Chapter 1

Introduction

Agriculture can be defined as the oldest of all trades known to mankind. It has evolved itself from ancient times to take the shape as we know it today. The activity has taken in its stride many improvements and has improved with experience and innovation.

1.1 Agriculture in Iran

Roughly one-third of Iran's total surface area is suited for farmland, but due to the poor soil conditions and lack of adequate water distribution in many areas, most of it has not been brought under cultivation. Only 12% of the total land area is under cultivation (arable land, orchards and vineyards) but less than one-third of the cultivated area is irrigated; the rest is devoted to dry farming. The western and northwestern portions of the country have the most fertile soils.

One third of the total land area is used for grazing and small fodder production. Most of the grazing is done on mostly semi-dry rangeland in mountain areas and on areas surrounding the large deserts ("Dasht's") of Central Iran.

At the end of the 20th century, agricultural activities accounted for about one-fifth of Iran's gross domestic product (GDP) and employed a comparable proportion of the workforce. Most farms are small, less than 25 acres (10 hectares), and thus are not economically viable, which has contributed to the wide-scale migration to cities. In addition to water scarcity and areas of poor soil, seed is of low quality and farming techniques are antiquated.
All these factors have contributed to low crop yields and poverty in rural areas. Further, after the 1979 revolution many agricultural workers claimed ownership rights and forcibly occupied large, privately owned farms where they had been employed. The legal disputes that arose from this situation remained unresolved through the 1980s, and many owners put off making large capital investments that would have improved farm productivity, further deteriorating production. Progressive governmental efforts and incentives during the 1990s, however, improved agricultural productivity marginally, helping Iran toward its goal of reestablishing national self-sufficiency in food production.

Iran’s agricultural sector contributed 11 percent of the GDP in 2004 and employed a third of the labor force. Since 1979, commercial farming has replaced subsistence farming as the dominant mode of agricultural production. Some northern and western areas support rain-fed agriculture, while other areas require irrigation for successful crop production. Wheat, rice, and barley are the country’s major cereal crops.

The 1979 Revolution sought self-sufficiency in foodstuffs as part of its overall goal of decreased economic dependence on the West. Higher government subsidies for grain and other staples and expanded short-term credit and tax exemptions for farmers complying with government quotas were intended by the new regime to promote self-sufficiency. But by early 1987, Iran was actually more dependent on agricultural imports than in the 1970s.

By 1997, the gross value of products in Iran’s agricultural sector had reached $25 billion. In 2000, the Construction Jihad Organization
and the Ministry of Agriculture were merged by a national legislation, to form the new Ministry of Agricultural Jihad. By 2003, a quarter of Iran's non-oil exports were agricultural based. Today, according to a senior Agriculture Jihad Ministry official said that Iran has attained 94 percent self-sufficiency in essential agricultural products.

Mechanized agricultural has had a slow but steady growth in Iran. Industrial facilities in Tabriz and Arak are Iran's largest producers of machinery and equipment for the agricultural sector (i.e. tractors and combine harvesters).

While the Iranian Government policy is aimed at self-sufficiency for even more products, it's unlikely the country will produce enough agricultural products in the short- to medium-term to meet that goal. Iran has struggled to provide enough basic food commodities to its local market demands, following a significant population increase over the past two decades. For example, annual wheat production ranges between six and 10 million tones, yet the government currently imports between three and four million tones to meet the growing demand

1.2 Agricultural Marketing in Iran

"Agricultural Marketing in general may be defined as the whole process by which real marketable surplus, belonging to the producers, reaches the consumers."

All decisions and transactions from farm until final sale to consumers can be considered part of agricultural marketing system, as is the supply of inputs from the producer or importer to the farmer. Physical processes such as assembly, transport, drying, storage and
processing, wholesaling and retailing are integral elements of this system as are trade finance and marketing infrastructure and the legal, administrative and macro-economic policy framework.

An efficient agricultural marketing system is essential for the development of the agricultural sector. In as much as it provides outlets and incentives for increased production, the marketing system contributes greatly to the commercialization of subsistence farmers. Failure to develop the agricultural marketing system is likely to negate most, if not all, efforts to increase agricultural production.

The local traditional market in Iran is usually maintained in areas where transportation is almost impossible for the rural population with its limited means. And the goods and services are intended for local consumption. The local market is usually located in a market place. This is a site in which the goods offered change from season to season. Such a local market forms a network, in which one market is linked to another through the passage of goods, services and people. The local market is a meeting place of occasional sellers, who set up at random in sales shacks, and come together at fixed time intervals at that fixed site. This is where goods and services are distributed between the villagers, who act both as buyers and sellers.

The agricultural sector shows a noticeable growth in horticultural production in Iran. The country produces a large quantity of Pistachio, Saffron and Dates in addition to other crops. A large quantity of these commodities are exported to other countries of the world particularly USA, Japan, Europe and Middle East countries. A large group of
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farmers produce these products and they sell the products to the local buyers. The traders ultimately sell these products either in the domestic market or in the international markets. A large quantity of the output is sold in the global markets.

**Saffron**

Saffron, botanical name crocus sativus is one of the most expensive spices in the world. Derived from the dried stigmas of the purple saffron crocus, it takes anything from 70,000 to 250,000 flowers to make one pound of saffron. Moreover, the flowers have to be individually hand-picked in autumn when fully open.

Records detailing the use of saffron go back to ancient Egypt and Rome where it was used as a dye, in perfumes, and as a drug, as well as for culinary purposes. It reached China in the 7th century and spread through Europe in the Middle Ages. The town of Saffron Walden, where it was once grown commercially, takes its name from the plant. Now, however, most saffron is imported from Iran (southern Khorasan) and Spain which is recognized as producing the best quality, but it can also be found in Egypt, Kashmir, Morocco and Turkey.

**Saffron Threads vs. Powdered Saffron**: Saffron has an aroma and flavor which cannot be duplicated, and a chemical make-up which, when understood, helps the chef or home cook to know how to best
release that flavor and aroma in cooking and baking. Saffron is sold in two forms, powder and threads, and each behave very differently in the kitchen.

In order to understand commercial saffron, it is important to understand the make-up of the saffron plant. Commercial saffron comes from the bright red stigmas of the saffron crocus (*Crocus sativus*) which flowers in the fall in many different countries, including Greece, India, Iran and Spain. The *Crocus sativus* stigmas are the female part of the flower. In a good year, each saffron crocus plant might produce several flowers. Each flower contains three stigmas, which are the only part of the saffron crocus that when dried (cured) properly, become commercial saffron. Each red stigma is like a little capsule that encloses the complex chemicals that make up saffron's aroma, flavor, and yellow dye. In order to release these chemicals, you must steep the threads. Powdered saffron is more efficient because it does not need to be steeped.

In the food processing industry saffron is used as a colorant in alcoholic-cheese and alcoholic and non -butter ,margarine ,sausages cream and-lavor in iceIt is also used for coloring and f .beverages .saucers and dressings

It has also been used in the treatment of ailments such as dysentery, measles, enlargement of the liver and gall bladder and urological infections.
Uses: In the food processing industry saffron is used as a colorant in sausages, margarine, butter, cheese and alcoholic and non-alcoholic beverages. It is also used for coloring and flavor in ice-cream and sauces and dressings. Arabs use saffron for preparing a kind of tea named after it and Arabic coffee. Indians use saffron for the preparation of a dish called Biryani. Italians and the Swiss use saffron for the preparation of a dish with rice called Risotto. Spaniards use saffron for the preparation of a dish called Paella. Germans and the English use saffron for the preparation of saffron cake. Due to its other properties, Saffron can also be used for medical purposes such as: Helps with digestion; strengthens the stomach and is anti-tympanites. Rouses sexual desire is analgesic, especially for colicky pains and combats gingivitis Helps to fight tumors and collections of free radicals (thus reacting against

Medicinal Uses: Since ancient times saffron has been considered to have a number of therapeutic properties. It has been used as a sedative, a tonic, a stimulant of the stomach and an expectorant. It has also been used in the treatment of ailments such as dysentery, measles, enlargement of the liver and gall bladder and urological infections. The effects of the compounds in saffron on certain types of cancer are being studied and positive results have been obtained in experiments on lab animals.

With the continuing trend of preferring natural to synthetic and chemical substances as an ingredient in food processing, medical, sanitary, cosmetic products, perfumes, etc, the future for the growing use of saffron in these industries looks good.
**The botany and composition of saffron:** The scientific name for saffron is *crocus sativus*. It is both a bulbous and herbal plant. The lifespan of the saffron plant is 7 to 10 years. The brown bulb of the saffron plant belongs to the corm family. Each bulb grows into 6 to 9 thin, herbal leaves. In the autumn, one or two pink or purple colored flowers bloom from each corm. The pistil of the saffron flower is in the center and contains the ovary and the thin, yellow style growing inside. Saffron flowers have bright, red stigmas that are 20 to 30 mm in length. The stigma is the edible and commercial part of saffron. The stigma has many chemical components, such as: carbohydrates, minerals, vitamins, pigment (especially crocin), essence (especially safranal) and flavorings (especially picrocin).

**Global trade in saffron** The statistics of Iranian saffron exports, according to the Customs Organization of Iran, are shown below (values are in millions of dollars):

Graph 1.1

![Graph 1.1: Statistics of Iranian saffron exports](source: Customs Organization of Iran)
According to FAO statistics (2006), Iran is the number one exporter of saffron in recent years and Iranian saffron is exported to many countries.

This graph, based on FAO statistics, shows the percentage of Iranian saffron exports in the global market.

**Pistachio**

The growth areas of Pistachio in Iran extended from west to the present Neishabur, and from east to Balkh, on both sides of Jeyhoon River. Since long time ago, the Iranians, by observing the wild pistachio trees and eating the fruit, have learned about the nutritious qualities of pistachio; such as hematopoiesis, livability, energizing, and inducing the intelligence. For example, as narrated by ancient sources, the non Iranian tribes, called Iranians as the pistachio eaters.

**Pistachio global export**: The statistics of Iranian pistachio exports, according to the Customs Organization of Iran, are shown below (values are in millions of dollars):
According to FAO statistics (2006), Iran is the number one exporter of pistachios in recent years and Iranian pistachios exported to many countries.

This graph is based on FAO statistics, shows the percentage of Iranian pistachio exports in the global market.
With regard to the ever increasing interest that the international trade market shows towards the pistachio product of Iran; the potential to introduce this valuable agricultural product of Iran to the world; demands the evaluation of its role in the trade and agriculture history of Iran.

1.3 Role of Market Information System (MIS)

Market information system is an important facilitating function in a marketing system. It facilitates marketing decisions, regulates the competitive market processes and facilitates marketing mechanisms. Market information is vital to minimize information gaps and uncertainties that exist in the agricultural sector of a developing economy such as that of Iran. It is much needed by farmers in planning production and marketing, and equally needed by other market participants in arriving at optimal trading decisions. The agricultural sector in Iran is beset with a high degree of uncertainty due to the nature and structure of the production sector, organization of the marketing system and natural hazards. Production is characterized by a large number of small, scattered farms and marketing is still unorganized, with too many middlemen handling small quantities of agricultural produce. Within such a structure, market information is deemed necessary to provide the right signal to participants. In fact, the existence and transmission of complete and accurate marketing information is the key to achieving both operational and pricing efficiency in the marketing system.
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A service usually operated by the public sector, which involves the collection on a regular basis of information on prices and, in some cases, quantities of widely traded agricultural products from rural assembly markets, wholesale and retail markets, as appropriate and dissemination of this information on a timely and regular basis through various media to farmers, traders, government officials, policy makers and others, including consumers.

The methods and procedures in which information in desired forms is made available to different target groups on time to assist them to take appropriate decision at the appropriate time.

Agricultural marketing information services (AMIS) covers both output and input marketing information. The information on demand, supply, prices, cost marketing, cost of storage, marketing channels etc, are required.

1.4 Role of Information Technology

The market users require information on their activities / functions carried out by them in the process of marketing. The producers require information on inputs, demand, supply, time of supply and others for making their decision. This information facilitates them to make decision on what to produce? Where to produce? How much to produce and how to produce in respect of production of agricultural commodities. Similarly, they require information on marketing to take decision on where to sell, how to sell, how much to sell and when to sell. In the absence of such information, the farmers fail to take appropriate decision while produce or sell their commodities. Even the other market users like
trades, commission agents, importers, exporters, storage operators, processors etc do require information on their functions to make proper decision. Therefore, the information to market users is crucial without which the efficiency of the marketing cannot be enhanced. In this direction, IT plays an important role in providing such information, to the market users. This would help in increasing the performance of the market as well as returns to the market users in general and the producers in particular.

Much of the interest in electronic markets has stemmed from the belief that, by centralizing price establishment while decentralizing product flow; the pricing advantages characteristics of central assembly markets can be achieved without jeopardizing the cost and coordination advantages of direct product transfer. Indeed, it has been argued that electronic markets have the potential to improve on both the cost and coordination advantages of direct trading and on the pricing of product assembly markets.

Organized competitive sales negotiations among many trader’s increases the likelihood that marginal changes in terms of trade will result in completed transactions. At the same time it lowers the cost and increases the accuracy of market information.

Computerized network can rapidly handle vast amounts of communications among large number of participants. This accommodates many traders in the market simultaneously, a critical ingredient to centralized trading and efficient pricing. It also facilitates the use of detailed product description-descriptions, which might entail several hundred combinations of qualitative variables, thus
allowing great descriptive precision, which reduces the chance of misrepresentation.

The use of computer network is spreading among firms that buy and sell agricultural products. Application is now being made for such things as inventory controls, remote sensing of product condition and input needs, communications with customers and suppliers, and automated ordering of replacement inventories and invoicing of products delivered.

Many of these uses offer such direct links to electronic marketing as remote sensing of product condition, thus aiding in product description, and customer to supplier communications, which generate information about market supplies and demands. The direct ties are equally important. People are becoming comfortable with computer communications for a growing array of management functions. Idle computer network capability is available at low marginal cost, thus encouraging the development of additional applications. And the availability of idle time on computer networks overcome the necessity of building such capacity specifically for electronic marketing, thus reducing a major cost component.

Information technology plays an important role in decision making process. The producers can make their decision on both production and marketing activities. Their marketing and production problems can be addressed very easily when they get timely and correct information. In this direction Information Technology has become an important tool for providing correct Information to the market users.
This Information system would help the farmers to take their decision on:
What to produce?
When to produce?
Where to produce?
How much produce?
What to sell?
When to sell?
Where to sell?
How much sell?

The answers for the above questions through better technology solve most of the problems of the farmers in particular and market users in general. This would increase their profit and reduce the unnecessary cost of marketing.

**IT in Agri-business**

In order to achieve greater efficiency in agri-business activities i.e. in production, marketing, processing, and distribution of agri-commodities, the integrated information on the following is very much needed and that information have to be supplied by the concerned agencies to the needy persons through systematic technology

- Availability and prices of different inputs.
- Crop cultivation technologies which are agro-ecology specific.
- Information about post-harvest infrastructure such as processing, value addition and storage.
- Agricultural of products demand and supply, prices etc.
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- Marketing system cost of marketing, prices of agricultural commodities.
- Import and Export of agricultural commodities, prices at international market demand and supply of agri – commodities.
- Government policies, programs etc.

1.5 E-commerce and Agribusiness

E-marketing:

There is no single description covering all different people’s view on electronic marketing. It invokes many different perceptions. Yet, the concept can be formed by identifying their common elements. The fundamental concept of e-commerce is the simultaneous trade negotiation among spatially separated buyers and sellers channeled into an interactive central market through electronic communications. Then, the product movements occur. Physically assembling of the traders as well as product at a common location does not take place.

Sellers sell their products by description rather than personal inspection by the buyers. The concept covers several types of markets. They include Conventional and Video tele-auctions, where products are sold by an auctioneer to sellers interconnected through a conference telephone call, Teletype auctions, where a network of Teletype printers is used to communicate product descriptions and conduct auction-type bidding among several potential buyers, Telephone clearing house, where a market agent collects and matches bids and offers from traders via telephone, and Computerized trading networks, where buyers and sellers interact through computer
terminals connected to a central computer, which manages the communications network and facilitates trading.

According to Prof. Dennis R. Henderson (1984), “It is now appropriate to limit the definition to computerized trading networks”, though the concept includes a wide range of market mechanisms. Moreover, he agreed that it should include only computerized markets, which utilize an open, competitive price establishment procedure such as some variation of auction, as it is contrasted to computer assisted trading systems, which simply provides communication for private negotiations between an individual buyer and seller. Such restricted computerized trading network as a pragmatic practice can rapidly handle vast amounts of communications among large numbers of participants, accommodating many traders in the market simultaneously.

There are some common characteristics in electronic markets, regardless of the type of the products or the services being marketed, though they can be features of conventional markets too. These characteristics can be presented in four frames. They are as follows;

**Organized Trading** - Electronic markets are organized markets within which there are some established rules of trader behavior, including guidelines on product description, delivery, payment, and settlement of disputes, and right for participants, including access to deal with other traders and to information available in and generated by the market, and the right to action such information.

**Centralized, Competitive price negotiation procedures** - Electronic markets provide a single forum in which various numbers of traders competitively interface via some type of procedure similar
to auction to strike deals with other participants. These markets are the anti thesis of private, one-on-one trading market that can utilize a deal all-only marginally different terms.

**Remote Access through Electronic Communications** - Potential traders from scattered and distant locations take part in these markets, generally from their individual business locations, assembling for market purposes through electronic communications rather than in person at a central location.

**Description Selling** - Instead of bringing products traded together at a common location for inspection, the products are described in terms that are clear and meaningful to buyers and sellers alike, either verbal description, pictorial descriptions or combinations. Sometimes, to assure accuracy, objectivity and integrity, third party inspectors are used. Gradually, electronic sensing of product attribute is likely to play a larger role.

**Post-Sale Product Delivery** - Products are sold by description between spatially separate traders, which are not delivered until sales negotiations have been completed, delivered to the buyer directly from seller to buyer. Moreover, the timing of delivery can be negotiated or specified term of transactions.

As it is mentioned earlier, none of these characteristics are unique to electronic markets. The difference is that their combination in a single trading system is unique, distinguishing them from other market institutions. Moreover, such characteristics neither reveal what electronic markets are not, specifically they are not just computerized market information networks, though they do generate and disseminate information, since they are actual markets within which
transactions are made, nor are they spot markets because delivery occurs after sales negotiations.  

Over the past several decades, agriculture has experienced substantial change, such as declines in the number of farms and people working on farms, increased specialization, a shift of many functions once performed on the farm to off-farm enterprises, and a change in the predominant way of marketing farm products from assembly markets to direct deals, contracts and other types of private treaties.

In agriculture, like any other types of economic sector, markets are important means of economic organization, where the outputs of one stage are coordinated with the input needs of an adjacent stage. Once, central assembly markets like terminal livestock and wholesale products exchanges were dominant, attracting large volumes of products and large number of traders, viewed as ‘the highest type of organization and the highest development of efficiency in marketing frame (Clar and Weld ). In these markets, prices established were generally accepted as accurate guides to true market values (Duddy).

These central assembly markets were widely dominant when the half-century entered on 1900. However, their relative importance has ended rapidly since the end of World War II. Since then, direct sales, private marketing agreements, various types of formula priced contracts, and vertical integration has displaced them. Part of this shift has been cost driven with the combination of truck transportation and larger farms facilitating efficient supply directly to processor, shipments, thus avoiding the costs of product assembly. Others have been driven by the improved coordination and lower risk that
increasingly interdependent firms can achieve by dealing directly with each other. In reality, largely shifting from centralized marketing to various types of private treaties has done it.

1.6 E-commerce;

Electronic commerce is defined as, ‘commercial transactions through an electronic medium.’ Zuress defined e-commerce as “the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications network”. Applegate L.M. believes that e-commerce involves using network communication technology to engage range of activities up and down the value added chain, both within as well as outside the organization. He classified e-commerce into three types, namely, customer to business (B2C), by which companies provide marketing message to end customers (consumers) through Internet applications by using web and disseminate information throughout the company’s intranet, Business to Business (B2B), called sometimes Extranet, providing a link between the firm’s internet and intranet strategies, thereby altering their trading relationships, and inter-organizational.

Every aspect of the human life, particularly the way businesses are to be conducted, has been transformed by the introduction of the new technology in the world. The famous futurist, Thiru Alvin Toffler, two decades ago predicted that the new network digital economy would drive and change the 21st century. Today, e-commerce has made this true. Customers, partners, and even shareholders put huge pressure on corporate world to rapidly develop e-commerce capability. Corporate sectors are forced to reach out
beyond their traditional market places by intense business competition in product and services in global environment. Internet is the very gateway for corporate to enter into the global village.

E-commerce as the catchword of today’s business can bring a paradigm shift in the lifestyle of the people with a click of the mouse and by use of the web. Therefore, an abundant opportunity is provided to the businesses by bringing together the customers, vendors, and suppliers.

Although e-commerce is accepted as one of the most important developments in conducting businesses, there is not any unique definition of the concept. World Trade Organization (WTO) defined it as “production, distribution, marketing, sales, or delivery of goods or services by electronic means.” As it is mentioned earlier, there are four basic types of e-commerce activities; Business to Business (B2B), Business to Consumer (B2C), Business to Government (B2G), and Intra-organizational.

Currently, B2B type of e-commerce constitutes the biggest part of the e-commerce. It is the rapid popularity of Internet and WWW which enhanced the growth of e-commerce. The rapid integration of the internet and other telecommunication-based function into almost every sphere of business is what has given rise to the recent international focus on the new world of electronic commerce.

For some types of products, being traded electronically and are expected to record high future growth such as computer products, books, music, gifts and flowers, clothing and food items, ecommerce is ideally suited. Moreover, services such as advertising and
marketing, financial, tourism, entertainment, and information services are likely to be benefited from e-commerce.

E-commerce can take two forms; namely, *direct E-commerce*, in which products or services such as music or professional legal advice is delivered to the buyers electronically, and *indirect E-commerce*, in which the product is ordered on the net but it is delivered in the normal way, for example, amazon.com, which is the largest bookstore in the net, takes orders electronically, but supplies by mail or courier.

There are several advantages e-commerce can bring to the companies. These are as follows;

- *E-commerce minimize inventory costs*, by adopting Just in Time (JIT) systems and enhancing the firm’s ability to forecast demand more accurately.
- *E-commerce improves customer services*; providing after sales services can account up to 10% of operating costs. These costs get reduced with simultaneously improvement in service quality, since under electronic commerce many of the services can put online.
- *E-commerce reduces distribution costs*, which can be done by reducing the time needed to process orders.
- *E-commerce enhances global reach*; particularly for small companies it provides an opportunity to make information on its products and services available to all the potential customers in the world with a minimum cost. It also allows SMEs to enter a market with minimum entry costs.
1.6.1 Conditions for growth

It is the cost of telecommunication which determines the future of electronic commerce globally. It also depends on telecommunication infrastructure. In order to enhance internet-based businesses and help them to reach its full potential, the infrastructure facilities should be improved.

E-commerce is an internet-based transaction which is impersonal, anonymous, and automatic. At the same time, there are technical means and opportunities for fraud. Hence, in order to reach much higher level of acceptance, governments play a crucial role.

E-commerce—how does it work?

Purchasing a product electronically follows conceptually nearly the same process of purchasing a product from physical store. In conventional purchasing process, the potential purchaser browses the store shelves, finds the product that he wishes to buy, puts the items into the shopping basket, goes to the cashier, brings out the wallet and selects the payment instrument such as credit card, by which the merchant will usually have a payment processing application that establishes an electronic connection to verify the validity of the credit card and the purchaser’s address or e-Money. The transaction is accepted and purchaser receives and order of confirmation number and signs on the receipt for future reference as well as for validation in case the purchaser’s card and address are validated.

The procedure is similar in business to consumer (B2C) type of electronic commerce. The difference is that the purchaser only shifts his purchasing from a physical store to a virtual store on Internet. In such cases, the purchaser browses an online catalogue over the
Internet, selects the product, and tells the merchant system that the product is acceptable to him and he is ready to purchase it, resulting in the merchant system telling the purchaser to select a payment instrument. The purchaser may opt for any kind of e-Money including credit card, in which the purchaser fills in the credit card and address information on the screen (or it is provided by the purchaser’s wallet) and sends the information to the merchant over the Internet. The merchant validates confirms the transaction by Electronic Payment Systems (EPS). Seller may dispatch the product to the customer either on-line or through courier depending on nature of the products once the money is realized.

E-commerce appears to be a simple operation of buying and selling of goods at front end. Nonetheless, it spans a number of activities, including order processing, delivery, payment, etc., at back end. Apart from the technology and the model, the important issue is to understand how the business works and how it can be optimized to gain from going online. What makes conventional or traditional commerce different from electronic commerce is the method of transmitting the information. In conventional commerce, the purchaser is communicating physically to the manufacturing corporation through the retailer to wholesalers to distributor/importer, etc., while in e-commerce the information is transmitted via the Internet through a new set of intermediaries.

1.6.2 Models of E-commerce;

To sell e-commerce products and services, there are several ways which can be classified as Business to Business (B2B), Business to Consumer (B2C), Consumer to Business (C2B), Consumer to
Consumer (C2C), Business to Government (B2G), and Government to Consumer (G2C).

**Business to Business** - As it is evident from its name, in Business to Business E-commerce, the transactions are between Businesses, wherein business sells to other business. For example, Intel sells its chips to the other business – OEMs who make computer. Many companies like Tata, IBM, Telco, ABB India, TCS, Citibank, BHEL, JN Port Trust, HLL, Essar, TVS, Maruti Udyog, Henkel, Dupont, Bajaj Auto, Samsung Electronics, and TVS Electronics are using e-Commerce in some way or other. Such companies start B2B transactions with their suppliers first. For instance, Samsung has redefined its business paradigm, and deployed electronic commerce to redefine its critical business process linking it directly to its suppliers and distributors.

**Business to Consumer** - In B2C, the transaction takes place between businessmen and the consumers, and business directly sell to the end consumers. Products like books, flowers and other gift items are among the first products which were offered by some enterprises. For instance, amazon.com, as the first online bookseller, has beaten up traditional brick and mortar booksellers. Various sites such as export houses, departmental stores, book stores, and even grocery stores (bababazar.com) that are using e-commerce for selling goods and services in India, such as books, CDs, clothes, tickets, etc. Naukri.com, discount.com, pitara.com, etc. are some of the popular Indian e-commerce sites.

In industries like financial services and ICE (Information, Communication and Entertainment), which are information intensive
and service oriented industries, e-commerce is going to have significant impact. Products with basically of impulsive buying nature are among the first ones to move over the Internet. The first Indian website enabling Indian credit card transactions online was “Rediff on the Net”, which opened shops in August 1998, offering books, music, flowers, chocolates, etc., and makes hotel reservations online with the assurance of secure technology. Indishop is offering a range of products from toothbrushes to computers. It has been demonstrated that B2C is very booming strategy.

**Customer to Business** - The basic idea behind the B2C e-commerce is “to give the consumer what he wants at the price he wants, without the merchant having to suffer public embarrassment”. For instance, www.princeline.com is providing airline tickets at the demanded price by the consumer.

**Consumer to Consumer** - This model of E-commerce has recently been common, with the most evident example of auctions. Someone who has something to sell, can list it in the auction site, as if others visiting the site can give their bids to the product. www.ebay.com, and bazee.com are two examples of this type of auctions.

E-Governance, bearing the basic idea of Smart Government, characterized by being Simple, Moral, Accountable, Reliable, Transparent Government, improves processes like tax collection, revenue and resource management, effective deployment of funds into infrastructure and service etc.

**Business to Government** - This level of e-commerce includes services like filing of IT returns by corporate houses / Corporate taxes/renewal of trade licenses, etc., can be considered initially.
Government to Consumer - In this level of e-commerce activities like Records of land revenue and sales documents, issue of certificates and licenses by Government; renewal of driving licenses, passports, filing of income tax returns, filing of complaints, payment of bills, payment of dues etc., by individuals are performed.

1.6.3 E-commerce and Marketing;

Emerging information technologies have dramatically affected the marketing as the business function. Particularly, network technologies are helpful since marketing is so inherently communication intensive activity. Internet can provide companies new channels of communication and interactions creating close, yet more cost-effective relationships with customers in sales, marketing and customer support. Web facilities can give companies utilities to provide ongoing information, service and support creating positive interaction with customers that can serve as the foundation for long-term relationships and encourage repeat purchases. Moreover, cyber-shopping allows customers to conveniently sit down at their houses and purchase their products, purchasing any kind of product or service in the mid of the night and form any part of the world.

Marketing process in electronically-enabled environment contains several stages as follows;

1. Customer logs on the market place,
2. Customer searches for the product,
3. Customer selects the product,
4. Customer places an order for product,
5. Purchase order sent to seller,
6. Seller confirms the order,
7. Customer pays for the product,
8. Payment information sent to bank,
9. Credit checked by bank,
10. Credit approved by bank,
11. Product shipped by seller, and
12. Product received by Customer.

For example when a person is going to buy a camera, he turns on his computer; logs onto the shopper’s advantage web site, clicks on cameras. A list of all the major brands appears, along with information about each brand. He can retrieve a photo of each camera and reviews by experts. Finding the camera he wants, he places an order by typing his credit card number, address and preferred shipping mode. Seller confirms the order and ships the camera what the reporter selected.

1.6.4 Impacts of E-commerce on Marketing

E-commerce has several influences on marketing, out of which the most prominent ones are listed below;

1. **Product promotion**, which is done through direct, information-rich, and interactive contact with customers.

   ➢ **Direct savings**, meaning that, internet capable of enhancing the deliver of the information to customers substantially reduce the cost of disseminating such delivery.

   ➢ **Reduced cycle time**, which means that the delivery of digitized products and services to the customers, as well as the administrative work related to physical delivery,
especially across international borders, can be substantially reduced.

- **Customer service;** enhanced by enabling customers to find detailed information online.

- **Brand image,** meaning that the new comers can establish brand or corporate images very quickly, through the net, at affordable cost.

- **Customization,** meaning that to give customers the custom designed products and services. The net offers a tremendous opportunity to understand customers needs one at a time and offer customized products and services.

- **Advertising,** which is interactive communication (two-way), aiming at allowing customers to browse, compare, question and even custom design the product configuration, unlike the traditional advertising used mass or direct (one-way) communication to persuade customers to buy their products and services.

- **Ordering systems;** by drastically improving the process of taking orders by customers, it saves time and reduces expenses; so sales people have more time to sell their products or services.

- **Intermediaries;** by making the manufacturer and customer more closely, e-commerce can reduce the role of middlemen. When manufacturer and retail store connects electronically, warehouse and inventories are reduced, when money is transformed electronically between seller
and buyer, cheques and traditional banking facilities are no longer needed.

- **Value of customer:** unlike traditional marketing tries to maximize the value per transactions by practicing e-commerce, marketers are trying to form relationship with customers, and they are looking for long-term value maximization.

- **Market research:** unlike Conventional methods of collecting prospect data which often cost millions of rupees using information technologies and the related technologies, firms can reduce their market research dramatically.

### 1.6.5 Limitations of E-commerce;

There are several limitations regarding the development of e-commerce. Following is the list of such limitations:

- **Cost:** the cost of developing such e-commerce is too high that some companies are incapable of developing such programs.

- **Security and Privacy:** since customers still worry that unscrupulous snoopers to eavesdrop on their on-line transactions or intercept their credit card numbers and make unauthorized purchases, they eschew to send their personal information and credit card information.

- **Lack of trust and user resistance:** e-commerce transactions consist of unknown faceless seller, paperless transactions, and electronic money, to which customers are
reluctant to trust, thereby making switching from physical to virtual stores may be difficult.

- **Legal issues;** legal issues are also not resolved yet, though governments try to find solutions for these issues. Therefore, as far as such issues are not handled appropriately, customers will not be willing to transact over the internet.

Recent developments in Internet and World Wide Web (WWW) enhanced the development of technological advances. World Wide Web uses many revolutionary changes relating to how the human beings communicate, educate, entertain and the way how they carry on business marking a new era in the history of human race. Shopping behaviors of the customers traditionally was a personal one, which was the result of developing a personal relationship between the buyers and the sellers. Shopping has been taking place, from the days of trading from bartering till recently, in a shopping place, basically on the floor of a store. Information technology and enhanced utilization and application of this technology have changed the scenario, creating waves and redefining the business frontiers by e-commerce. The idea of global village is enhanced with a fast pave by the Internet, creating globalization, and thereby resulting in intense competition in business. Therefore, reaching out beyond their traditional market places is very important for the corporations to succeed. Moreover, impressive to ensure the cost is kept to the minimum so that the entry cost of doing business in the global market place, and maintaining competitive edge, do not become different to a global business model. E-commerce offers solutions that address both.
It changes the life styles of people significantly, such as banking, finance and shopping. All of this is possible by moving the mouse and clicking. E-commerce uses web to bring together consumers, vendors and suppliers, and presents abundant opportunities for business, and remove the middlemen in between.

1.7 Need for the Research

In the recent decade, the introduction of new technology has changed the industrial, agricultural and military sectors in Iran. It is noticed that the emergences of IT in these sectors is of high relevance and most required for the development of the country's economy. This study would throw light on the growth of IT in Agribusiness and its impact on enhancing business activities, reduce the cost of marketing and there by increase the producers share in a consumer rupee. This would help the policy makers in framing appropriate policies, programs and to initiate strategies to reduce the gap between the producers and the end consumers. Such initiatives in agribusiness activities would act as a buffer at times of stiff competition and shrinking margins. In this regard the current study aims to address some of the issues that would emerge in the light of IT revolution in agribusiness activities.

1.8 Objectives of the study

1. To document the various methods of information technology used in agricultural sector
2. To asses the growth of IT and its impact on development of agri-business activities
3. To analyze the marketing efficiency among the IT users and non-users
4. To document the role of IT in decision making process in agri-business
5. To study the government policies and program in promoting IT in agri-business

1.9 Methodology

Methodology gives the details on study area, selection of samples, sources for data, and analytical tools and techniques employed for the study.

This study is based on both primary data and secondary data. Primary data relates itself to the market users / participants such as producers, traders, exporters, processors. Such data are obtained from administering a well structured questionnaire to all market functionaries. Secondary data is obtained from the government publications, journals, International reports, FAO publications etc.

The chi-square test is employed for analyzing the obtained responses. As it was thought to be best suited for the prevalent conditions at the time. The tool got acceptance for the significance due to the fact that the same was recommended by the investigators who came out with the method based on related activities that they have conducted for various and obvious purposes in the past on the subject.

The research survey covered all the key players of the pistachio and saffron industry such as pistachio and saffron producers, traders, processors, and exporters with different customized questionnaires. The key reasons for this extensive primary survey
were to understand and to collect first hand information from the key players in fulfilling the objectives of the study such as the use of Information and Technology in obtaining inputs by the farmers and to fulfill the requirements of the consumers in the domestic as well as in the international markets. The particular reason for covering these major players is to understand the impact of IT in Agri – business activities in the area of study. The current data refers to 2007-2008. The stake holders are stratified into three groups namely Big, Medium and Small. The samples were drawn from all these three groups by using simple random sampling method.

1.10 Limitation of the study

The study is based on information extracts from internet, from the secondary sources in addition to the information collected from the producers, processors, exporters, traders and other market users. The study is limited only for major commercial crops i.e. Pistachio and Saffron. The inferences drawn from the data obtained and response of the stake-holders in the study area.

1.11 Organization of the study:

The thesis is organized into six chapters. The first chapter deals with the introduction, significance of the study, objectives of the study and methodology. The second chapter presents the Review of literature related to the research topic. The third chapter explains the research methodology adopted. The forth chapter discusses IT in Agribusiness activities in Iran. The fifth chapter represents result and discussions. The sixth chapter deals with the Summary, Policy implications and conclusions.