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An analysis of marketing mix strategies of major micro irrigation companies in Eluru district of Andhra Pradesh

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Abstract
Water is very important for farming, but it's becoming scarce because it is needed for energy, industry, and homes. In India, a lot of water for crops is used through old-fashioned methods, which waste a lot of it. This means only about 35-40% actually helps the plants. This not only wastes money but also hurts the environment by lowering the water level underground, causing waterlogged soil, and making it too salty for plants. To balance it micro irrigation is a clever way to use water better. It saves a lot of water compared to the traditional methods. It is good for all kinds of land, even the tough ones like hills or uneven ground. It helps crops grow better and uses much less water up to 90% less. The present study is conducted in the Eluru district of Andhra Pradesh. For conducting the study, five major micro irrigation companies operating in the Eluru district of Andhra Pradesh are considered based on their market share. Three distribution partners of each selected firm operating in the region is interviewed to collect the data. For collecting the data from the farmers, 12 farmers each for each identified firm is purposely selected from the records maintained by the firms. Hence, a total of 15 distribution partners and 60 farmers will form the sample. From the study it is observed that in Andhra Pradesh, there are some major companies like Signet Industrial Ltd. Finolex Plasson Industries Ltd. Jain Irrigation Systems Ltd. Captain Polyplast Ltd. and Skipper Metzer India LLP. These companies mainly make a limited range of parts for micro irrigation systems. Only Signet Industrial Ltd and Jain Irrigation Systems Ltd. are really good at promoting their products in the study area. Captain Polyplast Ltd. and Skipper Metzer India LLP doesn't cover all the districts in Andhra Pradesh. The government sets the prices for these products.

Keywords: marketing, major micro, irrigation, companies

Introduction
Water is one of the most critical inputs for agriculture, however, the share of water availability to the agriculture sector is declining at an alarming rate due to its ever-increasing demand for energy, industry and domestic purposes. Much of the available irrigation water in India is applied through conventional surface irrigation methods, which involve huge conveyance and distribution losses resulting in low overall irrigation efficiencies (35-40%) (GAS, 2014) [5]. The poor irrigation efficiency of these systems not only reduces the anticipated outcomes from investments in the water resources but also creates environmental problems, like lowering the water table due to over-exploitation of sub-surface water resources, water-logging and soil salinity, thereby adversely affecting the crop yields.

The situation of cropping under irrigated and rainfed conditions is quite decimal in India. The means for enhancement of the area under irrigation are also very limited, this calls for improving the water use efficiency of the available water resources which can be accomplished through proven water saving technologies such as micro irrigation systems. The term micro irrigation describes a modern method of irrigation by which water is irrigated through drippers, sprinklers, floggers and other emitters on the surface or subsurface of the land. Sprinkler irrigation and drip irrigation are the commonly used micro irrigation methods.

The micro irrigation system is effective in saving water and increasing water use efficiency as compared to conventional irrigation methods. Besides, it helps reduce water consumption, growth of weeds, soil erosion and cost of cultivation. Micro irrigation can be adopted in all kinds of land, especially where it is not possible to effectively use flooding methods for irrigation. Micro irrigation can be useful in undulating terrain, rolling topography, hilly areas, barren land and areas having shallow soils. The benefit of Micro irrigation technology includes efficient use of water and reduction in water usage to the extent of 50-90%.

This can be achieved due to the fact that micro-irrigation helps to reduce conveyance losses, runoff, evaporation losses, seepage and deep percolation losses significantly. The saved water can be used to increase the area under irrigation or for the reclamation of degraded/waste lands. Since a low flow rate is required, small wells can also be used as a source and it helps for energy savings of up to 30 to 50%. The potential savings in power may be utilized in other sectors. The direct application of fertilizers to the roots results in the saving in fertilizer consumption of up to 25 to 30%. This has a long term impact to achieve land productivity. The crop yields increase and it is seen that the productivity for crops and fruits increased up to 40 to 45% and the increase in productivity for vegetables was up to 50 to 55%. This ensures good economic returns as results better yields. Farmers can judiciously add more new crops due to improved water scenarios. Hence, micro-irrigation has been considered an innovative technology for sustainable agricultural growth (Sunratiya and Sushma, 2022) [10].

Micro irrigation sector status globally and in India

The global micro irrigation system market size was USD 7.59 billion in 2019 and it is projected to reach USD 12.40 billion by 2027, exhibiting a CAGR of 6.92 percent during the forecast period. (Fortune Business Insights, 2020) [6]. Micro irrigation is seen more in India- 62 Mha, China- 60 Mha, USA- 24.7 Mha, Pakistan- 19.4 Mha, Iran- 9 Mha and Indonesia-6.7 Mha. (Reinders and Felix, 2014) [9].

To increase area under micro irrigation, The Government of India launched the Pradhan Mantri Krushi Sinchayi Yojana (PMKSY) in 2015-16 by combining ongoing schemes related to micro irrigation. Under per drop more crop component of the PMKSY, small farmers get paid to the tune of 55% of cost of micro-irrigation systems; other farmers get 45% of the unit cost. The task force on micro irrigation, 2004 had estimated a potential of 69.5 million hectares under micro irrigation. Presently, area under micro irrigation in India is 7.73 million hectares (Drip-3.37 million hectares and Sprinkler-4.36 million hectares). (Priya and Panchal, 2017) [8].

In India, out of total 140.13 M ha of sown area, the net irrigated area was 68.38 M ha (48.80%), while 71.74 M ha (51.20%) was non-irrigated, and the area under micro irrigation was only 12.90 M ha which is 18.80% of the net irrigated area during 2021. It was found that drip, sprinkler and micro irrigation increased by 2.58% and 4.76 M ha respectively during the period 2015-16 and 2019- 20 (Deshmukh and Ajay, 2021) [2]. Karnataka state has a large area under micro-irrigation in India. Most of the greenhouses equipped with micro-irrigation in the country are used for horticultural production. The drip irrigation system dominated the market in 2021, owing to higher subsidies offered by the central and state governments in various states. The maximum adoption of the drip irrigation system is witnessed for fruit crops, followed by plantation crops, in terms of area coverage. Jain Irrigation Systems Limited, Netafim, Avanijal Agri Automation Pvt. Ltd. Agsmartic Technologies Pvt. Ltd. and Flybird Farm Innovations Pvt. Ltd are the most active players in the Indian micro-irrigation systems market. These players are adopting product innovation as their most adopted strategy to have a competitive edge over other players in the market. (India micro irrigation systems market - growth, trends, and forecasts, 2020) [6]. Andhra Pradesh topped the list followed by Karnataka, Maharashtra, Tamil Nadu and Gujarat which are among the top five states in micro-irrigation. Also, the report said that 51% of the total cultivated area in AP is under this type of cultivation, 49% in Karnataka, 34 percent in Maharashtra, 29% in Tamil Nadu, and 22% in Gujarat are implementing micro-irrigation.

Table 1: Percent of area under micro irrigation in top five states in India

S. No.	Name of the State	% of area under micro irrigation
1	Andhra Pradesh	51
2	Karnataka	49
3	Maharashtra	34
4	Tamil Nadu	29
5	Gujarat	22

***Source*:** NABARD

Andhra Pradesh has emerged as a leading state in India in the field of micro irrigation due to its potential and the significant number of small and marginal farmers. Currently, around 1.9 Mha of land in the state is estimated to be using micro irrigation systems, with drip and sprinkler irrigation being the most prevalent methods. The micro irrigation market in Andhra Pradesh is served by major companies such as Jain Irrigation Systems, Netafim Irrigation, and Mahindra EPC Irrigation.

Concept of marketing mix

Marketing mix is the combination of different marketing decision variables being used by the firm to market its goods and services. After identifying the market and gathering the basic information about it, the next step is deciding the market programming, to decide the instruments and the strategy to meet the needs of the customers and the challenge of the competitors. It offers an optimum combination of all marketing ingredients, so that companies can realize goals, for example profit, sales volume, market share, return on investment, *etc*. The marketing mix is grouped under four elements *i.e*., Product, Price, Place, and Promotion. A profitable formula of marketing operations is that most marketing mix changes as per marketing conditions and also with changing environmental factors.

Methodology

For conducting the study, five major micro irrigation companies operating in the Eluru district of Andhra Pradesh are considered based on their market share. Three distribution partners and 12 customers of each selected firm operating in the region is interviewed to collect the data. Hence, a total of 15 distribution partners and 60 farmers will form the sample. Survey method is used to collect the required data from the selected respondents with the help of a well-structured pre-tested-questionnaire.

Major findings of the study

Marketing Mix is a set of marketing tools or tactics, used to promote a product or service in the market to create interest in the product and to motivate the target customers to purchase the product. It is about position a product and deciding to sell it at the right place, at the right price and right time. The components of the marketing mix consist of 4Ps; Product, Price, Place, and Promotion. In the business sector, the marketing managers plan a marketing strategy taking into consideration all the 4Ps to further the business of the firm.

The marketing mix of the various micro irrigation companies operating in the study area is presented in this section. The

data collected and analysed with regard to the products manufactured by various micro irrigation firms, the promotional activities taken up by different companies and the details of pricing and place of operation are dealt in this section.

Products of selected micro irrigation companies

A product is an item offered for sale. It can be physical or in virtual or in cyber form and it could be a service.

The product that is offered by the micro irrigation firms to the farmers include complete range of components of micro irrigation, designing of micro irrigation system suitable to the field conditions and also installation of the micro irrigation system in the farmers field. With regard to the equipment of micro irrigation, all the selected companies have a range of components which they manufacture in their facilities and they outsource few components that they do not manufacture from other firms. Mostly, the firms buy certain type of filters, air release valves and pp-ball valves from other firms. The components that are manufactured by five selected micro irrigation firms operating in the study area are shown in the following table 2. From this table 2 it can be seen that the range of components manufactured by Jain Irrigation Systems Ltd is more in comparison to the other firms. Skipper-Metzer India LLP, Finolex Plasson Industries Ltd and Jain Irrigation Systems Ltd offer automation instruments through which micro irrigation system can be controlled from remote. In case of Jain Irrigation System Ltd. automation is more sophisticated as the equipment has sensors that can sense the field conditions like moisture content in soil, humidity *etc*. These instruments do not form a part of the standard micro irrigation equipment but are sold to the farmers if the farmer prefers to have an automated system.

Promotional activities

Farmers need to be communicated about the existence of particular brand of micro irrigation system. Awareness must be built among the farmers about why they need to use the product, what benefits it can provide and what difference it can make to the cultivation practices, and the unique features of the product.

Promotion is a form of marketing communication that seeks to inform farmers about the firms activities, its present and future offers and helps in building a positive brand image, fosters positive relationships and tries to stimulate demand.

Companies can take up different types of promotions to convince the farmers to choose their product. Various types of promotions that are taken up by five major micro irrigation films in the study area are depicted in the table 5.

Table 2: Components manufactured by five major micro irrigation firms

S. No.	Signet Industrial Ltd	Finolex Plasson Industries Ltd	Jain Irrigation Systems Ltd	Captain Polyplast Ltd	Skipper Metzer India LLP
1	Drip lines	Drip lines	Drip lines	Laterals	Drip lines
2	PVC pipes and fittings	Emitters	Emitters / Drippers	Drippers	Emitters / Drippers
3	HDPE pipes and fittings	Laterals	Sprinklers	Sprinklers	Mini sprinklers
4	HDPE sprinkler pipes	Filters	Filters	Micro sprinklers	PVC pipes
5	Cable ducts	Fertigation equipment	PVC pipes and fittings	Compression fittings	HDPE sprinkler pipes
6	Spray pumps	HFPE Pipes	HDPE pipes and fittings	Control valves	Automation instruments
7	Crates	HDPE fittings	Fitting accessories	Filters	
8		PVC valves	Drip kits	Pipes and fittings	
9		Automation instruments	Dosing pumps and injectors	Fertigation equipment	

Table 3: Promotional activities carried out by major micro irrigation companies in Andhra Pradesh

Sl. No.	Promotional activity	Signet Industrial Ltd	Finolex Plasson Industries Ltd	Jain Irrigation Systems Ltd	Captain Polyplast Ltd	Skipper Metzer India LLP
1	Crash campaigns	✓	✓	✓	✓	✓
2	Crop seminars	✓	✓	✓	✓	✓
3	Demonstrations	✓	✓	✓	✓	✓
4	Trainings	✓	✓	✓	✓	✓
5	Regional melas	✓	✓	✓	✓	⊠
6	Exhibitions	✓	✓	✓	✓	✓
7	Crop folders	✓	✓	✓	✓	✓
8	Product Literature	✓	✓	✓	✓	✓
9	Posters	✓	✓	✓	✓	✓
10	Pole posters	✓	✓	✓	✓	⊠
11	Banners	✓	✓	✓	✓	⊠
12	T-shirt campaign	⊠	✓	✓	✓	⊠
13	Wall painting	✓	✓	✓	✓	⊠
14	Shop painting	✓	✓	✓	✓	⊠
15	Retailer boards	⊠	⊠	⊠	⊠	⊠
16	Retailer gates	⊠	✓	⊠	⊠	⊠
17	Trolley painting	✓	✓	✓	✓	✓
18	Hoardings	✓	✓	✓	✓	✓
19	Radio (spots)	⊠	⊠	⊠	⊠	⊠
20	Prints (Ads)	✓	✓	✓	✓	✓
21	TV (spots)	⊠	⊠	⊠	⊠	⊠
22	Dealers meetings	✓	✓	✓	✓	✓

(Note: "✓'' mark indicates that the promotional activity is taken up by the firm whereas as a ''*'' mark indicates that the promotional activity is not taken up by the frirm)

From the table 3 it can be seen that crash campaigns, which are short duration purpose based campaigns are carried out by all the major firms. These campaigns which are usually based on the crops cultivated in various seasons. Crop based seminars in which the technical aspects related to irrigation are explained are conducted during the season by all the firms. Similarly, demonstrations, trainings, exhibitions, crop folders, product literature, print advertisements, posters, trolley paintings, hoardings and dealers general meetings are promotional activities taken up by major micro irrigation firms operating in the study area. Promotional activities like regional melas, pole posters, banners, wall paintings and shop paintings are taken up by Signet Industrial Ltd. Finolex Plasson Industries Ltd. Jain Irrigation Systems Ltd and Captain Polyplast Ltd. T-shirt campaign is taken up by Finolex Plasson Industries Ltd. Jain Irrigation Systems Ltd and Captain Polyplast Ltd. Sponsoring retailer boards, radio and television promotions are not carried by selected micro irrigation firm in the study area.

Place

Place in marketing mix refers to the geographical location in which the micro irrigation firms sell their products and provide services. The micro irrigation firms that have been selected for the study based on their market share are operational in majority of the districts of Andhra Pradesh. The following table shows the data with regard to the districts in which each firm does not operate its business in Andhra Pradesh.

Table 4: Districts in which selected firms do not operate in Andhra Pradesh

S. No.	Firms	Districts in which the firm is not operating
1	Signet Industries Ltd	Nil
2	Finolex Plasson Industries Ltd	Nil
3	Jain Irrigation Systems Ltd	Nil
4	Captain Polyplast Ltd	Anakapalli, Guntur, Kakinada, Konaseema, Krishna, Parvathipuram Manyam, Vishakapatnam, Vijayanagaram and West Godavari
5	Skipper Metzer India LLP	Anakapalli, Guntur, Kakinada, Konaseema, Krishna, Nandyal, Nandamuri Tharaa Ramarao, Parvathipuram Manyam, Sri Potti Sriramulu Nellore, Srikakulam, Tirupathi, Vishakapatnam, and West Godavari

(APMIP, 2023).

It is seen that Signet Industries Ltd. Finolex Plasson Industries Ltd and Jain Irrigation Systems Ltd are operational in all the districts of Andhra Pradesh. Whereas Captain Polyplast Ltd is not operational in nine districts Andhra Pradesh. Skipper Metzer India LLP is not operational in 13 districts of Andhra Pradesh. Hence Skipper-Metzer India LLP has good scope to increase its share by expanding its operations in the districts in which it is not operating now.

Firms decide about the place of operation based on various factors like crops cultivated, schemes of Government that are operational, availability of water and extent of land in which micro irrigation systems are installed. In the potential areas identified, the firms approach Government for approval to operate in the identified area.

Prices of various components of micro irrigation system in the study area

Price is the amount that consumers are willing to pay for a product. In case of micro irrigation systems price is the amount that farmers will be willing to pay for buying micro irrigation equipment and installing it. Firms usually link the price to the products real and perceived value, while also considering supply chain cost, seasonal discounts, competitor prices and retail markets. In case of micro irrigation equipment and installation, the prices of various components are fixed by the Government and the firms have to follow them invariably. The cost of installation of micro irrigation system will vary depending on the cropping intensity, type of crop and topography of the land. In the study area it is seen that the cost per acer varies in between Rs 400 to Rs 600. Half of the fitting charges will be borne by the firm. The amount that needs to be paid by the firm towards fitting charges for installation is fixed, however farmers negotiate with the fitters with regard to the 50% of installation charges they need to bear. Hence, a variation in the fitting charges is observed.

The prices of various components of micro irrigation system as fixed by the Government are listed in the table 3.6. The most expensive item in the whole system is hydro cyclone filter which costs around Rs 4500 per unit. The cost of screen filter is around Rs 2400 per unit and other components whose values are little more than Rs 1500 are ventury and throttle valve. It is also noticed that different types of filters are purchased by the firm from the manufactures of filters.

For the installation of the micro irrigation system, Government of Andhra Pradesh gives subsidy of 90% to the farmers having land holding size of one to five acers and 50% to those who have land holding size of more than five acers. The subsidy is directly given to the firms based on the business they do in a certain period.

Table 5: Prices if micro irrigation system components proposed by the Government of Andhra Pradesh

Sl. No.	Name of the product	Size of the product	Unit	Unit price in Rupees
1	Screen filter	40 M^3	No	2337.76
2	Ventury	2 M^3	No	1550.27
3	Inlet outlet manfold	3 M^3	No	713.08
4	Throttle valve	3 M^3	No	1627.13
5	Air release valve	1 M^3	No	141.9
6	Pressure gauge	0.25 M^3	No	198
7	Pressure cork	0.25 M^3	No	78
8	Hydro cyclone filter	3 M^3	No	4448.72
9	PVC pipe	110 mm	Mtr	110.46

10	PVC pipe	90 mm	Mtr	135.86
11	PVC pipe	75 mm	Mtr	112.2
12	PVC pipe	63 mm	Mtr	77.12
13	PVC pipe	50 mm	Mtr	55.2
14	p.p-control valve	63 mm	No	576.4
15	Flush valve	63 mm	No	80.9
16	Flush valve	50 mm	No	72
17	Plain lateral	16 mm	Mtr	8.43
18	Plain lateral	12 mm	Mtr	4.45
19	Emitting pipe	16-4-60	Mtr	10.83
20	Micro jet assembly	270º	No	15.38
21	Micro jet assembly	360º	No	15.38
22	Dripper	8 lph	No	2.63
23	Dripper	4 lph	No	2.63
24	Gromet	16 mm	No	1.84
25	Gromet	12 mm	No	1.25
26	Start connector	16 mm	No	1.72
27	Start connector	12 mm	No	1.41
28	Nipple	16 mm	No	1.78
29	Nipple	12 mm	No	1.47
30	End cap	16 mm	No	1.59
31	End cap	12 mm	No	1.29
32	Microtube	6 mm	No	1.27
33	Barbed connector	6 mm	No	0.54

Conclusions

- All five major companies mainly have a limited range of parts of micro irrigation systems.
- Signet Industrial Ltd and Jain Irrigation Systems Ltd. are good at promoting their products in the study area.
- Captain Polyplast Ltd. and Skipper Metzer India LLP doesn't operate in all the districts in Andhra Pradesh.
- The government sets the prices for these products and all the companies should follow it.
- All the companies sell their products through APMIP.

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