

DIFFUSION OF EMERGING RETAIL FORMAT & NEW PRODUCTS IN INDIAN RAILWAY

(An untapped Market opportunities for potential Companies, Consumers of Indian Railway)

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Abstract

Indian Railway is going through massive transformation, ranging from infrastructural visible changes to service dimension, to perceptual and aspirational changes of its Passengers. Railway provides a concentrated market for product and services. Station are upgraded, Line and guage upgradation, New station infrastructures, are created, inception of new bogies and engines are defining the millennium new phase of Indian Railway.

Travelling is considered to be inevitable and when it comes to Indian railway it is having obvious advantages to it. There is a need for the companies in India to re-look Indian railway destinations and its consumers in a new perspective with the access of mobility and convenient of technological connectivity. Railway represents the actual picture of mini India. Its demographic disparity and diversity by uniting it across the matrix of the nation. India's disparity is expressed in terms of its consumption pattern, its axis of wealth but also in the contest of how railway operates. Till date only 5 % of the actual potentiality of Indian market was tapped and realised by Companies through Indian Railway. Potentiality of Indian consumers can be unlocked broadly into 4 categories, urban India, rurban India, rural India & moving India. Railway represents moving India. The products of substandard and inferior quality clearly makes in-roads, can be conveniently replaced by standardized and quality product of organized market/emerging Retail formats through Consumers taste and preferences in the modern era of hyper marketing delight.

Railway represents tremendous potential for the growth. This paper can be used for number of products, vendors, Railway retail formats for Product penetration. It can also be used by the companies by substantially adding the new set of product category which may lead to the opening of a new product segment. Redefining the Journey of world largest network.

Till date consumers are just fulfilling their basic requirements, but it the time when we need to provide the Consumers high quality products which can not only fulfill their functional and aspirational requirement, but should also provide them a product usage satisfaction and memorable experience. It can provide tremendous traffic as well as visibility to the latent Consumers. An opportunity to the companies to formally rewrite the marketing game plan for the emerging Retail sector, Conventional Ps are needed to be re-worked with new Ps when it comes to marketing of products (In the context of Indian Railway).

Keywords : *Urban India, Rurban India, Rural Indian, Moving India in railway, Railway infrastructure, Type of passengers, Taste, Consumption behavior, Travelling consumers, Type of stations, Trains Frequency of travel, Migration, LCM, Trans-local consumers*

INTRODUCTION

Railway provides a concentrated market for product and services. Travelling is considered to be inevitable and when it comes to Indian railway it is having obvious advantages to it. There is a need for the companies in India to re-look Indian railway and its consumers in a new perspective with the access of mobility and convenient of technological connectivity. Railway represents the actual picture of mini India. Its demographic disparity and diversity by uniting it across the matrix of the nation. India's disparity is expressed in terms of its demographic differentiation, consumption pattern, its axis of wealth but also in the contest of how railway operates. Till date only 5 % of the actual potentiality of Indian market was tapped and realized by Companies through Indian Railway.

Indian railways always remains the biggest themes of Bollywood, and now It Is the tern for the marketers to unlock its potential for consumer benefit which is also the key for the success of companies. Plethora of Indian companies with MNCs flair failed to create effective dent in the mind space of Indian consumers in the conventional market, reasons for their failures can be multiple but analysis suggest some fundamental functional indicator behind them, a similarity to reckon with, indicating the direction of failure, MNCs with innovative products and established global brands failed to create a dent in Consumer mind-space, Only those companies are successful in Indian Diaspora which are innovative, adapting to Indian condition, localizing their product, and customizing according to Indian consumers irrespective of MNCs brand baggage. Diversity of the success and failure depends upon reading the mind set of Consumers. Railway provides the perfect recipes for these MNCs to get success.

Railway represents the actual picture of mini India. Its demographic disparity and diversity by uniting it across the matrix of the nation. India's disparity is expressed in terms of its consumption pattern Till date only 5 % of the actual potentiality of Indian market was tapped by Companies through Indian Railway. Potentiality of Indian consumers can be unlocked broadly into 4 categories, urban india, rurban india, rural India & moving india. Railway represents moving India. A country as huge like India can never be neglected to its potentiality and failure. Railway represents the true picture of India, its vast demographic variation, cultural diaspora, and visible consumption variation that makes India unique in its one form, There is a homogeneity in India's Railway system, as per its operational parameters are concerned. On the one hand it unite India but also distinctly segment Indian Consumers based upon social, demographic, economic, locational availability, culturally etc.

Indian Railway is going through massive transformation, from infrastructural visible changes to service dimension, to perceptual and aspirational changes of its Passengers. Railway provides a concentrated market for product and services. Travelling is considered to be inevitable and when it comes to Indian railway it is having obvious advantages to it. There is a need for the companies in India to re-look Indian railway destinations and its consumers in a new perspective with the access of mobility and convenient of technological connectivity. Railway represents the actual picture of mini India. Its demographic disparity and diversity by uniting it across the matrix of the nation. India's disparity is expressed in terms of its consumption pattern, its axis of wealth but also in the contest of how railway operates. Till date only 5 % of the actual potentiality of Indian market was tapped and realised by Companies through Indian Railway. Potentiality of Indian consumers can be unlocked broadly into 4 categories, urban India, rurban India, rural India & moving India. Railway represents moving India. The products of substandard and inferior quality clearly makes in-roads, can be conveniently replaced by standardized and quality product of organized market/emerging Retail formats through Consumers taste and preferences in the modern era of hyper marketing delight.

Railway provides a concentrated market for product and services. There is a need for the companies in India to re-look Indian railway and its consumers in a new perspective with the access of mobility and convenience of technological connectivity. Railway is increasing at a rate of 7%. The products of substandard and inferior quality clearly makes inroads, can be conveniently replaced by standardized and quality product of organized as well as local market through Consumers taste and preferences. Railway represents tremendous potential for the growth,

It can provide tremendous traffic as well as visibility to the latent Consumers. An opportunity to the companies to formally rewrite the marketing game plan,

Indian Railway has created a massive networks of 64,000 Kms spread across Pan India and transport 30 million passengers each day from the length and breadth of the country, Indian railway is the largest railway network connectivity in the world, If we only focus on passengers train, covering India, Companies which purely create product on needs of Railways can create tremendous depth in Product portfolio. By creating railway as universe marketers can promote their product very effectively to the consumers. Railway station are the points of selling and the companies should target the lines/ routes of selling, Different marketing models can be created by the companies, to generate effective business which can be based upon mass customization of the product, another can be meant for niche segment, for rich and poor, on the other hand products can also be created based upon local approaches, and Hyper local means. Travelling is considered to be inevitable and when it comes to Indian railway it is having obvious advantages over others.

Portable sitting system, High energy biscuits, snacks, socks, energy beverages, fragrances, syruped water, Local delicacies, Toys, spices, detergent, confectioneries fancy handicrafts, Packed meals with unique local flair, The plethora of the products which are not covered through online and offline tools can make in-roads in the consumer home through Indian railway. Indian railway is a world in itself. Smart phones are quite successful in penetrating this category by providing information and visual urge of the consumers during the travel. To a certain extent smart phone has provided us the functional as well as emotion consumer (Passenger) engagement.

The distribution element of Railways can be classified in to Utility chart

Table-1

Types of Product Category	Utility Functions	Scope	Company Category	Type of Companies
Food products	Functional needs	Exist	FMCG	MNCs as well as local
Toys	Functional and aspirational needs	Exist	FMCG	MNCs as well as local
Beverages	Functional needs	Exist	FMCG	MNCs as well as local
Well-ness Medicines	Health needs	Exist	FMCG/Pharmaceutical Companies	MNCs as well as local
Human safety	Functional needs	Exist	FMCG	MNCs as well as local
Apps which can make our journey easier	Aspirational need and functional needs	Exist	FMCG	MNCs as well as local
Local especiality/ Delicacies	absence	Exist	FMCG	MNCs as well as local
Travel Utilities	absence	Exist	FMCG/Retail	MNCs as well as local
Cosmetics and Toiletries	absence	Exist	FMCG/Retail	MNCs as well as local

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During the travel a passenger spend around 6 – 12-24-30 hrs, and it is this duration when the passengers goes through different types of biological, physiological, psychological, emotional urge of consumption which opens the possibilities of the companies to do business. Train travel in India and its experiences can be categorized into different segments ranging from Maharaja Travel experience of luxury to the most fundamental/ crude form of travel in conventional sleepers, where the passengers are just urging for reaching the destination on time , but with infrastructural hiccups, passengers are bound to spend more travel time. It can also harbor the market possibilities for such product which are unique in the TIER-2345 cities or other way round.

Indian markets can be broadly classified in to various market parameters, fundamental variables(tangible as well as un-tangible) include product, place, price, promotion, publicity,process, procurement ,politics,purity, pride, personal selling, procedure, proliferation, proximity, profile, promise, public relation, pressure groups, para-language, para pharse, point of interaction etc. The conventional mix of marketing are replaced by new mix in the universe of India railway system. Conventional Ps are needed to be re-worked with new Ps when it comes to marketing of products (In case of Indian Railway). The Journey of Indian railway provides a unique mix of comfort, challenge, risk, joy, luxury, adventure, enigma, patience, sadness, perseverance and testing our mettle inside, hence opens the window of all psychological as well as physiological needs. Railway provides the concentrated market for product and services. Brand loyalty will be replaced by the fusion of brand loyalty-availability. Design specification are required to be updated for the identified product and category which can provide multiple benefits to the travelling consumers.

No. of the people used to travel every year, is approximately 84 crore and increasing at a rate which is equal or more than the entire population of Europe and Australia . (Localisation , Customization and Mass marketing) is the mantra for the success of MNCs to get successful in Indian Railway market.

Indian railway system , is a universe in itself, and its passengers are the world largest consumer market in a specific domain. Britishers rule this country and united economically its resources by creating massive railway network. Effective business models and marketing strategies can provide enough space to the companies not only to provide market place but also to collaborate wealth. The dynamics of marketing mix and marketing in Indian railway system. Local produce which are mostly perishable /non-perishable nature can be easily dispersed through the Indian railway networks, even the passengers, Railway itself replaces the conventional marketing mix.

There are many villages across the country which are solely depending upon the timings of railway that arrives, these villagers are desperate to sell their produce through railway Network.

OBJECTIVE/ APPLICATION OF THE STUDY:-

This paper can be used for number of products , Companies and vendors for Product penetration in Indian Railway Domain. It can be used by Indian railways as a point of selling strategy and Market opportunity . Companies by substantially adding the new set of product/Service category may lead the opening of a new product /Service category hence redefining the Journey of world largest network of travel, Till date consumers are just fulfilling their basic requirements, but it the time when we need to provide the Consumers high quality products which can not only fulfill their functional requirement, but should also provide them a product usage satisfaction. Railway can utilize its unused layout for commercial purposes hence increasing its operational efficiency ,and cash surplus which can be further used for massive development of railway infrastructure expansion.

The objective of this research article is to provide an incite in to the potentiality of Indian Companies unlocking through Indian railways. .

RESEARCH GAP:-

An opportunity for the companies to formally rewrite the marketing game plan for the Retail sector especially in the context of Indian railway domain, Conventional Marketing Ps are needed to be re-worked with new Ps(Mobile Phone and process of selling- Virtual)will be the deciding factor for future railway , when it comes to

marketing of products(In case of Indian Railway). Diffusion of Emerging Retail format & New Products in Indian railway

RESEARCH METHODOLOGY:-

To know about how diffusion speed varies for various products and retail formats across Railway destination of the country by using a Bass diffusion model. For Marketing managers, one of the biggest question is how fast a new product is likely to selling different destinations. By the help of data and research findings a consensus is building which will help to answer the query. By the use of "meta-analysis" of "diffusion speed" research, the mystery of diffusion speed is resolved and certain useful quantitative tool provides the insight information for product adoptions across certain categories .

How does the speed at which new products get adopted and diffuse through the market vary across products and formats. One simplest way to answer that question is by collecting data on the diffusion of a large number of products available in a large number of multi formats, and analyzing them to identify systematic patterns. However, building such a database would be an enormous task. Fortunately, there is an alternative. For over four decades, sociologists and marketing academics have been studying the diffusion of new products. So, the alternative is to pool the results of all published studies and look for patterns. This piggy-back strategy where one does not collect new raw data but instead analyzes other people's analyses has long been accepted in medicine and psychology. It is called "meta-analysis." This is the research strategy that I will follow. But how does one quantify diffusion speed? To quantify the diffusion speed and to correlate with existing format I have used the Bass Diffusion Model.

USING THE BASS MODEL

For over 30 years, marketing scientists have been using a simple mathematical model to study the diffusion of innovations in various sectors . It is often referred to as the Bass model, after Professor Frank M. Bass who first applied it to marketing problems. Here is how the model works. There is a market consisting of m consumers for differentiated and un-differentiated products , who will ultimately adopt. (I use the word consumers, but the model can be applied to business markets as well.). Let's call $N(t-1)$ the number of people who have already adopted before time t . The model assumes that the probability that someone adopts given that he or she has not adopted yet consists of two factors. First, there is a fixed factor p that reflects people's intrinsic tendency to adopt the new product. Second, there is a factor that reflects "availability", "word of mouth" or "social contagion," such that people are more likely to adopt the larger the proportion of the market that has already adopted. Since that proportion is simply $N(t-1)$ divided by m , the rate at which new people adopt is $p + qN(t-1)/m$, where q captures the influence of word of mouth. So, since the number of people who have not adopted yet before time t is $m - N(t-1)$, and the rate at which these people turn into new adopters is $p + qN(t-1)/m$, one can express the number of adoptions occurring at time t as:

$$N(t) - N(t-1) = [p + qN(t-1)/m] \times [m - N(t-1)]$$

The model has three unknown parameters: the market size m , the coefficient of innovation p , and the coefficient of imitation q . The parameters can be estimated from real data using standard statistical software or even using the Solver tool embedded within Microsoft Excel.

ATTRACTIVE PROPERTIES

The model has several attractive properties. When q is larger than p , the cumulative number of adopters $N(t)$ follows the type of S-curve often observed for really new product categories. When q is smaller than p , the cumulative number of adopters follows an inverse J-curve often observed for less risky innovations such as new grocery items, movies, and music CDs. Exhibit 1 shows these patterns, where I rescaled the curves to be cumulative penetration curves by dividing $N(t)$ by m . Exhibit 2 on this page shows the corresponding patterns for the proportion of new adoptions occurring at time t , i.e. $[N(t) - N(t-1)]/m$. Note that an S-curve as shown in Exhibit 1 for the cumulative proportion corresponds to the familiar bell-shaped curve for the non-cumulative proportion of adopters (Exhibit 2) described in Geoffrey Moore's popular books like Crossing the Chasm.

DIFFUSION SPEED IS CAPTURED BY P AND Q

The parameters p and q provide us information about the speed of diffusion. A high value for p indicates that the diffusion has a quick start but also tapers off quickly. A high value of q indicates that the diffusion is slow at first but accelerates after a while. Of course, the number of new adoptions must start to decline at some point in time, since the number of people who have not adopted yet $[m - N(t-1)]$ becomes smaller and smaller.

Interestingly, once one knows p and q , one can calculate the time at which the peak number of adoptions occurs as:

$$t^* = \ln(q/p) / (p + q)$$

In short, the Bass model is a handy model that one can use to quantify the speed of diffusion. Better still: assuming that we start at the time of launch (where $t = 0$ and $N(0) = 0$), and that we have values for m , p and q that we feel comfortable about, the model can also be used to forecast future adoptions using the following formula:

$$N(t) = m \times [1 - \exp\{-(p+q)t\}] / [1 + (q/p) \exp\{-(p+q)t\}]$$

HOW P AND Q VARY

Having found a way to quantify diffusion speed in terms of p and q and having chosen to perform a meta-analysis, I can translate the broad question I started with into something feasible: Taking all published applications of the Bass diffusion model, what can one say about the speed of diffusion of innovations as captured in the parameters p and q ? Specifically, how do p and q vary across products and countries? p and q values are considered to be quantifiers which determines the market value or perceptions of products towards the Consumers.

CONSTRUCTING THE DATABASE

I constructed a database containing 1000 sets of p and q parameters, from 50 papers published between yr.2000 and yr 2018. Some of these observations of 1000 data sets, include multiple p and q values for the same diffusion process. For instance, many studies have investigated the diffusion of Retail, FMCG Products of organized and Un-organised formats. I drastically reduced this database. By deleting all entries relating to such products which diffused much faster than average, I kept only those datasets about the extent of collectivism and risk avoidance. Furthermore, I only kept data relating to the period between yr 2000 and yr 2018, since this is the only window for which data on consumer buying and adoption inputs are available. Finally, I collapsed multiple observations of the similar product/ matrix in to a single average value. These several steps reduced the data set to 100 unique sets of p and q .

Averages are better than nothing, but market analysts and managers want more fine-grained and precise information. Say we have a new product that perhaps is not even launched yet. Based on the diffusion history of previous product categories, what kind of diffusion curve can we expect for the new product? That is, what values for p and q gives the forecast to the adoption curve?

As a baseline, I took specimen value of consumer products available at railway destination. The Exhibit (1 &2) give values for p and q for such cases, and also indicate how we should change those values if the Product/Category does not fit that baseline. The exhibits also report 90 percent confidence intervals. Those are intervals or "windows" of values such that one would expect the (unknown) true value to fall within that interval with a 90 percent probability. As such, the intervals reflect uncertainty.

When applying the values, it is a good idea to get indicative values within the confidence intervals. This will allow us to see how sensitive the predicted curve is to the level of uncertainty in my analysis. Also, as a general rule in forecasting, we should use the forecasts from the Bass model, technique as it provides the accurate predictive value.

The results shown in Exhibit 1 and Exhibit 2 describe differences across product categories and demographics. First, in one axis of wealth where more development has taken place, consumers are more proactive rather than

other Axis of wealth, where q is higher. This makes a lot of sense, Consumers in that segment are aspirational with higher amount of Purchasing parity than others.

Second, in specific regions with higher Axis of wealth & higher purchasing power, per capita, p is higher. That makes perfect sense as well, since having a higher purchasing budget makes it easier to adopt new products immediately. Finally, products and technologies that exhibit network effects compounded with avenues of possibility of heavier investment in infrastructure to enhance Consumer buying capacity with a higher q . This is in consistent with prior research indicating that for such categories, people tend to wait until enough other people have adopted and, when there are competing standards, until it has become clear what products will survive. Interestingly, p also tends to be lower for products with network effects, making the S-shape even more pronounced.

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Fog-1, (Aggregation & Integrator -can also be summed up through Railway Model/ Consumer Adoption)

FINDINGS AND CONCLUSIONS:-

There are systematic differences in diffusion of global products which emerge using a Bass model analysis.

Here are my conclusions:

The Bass model is a handy tool to look at diffusion patterns. Moreover, the quantitative "best guesses" from meta-analysis can be useful for predicting future adoptions, even when the product has not been launched yet.

There are systematic demographic differences in diffusion patterns.

The average coefficient of innovation p (speed of take-off) in some parts of one Axis of wealth is roughly half then the other axis.

The average coefficient of imitation q (speed of late growth) in one Axis is roughly a quarter less than that of other Axis.

Also, economic differences explain regional disparity of markets its product adoption variations in speed and cultural differences. It also explains about the potentiality of Indian Railway and the need for investment in Railway Infrastructure. There are systematic product differences in diffusion patterns. For instance, take-off is slower for non durables and products with competing standards that require heavy investments in infrastructure, while late growth is faster for industrial products and products with competing standards which require heavy investments in infrastructure.

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Exhibit-1

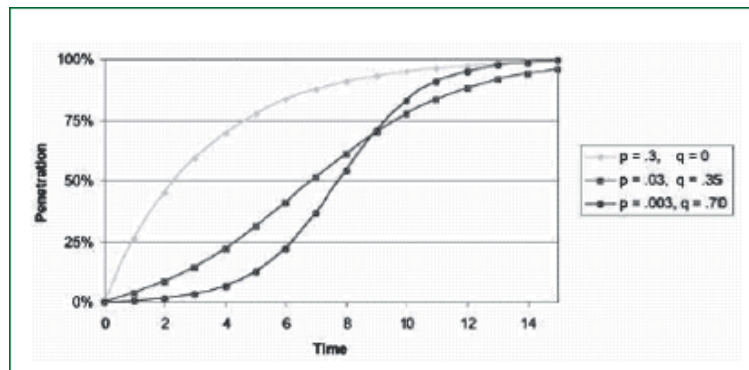


Exhibit-2

