

# Jagruti : Suwendu Sekhar Mahapatra

## Electronics and Telecommunication to Solid Waste Management

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### Abstract

How an electronics and telecommunication engineer became an entrepreneur and managed the municipal solid waste (MSW) system of a smart city? MSW management is a labour intensive job which involves ridiculous work hours, and is subjected to immense pressures from citizens and many other stakeholders. The dimensions involved are varied and unique - managing illiterate or semi-literate workforce, scheduling different zones to ensure the completion of work in time, effective monitoring of the work, operating within the cost constraints, and managing the cumbersome bureaucratic process of the government. How many novice entrepreneurs would like to get into such a sector?

This case study presents the sequence of events, dynamics, and challenges of an entrepreneur in this sector. It also briefly discusses various aspects of managing MSW. The case study supporting resources are given to facilitate case discussion with the participants.

**Keywords :** Entrepreneurship, Municipal Solid Waste Management

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### Municipal Solid Waste Management : An Overview

Municipal solid waste (MSW) management is one of the major environmental problems in India. It is estimated that about 90% solid waste is disposed in landfills or open dumps. It is one of the basic services that every government provides to its citizen with varying levels of service, cost, and environmental impacts (Hoornweg & Bhada-Tata, 2012).

Inadequate manpower, financial resources, implements, and machinery are some of the shortcomings identified in the Indian scenario (Kumar, Bhattacharyya, Vaidya, Chakrabarti et al., 2009). Bhubaneswar as the capital of Odisha and a smart city has been growing rapidly over the years. There has been concern on the solid waste management aspects of this city. A research reports institutional weakness, shortage of human and financial resources, improper choice of technology, inadequate coverage, and lack of short and long term planning as the shortcomings (Mohanty, Mishra, & Beuria, 2014).

The role of solid waste management has increased manifold and gained importance after the Swachh Bharat Abhiyan was announced in 2014 ("SwachhBharat- Swachh Bharat Abhiyan a nation-wide campaign in India," n.d.). Bhubaneswar Municipal corporation also has the details of the processes on its website (Bhubaneswar Municipal Corporation, n.d.).

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## Methodology

Entrepreneurship literature lacks case study based research on small and medium enterprises (SMEs). Most of the case studies are based on long established entrepreneurs of large organisations. Such bias towards large successful organisations fails to give right perspectives to novice entrepreneurs. To address such a gap, more case study based researches are required. However, there are a few case studies which emphasize on sequential search for business ideas (Kar, 2015), experiential process and persistence (Kar, Pathak, & Panda, 2018), and efficacy (Subudhi, Kar, & Nayak, 2017) as some of the entrepreneurial proclivities. The case study method also discusses the context in which such efforts bear fruit or fail (Kar & Patra, 2017).

For this case study, the interview was conducted on May 28, 2018, 12.39 p.m. for one hour and fourteen minutes. The file type was MP3 and the size was 27.4 MB. The location of the interview was at Jagruti's office in Bhubaneswar. The transcript was shown to the interviewee and consent was obtained for publication. The photographs were collected subsequently.

## Early Life and Education

Suwendu is a native of Biranarasinghapur in Puri district but he was born in the village of his maternal uncle, Dhananjaypur, Kodala in Ganjam district. His childhood days and education was in Bhubaneswar. He has three sisters, two of them are elder to him. All his sisters are married. Both the elder sisters are in Bhubaneswar, and the younger sister is in Hyderabad.

He studied in a vernacular medium school where his father was a teacher. Suwendu was known as the son of 'Sashi Sir' ; it was an identity for him. Though his school life was like that of many others, he felt scared and shy, as if everybody was watching him. More people knew him than he knew. He used to walk 3 to 4 km to and from school along with his friends. During the recess, he enjoyed local savouries (*Alu Chop and Ghuguni*) with 25 paise that he used to bring with him. School life was a mix of discipline, fear, and enjoyment. He could not watch a movie throughout his school life. Eventually, when he went out for a movie after the 10th board examination (1985), he came out of the movie hall halfway through. He felt it was getting late!

He studied intermediate science in one of the best colleges (BJB College) and completed Diploma in Electronics & Telecommunication Engineering from the Institute of Electronics and Telecommunication Engineering (IETE), New Delhi. Figure 1 shows Suwendu with Prof. Brajaballav Kar.



Figure 1. Suwendu and Prof. Brajaballav Kar

## Career

After completing diploma in engineering, Suwendu got a job with Suyog Telematics in the year 1996. This company had bagged installation projects in entire Odisha and adjoining states to implement Multi Access Rural Radio (MARR). At that time there was no mobile network, and Government of India funded the project. In this system, there is a base station unit and a remote station unit. Base and remote station units are connected to pass any information

through this MARR. Suvendu used to install base station and other engineers used to install remote units. With the help of a small tower with radio frequency unit, 36 rural stations could communicate with a single base station. He continued this work for 4 years and visited all the villages of South Odisha. His home location in the job was Berhampur. Before Suvendu joined the company, Suyog was not able to get projects completed in South Odisha. The State Telecom department was also involved in completing the projects that caused loss of revenue and conflict. Suvendu met Deputy General Managers of Telecom Department and convinced him that this job was to be done by Suyog.

## **Misfortune and Confusion**

As bad luck would have it, Suvendu's father expired (December, 1998) in service as the headmaster of Dandamakundpur government high school. Family members proposed Suvendu, the only son, to apply for a teacher's job with the government on the basis of compassion. However, Suvendu did not have B.Ed., and further, he was not sure if he wanted to do this job. Though he could have joined as a clerk, he proposed his younger sister to take up the job, who was M.A. in Economics and had completed Postgraduate Diploma in Computer Application (PGDCA).

As luck would have it, rehabilitation scheme was banned at that point of time. Education department is huge and it gets many requests for rehabilitation. Possibly, they could not manage so many requests at that period. In the meantime, Suvendu's sister got married, and settled in Hyderabad. Even after marriage, she was interested in taking up teaching job with the government, but Suvendu dissuaded her, reasoning that the school job in Odisha may disturb her family life. Instead, he thought another deserving person should get the job. Suvendu knew people in the department and it could have worked out in his favour but he did not choose to pursue it.

Suvendu continued with his job after the death of his father, but the same year he also thought of doing something of his own. In retrospect he says, "From my childhood, I did not have an attraction or interest in a job even though I did not have a strong financial background, I am not very sure how, but from my childhood I wanted to have an industry." He further indicates, "during my +2 days, one of my friends (Smruti Ranjan Parida) and I had gone to district industries centre and enquired about how to build a biscuit factory. We wanted to understand the knowhow, capital requirement etc. but there was no known reason." Interestingly, the friend who had gone to District Industries Centre (DIC) with Suvendu, is the current secretary of Jagruti Welfare association that both of them built. Suvendu says, "From 6<sup>th</sup> class onwards he is with me, if I bought cycle, he used to ride and I used to sit. He is my partner since 2003. There has been no dispute, he respects my decisions and I think my decisions are impartial. I also depend upon him a lot."

In fact, Jagruti Welfare Organisation was registered as a society registered under Societies Registration Act 1860 in 1996 (<http://jagrutiodisha.com>). In the initial days, it was involved in health awareness camps and other minor social activities.

## **Entrepreneurship Intention**

Suvendu wanted to do something of his own. To take up a job in government was not exciting for him. He says, "I always thought if my boss is able to get so much out of my effort, why can't I do the same but I could not get into same telecom sector because I did not have enough resources."

By the time Suvendu quit his job, the project works had already started shrinking. The Managing Director of the company took franchisee of NIIT for different parts of Odisha and asked Suvendu to be the centre manager for about ten centres. Suvendu refused the reassignment as he was not a computer professional, and the role of centre manager was very limited. He sensed a lack of growth and decided to quit. The managing director was shocked, but agreed. It was around the year 2000 and by that time, Suvendu had managed some savings.

## **Self-Employment**

This was the time when internet cafe was in craze. He wanted to keep his younger sister engaged. Suvendu opened a cafe called CYBER VISON. That was his first investment of about 2 lakhs, which was mostly from his own savings.

The cafe had few computers. His sister managed it until her marriage. Suvendu used to go to the café only in the evening. The cafe kept growing and he added another internet cafe. During 2000, the revenue was around ₹ 25,000 per month from both the cafes.

There was another opportunity, where an organization called Computer Point had taken projects to open computer education centre for various colleges. This company offered Suvendu a franchise for 3 government colleges to open computer education centre. He grabbed the franchise opportunity in the name of SSS Infotech. One of the three partners of Suvendu knew the owner of Computer point. The colleges provided infrastructure and SSS Infotech engaged faculty for teaching.

## **Another Opportunity**

In the year 2003, Bhubaneswar Municipal Corporation (BMC) floated a tender requiring 20 tractors to be deployed for waste disposal. An old friend of Suvendu had earlier given a tractor directly to BMC on rent. There were other vendors supplying tractors as well. The BMC used to manage such tractors directly by paying rent to owners. One of the tractor owners acted as a leader, and was creating nuisance by holding strikes, creating media issues, and pressurising BMC to pay even without working. The BMC wanted to outsource all these activities and to put a stop to such nuisance. Suvendu's friend asked if they should bid for the tender and Suvendu readily agreed for the new opportunity. However, despite being unsure of the growth, they wanted to start and explore this sector and applied. A senior IAS officer was the administrator of BMC. During the tendering process, the IAS officer took the interview, and enquired Suvendu about his engineering background and his work experience and said he was apprehensive about Suvendu working with the BMC. However, Suvendu's confidence and their competitive rate got them the tender.

## **The Difficulty**

Suvendu says, “We faced hell lot of problems during the first phase. We did not have own vehicles and thus, had to hire. No specific individual had 20 tractors. Other people who used to give tractors earlier refused to cooperate thinking that we will fail and the tender will be withdrawn and they will continue as before.”

Suvendu thought he had to break the trend and decided to search for willing tractor owners around Bhubaneswar in a 40 km radius. They could manage four to five tractors.

Once they started, other suppliers also wanted to send their tractors, but asked Suvendu and team to pay six months advance. There was no money with them as they were just starting from zero. They had already paid ₹ 25,000 as EMD (Earnest Money Deposit). Tractor owners demanded ₹ 60,000 per owner. Suvendu told his friend Smruti Ranjan Parida that they should do something, so that these owners would come to them and pay advance for 6 months, then only their tractors would be used. With persistent efforts of the team, Suvendu could manage the first 15 vehicles. Subsequently, other tractor-owners came and requested their tractors to be used. Suvendu asked them to pay security deposit money for two months, and they paid!

The other issue was manpower. Sometimes tractors would not report, and BMC would reprimand. With time, things fell into place and became manageable. For two years, the work was to provide tractors to the BMC.

## **Privatisation**

In the year 2005, BMC wanted to privatise ten wards for municipal waste collection, transportation and disposal of garbage. Jagruti got the tender for five wards out of ten and door to door garbage collection started in 2005. As of now, Jagruti is responsible for two out of four areas allocated in Bhubaneswar. The other two are being done by RAMKY and PMR (Pravakar, Manoj, Rajasekhar) group. PMR is a consortium by individual contractors who got into this activity during the tendering process in the year 2013. Individual contractors are not allowed to bid and thus, the consortium. There are many players outside Odisha compared to those from Odisha. Jagruti has different high-end equipments such as compactors, dumper placers, excavators, auto tippers and about 1200 people on the roll. Ramky Enviro Engineers

Limited is from Hyderabad and works in 20 to 25 states on MSW. Large organisations have their own challenges with respect to supervision, monitorings, and execution.

Jagruti knows the challenges of close supervision required for this kind of job. Emergency works cannot be taken up (e.g. cleaning debris after natural calamity). The need for closer supervision and ensuring quality has forced Jagruti to concentrate its effort in adjacent towns of Bhubaneswar, Puri, and Jajpur.

## Regular Operations for MSW

The operation starts early in the morning at 5.15 a.m. when sanitation workers reach the specified attendance point in each ward. There are specified stretches of lanes for each worker. Larger wards have more than one attendance point. Jagruti has around 28 attendance points for 28 allocated wards. The work is finalized such that the workers are able to complete their work by 11.00 AM. Their work is for around 5–6 hours instead of 8 hours. Lane assignment, attendance point, and ward are based on a detailed map. Trolley pullers for garbage collection move from door to door, take the garbage, and hand over at the designated location. Lane sweeping, door-to-door collection, and drain cleaning are regular jobs. Drain cleaning is a periodic activity (usually three days in a week.) The de-siltation work involving mud and waste cleaning from the drains is done during April. Two most busy markets of Bhubaneswar are cleaned during the night. Suvendu went to Hyderabad to observe the process of night-cleaning activities. Cleaning during the night is better due to less disturbance, higher efficiency, and better supervision but it needs infrastructure facility, proper lighting, and security for women sweepers. Jagruti takes up cleaning during night in densely populated areas with adequate lighting and assured safety for women sweepers.

Garbage collected from wards is deposited at a temporary transfer station (TTS), 5 km away. It is carried through tractors and compactors, weighed in the weighbridge, and deposited. Subsequently, it is taken to the designated landfill site 10 km away (Bhuasuni Chandaka). The transportation from TTS to landfill is Jagruti's exclusive tender. It got that tender in 2010 and is continuing as on date. Jagruti has 40 HYVA trucks for this work. More than 100 trips are conducted in a typical day from TTS to landfill site.

The weight of the garbage is a measure of the operator's efficiency and payment, and it helps the operator to be oriented towards collection. Vehicle trip is not the correct measure, as the vehicle may be half-loaded. The weight document contains the vehicle number. Operators have to deposit the document for payment processing. Currently, there is only one weighbridge available. Ideally more are required. If the weighbridges are fewer, the queue length is more, waiting time is high, and the problem compounds in the rainy season.

The award of the tender is as per the lowest cost (L1). Cost control is the most important aspect of managing MSW. Cost calculation has to be accurate and perfect, otherwise one is likely to fail. It is also a labour intensive work. If the cost is quoted low, then the workers cannot be paid regularly. Jagruti pays labour dues by mid of each month, irrespective of payment by the BMC. A payment delay immediately causes labour strike. Jagruti has about 1200 workers on daily wage. After demonetisation, wages transfer is done through NEFT/RTGS.



**Figure 2. Meeting and Discussion with Delegates on Waste Management in 2018**



**Figure 3. Jagruti Mechanised Road Sweeping Machine**



**Fig. 4. Puri Sea Beach Cleaning Equipment**

Since absenteeism is high in a daily wage condition, backup plan becomes necessary. If the actual work is for 40 workers, 50 workers have to be requisitioned but, sometimes, extra labourers turn up, and they have to be deployed in some extra work such as conservancy line cleaning (cleaning work for bush cutting between two rows of quarters) etc. Government health officers monitor the activity and finally measure the weight of the garbage collected.

The costing for tender is a delicate balancing work. One has to estimate labour expenses, transportation, and the necessary cushions. Usually, the organization floating the tender prepares an internal estimate of the cost and at times they also publish the estimate. Figure 2 shows meeting and discussion with delegates on solid waste management 2018. Figure 3 shows Jagruti mechanised road sweeping machine. Figure 4 shows Puri sea beach cleaning equipment.

## **Awards and Recognitions**

Jagruti Welfare Organization (JWO) has won many awards, recognition and accolades over the years for its impeccable work.

↳ In the year 2005, the JWO was selected as the best NGO for Cleaning and Sanitation by the Housing and Urban Development Department, Government of Odisha.

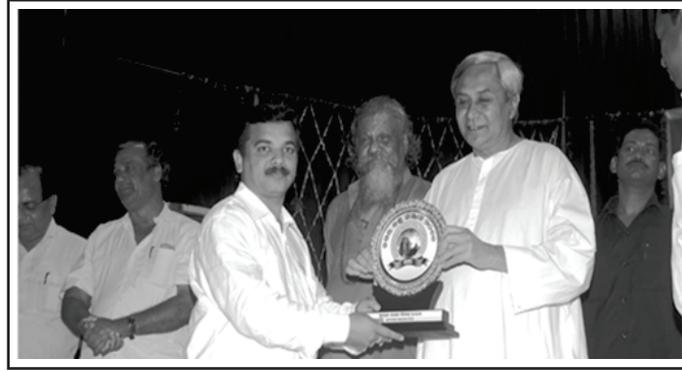
↳ In the year 2007, it was awarded “Bhubaneswar Gaurav Sanman” by Capital Day Foundation.

↳ In the year 2008, JWO was awarded “Pragati Sathi” by Bhubaneswar Municipal Corporation.

In the year 2011, JWO was awarded “Nagar Bandhu Sanman” by Honourable Chief Minister, Odisha Sri Naveen Patnaik. Figure 5 shows felicitation by CM of Odisha Mr. Naveen Patnaik in 2011.

## **Cuttack Tender**

The cost of waste disposal is ₹ 2480 per ton In Bhubaneswar, and has remained constant since June 2014. The BMC



**Fig. 5. Felicitation by Mr. Naveen Pattnaik,  
Chief Minister of Odisha in 2011**

does not take inflation into account. The tender for Cuttack city (Bhubaneswar and Cuttack are known as Twin Cities) was for similar work of garbage collection and disposal. Jagruti was eligible to participate. The garbage generation estimate for Cuttack is half that of Bhubaneswar but there was a perception that the tender was tailored for a specific outside agency. Jagruti attended the pre-bid meeting but did not participate in the tender process. The tender condition required an annual turnover of ₹ 30 crore. The garbage cost was fixed at ₹ 5785 per ton. Subsequently, a case was filed in the honourable High Court and it commented on the exorbitant cost and turnover conditions that were stifling. The tender was cancelled and a fresh tender was floated with turnover eligibility of ₹ 25 crore. Interestingly, an additional clause of no pending cases for the party was inserted. This clause made Jagruti ineligible for the tender. Suvendu defends the case and says, “Usually, the vehicle numbers are noted for bill submission and in one of the bills in place of "B" the letter "D" got typed, and the bill was passed though all parties (Health Office, BMC), and subsequently paid. An RTI found the vehicle number to be of a moped instead of a tractor. A vigilance case was initiated against the health officer, sanitary inspector, and three agencies working under them for falsification of document. The case is a composite case and not on Jagruti alone.” However, this case alone made Jagruti ineligible. He continues, “A simple and freak FIR can make the organisation ineligible to participate. The investigation takes a very long time. So, effectively it means the survival and livelihood of the people are at stake. Jagruti’s bid was rejected. It seemed that they did not want the work to be done at low cost. One can judge the intention. Such attitudes reduce the morale of the organization and against the good work done for a long time.” The case was also reported in different newspapers (Patnaik, 2018).

## **Plastic Pollution**

Suvendu is investigating the possibility of acquiring plastic waste shredding and granule-making machine. But the larger question is, who will buy? The government should take such granules. Only the government order can ensure that the waste is used for road construction. Currently, plastic garbage collected is transported to Kolkata and other places after segregation at TTS. Rag pickers are involved in these activities who sell it to traders, then wholesalers. For a viable plastic reuse plant, the volume of garbage has to be enough; otherwise, garbage has to be procured from garbage collectors at a higher cost, which reduces feasibility. Recycle points are needed in each ward and people can be given some incentives. Similarly, vegetable waste can be used to create compost for planting in pots.

Sometime back, the government had floated a tender for waste to energy project. Few parties had applied, but nothing happened. Suvendu said, “Our implementation is the weakest. Waste to compost should be the first step. The compost along with chemical fertilisers can be given to farmers. Farm houses can use such compost. There should be some serious interest otherwise it will not lead anywhere.”

## Work Principles

Team Jagruti works in a very systematic manner. Everyday, they meet regularly regarding various issues. The waste targets are given to supervisors. They compare the data on garbage density of each ward. The average tonnage of garbage for a specific location is evaluated. If there are deviations, the supervisors visit and find if there are any left out garbage.

All the employees have fixed salary. Suwendu says “Jagruti is a social organization and the promoters have never thought of building personal wealth out of it.”

Suwendu and team want to create employment. He maintains a cordial relationship with everybody. He also has built "Shashi Bhusan Memorial library" in the school he studied at in memory of his father. Suwendu regularly monitors the functioning and upkeep of the library and pays expenses of newspaper and magazines.

## Case Discussion Questions and Theoretical Discussions

Why did Suwendu decide to become an entrepreneur? How the choice of sector, or the particular opportunity was decided (passion/ efficacy/ expertise/ any other)? Does the choice indicate planning? How the situation and people known to him influenced different decisions?

There are several theories of entrepreneurial actions such as alertness to opportunity, social cognitive theory, individual-opportunity nexus, resource based theory, network theory etc. However, for this case, the case instructor can discuss the theory of effectuation by Sarasvathy (n.d.).

Suwendu declined the Centre Manager post, which had ten computer centres to manage citing lack of technical expertise. However, eventually he set up his own internet café and expanded. Do you think it is a contradiction of his intent? Wouldn't the earlier experience (which he didn't take) helped in his café business?

Few supporting resources are :

(1) What is effectuation? Presentation from the website [www.effectuation.org](http://www.effectuation.org) (Effectuation.Org, 2011)

(2) What makes entrepreneurs entrepreneurial ? (Sarasvathy, n.d.)

## Limitations

Often, it is difficult to portray the exact context to the reader. There is a need to maintain balance between the details of the case and interest of the audience. Secondly, the name of the places may sound unfamiliar to many and can be neglected in analysis.

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