



Business Model Development for Fecal Sludge Management

Insights from Bihar, India

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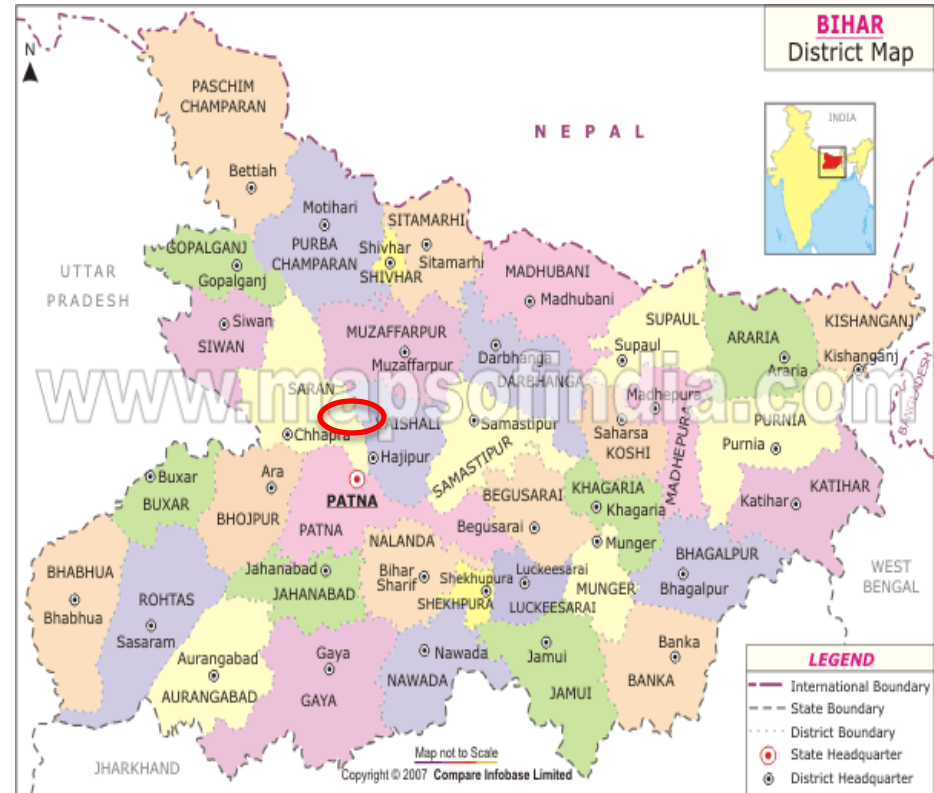
Population Services International



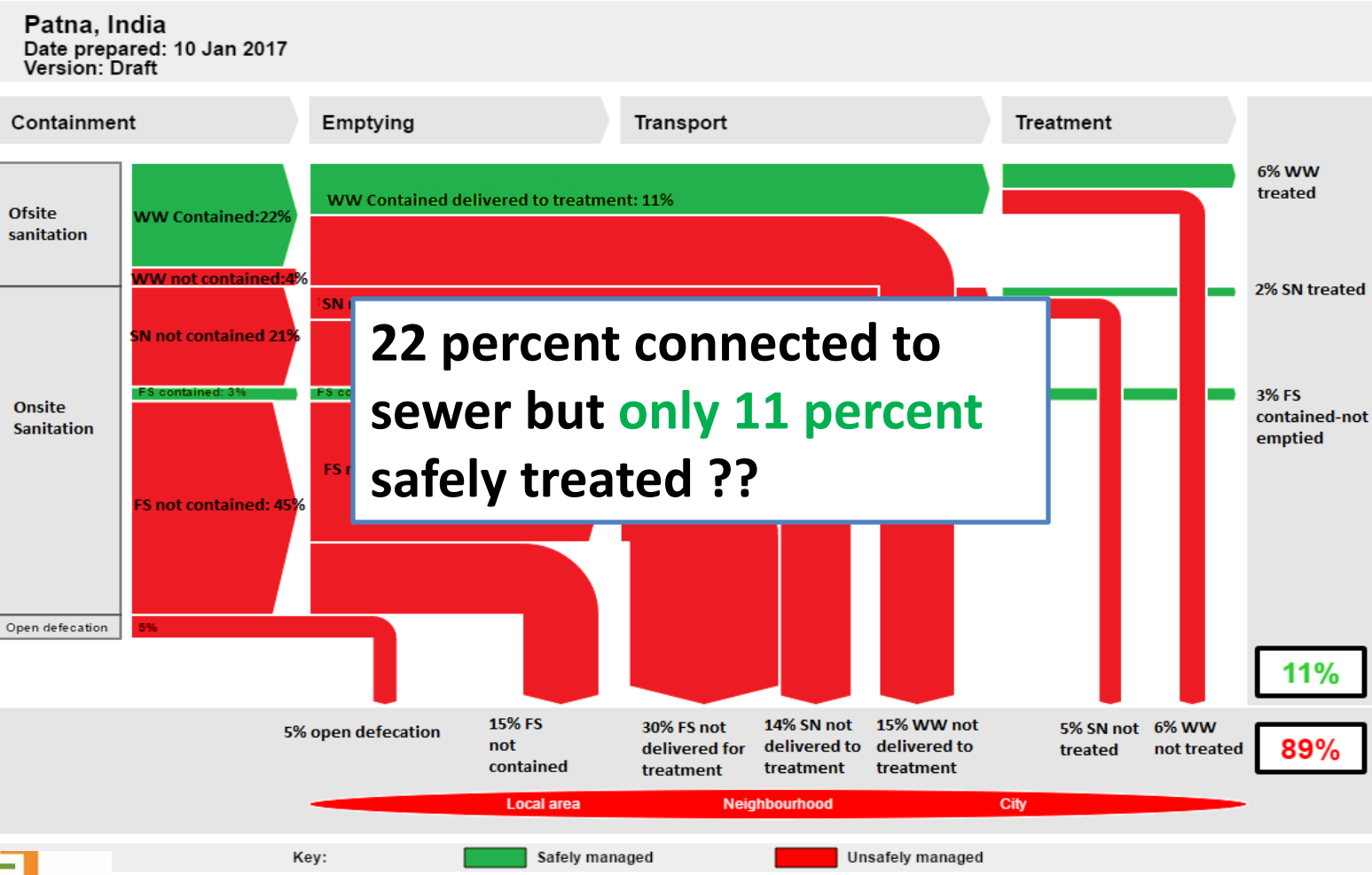
Problem Context

Patna City

- Around 3,00,000 households
- 21.5% are connected to sewer
- 65% of H/H have septic tanks (Cesspools, pits lined/unlined)
- Fecal sludge is disposed in to the open is about 0.25 to 0.4MLD

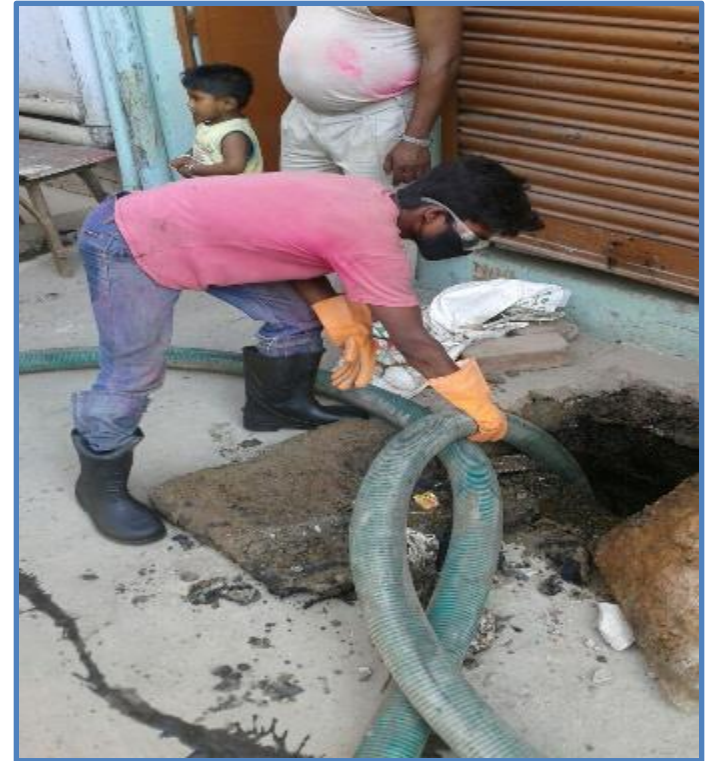


Shit Flow Diagram for Patna City (Draft)



Intervention- Incremental Build Model

- ❑ Facilitates linkages between a local sewage treatment plant, supply chain actors, and households
- ❑ Deploys a decentralized model to align capacities and incentives for FSM in Bihar.



BUSINESS MODEL 1: Portable Toilet Cabin Model

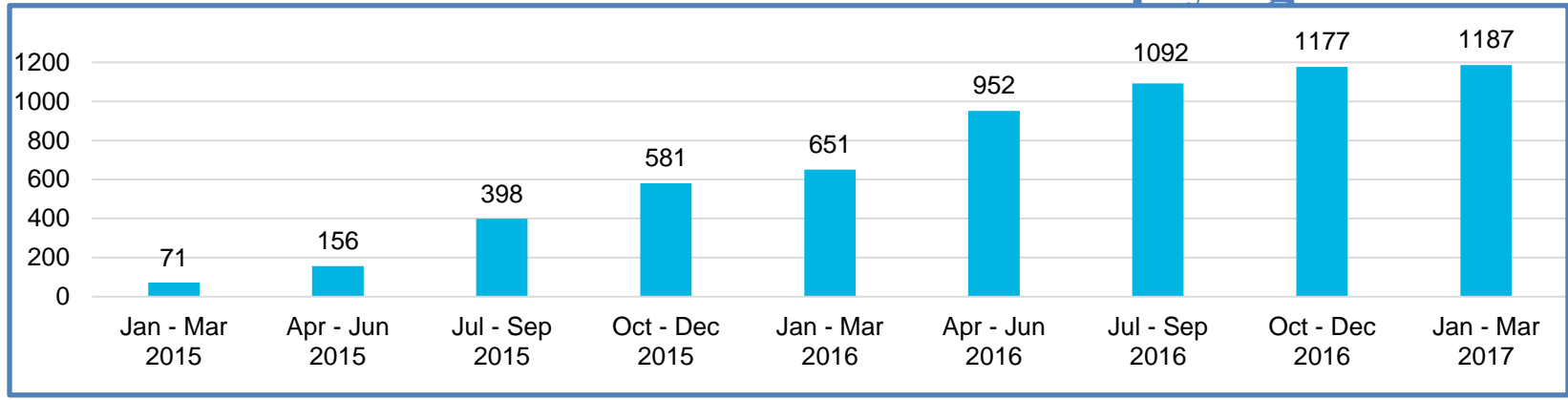
Proof of concept for possible BMs (PTC model)

- ❑ Installed a FSTP of capacity 15000 lits/day
- ❑ Engaged with 3-4 tanker operators for disposal and incentivised them
- ❑ Installed 17 PTC in peri-urban and 26 at urban centre
- ❑ Initiated revenue collection from the users

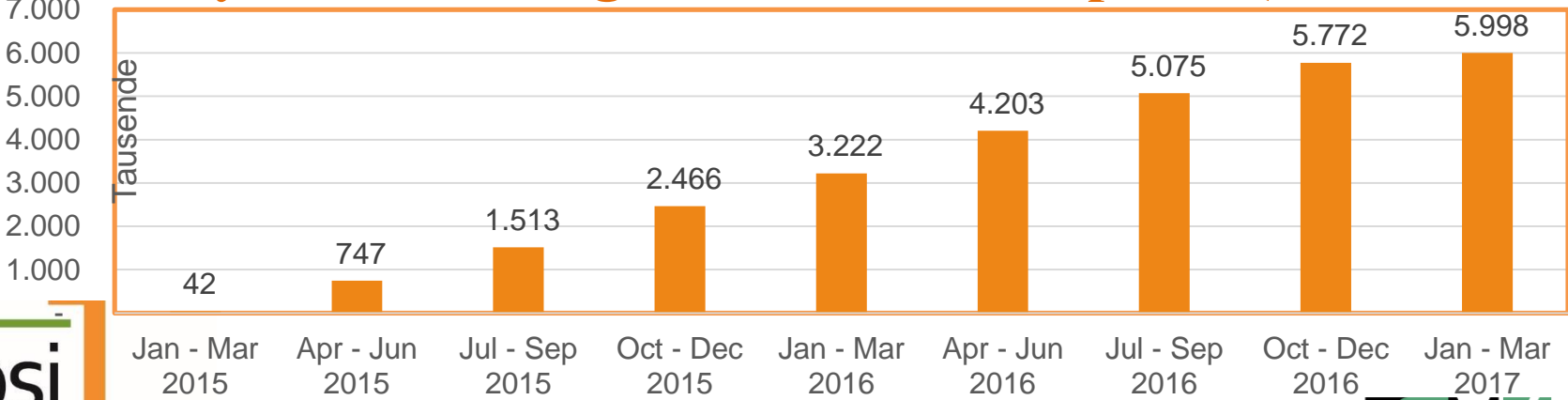


Story So far....

Number of Households Received Pit Emptying Services



Quantity of Fecal Sludge collected and disposed (Cumulative)



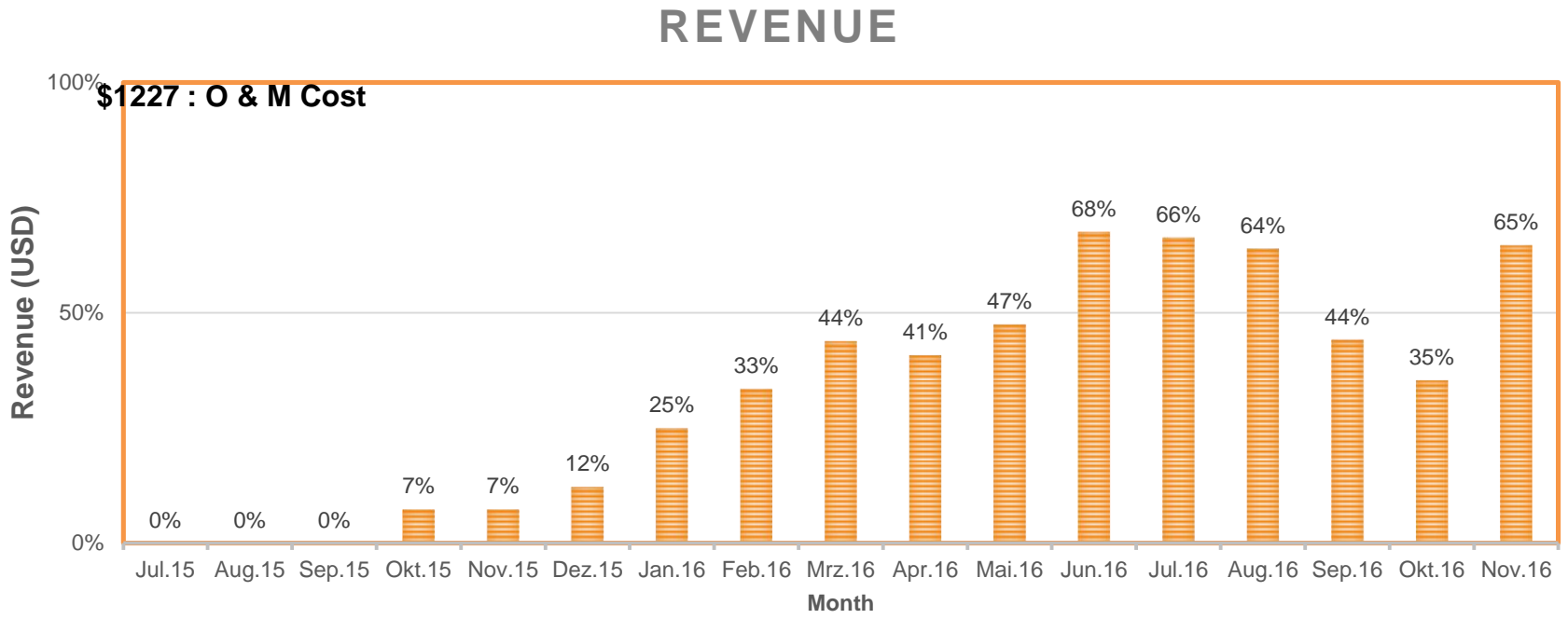
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Story So far....

Revenue Collection in the PTC model



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Next steps for increasing revenue

- Increase uptake of PTC cabins
- Use of PTC as bill boards
- Increase user charges

BUSINESS MODEL 2: Co Treatment Model

Patna

- 4 treatment plants with total 109 MLD capacity
- Utilized capacity around 69%
- 33 lifting stations
- Ready to accept FS- 6 locations
- 18 tanker operators with 50 tankers



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Barriers

1. Upstream

- Unregulated (Indistinct policy)
- Inertia at govt. level towards integrating the private sector

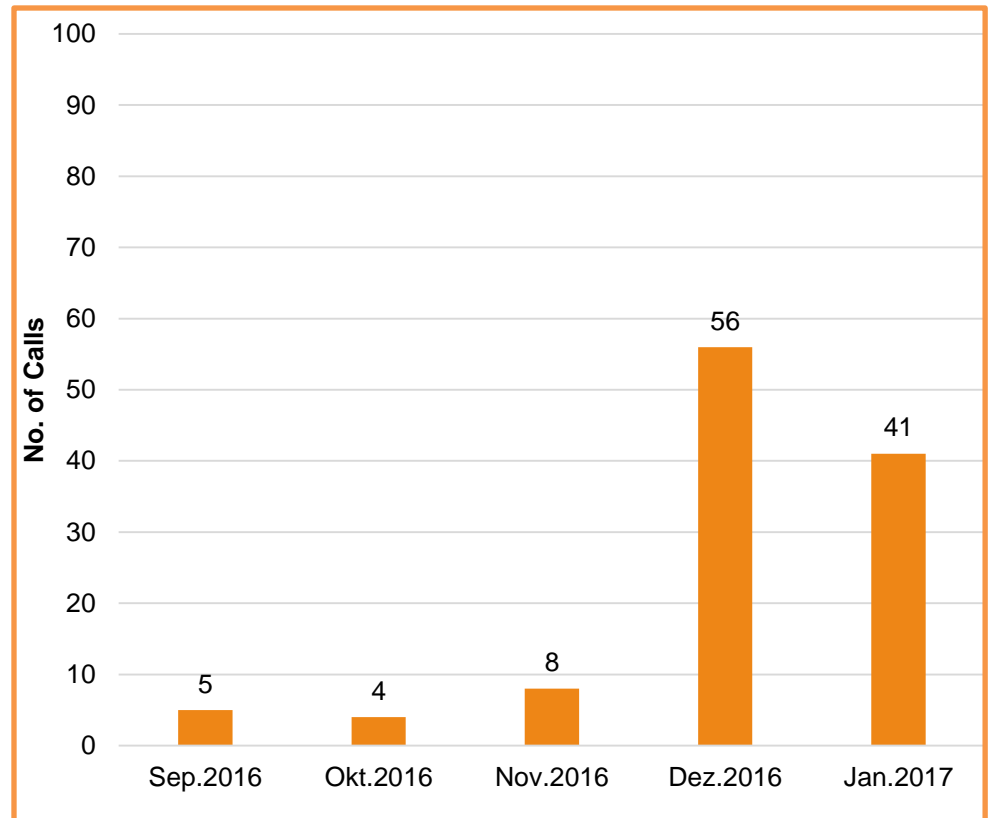
2. Downstream

- No disposal points
- Knowledge gap (quality, safety, finance etc)
- Inadequate communication channel (Customer-Service provider)
- Unrecognized and Unorganized Service provider

Story So far....

Call Centre (bridging service provider and the customer)

- A call center initiated with toll free Number **18001231044**
- Limited catchment
- Total calls received is 114
- Total pits cleaned through call center 26
- Sustainability- Transfer it to TO association or government



Call centre Business estimation	
No. of Households pit emptied per day in Patna City	50
Average No. of Loads per House	2
Total trips per Day	100
Rent per trip	Rs. 1500
Total Business Turnover per day in Septic Tank cleaning	Rs. 1,50,000
Total Business per month from Patna	Rs. 45,00,000
Expected Business from call centre	
We expect to generate additional 10% business through the call centre	5
No. of Loads of Business generated through Call centre from 5 Households per day	10
Value of Business Generated through call centre per day @ 1500	Rs. 15,000
Value of Business Generated through Call centre Per month @ 25 days working	Rs. 3,75,000
Assuming 25% of the existing business will be transferred to the Call centre	Rs.11,25,000
Total business from the Call Centre per month	Rs15,00,000
Recurring cost of call centre	Rs.33,000
Recurring cost as percentage of total business (INR 57per trip)	2.2%



Story So far....

Co treatment model

- Government agreed to provide access to the tanker operators in to the STP/lifting stations
- As a pilot to understand behaviour of STP one is opened for TO
- Around 60,000 lits of fecal sludge has been disposed



Preliminary Learnings

- **GOVERNMENT ENGAGEMENT:** Slow but willing government; monitoring, needs TA to undertake transactions to prevent rent seeking/market monopolising practices/price distortions
- **CAPEX:** Private sector less likely to bear the capital cost expenditure
- **PRIVATE SECTOR RESPONSE:** Needs to be convinced about the business proposition; currently in a dilemma (join hands for FSM or not?)
- **TANKER OPERATORS (TO):** Need to mainstream TOs a critical FSM value chain player



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