

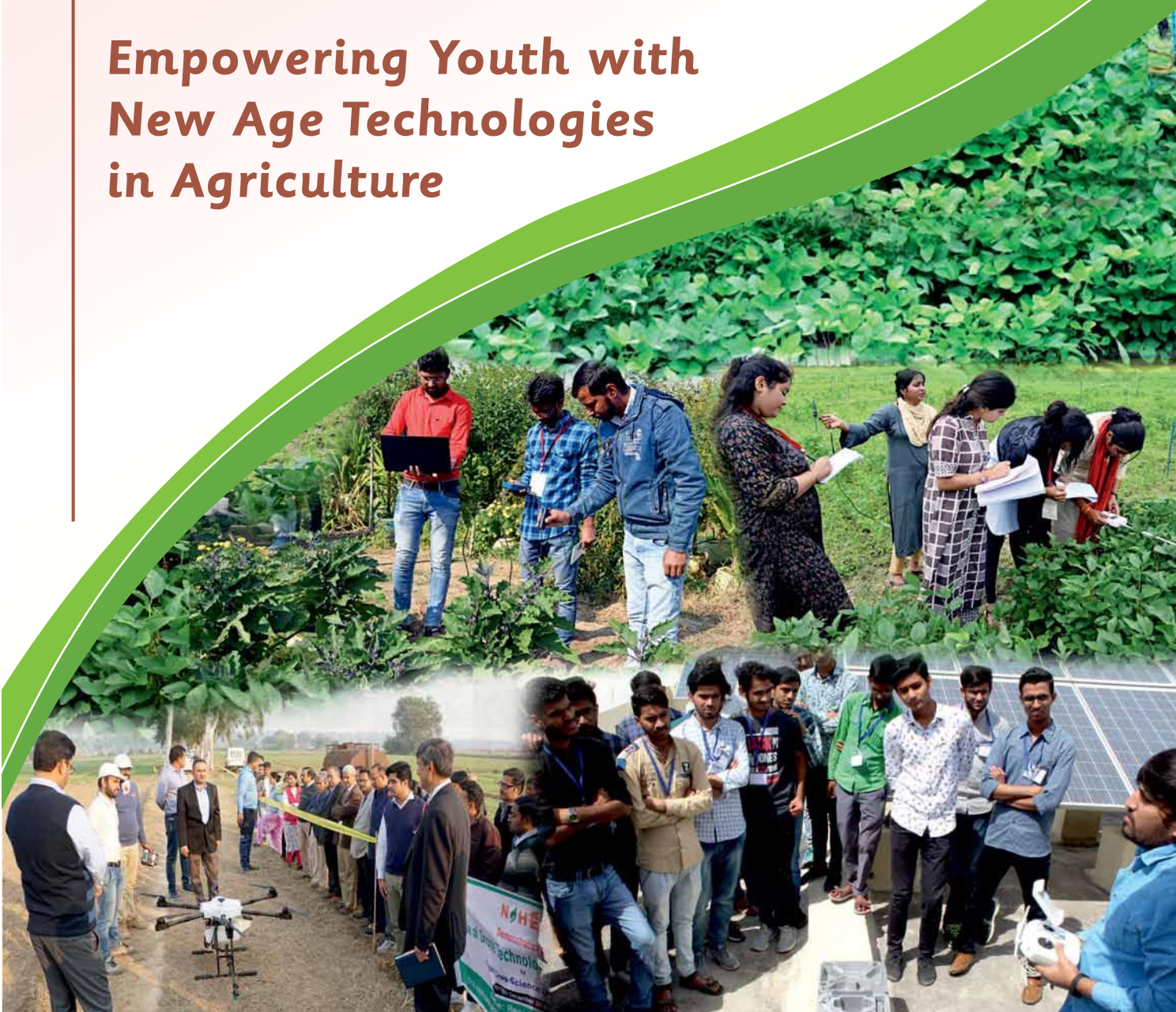


agri rise

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Empowering Youth with New Age Technologies in Agriculture



agri-rise

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Reinforcing Smart Agricultural Market and Business with Digital Technologies

The international smart farming market size was valued at \$16,746.7 million in 2019, and is estimated to reach \$29,234.6 million by 2027 with a CAGR of 9.7% from 2021 to 2027. Accordingly, the smart farming concept is often focused on providing the agrarian industry with the infrastructure to influence progressive sciences and technology. Developing countries like India are well geared up to fetch advantages of various advanced and innovative versions of science and technologies. Digital India Movement is one such most significant programs initiated by the Government of India in 2015. As time goes on, digitalization spreads its wings from document automation, payment systems, content management, group buying, online banking, trading and marketing, teleconferencing, electronic tickets to artificial intelligence, machine learning, robotics and many more sectors; more specifically in

farming and allied sectors. COVID 19 era established the true importance of such newly evolving sciences where huge digital platform was offered to the world offering multiple acts and activities. Agriculture too got its new way of farming and

doing business in the changing economic environment characterised by liberalization, privatization and globalization (LPG). More recently, the high value agricultural products like fruits, vegetables and value-added products from many such farm produces are being sold through online mode using plethora of digital platforms with smart intelligence based technologic inputs.

Data from authentic sources revealed that the number of IT and social media users has increased by 78 million (+21%) between 2020 and 2021. As per Stat counter report during 2021, majority of the Indian (including rural populace) have their hands-on digital platforms like Facebook (64.2%), YouTube





in due knowledge exchange, targeted recommendations, market integration and access to finance to make agriculture a profitable enterprise and attractive for youth. In this context the digital farming may be perhaps exactly defined or narrated as an ICT and data ecosystems to support the development and delivery of timely, targeted information and services to make farming profitable and sustainable while delivering safe nutritious and affordable food for ALL.

The term 'Market' in general shows the image of large number of sellers, buyers and intermediaries in the mind of an individual, an image of typical traditional market. Traditional market is the market where buyers and sellers are physically present in the market to transect the homogeneous and heterogeneous commodities. But, in the current era, science has started involving in this marketing process and recognized as digital marketing or digital market. There has been an increase in modernization and digitalization in the agribusiness sector over the past few years. Digital marketing is the term used today to refer to the technology, processes, and digitalization used in marketing. Using information that is now and historically available, digital marketing assists farmers in making the best decisions regarding where and when to sell their crops.

There remain enormous steps that have been recently taken by government, non-government and private social, segments, to boost the agricultural and allied sectors

(17.37%), Instagram (8.19%), Pinterest (5.08%), Twitter (3.73%) and Tumblr (0.65%). If we look towards global situation, in same time span, nearly 4.1 billion people have been vigorously using smart digital communication channels (emails) which represents about 50% population of the world. Like other sectors, the mass media connectivity remain equally wide and deep for farming sector and communities adopting variety of means, channels, and platforms of communication and information exchanges. It includes popular examples like *Krishi jagat*, *Chopal*, *Kisano ke liye*, *Khet ki baten* and *Khet aur khalihan*; which were known for their most effectual end deliveries in this context. One of the most popular and accepted communication channels is the 'Kissan Call Centre' which has eleven-digit number 1800-180-1551 to offer all the farm related

information/communications to farmers, casing as high as 22 numbers of regional languages. In nut shell, such smart technologies via digitalization very well connects the dots of science based agricultural revolution to the technology-based market environment which ultimately empower the farming communities and their ease of doing farming.

Horizon of Digital Media and Marketing in Agriculture

Over the last few decades enormous high-tech development and opportunities have transformed people's lives. However, these opportunities have not benefited the agriculture sector in a significant way. Farmers and various other actors along the agriculture value chain need significant amounts of information. Information and Communication Technologies (ICTs) is going to play a key role



Details of 9 most popular Start Ups used for digital market intelligence in farming sector

in a variety of ways. Placing a comprehensive account of all such efforts, products, solutions and supportive knowledge/information sphere is beyond scope here, owing to paucity of space. Moreover, major outcomes/efforts in this direction could be segmented into two broader groups namely (1) A large number of Apps for farms/farmers/farming and (2) A large number of start-ups from various agencies/organizations/individuals. A few of them are briefly

accommodated in below given paragraphs by using crisped deliberation through texts and pictorial reflections.

Digital Marketing

Digital marketing is well established as an excellent potential source of business for the farm. Mobile devices and high-speed broadband can make it easier to get access to the internet. In addition, a wide range of mobile apps has opened the way to reach new customers, to set up webshops,

to create a personal community on social media and to shorten the supply chain. One step ahead the demand driven digital marketing can play a noteworthy role in increasing demand for agri-products and services at local to global scale.

The Growing Potential of Digital Marketing in Agriculture

Digital Marketing is emerging as a prerequisite for current days agricultural interventions. The reasons behind it remains the fact that the farming and agribusiness creation itself has grown in complexity to encompass subsectors like farming machinery, precision-agriculture, chemicals, farm equipment, crop production, supply-chain services, and more. Companies in these sectors can now choose between traditional business outreach channels or online marketing practices. But the truth is, that digital marketing for farming and the agribusiness sector provides businesses with the opportunity to increase visibility and to generate business-to-business leads more efficiently than ever before. As these industries continue to grow and continue to modernize, the proportion of operations that take place online will grow as well. Under prevailing situations, few best practices which could be set as end target may be taken as follows:

- Ensuring long-term business growth and reliable revenue
- Maintaining or growing industry market share
- Promoting brand recognition and building a business's loyalty base

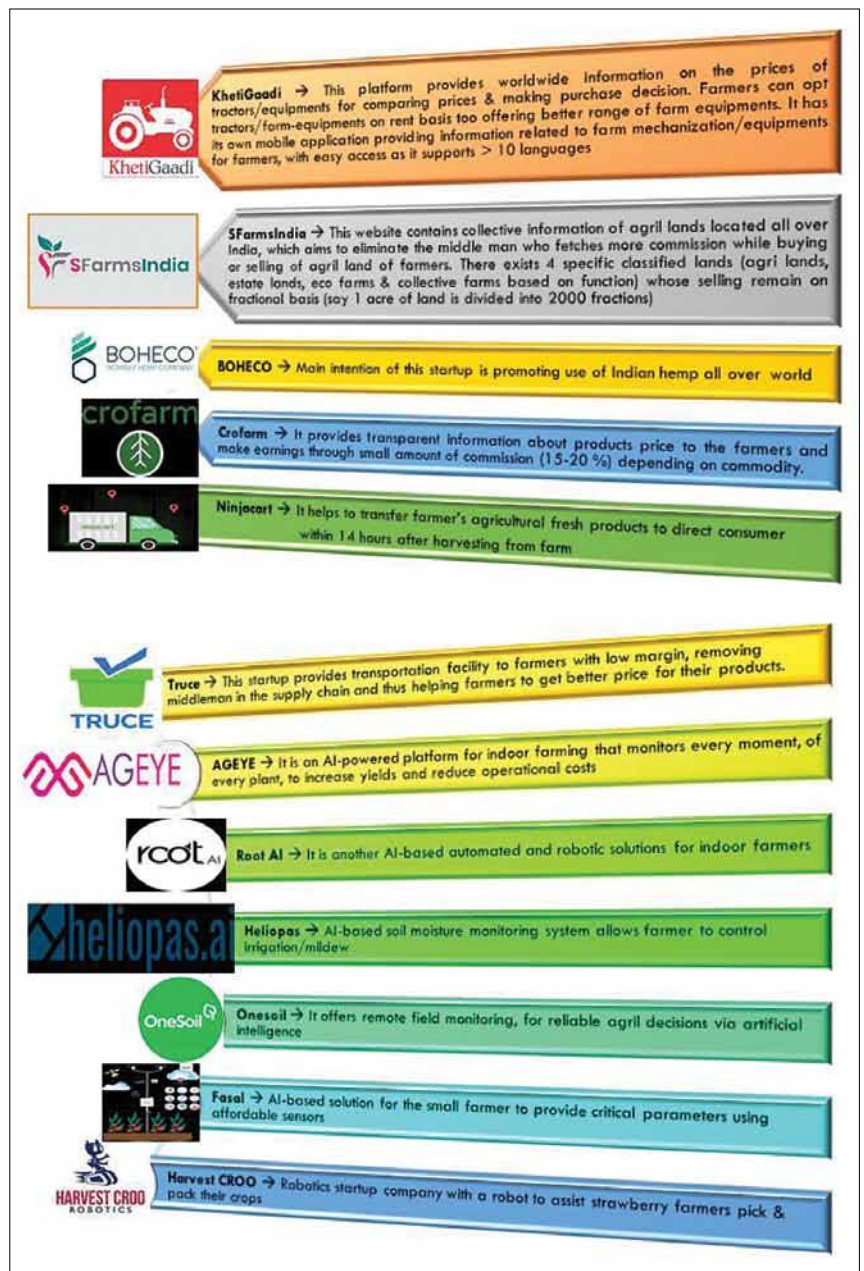
- Growing traffic to your digital platform across organic, referral, and social segments
- Gaining authority with improved page-linking and natural backlink growth
- Improving sales and revenue affordably, without an ad budget
- Making leads and sales by catching search traffic for customers being at the top of shopping funnel

The success of marketing any kind of business products is closely related to how to overcome marketing obstacles. One is the use of proper user friendly and demand riven digital tools. Researchers including faculty at AAU Anand, have developed some of the versatile tools and technologies, which have proven their worth by their wider acceptances from farming as well as agri-business community. There remain enormous number of quality Apps, namely Kisan Suvidha, AgriMarket, AgWeb, KisanSetu, Mandi trade, e-Choupal, eMandi, e-NAM, IFFCO-iMandi and many others. Few most popular ones (preferred by Indian farmers) are pictorially illustrated.

Similarly, larger emergence of start-ups towards digital market and corresponding architecture are also reviewed out of which most popular start-ups remains *KhetiGaadi*, *SFarmsIndia*, *BOHECO*, *Crofarm*, *Ninjacart*, *Truce*, *AGEYE*, *Root AI*, *Heliopas*, *Onesoil*, *Fasal*, and *Harvest CROO*.

Role of Market Intelligence in Digital Marketing

In farming rich nations like India, agriculture plays critical



Details of 12 most popular Apps as used for digital marketing in farming sector

role in meeting out the food and nutritional needs of society along with the raw material necessity of agro processing industries. Nevertheless, the instability in prices of agricultural commodities has been remained the matter of serious concern since decades, both for farmers as well as traders. The high post-harvest losses, high market

arrivals and low prices led to decrease the producer's share in consumer's rupee. Many studies have well outlined the role of market intelligence in marketing of vast agricultural commodities. From conceptual viewpoint, any of the market intelligence is considered to be a type of market information which could certainly and confidently helps the society

(growers or consumers) to become aware about the future movement of prices based upon the past and present trends. The ultimate outcomes and recommendations often suggest that the market intelligence in agri-business sector should inevitably focus on establishing efficient marketing and agro-processing linkages between farmers/ farmer producer groups, markets and processors which would make agriculture a more viable proposition. To achieve this giant and complex task we need to have a robust information and communication system followed by strong data base and its region-specific analytics yielding optimum decision supports at the end. The step would not only help in generating better returns but also help in reducing the losses, generating employment and ensuring the price guarantee.

It would serve as the source of commercialization for farmers who are doing subsistence farming only. Digital marketing is well established as one of the versatile approaches as well as direct solution to matrix of marketing related issues and problems. While defining true objectives of agricultural marketing, such digital transformations may well take care of diverse conditions whatever prevails in regards to farming, farmers, consumers and markets. With broader, deeper & reliable information bases the due objectives of such marketing can be shaped in a manner where they remain measurable, actionable, relevant and time bound.



Series of events to lively promote and work upon agricultural market intelligence at AAU



Conceptual and operational framework of agricultural marketing intelligence

Centre for Agricultural Market Intelligence under NAHEP-CAAST at AAU, Anand

Prevailing economic environment is characterized by liberalization, privatization and globalization, where agricultural marketing is emerging as one of the key issues for whole farming community and business as well. Further, the massive small and marginal farmers (86 % of total farmers) have less than two hectares land holding, remain core constituent of Indian farming production system with very low marketable surplus and almost no bargaining power. Keeping in view the emerging worth of market intelligence for farmers and other stakeholders/policy-planners; Anand Agricultural University (AAU), Anand, has already bagged a prestigious national project entitled "Establishing Centre for Agricultural Market Intelligence" under CAAST Component of National Agricultural Higher Education Project (NAHEP), jointly funded by ICAR and World Bank. It involves multidisciplinary interventions towards production, processing, marketing, trade and IT in the broader areas of farming and allied activities. Elementary objective is inclined toward improving information knowledge base along with qualitative higher education in farming domain.

There exist dozens of operational research studies, including innovative R&D projects with high end organizations like ISRO, Ahmedabad and Western

Sydney University; to work upon specific advanced modules like (i) Developing hybrid model for price forecasting of major crops and (ii) Enhancing agricultural market intelligence using digital ecosystem for generating primary data streams. Enormous number of efforts are on to attain elements of due success via capacity building programmes (>100) on marketing, trade, price forecast and farmer producer organisations; by inviting experts of national and global repute. Another channel for realization and dissemination of agricultural market intelligence remain planning and conductance of certificate courses on diverse zones of market intelligence via python/digital-marketing. Ongoing efforts also includes developing quality HR and their advanced developments via national and global trainings. About 40 PG scholars and 25 faculty members are getting rewards via this vital component. As a recent end deliverable, the validity of the price forecasts of some of the farming commodities has been found more than 90 % at this centre of excellence on marketing intelligence.

Agri Startups under Digital Marketing Architectures

Variety of startups have recently ventured into the farming sector, offering a effective system of transparency, traceability, efficiency, and consumer centric slant in the agrarian and allied sectors. Artificial Intelligence, machine learning, block chain analysis, drone-based agriculture, and

precision agriculture are some of the innovations of science that widen the scope of agriculture and bring more startups in this field. AAU has recently established an Incubation Centre to support few leading Start-ups from Agriculture, Food Processing and Allied Segments. It is a well-established fact that under present smart technologic era, any kind of added proven technology; always benefits via generation of added levels of resource use efficiency, productivity, profit and farmers' income. Some of the conceptual and operational framework of farming marketing intelligence are highlighted in above figure, being self-explanatory to establish standing of digital marketing and its intelligences.

The inherent architecture of digital marketing plays a governing role to decide the level of success or failure that is expected to be attained. Some of the basic advantages and limitations of digital marketing are narrated herein, which requires due realizations.

Conclusion

Digital marketing is intensively sprouting marketing strategies in today's era, whose potential in agricultural is yet to be fully harnessed to improve farming and income of farmers. Farmers, traders, FPOs, and consumers happens to be the key participants in agricultural digital market, where even the smaller and marginal farmers too can have the chance to learn more about the market and sell their products either directly to consumers or to traders who would pay them a fair price. A wide range of

Advantages of Digital Marketing

- **Easy Consumer Reach:** Companies can effectively communicate with large number of potential customers simultaneously, as using the internet as a marketing channel happens to be a quick way to simultaneously reach large number of potential customers and prospects worldwide. Advanced revolutions via variety of social media platforms (Facebook, Twitter, LinkedIn, Pinterest) have added further values in digital marketing.
- **Direct Advertising:** Making it possible, a better awareness on brand/product can be raised, where companies can easily advertise their goods/services via variety of digital platforms. Under prevailing highly competitive marketing environment, digital marketers can fetch higher benefit from an effective online advertising strategy and promotional tools.
- **Perpetually Displaying Ads:** Digital marketing facilitates the advertisements to make them easily accessible to target customers at any time or location, offering simultaneous viewing of advertisements on any website at any time and from any location. Prospects are enticed to get in touch with producer or buyer with accurately discovered products and services. However, for all these ads to appear on a webpage, an effective management is always required keeping in view the local conditions.
- **Global Reach:** Digital marketing enables businesses to advertise internationally and thus broaden their customer base beyond regional or national borders.
- **Easy Brand Promotion:** With the advent of new technologies and the use of internet in business, brands may be able to effectively communicate with their clients fetching advantage of reach of their customers.
- **Cost Effective Channel:** When compared to traditional marketing channels like television, radio, magazines, newspapers, banners etc; digital marketing always remain cost-effective; as marketers can tailor their advertising campaigns based on their budget. Most of the time, the websites and business profiles that show ads and details about products or services get a lot of free traffic. Due to its numerous advantages, social media has been instrumental in promoting digital marketing initiatives. Online Entertainment Advertising stages like Facebook, Twitter, Google+, LinkedIn, WhatsApp, Sites, Cry, Instagram, and YouTube also offer a significant source of traffic.
- **Consumer's Convenience to Shop Online:** Customers now find it easier to shop online at any time (24 hours a day, seven days a week), regardless of where they live or where they shop. This is because digital marketing is becoming more and more popular. Companies and retailers now have opportunity to direct customers to an offline location of their online store, thanks to digital marketing.
- **Accountability of Marketing Activity:** Companies can use digital marketing to gauge the success or failure of their marketing efforts, as well as the amount of activity and conversations that occur.
- **Helping Marketers' Career:** For individuals who are familiar with implementing digital marketing strategies and assisting businesses in expanding their brands to target customers via the internet, digital marketing has emerged as a lucrative career option.

producers and clients are available to traders, allowing them to buy and sell produce from them. Digitalization can amply boost the value of

the FPO brand and open up new agri-business prospects, where the customers too will have the option of making affordable direct purchases

from the farmers. The next generation farming sector marketing is certainly going to be smart technologically driven and gaining expanded

Limitations of Digital Marketing

- **Constraints of Internet Access:** The internet is a key component in digital marketing, and when the customers may not have adequate or ensured access to internet connectivity, digital marketing may not be so successful.
- **Limited Consumer Link/Conversation:** Due to digital marketing's reliance on the internet, advertisers may struggle to make their adverts more thorough and engage customers in conversation about the company's brand or products.
- **High Competition of Brands:** When a customer searches for a specific product on the internet, digital marketing has a drawback in that many competing goods and services with similar marketing strategies appear on the customer's home page. Customers may get confused as they have the option of selecting a lower-priced, higher-quality product from another company. As a result, some customers don't trust a lot of advertisements that show up on websites or social media, taking them as scams.
- **Risk of Hacking Strategies:** One of the drawbacks of digital marketing is that digital channels (the internet) always carry the risk of a company hacking its promotion strategies. The valuable promotional strategies of a well-known company can easily be tracked and copied by competitors or hackers, who can use them for their own purposes.
- **Anti-Brand Activities:** Digital marketing has the disadvantage of allowing anyone or a group of people to "doppelgang" a well-known brand and harm its image. Hostile to mark activists, bloggers, and assessment pioneers spread the term 'Doppelganger' to object the picture of a specific brand.
- **Advertisement for Limited Products:** One more common-sense downside of Computerized Promoting is that it is just helpful for shopper products. Digital channels are ineffective for marketing pharmaceuticals and industrial goods. Also the digital marketers may benefit from comprehending the digital marketing's advantages/disadvantages with information narrated above.

digital interventions, which are transparent, user friendly and better result producing. Digital tools used in agricultural marketing and agri-entrepreneurship with particular focus on startups are going to play a vital role in making the country move in tandem with need of the national and international markets. Focused attention of policy makers and agencies concerned in public and private sectors in promoting and encouraging digital marketing system can go a long way in transforming agriculture into inter-alia, attractive and more

paying proposition which is need of the hour.

In view of growing use of digital media, particularly specialized marketing and agri- commodity Apps, through smart phones and availability of agricultural market intelligence generated based on the rigorous analysis, farmers can take informed decisions about sowing of crops to marketing and trade, which eventually enhance their income in big way and in transparent manner. Digitalization in agriculture seems to be one step solution in science-based market field supported by timely availability

of market intelligence, which will defiantly bring more players in the field of agribusiness with paramount scope and hope in the time to come. In nut shell, it cannot be gainsaid that science, with particular attention on digitalization is the panacea in the mid-way of market, business and sustainability in agriculture in the 21st century.

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