

Blue Water Company



FSM and Wastewater Solutions for Urban India

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“Solve a Real Problem”

- 420 Million urban Indians--600Mn by 2030
- <20% wastewater is treated (40 Bn litres untreated)
- Dirtiest urban water bodies

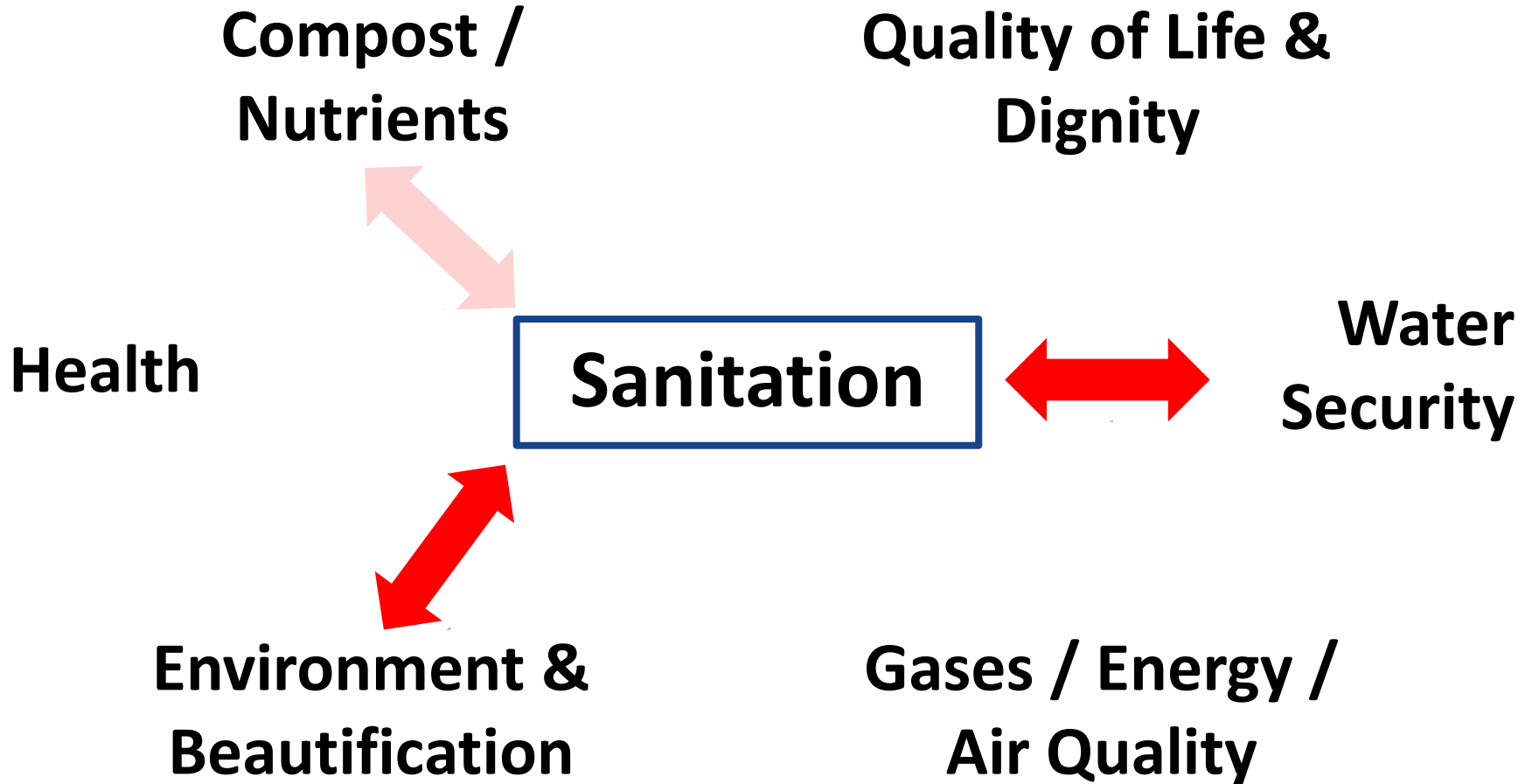
Sewage is top contaminant

- Water Crisis—worsening





“Solve a Worsening Problem”





Business Services

Town-Scale Solutions



Building-Scale Solutions



**Faecal Sludge
Management**

**Small-Scale
WW Treatment**

**Rainwater
Harvesting**





The Opportunity

Faecal Sludge Management

- 7,000 small towns—UGD not viable
- Larger towns: UGD < 100%
- Good solution for **part** of the problem

Wastewater Treatment

- 60% large STPs underperform
- Small STPs (30-800kld) easily allow 100% re-use
- Water is expensive—reduce need by 30-50%





Small-scale Sewage Treatment Plants



Small Sewage Treatment Plants (1/2)

- Design, Build **AND** Operate
- 30,000 – 1 million liters / day
- Apartments, Commercial, Malls, Industry, Hospitals, Hotels, Education campuses
- Prefer natural, low energy, green technologies
- Integrate organic waste treatment?



Small Sewage Treatment Plants (2/2)

- 100% water re-use—on-site or off-site
- Invest in CapEx—own the water (enforcement??)
- Service Fees + Water Revenue + Gas Revenue
- Right Technology → Great Returns (11-26%)

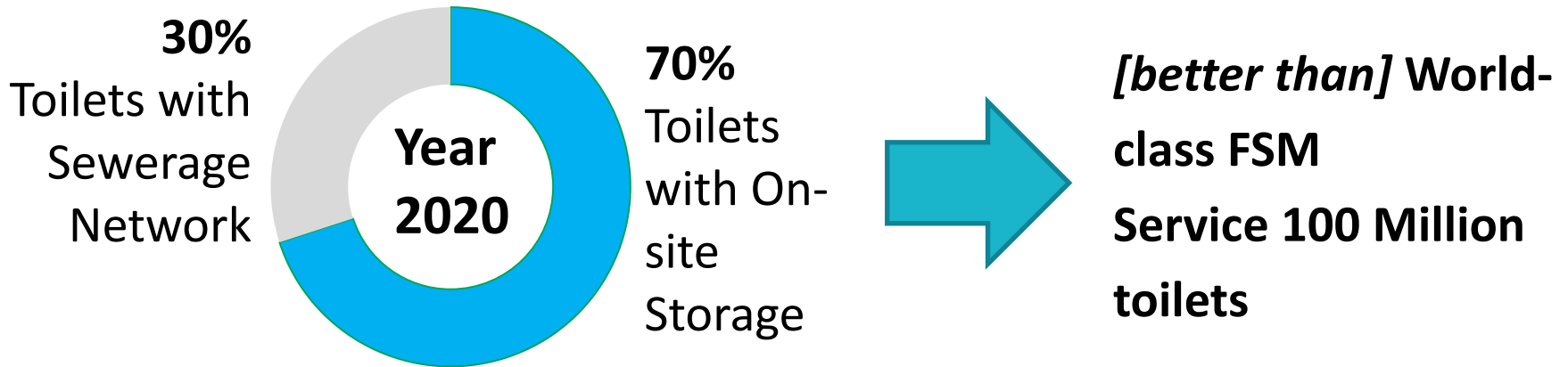


FSM Services

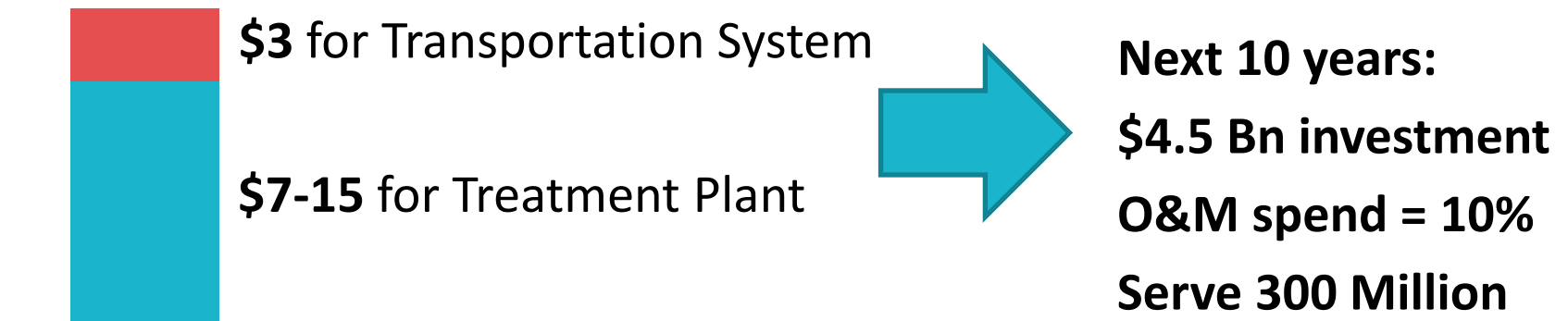




Investment Needed for FSM



Investment per Capita (CapEx)





Business Model

Desludge + Transport

- Scheduled / On-Call
- Quality Control
 - Training
 - Technology

FSTP

- O&M - 24x7
- Achieve Standards
- Sell sludge

Control Centre

- Customer Service
- Reporting to Govt.



P1 : Private De-sludging Services

- **Chandru** : Hi-Tech Sanitation Services
- 2 Trucks: 4-7 calls / day
- Profitable
- 50-50 JV: improve + expand
- Template for national expansion
- *Governance*
- *Systems*
- *Private FSTPs*





P2 : Scheduled De-sludging

- **Sinnar:** Tender floated [CEPT]
- 4,000 HH/year
- Buy and Operate Trucks
- Fixed Payment

- *Treatment??*
- *Collecting Payments*



P3 : Integrated FSM

- **Devanahalli** : Tender expected [CDD]
- FSTP + Trucked owned by ULB
- Services Contract (3-5 years)
- Fixed Payment

- *Set up Control Centre*
- *Ringfence Budget*

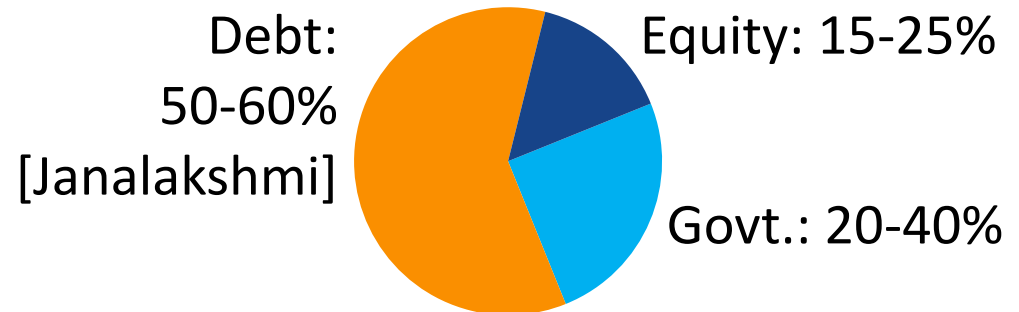


P4 : PPP

- **Hybrid Annuity Model (HAM)**

- Orissa ; Warangal [ASCI]

- CapEx: (Truck+FSTP)



- Annuity = OpEx + Debt Servicing

- Payment for success ; 12+ yrs

- *Equity*

- *No precedence ; Bankability of ULB*



Simple Technology

Desludge + Transport

1. GPS—monitor movement
2. Sensors—identify dumping
3. On-Board Video

FSTP

1. Robust, low O&M cost systems
2. Flexible Capacity
3. Co-treatment

Control Centre

1. GIS Maps—track de-sludging freq.
2. CRM records
3. MIS

Ambulance services, Cash Management...





Unit Economics

De-sludging and
Transport



Treatment Plant

CapEx

OpEx

Revenue

Profit

Integrated system can break-even (w/o tax)



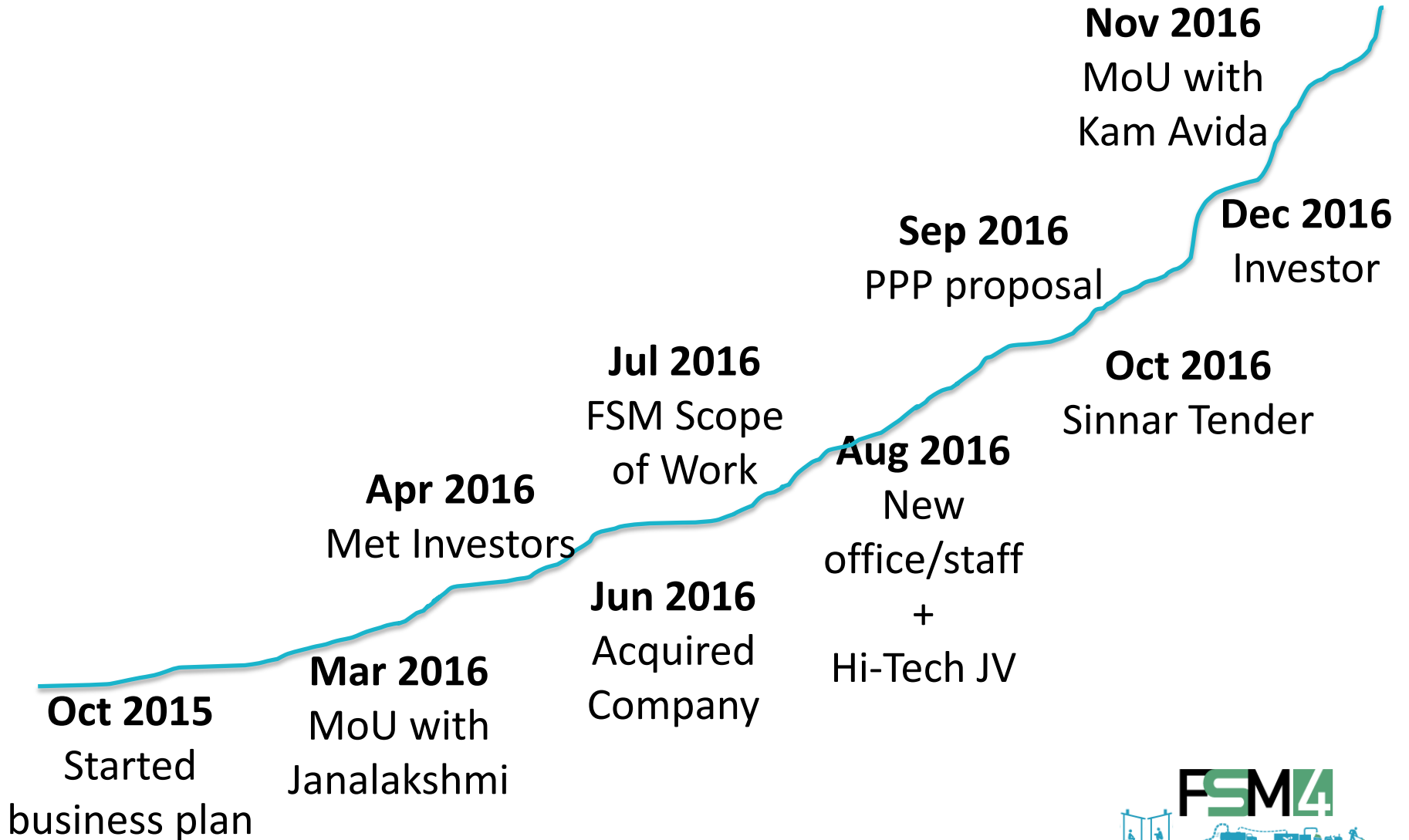


Structuring Service Delivery

	PPP	Services Contract	Private Services
1. Truck + FSTP (+ Control Centre)	★★★	★★★	★
2. Truck Only	★★★	★	★★
3. FSTP Only	★★	★★★	★



Timeline





Other Thoughts

- Cluster Development with State Govt ($r = 50-100\text{km}$)
- Trucks: License to operate (uniform Tech.)
- Single Contract: Truck + FSTP



Challenges

- New Sector and Business Model—Fundraising
- Pace of Projects
- ULB contracts are not bankable
- **The first, good contract—presedence?**

- *Regulations*
- *L1 Bidding / Local players*



Potential Opportunity

- 3,500 FSTPs
- FSM O&M = INR 3,000 Cr (\$450Mn) / year
- Small-scale STPs: 12Bn liters / day
- JV with existing players





Thank You



**HAPPINESS ISN'T
GETTING ALL YOU WANT.
IT'S ENJOYING ALL YOU HAVE.**





Status in India

CAPTURE >

STORAGE >

TRANSPORT >

TREATMENT >

REUSE





Objectives

1. 100% of sludge must reach a treatment facility
 2. Treat for safe water and sludge (FS \neq Sewage)
 3. Re-use
- Gap : Containment???



Wastewater Treatment : Options

USD 180-350



CapEx / Person

OpEx/Person/Yr

40-70



Centralized Sys.

Every city needs a combination of solutions

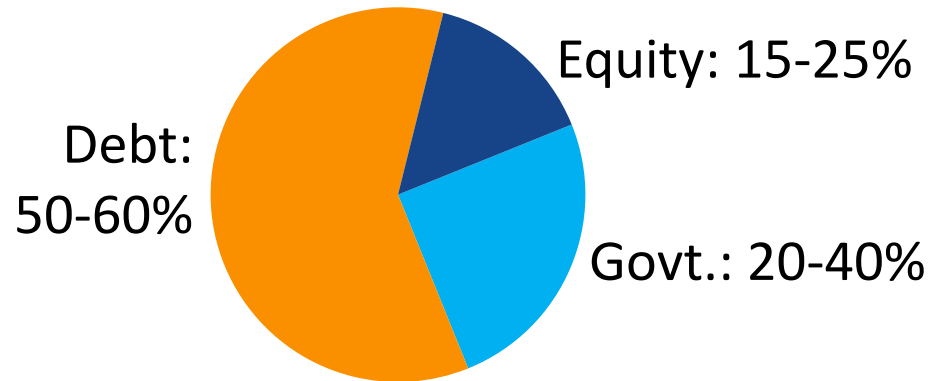




HAM BOT PPP

1. Hybrid Annuity Model; Build-Operate-Transfer

2. CapEx:



3. Annuity = OpEx + Debt Servicing

4. Payment only on Service Delivery

5. O&M Term: 12+ years



Current Status

- 2 trucks operational (Bangalore, JV)
- 4 potential Services Contracts
- 2 PPP discussions / MoU with Janalakshmi Bank
- \$100,000 equity investment secured

