

Addressing the Problems Faced by Agricultural Input Industry through M-Commerce: A Sector Study

Shefali Srivastava

Economics, Gokhale Institute of Politics and Economics, Pune, Maharashtra

Abstract— The study of agro-input m-commerce sector is aimed at finding to what extent emerging m-commerce enterprises have been successful to solve the problems faced by Indian agricultural input industry. Through SWOT(Strengths, Weaknesses, Opportunities and Threats) analysis the future prospects of the industry , the benefits to the farmers and the ways through which these benefits can be furthered are highlighted.

Keywords— agribusiness, start-ups, agro-chemical industry, m-commerce, agricultural input industry, agro-input

I. INTRODUCTION

The agro inputs relevant to this study include fertiliser, crop protection products, seeds and agricultural implements. M-commerce platforms like Agrostar and BigHaat are taking the advantage of high mobile penetration in India. In [1] the penetration rate is calculated by dividing number of subscribers as on month end (December) divided by the population of the state and for compound annual growth rate (CAGR), a log-linear model is used to calculate the exponential growth in subscribers:

Table I^[1]: Statewise Mobile Penetration, Income and Inequality

States/Union Territory	Penetration (2012)	CAGR 2002-2012 (in %)	Rural Gini	Urban Gini	SDP/Capita	Density
Delhi	2.09	41.18	0.27	0.38	106677	12823
Tamil Nadu	1.08	57.87	0.28	0.33	57093	522
Punjab	1.04	44.66	0.28	0.31	46325	555
Himachal	0.99	70.50	0.28	0.29	49203	123
Kerala	0.93	48.51	0.36	0.41	52808	895
Karnataka	0.88	64.48	0.26	0.40	41492	313
Maharashtra	0.86	90.93	0.25	0.35	61276	371
Gujarat	0.84	53.77	0.25	0.28	56634	305
Haryana	0.76	60.04	0.26	0.29	61716	585
Andhra Pradesh	0.75	61.42	0.25	0.30	38556	311
West Bengal (A&N)	0.72	68.19	0.24	0.37	32164	1023
MadhyaPradesh	0.69	34.98	0.27	0.36	23272	238
Rajasthan	0.68	79.29	0.25	0.32	29612	201
Northeast	0.63	108.85	0.20	0.23	35166	76
Bihar	0.62	87.04	0.20	0.29	13149	1051
Orissa	0.59	80.82	0.23	0.36	24542	264
UP	0.59	75.22	0.25	0.31	18014	848
Jammu	0.57	81.96	0.24	0.30	28790	53
Assam	0.46	89.83	0.22	0.33	21741	395

The farmers don't necessarily need a smart phone to access m-commerce platform. The m-commerce companies sell the products of the agro-input companies they have tie-up with. The working model is as follows. Farmers give a missed call on the company's number. A representative from call centre then calls them back and the farmers get an option to buy from a diversified range of products relevant to their problems. The products are differentiated in terms of factors like pricing, available packing, toxicity. After the purchase is confirmed, the product is delivered at farmers' doorsteps.

The prevailing problems of agro-input industry are as follows. It is quite likely that a local agro input retailer may not have a range of differentiated products. He may sell products of inferior quality or the products which are not quite suitable for the crop, suggest high or sub-optimal doses of agro-chemicals which may be ineffective or leave pest residues in more than

the admissible amount. Illiteracy among farmers is another reason due to which they use high doses of chemicals. In the case of m-commerce platform, representatives of m-commerce company suggest the exact products with right dosages to the farmers.

According to [3], 40% of products sold in India are non-genuine which are harmful and inferior formulations, unable to kill the pests efficiently. Due to the supply chain inefficiencies and inadequate infrastructure, post harvest losses amount to INR 45,000 crore every year. M-commerce companies are playing an important role in organising the supply chain. They aim at supplying agro-inputs in time. Distribution costs can be managed efficiently through these channels. It is predicted that the agro-input industry would boom on account of increasing demand of pesticides and fertilizers.

Table 2[2]

All-India Consumption of Fertilizer Nutrients 2007-08 to 2010-11							
Year	Nitrogen (N)	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Total	% increase over the previous year	Kg/ hectare (N+P+K)	N:P:K
-----'000 MTs -----							
2007-08	14419.1	5514.7	2636.3	22570.1	4.2	115.7	5.5:2.1:1
2008-09	15090.5	6506.2	3312.6	24909.3	10.4	127.7	4.6:2.0:1
2009-10	15580.0	7274.0	3632.4	26486.4	6.3	135.8	4.3:2.0:1

According to [3], Indian agrochemicals industry faces challenges in terms of low awareness among farmers (only 25-30% of the farmers are aware of agrochemical products and their usage). If appropriate promotional strategies are

adopted by m-commerce companies then, this issue can also be resolved to a better extent.

II. CONCLUSIONS

SWOT Analysis

	Helpful	Harmful
Internal Origin	<p>Strengths</p> <ul style="list-style-type: none"> High mobile penetration which imply increasing prospects of the growth of industry. Moreover, rural markets have greater potential as compared to the saturated urban market. Customer satisfaction since the farmers get quality products with the right doses told to them. (Applying chemicals under prescribed limits can address the burning issue of toxic levels of residues found in plant. Loyal customer base since the farmers buy products at competitive prices and products are delivered at their doorsteps. (The issue of high pricing can be addressed if more number of players enter the market and farmers get range of prices to choose from. Useful for both illiterate and literate farmers (Thus, there is a possibility of increasing the number of customers.) 	<p>Weaknesses</p> <ul style="list-style-type: none"> Delivery time of agro-inputs to the farmers should be as low as possible Presence of more players is needed in the market for competitive pricing and offers. Currently there are only 2 major players. Need to develop efficient distribution system

<p>External Origin</p>	<p>Opportunities</p> <ul style="list-style-type: none"> • CAGR is high. Therefore, there is scope to increase customer base in the future • Increased opportunity of market segmentation through data mining to develop products which • Customized products in small packing and agricultural implements can be made for small and marginal farmers to have wide customer base • Need of consumer laws to be made protective to a greater extent 	<p>Threats</p> <ul style="list-style-type: none"> • Rising costs of inputs might narrow the customer base • Cost of the capital incurred to the start-ups
------------------------	---	---

REFERENCES

[1]. Saripalle, M., & Mukhopadhyay, J. P. (n.d.). Table: Statewise mobile penetration, income and inequality. Retrieved from <http://ifmr.ac.in/madhuri-saripalle-jyoti-prasad-mukhopadhyay-mobile-penetration-inequality-economic-growth-18-3-2016-one-day-international-seminar-creation-diffusion-technol/>

[2]. India, Ministry of Chemicals & Fertilizers, Department of Fertilizers. (n.d.). *Report of the working group on fertilizer industry for the twelfth plan (2012-13 To 2016-17)*. Retrieved from <http://planningcommission.gov.in/aboutus/committee/index.php?about=12strindx.htm#ind>

[3]. *Ushering in the 2nd Green Revolution - Role of Crop Protection chemicals* (Publication). (2015). Retrieved from <http://ficci.in/publication-page.asp?spid=20662>

