Dabbawalla" system –a new innovative technique in logistic management

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Dabbawalla" system that operates in Mumbai is unique and incredible in the complexity of its task, simplicity of its operation, and surprisingly low error rates for a system of its size.[2] Every day, some *5,000* tiffinwallahs or packed-lunch boys set off across Bombay's far-flung and verdant outer suburbs. Parking their bicycles outside a succession of middle-class tower blocks, they collect up to *160,000* home-cooked lunches. An Indian entrepreneur, ***Mahadeo Havaji Bacche,*** invented the tiffin distribution business back in 1890, to meet the culinary needs of Bombay's rapidly expanding working population, both British and Indian. His idea caught on. By the 1950s and 1960s the tiffin-wallas were delivering some ***200,000*** dabbas or lunch-boxes a day. Forbes awarded the humble dabbawallas a *6 Sigma performance* rating, a term used in quality assurance if the percentage of correctness is *99.9999999* or more **.**

The article aims to focus on various aspects of the dabbawallas. Through this article we wish to come across lessons that can be learnt from the dabbawallas by Indian Corporate Houses. The *dabbawalla* never misses his address and is never absent." A view shared by nearly 1,75,000 satisfied customers.[6] When asked about the pricing, most of the customers (90% of them) unanimously agreed that the service is offered at fairly reasonable or economical prices

The dabbawallas conduct their operations using homespun logistics, yet with high technical precision, these closely-knit groups of dabbawallas make only one error in two months or in 16 million transactions. This gives them the ‘six-sigma’ distinction, which is an achievement by only a handful of companies worldwide. They achieve their efficiency with zero paperwork and with no utilization of technology which in itself is a marvel**!**

Professor **C. K. Prahalad** calls their operations, “a model of managerial and organizational simplicity”. No wonder that these dabbawallas are now acknowledged worldwide for their efficiency and conventional methods of operations.

This undoubtedly demonstrates that the Dabbawallas of Mumbai are doing an excellent job of managing a network of this magnitude and irrespective of heat, rain, pollution or traffic; they are still managing a high level of ***customer satisfaction.*** But in order to be honored in such a manner, one would have to be more than just a logistical success of clockwork efficiency. This article decodes the system and explores the possibility of using the same in different industry

Key words: Dabbawalla: Tiffin carrier

Introduction

They are humble, semi-literate and have been delivering lunch in containers in Mumbai, India, for about *100 years.* In service for more than 100 years, Mumbai's dabbawallas have been in the news for their precision and punctuality.[1] The "Dabbawalla" system that operates in Mumbai is unique and incredible in the complexity of its task, simplicity of its operation, and surprisingly low error rates for a system of its size.[2] Every day, some *5,000* tiffinwallahs or packed-lunch boys set off across Bombay's far-flung and verdant outer suburbs. Parking their bicycles outside a succession of middle-class tower blocks, they collect up to *160,000* home-cooked lunches.

An Indian entrepreneur, ***Mahadeo Havaji Bacche,*** invented the tiffin distribution business back in 1890, to meet the culinary needs of Bombay's rapidly expanding working population, both British and Indian. His idea caught on. By the 1950s and 1960s the tiffin-wallas were delivering some ***200,000*** dabbas or lunch-boxes a day. Lately, the figure has fallen away a bit with the advent of fast food joints and western-style restaurants. But there is no prospect of tiffin-walla unemployment. Bombay's conservative middle-classes remain sceptical of what is described as "outside" food. They prefer their chapatis cooked at home, preferably by mum.

A typical dabbawalla dresses in a ***"white shirt, pyjamas and trademark Nehru cap." Dabbas*** -- the containers in which tiffin (lunch) is carried -- are picked up from individual households each morning carried by bike to suburban railway stations.[3] There, they sort them out by destination on the platform. The lunches then travel southwards

into the centre of Bombay. Here, the dabbawallahs deliver them by 12.45pm[4] sharp to hungry office workers. The ritual is then played out in reverse: once the tiffins have been eaten, the same empty metal containers are escorted back to where they came from.

Forbes awarded the humble dabbawallas a *6 Sigma performance* rating, a term used in quality assurance if the percentage of correctness is *99.9999999* or more. In other words, for *six million tiffins delivered only one fails to arrive.* This error rate means in effect that a tiffin goes astray only once every two months. It is a rare day indeed when a customer's deep-fried rotis fail to turn up. The sigma rating was the same as that given to the top blue-chip company Motorola - not bad considering that most dabbawallahs are illiterate. However with the changes in Indian eating habits like fast food joints, the number of tiffins delivered are decreasing from its peak, and therefore there is a need for these 'humble souls' to buckle-up and capitalize on their affinity with their customers to keep up with the times.

Amazingly, almost all of the tiffin-wallas come from the ***same small village near Pune, four hours away from Bombay.*** Most are related to each other, and for five days each March, tiffin distribution is suspended as around ***1,000 tiffin-wallas*** go home for the annual village festival. The cap worn by the dabbawallahs is not an affectation but a necessity: tiffin-wallas are expected to carry on their heads wooden tiffin baskets containing up to ***45 metal lunch-boxes***. The baskets can weigh up to ***90kg***. The tiffin-wallas are self-employed. To join the profession, you need to donate ***30,000 rupees*** to the tiffin-wallas' union. After that you are guaranteed a monthly income of ***5,000 rupees*** a good salary by Indian standards - and a job for life. The tiffins are delivered six days a week for the paltry sum of ***150 rupees a month***.

Indian marketers have noted the efficiency and accuracy of the system – and have decided to employ the dabbawallahs to deliver free samples and circulars along with meals. "It's an excellent route to get your message across," says one advertising executive. "You could advertise any product using this service." [5]

"We are very proud," ***Raghunath Medge, President of the tiffin-wallas' union***, the Nutan Mumbai Tiffin Box Suppliers Charity Trust said. "Our ancestors carried swords in their hands. Now we carry tiffins instead." The beauty of the system, Mr Medge explained, is the ***colour coding*** used on the top of each tiffin box. The home address, office address, railway stations of delivery and pick-up are all crunched into a small series of letters and numbers, painted by hand.

However, just as any business cycle has its up and downs, so does this noble service. Some of the problems faced by the dabbawallas are as follow:

⇒ **Finance:** The dabbawallas of Mumbai have problems when it comes to financial support. Even though they are well established in their business now but somewhere in the midst of all their operations they do feel that *money crunch* still exists.

⇒ **Manpower:** The Nutan Mumbai Tiffin Box Supply Charity Trust faces a problem of manpower incases when employees are on leave or even in getting people to join their organization as the work is tedious and monotonous.

⇒ **Native Place Visits:** The dabbawallas need to visit their native place when their agricultural produce is ready and needs to be sold. This becomes one common time for all the dabbawallas to go their native place and therefore at this time a large number of employees are not working. This poses a problem to the few of the lot who are working to deliver tiffins in diverse locations of the city.

⇒ **Decline in the Customer Base:** With the rise of fast food joints and *meals on wheels* (food delivery) the customer base of these dabbawallas is threatened. However, statistics prove that their customer base is rising by 10% (approx.) every year.

⇒ **Relocation of corporate/business houses:** In the last few years a lot of business houses have developed in areas like Bandra Kurla, Andheri etc. Whereas earlier majority of these were located in areas like Chattrapati Shivaji Terminus,

Nariman Point and the like. This creates a problem for the dabbawallas as they have to broaden their network and this would take some effort.

The article aims to focus on various aspects of the dabbawallas. Through this article we wish to come across lessons that can be learnt from the dabbawallas by Indian Corporate Houses. The learnigs from this article would be as follows:

⇒ **Profile of the dabbawalla:** The article aims to study the profile of the dabbawallas. The dabbawallas seem to follow a statute in their organisation which states that all their employees belong to the same village.

⇒ **Management Practices:** The article aims to call readers' attention to astonishing management practices used by the dabbawallas. This will not only be learning for the corporate houses but also for the budding managers worldwide. Yes!...***Worldwide*** as these humble, semi-literate men are proving to be management gurus at premier institutes like the IIMs and have also met Prince Charles, who profoundly appreciates their working techniques.

⇒ **Organizational Structure and Business Practices:** This piece of writing will also throw light on the organization structure of the dabbawallas and shall also look at their service satisfaction level, as well as, how the minds of these *desi dabbawallas* can provide brilliant commercial competence.

Methodology

The information for the article has been collected mainly through an interview with **Mr. Raghunath D. Medge**, President of the Nutan Mumbai Tiffin Box Supply Charity Trust. Also, secondary sources of data like journals, newspaper articles, books on logistics and supply chain management have been used. No attempt to blindly cut-copy-paste data has been made. A detailed, in-depth study of management practices was made and its application is discussed in the results column.

Eliciting data were noted, analyzed and re-discussed, to clear doubts, trough the interview process. A field study to understand the operation was undertaken too.

To study the level of **customer satisfaction**, a field study using a **sample of 50 dabbawalla customers** was conducted where each respondent was asked questions (through a questionnaire) to discern the level of satisfaction. These 50 people comprised some businessmen, several employees and also some housewives.

Table 1: Profile of dabbawalla customers interviewed

Businessmen	Housewives	Service Class	Total
14	9	27	50

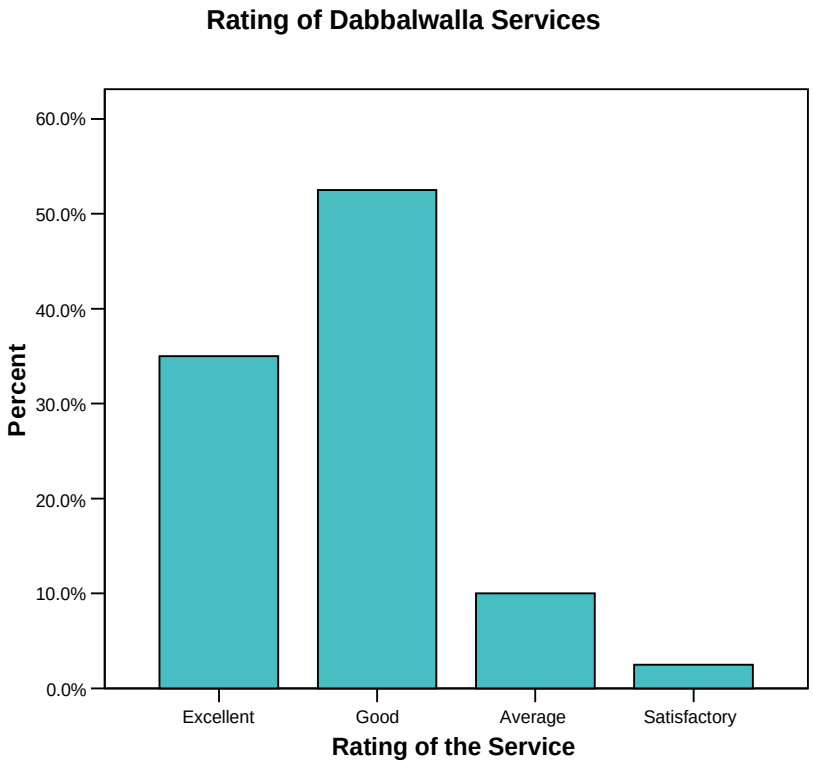
Respondents were also asked if they faced any problems with the dabbawallas or if they wished to counsel the dabbawallas to improve further. The results of this survey are discussed further in the article.

The facts presented in the article are true to the best of our knowledge.

Results

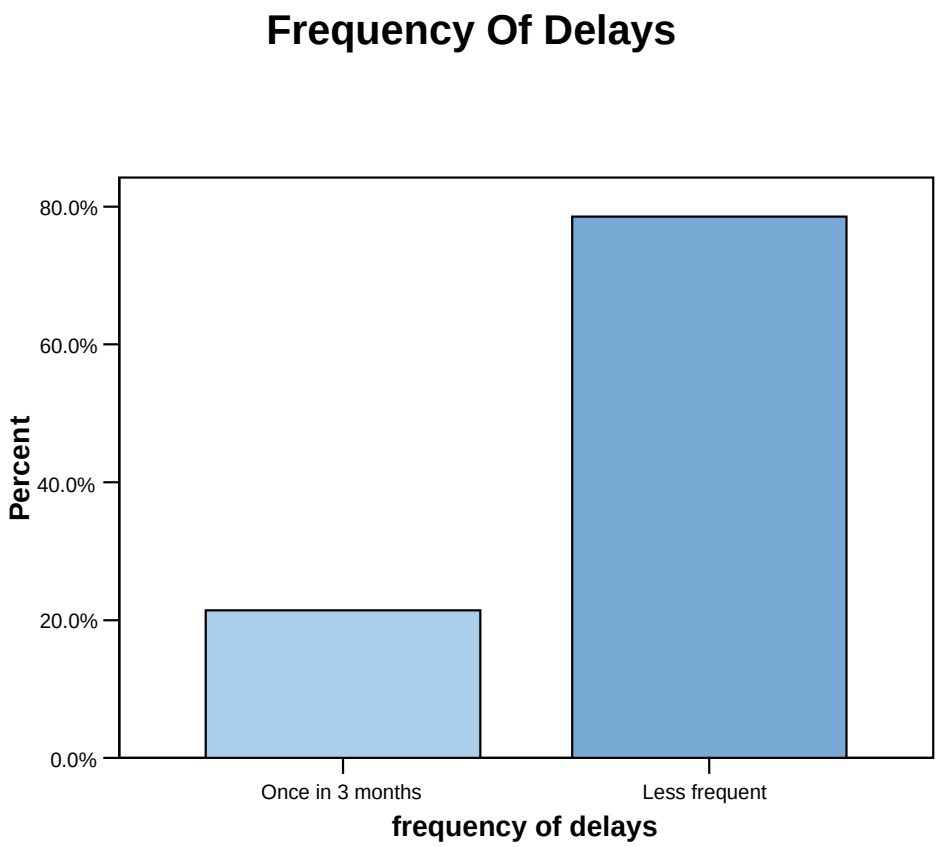
About 65% of the respondents have been using the dabbawalla services for more than year and therefore, they have a greater exposure to their services.

Table 2



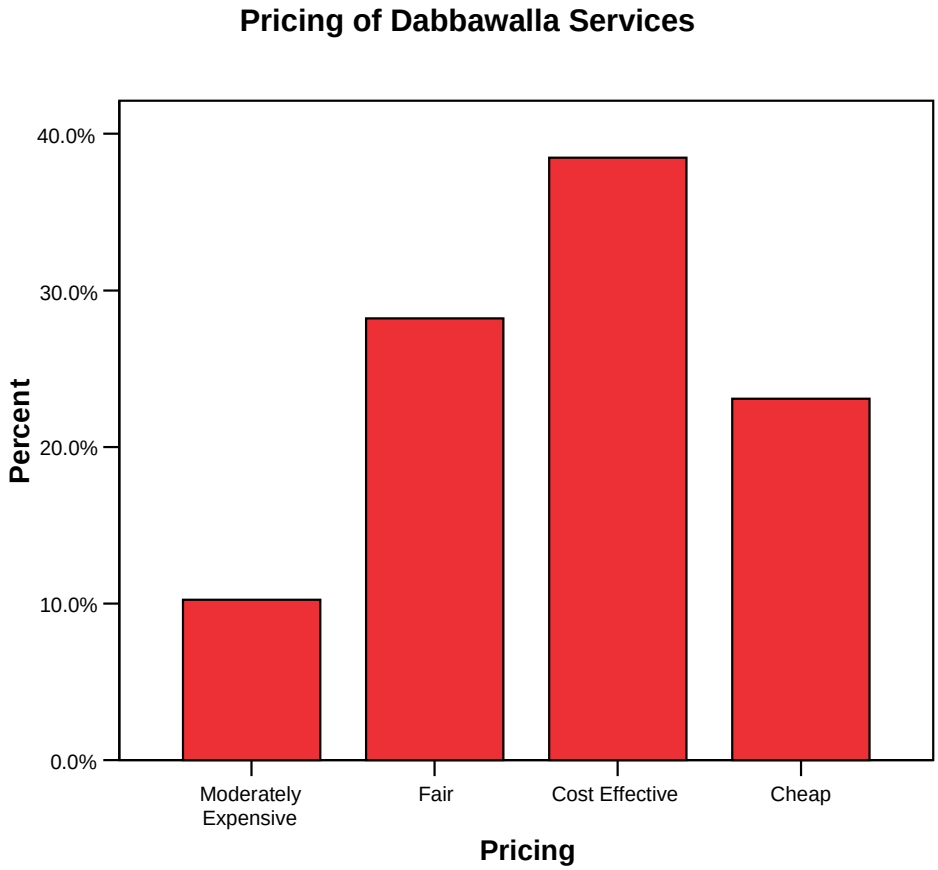
Most (over 87%) of the dabbawalla service users are extremely satisfied with their services. The remaining (13%) are slightly dissatisfied with the services due to complaints/problems like food leakage, cold food and the like.

Table 3



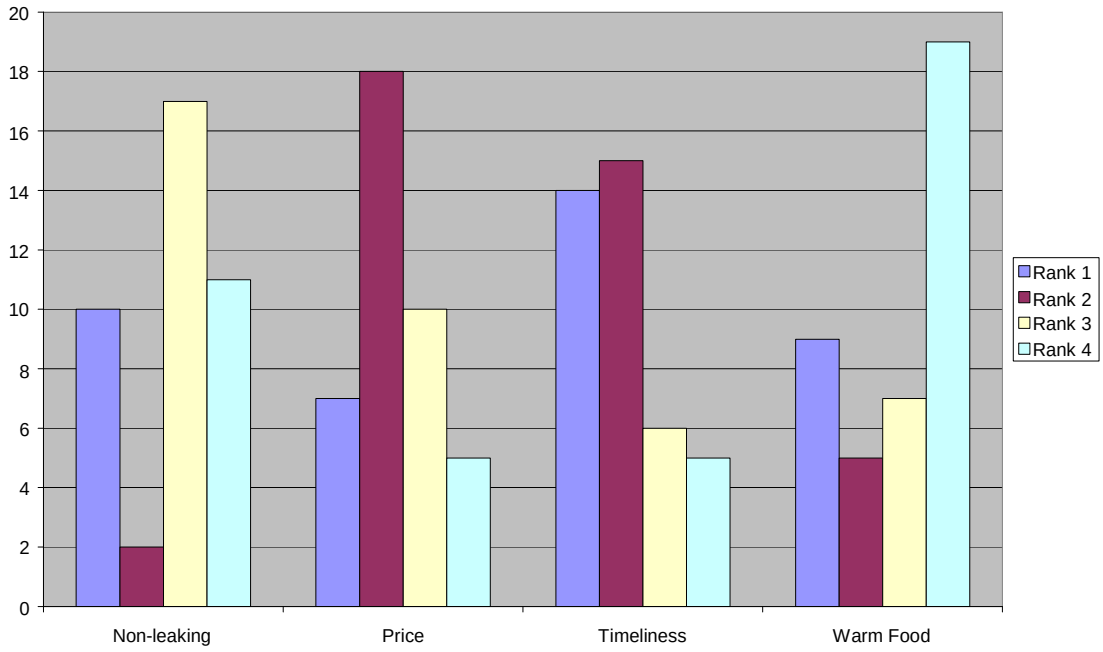
Although 35% of the customers complained of delays in tiffin deliveries, they claimed that these delays happened even lesser than once in 3 months (which is acceptable to a great extent). Another important factor that contributed to dissatisfaction is the leaking of liquids packed in the tiffins (which is beyond the control of the dabbawallas – considering the highly crowded local trains of Mumbai).

Table 4



When asked about the pricing, most of the customers (90% of them) unanimously agreed that the service is offered at fairly reasonable or economical prices. When asked if they were willing to pay more if the food is delivered in a hot-case, the customers willingly agreed.

Table 5 RANK TEST OF FOUR TYPE OF SERVICE PARAMETERS



When asked to rank the service deliverables (on a scale of 1 to 4) of the Dabbawallas, customers opined as under:

Service Deliverable	Rank
Timeliness	1
Price	2
Non-leakage of food	3
Warm Food	4

About 10 – 20% of the customers have a few grievances with regards to the dabbawallas. Some of them are:

- "If the tiffin is not ready for delivery, the man will not even wait for some time" – said a housewife in Santacruz.
- Also it was a complaint that at times the dabbawallas are rude (when asked to wait).

"The *dabbawalla* never misses his address and is never absent." A view shared by nearly 1,75,000 satisfied customers.[6]

Coding System

In the 1970's, a senior member from Raghunath Medge's family decided to implement a new system where all box codes and markings were uniform for all the dabbawallas. This system would also cater to any number of tiffins, no matter the growth in new additions. This system was an ***ingenious creation.*** [7] It served as a common code for all dabbawallas which was also *easy to decipher*.

Each tiffin containing the food has, a number of *codes in alphabets and numbers on its top,* which identify the following:

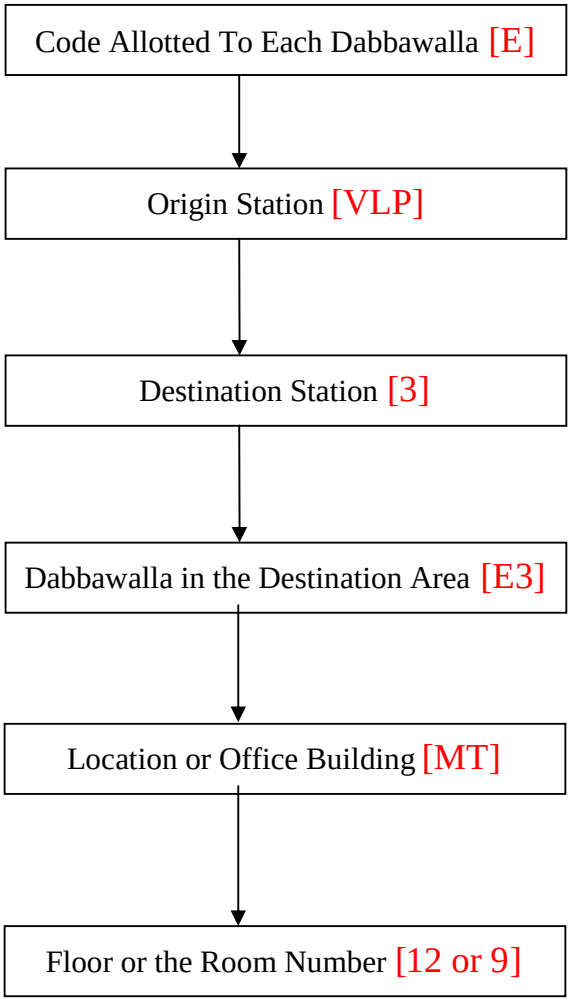
1) The **code allotted to each dabbawalla** in a group that picks up the tiffin from a particular area or suburb,
2) The code of the **origin station** which is usually one of the suburbs on western, central or harbour lines,
3) The code for **destination station, which** is again Churchgate, C.S.T or any other commercial area,
4) The code for the **dabbawalla in the destination area** who handles the tiffin there,
5) The code for the **location or office building** in the destination area,
6) The **floor or the room number** in that building.

Besides these items that are displayed on the top of the dabba, there is also a difference in the colour of paint or chalk that they use to write these codes. Different groups will have different coloured codes written on the top of the dabba so that the tiffins belonging to that group remain ***distinct.*** This is necessary because there is usually

more than just one group present at each station. The destination codes will actually be the same for all groups at the same station. This makes it difficult to distinguish their tiffins. So the simplest way of bringing the distinction that is required is by coding with different colours. This is a simple and easy way of differentiating the codes which is also easy to understand for the illiterate dabbawallas. The maximum number of ***colours used*** in this system is ***7.***

The coding procedure

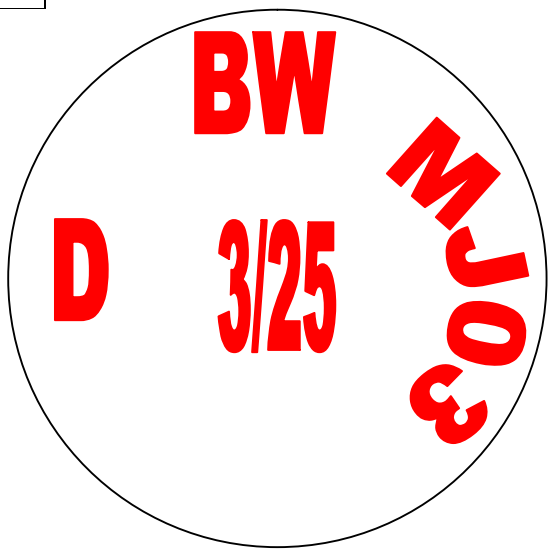




Codes	Their Implication
E	The code assigned to the Dabbawalla
3	Destination Station Code (Nariman Point)
VLP	Origin Station Code (Vile Parle)
E3	Dabbawalla Code (based on final destination)
MT	Building Name Code (Mittal Towers)

12	Floor Number
9	Room Number

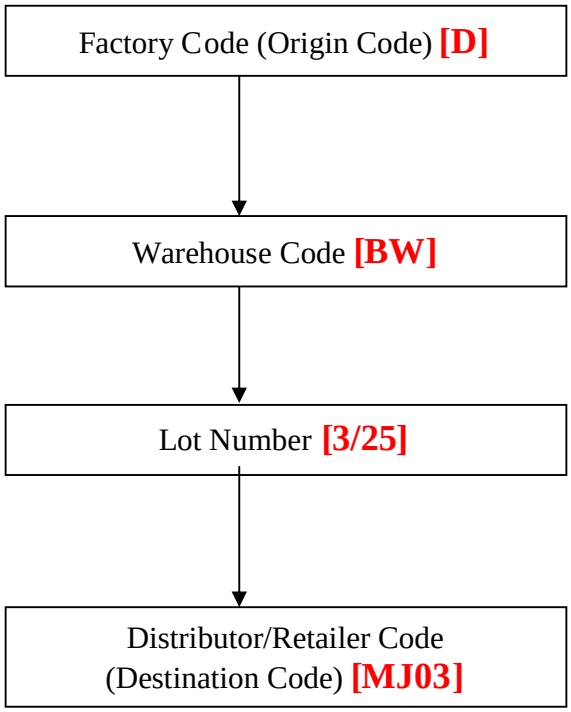
Distribution of Manufactured Goods



The concept used by dabbawallas for their distribution can be applied to various industries in the business world. Let us look at the manufacturing industry for example.

In a company manufacturing variety of products the coding system used by the dabbawallas can be applied, wherein the goods can be stored with different codes.

When the goods are to be dispatched to different destinations, the cartons in which the goods are sent can be coded using similar codes, thereby reducing errors in the distribution process. The same is illustrated in the flow chart given below:



Codes	Their Implication
D	The code assigned to the Factory where the good are manufactured (Daman Factory)
BW	Warehouse Code where goods are stored (Bhiwandi)
3/25	The 3rd box from a batch of 25 boxes
MJ03	Distributor/Retailer Code (Masjid Bunder, Client Code: 03)

Application of the Dabbawalla Concept for Corporate Houses

An exhaustive list of areas where the “dabbawalla” concept can be applied:

“A” Div

1. Courier
2. Advertising
3. Utility Services
4. Groceries

“B” Div

1. Manpower agency
2. Dhobi services
3. Vegetable services
4. Temple e.g. Tirupathi
5. School children pick up and delivery
6. Telecom – Routers
7. Inventory management
8. Retail Stores
9. Flower vendors

“C’ Div

1. Pizza delivery
2. Clearing cheques services
3. Household service providers (HSP)
4. School children pick up & delivery
5. Labour resource management
6. Super market
7. Collection of financial payments

For what markets do the dabbawallas become the potential customers?

1) **Insurance:** The dabbawallas are regular users of the trains and are therefore vulnerable to accidents. Apart from this, even their productivity rate and efficiency can be insured. This can also act as a motivator for them

2) **Mutual Funds:** The dabbawallas can put a part of their savings either as individuals or as a group into the mutual funds and thus, multiply their savings.

3) **Educational Loans:** If the awareness of education and even higher education is made, their children could avail the facilities of educational loans.

4) **Small Loans:** As such the dabbawallas work for approx 6hrs a day, they can be funded for other small scale business, which they can carry out in the later part of the day.

5) **Health Services:** The association can give a contract for regular fitness of the dabbawallas to a fitness club or even a private health clinic.

Conclusion

The dabbawallas conduct their operations using homespun logistics, yet with high technical precision, these closely-knit groups of dabbawallas make only one error in two months or in 16 million transactions. This gives them the 'six-sigma' distinction, which is an achievement by only a handful of companies worldwide. They achieve their efficiency with zero paperwork and with no utilization of technology which in itself is a marvel**!**

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This undoubtedly demonstrates that the Dabbawallas of Mumbai are doing an excellent job of managing a network of this magnitude and irrespective of heat, rain, pollution or traffic; they are still managing a high level of ***customer satisfaction.*** But in order to be honored in such a manner, one would have to be more than just a logistical success of clockwork efficiency.

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