

# eSagu<sup>TM</sup>: A Data Warehouse Enabled Personalized Agricultural Advisory System

P. Krishna Reddy, GV Ramaraju, and G.S. Reddy

Media Lab Asia Project

IIT-H, Hyderabad, India

Phone: +91-40-23002314

E-mail: pkreddy@iiit.ac.in

## ABSTRACT

In this paper, we explain a personalized agricultural advisory system called eSagu, which has been developed to improve the performance and utilization of agriculture technology and help Indian farmers. In eSagu, rather than visiting the crop in person, the agricultural expert delivers the expert advice at regular intervals (once in one or two weeks) to each farm by getting the crop status in the form of digital photographs and other information. During 2004-06, through eSagu, agricultural expert advices delivered for about 6000 farms covering six crops. The results show that the expert advices helped the farmers to achieve savings in capital investment and improved the crop yield. Mainly, the data warehouse of farm histories has been developed which is providing the crop related information to the agricultural expert in an integrated manner for generating a quality agricultural expert advice. In this paper, after explaining eSagu and its advantages, we discuss how data warehouse of farm histories is enabling agricultural expert to deliver a quality expert advice. We also discuss some research issues to improve the performance of eSagu.

## 1. INTRODUCTION

Developing personal information systems to deliver personal information service to each individual is one of the problem area [1]. Progress in database/data warehousing, data mining, mobile, and internet technologies are enabling mass customization and personalized information services [2]. We are making an effort to design a personalized agricultural advisory system to improve the utilization and performance of agriculture technology to improve the productivity of Indian farmers<sup>1</sup>.

By integrating both agriculture and information technologies, we are making an effort to develop a personalized agricultural advisory system called eSagu<sup>2</sup> [4,5]. (The word “Sagu” means Cultivation in Telugu language.) The eSagu system aims at providing fresh agricultural expert advice to the farmers in a timely and personalized manner. The agricultural experts generate the advice by using the latest information about the crop situation received in the form of both photographs<sup>3</sup> and text. In eSagu, the agricultural expert’s advice is delivered to each farm<sup>4</sup> on a regular basis (typically once in a week/two weeks depending on the type of crop)

<sup>1</sup> The proposed system has been developed by considering agriculture situation in the state of Andhra Pradesh, India. Typically the farm size is about 1.5 hectares.

<sup>2</sup> eSagu is a trademark of IIT-H, Hyderabad and Media Lab Asia

<sup>3</sup> Here, the photograph taken by visiting the farmer’s field.

<sup>4</sup> The word “farm” means a piece of land in which a crop is cultivated. In this paper the words “farm” and “crop” are used interchangeably.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

SIGMOD '07, June 12–14, 2007, Beijing, China.

Copyright 2007 ACM 978-1-59593-686-8/07/0006...\$5.00.






