
Wants a better life than their parents

Increasing cost of labor in urban & semi urban areas

Deep penetration of Mobile telephone
Opportunities to Make a Difference

- Address the MASSIVE gaps in the basic Economic & Social Development
  - Water & Sanitation
  - Power
  - Health Care

- Provide
  - A sustainable free market solution
  - Address the evolving needs & trends
  - Empower People – Provide a rational choice
  - Create meaningful jobs
How are the issues for water & sanitation addressed currently?

• Poorly engineered – at best rule of thumb solutions.
• Through ‘Unorganized’ sector
  • by providing make-shift ‘Jugaad’ solutions
• This leads to
  • High cost
  • Poor efficiencies
    • Wastage
    • Excess consumption
  • Undersized and leaky pipe networks
  • Contamination
  • Frequent maintenance
  • Indiscriminant water mining from Bore wells without replenishment!
Addressing the Pain Point

- Can drinkable water be provided in every tap at a comparable or lower than reasonable government charges?

- Can this be a sustainable initiative from economical and environmental point of view?

- Can the local stake holders be involved to create meaningful ecosystem providing skills & livelihoods?
Our Strategic Intent

• Provide
  • Drinkable water in every tap
  • With local participation
  • In a sustainable manner

Offer an alternative where consumer has a choice to use, replenish and control water without depending on the government
Where are the opportunities to meet the intent?

At every step of the Water Chain

Key is to

*Understand each step*

*Execute each step well*
Solutions through Services and Products

Scientific Precision Pvt. Ltd.

Data → Solutions

Information → Insight

Knowledge → Profiling

Services
Water & Food
- Testing & Analysis
- Mapping
- Consulting

Products
Water
- Automated Water Supply & Purification Systems
- Water Harvesting Products & Solutions
- Water Recycle Solutions
- Solar Energy Systems for Water Systems
How do we do it?

- Assess Needs
- Check Water Quality and Power availability
- Develop Water Budget & Consumption Profiles
- Provide Sustainable Solutions through appropriately designed products and systems
Strategy to Scale

- Provide Solutions *Through Products or Combination of Products*
- Develop Supply Chain *Which*
  - *Works Across Geographies*
  - *Requires Simple Training in*
    - *Customer Orientation*
    - *Multiple Skills viz. Electrician, Mechanical Assembly*
  - *Involves Low Cost Assembly and QA Stations*
- *Involve Local Talent and People*
  - *They are our best ambassadors*
  - *Create Local and Meaningful Jobs*
- *Be Nimble – Respond Fast*
Supply Chain

S P P L
Setting Values & Culture
Develop & Manage Processes
Training & Feedback

Field Services
Train Local Talent

Sales & Marketing
Focus on Decision Influencers
Local channels of other Service Providers

Assembly & QA
Customer satisfaction
Long Product Life

Manufacturing
Existing Capacity - Geographic
Young Engineers
Existing Univ. Systems
Process Intensification

Design
### Supply Chain Attributes

<table>
<thead>
<tr>
<th>Supply Chain</th>
<th>Source</th>
<th>Skills</th>
<th>Success factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>In-house</td>
<td>Science &amp; Engineering</td>
<td>Passion&lt;br&gt;Ability to work with hands and mind</td>
</tr>
<tr>
<td>Procurement &amp; Manf.</td>
<td>Outsourced</td>
<td>Fabrication&lt;br&gt;Metal Work&lt;br&gt;Basic Electronics &amp; Electrical</td>
<td>Eye for detail&lt;br&gt;Customer Orientation</td>
</tr>
<tr>
<td>Assembly &amp; QA</td>
<td>In-house</td>
<td>Aptitude for Technical Work&lt;br&gt;Eye for Detail</td>
<td>Source from Field Services&lt;br&gt;Customer Orientation</td>
</tr>
<tr>
<td>Marketing &amp; Sales</td>
<td>Mostly in-house</td>
<td>Young Multi disciplinary Communication Skills</td>
<td>Ability to clearly show the benefits of Our Products</td>
</tr>
<tr>
<td>Field Services</td>
<td>Outsourced</td>
<td>Technical Skills</td>
<td>Last Mile Ecosystem&lt;br&gt;Local Stake Holderes</td>
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</tbody>
</table>

### Seek Constant Feedback

Be nimble, move fast<br>Innovate Constantly – not just in design and products but more importantly in<br>- Customer Interaction & Communication<br>- Field Services & Product Delivery<br>- Understanding hidden needs and concerns
Product Profile

Sustainable Solutions

AquaWell
PowerStore
AquaHome
PowerSolar
AquaGarden
AquaSoft
AquaHarvest
AquaHome

A Fully Automated Water Purification & Supply Systems – Drinkable Water in Every Tap

• Ideal for 2 to 10 room homes and small resorts
• Fully Automated
• Low Power Consumptions
• Compact Foot Print & Robust Operations
• Easy Installation & Start up – Plug & Play
• Solar Power Back up Option
• No Overhead Tanks!
• Saves Time & Money!
AquaHome – 3000

- 3800 L/hr. (1000 GPH)
- 1 HP Power – Full Solar Energy Integration Possible
- Provides Water on Demand
- Provides Filtered & Drinkable Water
- Installation time – 30 min.
AquaSoft

- Water Softener for small and large volume
  - from few thousand liters to million liters per day
- Filters and Softens water
  - No more white spots or scales!
  - Great bathing experience with soft water!
- Environmentally Friendly
- Required because of Detoriating Ground Water Quality
AquaGarden

Automated Water supply system for irrigation
- Enough pressure for drip irrigation
- Provision for fertigation
- Low power consumption
  - Solar Power Operation possible
- Option of automated and intelligent watering schedules
- No overhead Tanks!
  - Cost & water savings
AquaRecycle

A Fully Automated Water Purification & Recycling System for car wash and Auto garages

- Fully Automated
- Removes grease, oil suspended solids and bacteria
- Recycles detergents and additives
- Low Power Consumptions
- Compact Foot Print & Robust Operations
- Easy Installation & Start up – Plug & Play
- Solar Power Back up Option
- No Overhead Tanks!
- Saves Time & Money!
PowerSolar

- Fully Integrated Solar PV based Electrical System
- Ideal for single phase motors and home applications
- Robust
- Compact
- Easy to install
- Low Maintenance
- Can be integrated with *AquaHome* & *AquaGarden*
Key Milestones

- Reduction in Power consumption
  - from 3 phase 5 HP motor to single phase 1 HP motor
- Reduction in Foot Print - Size Reduction
  - from 3 m x 4 m installation on a foundation to 1.2 m x 1.7 m Chassis
- Installation Time – 4 months to 0.5 hr.
  - Target 5 min.
- All weather module
  - Do away with Special Rooms
- Full integration with Solar Energy
Success Factors

• Practical down to earth approach
• Go to Gemba!
• Constantly Innovate
  • In all aspects
• Involve Local Stake Holders
  • Train and work with local talent
  • The last mile eco-system is your face with the customer
• Internalize learning and feedback across the supply chain
• Strong emphasis on systems, processes and quality assurance
  • No compromise on quality
• Ability to work with semi-organized sector and fragmented market
Businesses Served

• Semi – Urban Homes & Institutions –
  • $30-50 million Market growing at 18-22% per year

• Automobile Segment –
  • Recycle of Car Wash Water

• Hospitality Sector & Small Townships
  • Sectors being actively considered
Summary

• A massive supply-demand (S-D) gap exists in essential services and infrastructure in many segments in India. Some of these segments are.
  • Water & Sanitation
  • Power
  • Health Care

• Water & Sanitation are basic necessities for Social & Economic growth of a country. Its mismanagement can have a deep and irreversible impact on the health and development of individuals, communities and the country
• The challenge is to bridge S-D gap fast with
  • Sustainable solutions
  • Evolving a last mile eco-system
  • Partnering with local communities

• This is the new paradigm of supply chain and distribution for
  • Fragmented & unorganized sectors in India
  • It provides sustainable and affordable solutions across geographies
  • Creates meaningful choices
  • Empowers people with a choice
  • Provides a channel to quickly deliver appropriate technology for the problem at hand
Thank You!