A Proposed E-PAM System for Polyhouse Marketing

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Abstract
The polyhouse farming technique gives an absolute assurance to the farmers for the timely production of the agricultural commodities despite of unpredictable environment. But farmers do not have any proper channel or marketing system which helps them in advertising their organic polyhouse products and also help in tremendous growth of farmers financially. So, in this paper, an E-PAM (Electronic-Polyhouse Agricultural Marketing) system is proposed which will help farmers to directly sell their products. As there is no market network, some farmers go to the market itself and sell their product which leads to the bad production schemes, because their main focus is on market now. So here, an E-PAM is proposed which will act as an interface between the farmers and the customers.

Keywords
Polyhouse Farming, E-PAM System, Marketing Network, Demand and Supply Issue

I. Introduction
Growth and healthy production of plants under controlled favorable conditions in closed or partially closed space is called poly house. Indian farmers face several challenges such as small land holding, poor yields due to reliance on inefficient methods of farming, too much reliance on natural phenomena such as rainfall and lack of knowledge of modern methods of agriculture. Polyhouse farming is an alternative new technique in agriculture gaining foothold in rural India. It reduces dependency on rainfall and makes the optimum use of land and water resources. A typical, traditional farm of 500 square meters would generate an estimated annual income of Rs. 10,000 to 20,000, compared to estimated annual income from similar sized polyhouse of Rs. 45,000 to 50,000. Potentially, polyhouse farming can help the farmer generate income around the year growing multiple crops. It enables cultivation of crops that can give maximum yield on specific days (e.g. roses on Valentine’s Day) and exotic crops that can’t be normally grown in Indian conditions (e.g. colored capsicum, broccoli and mushrooms). It also enables cultivation of regular crops off-season, thus fetching the farmer a higher price (e.g. tomato, chilli, capsicum, brinjal, cucumber, cabbage, cauliflower). Polyhouse farming entails construction of a metal structure covered by polythene. Parameters such as moisture, soil nutrients and temperature in the polyhouse are controlled to ensure continuous maintenance of plant growth, outside the normal growing season dates back to 1980’s and it was mainly used for research activities. However, in recent years in view of the globalization of international market and tremendous boost and filip that is being given for export of agricultural produce, there has been a spurt in the demand for polyhouse technology.

II. Literature Survey
The creation of a special environment for the enhancement of plant growth, outside the normal growing season dates back to 500 B.C. (Walls, 1988). In India use of polyhouse technology started only during 1980’s and it was mainly used for research activities. However, in recent years in view of the globalization of international market and tremendous boost and filip that is being given for export of agricultural produce, there has been a spurt in the demand for polyhouse technology.

In marketing area on May 19, 2013 Kerela government said “This polyhouse project would be more effective when the project becomes breakeven within three crop seasons and more farmers come forward for vegetable cultivation. To popularize the products from polyhouses, eco shops would be opened in all the districts where safe to eat vegetables will be made available in the brand name ‘Amrit’. The technology will be developed by the Kerala State Remote Sensing Agency will make available the details on a website.”

In Feb 5, 2014 TN Prathapan, an Indian National Congress politician and Member of the Legislative Assembly of Kodungallur Assembly Constituency said, “Likewise, there is no market network at the government level to sell the organic products cultivated in the poly houses. There are a few of us who are cooperating with each other and we make sure that we don’t cultivate the same crop at the same time so that it will not be flooded in the market. Despite this, at times we are compelled to sell it for lower price to compete with the ordinary farm produces which are available...
III. E-pam (Electronic- Polyhouse Agricultural Marketing) System
The proposed E-PAM web interface strengthens the relationship between the farmer and a customer. It balances the demand and supply chain in polyhouse farming. It benefits farmers by providing knowledge regarding new various commodities and monitory benefits whereas customer will get the provision to place its order through this E-PAM web interface on on-demand basis. The web interface will provide dynamic links and updated information regarding any new farming technology or new commodities to the farmers and customers. This system is broadly divided into two domains: Marketing domain and Farmers domain. From marketing point of view this system will help the customers to locate nearby polyhouses and their various organic commodities from where they can easily place their order and also get the idea of delivery date which will be done by any courier system. This marketing system will give the society health related benefits also because in polyhouses only organic or healthy products are produced which will be available to people at very reasonable cost. Secondly, from farmer’s point of view this interface will act as an information system. It helps the farmers in establishing proper market channel, advertising their organic products and this helps them financially a lot.

VI. Technologies Used
Front End: The user interface of E-PAM system will be developing by using web development language PHP. The PHP Hypertext Preprocessor (PHP) is a programming language that allows web developers to create dynamic content that interacts with databases and users also. PHP is basically used for developing web based software applications. PHP is a server side scripting language. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites. It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.
Back End: The Apache Hadoop will be using as Back end. It develops open-source software for reliable, scalable, distributed computing.
The Apache Hadoop software library is a framework that allows for the distributed processing of large data sets across clusters of computers using simple programming models. It is designed to scale up from single servers to thousands of machines, each offering local computation and storage. Rather than rely on hardware to deliver high-availability, the library itself is designed to detect and handle failures at the application layer, so delivering a highly available service on top of a cluster of computers, each of which may be prone to failures.
The Hadoop includes these modules:
Hadoop Common: The common utilities that support the other Hadoop modules.
Hadoop Distributed File System (HDFS™): The Java-based distributed file system that can store all kinds of data without prior organization.
Hadoop YARN: A resource management framework for scheduling and handling resource requests from distributed applications.

Hadoop MapReduce: A software programming model for processing large sets of data in parallel. Other components that have achieved top-level Apache project status are also available include: Pig, Hive, HBase, Sqoop and Ambari etc.

V. Objectives
2. Designing of Relational Database system using HDFS (Hadoop Distributed File System).
3. Development of the proposed system and Integration of database with E-Commerce framework.
4. Testing of system by online data capturing.
5. Performance Evaluation of this integrated system.

VI. Basic Diagram

VII. Need of e-pam system
Polyhouse farming needs better support system. Marketing of the products is essential to sell the organic products cultivated in the polyhouses. As farmers sell their products to commodity agents and those agents sell them further in market at double rate which is actual great loss to farmers. So this proposed E-PAM system will provide farmers a platform from where they can advertise their polyhouse products, establish a new market channel and deal directly with the customers.
An effective Relational Database system is designed using Big data tool HADOOP having HDFS File System for Poly house Framework which manages the whole information regarding both farming and marketing aspects. This information helps the farmers in establishing a good network with the market. It also helps them in taking better decision that what type and at what time they should grow that commodities which helps in increasing their financial growth. It also stores the stock and order details of customers.

VIII. Future Work
An android SMS application can be developed for E-PAM (Electronic-Polyhouse Agricultural Marketing) system which will gives a facility to customers to order the products online from anywhere and also get the acknowledgment messages (SMSs) including order and delivery details from the courier system.

References


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