INDIAN INSTITUTE OF MANAGEMENT CALCUTTA

WORKING PAPER SERIES

WPS No. 727/ April 2013

Cheeni, a case of IT innovation

by

Priya Seetharaman
Associate Professor, IIM Calcutta, D. H. Road, Joka P.O., Kolkata 700104 India

Cheeni, a case of IT innovation

This case has been prepared by Professor Priya Seetharaman for the sole purpose of aiding class room discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial or administrative situation. The author has disguised certain names and other identifying information to protect confidentiality.

This case is to be registered as a working paper with Indian Institute of Management Calcutta. Feedback on the case can be sent to priyas@iimcal.ac.in

Cheeni, was acquired by a large business group from its erstwhile foreign holders in the early 1980s. During the time when it was acquired, Cheeni was seen as a struggling firm, rife with problems of inefficiency, internal politics and high levels of wastage. The MG group which took over Cheeni,quickly turned it around to make it a successful sugar business.

The MG group is a conglomerate of many companies in diverse areas including engineering, farm inputs, sugar, confectionery, sanitaryware, abrasives, bicycles, plantations, bio-products, information technology and finance with age presence in the southern part of India. Extensive agriculture based business has made the group develop strong ties to the semi-urban and rural population of Southern India.

Cheeni is in the business of manufacturing and marketing sugar, bio-pesticides and nutraceuticals. Sugar is a social industry. In other words, there is heavy dependence of the farmers cultivating cane on the processing firms and sugar manufacturers. Cheeni, for instance does not just purchase cane (its main raw material) from the "market". The company draws cane from each farmer. A rough estimate reveals that it deals with over a hundred thousand cane growers. Over 60% of these farmers are small and medium scale agriculturalists. Two reasons drive such a huge supplier base. First, land holdings in India are highly fragmented. Large agricultural land holdings were redistributed through land reforms and also through inheritance laws. As a result many large farms are now being held as small area farms by individual unrelated farmers. The second reason is more legal less historical. In many parts of Southern India, the Sugar Commissioner – the government body responsible for overseeing cane production, cultivation, and harvest through cooperative systems has decided that the minimum distance between two sugar factories has to be around 25 kilometers. This distance has implications in the tie-up of farmers to various factories.

Cane is a highly perishable crop – the sucrose content of the cane drastically reduces after a certain time has passed once the crop has been harvested. There is therefore some urgency in ensuring the cut crop reaches the factory and is processed at the earliest. In some states in India, sugarcane is purchased by sugar factories through cooperative societies (example Uttar Pradesh and Maharashtra), whereas in some others, the factories deal directly with the sugarcane growers (Andhra Pradesh, Tamil Nadu, Karnataka and Punjab). This has multiple implications. For a firm like Cheeni, it necessitates relationship building with multiple farmers. Moreover close to three-quarters of the cost of cane production lies in the procurement of cane. Quality and yield of sugarcane are therefore parameters of importance for the firm's produce. These can be ensured only through long term relationship building. As a result of such relationships, more intimate knowledge of the farmers' needs is now in the hands of the company representatives.

Cheeni supplies the plant to the cane growers from its own nursery. In addition, the firm has agriculture aid centers where representatives advise the farmer on the nutrients required for the soil and provide them with the necessary pesticides. The closeness with the farmer also provides Cheeni with an opportunity to monitor the crop growth through the 10-14 months' time period.   Cheeni has perfected this monitoring process through an elaborate mechanism called the "doc format" – where every 3 months, a "doc" is prepared when the company representative visits the farm and evaluates the progress of the crop growth. In other words, doc10, doc20, doc 30, doc 40 (4 times) are prepared during months 3,6,9 and 12 of the cane growth where parameters of growth, quality of cane, presence of infestation, etc. are checked. Advice to farmer is provided based on these docs. Troubleshooting is done to curtail pest attacks, etc. should the need arise.

Financial support to the farmer prior to harvest is provided based on the progress of the crop growth. This

ensures the availability of working capital at the requisite time interval instead of a one-time payment to the farmer after supply of the cane. Cheeni keeps in close contact with the cane growers through its many *cane field staff(CFS)*and section officers. Among the many roles played by the *CFS*, is that of monitoring and recording the various aspects related to cane growth, input provision, disease control, financial support, etc. With over a hundred thousand farmers from more than a hundred villages supplying the firm with sugarcane, Cheeni was compelled to look upon information technology as a viable tool to keep track of the large volume of information generated from the field.

In this unique situation, Cheeni, experienced the need for an innovative IT application. Each of the company's factories is manned by *CFS* who are involved in coordinating the procurement of sugarcane from the growers. CFS not only have intimate knowledge of rural India and have developed close relationships with farmers and their community, but are also often seen as one-stop shop for information relating to various needs of the farmers themselves. CFS' primary role is to build these relationships apart from the everyday operational task of monitoring the growth of cane in the farms under their supervision and capturing this data in the system. Unlike developed countries, much of the field level processing of cane such as harvesting, collection etc. in India is manual. The risk of cane non-availability is also mitigated by the company through its efforts to maintain community ties with the farmers, ensuring timely payments for their produce, introducing farmers to modern technologies like drip irrigation, making available improved cane varieties and carefully monitoring of the scheduling of planting and harvesting.

The request for an innovative IT application came from the team of end users of information technology –the *CFS*, who visualized the potential for a field based mobile tool which would aid them in their task of keeping track of cane growth in the various farms under their supervision. The vast geographical area covered by the CFS and the varied farmers they came in contact with everyday made their job complex and resulted in likely loss of accuracy in manual recording of information. In order to overcome such loss of data and the resulting inaccuracy of data capture, the *CFS* requested that they be provided with Personal Digital Assistants (PDAs) loaded with a suitable IT application to record the required information. The firm's IT department designed and developed a tool in collaboration with the *CFS* which provided them with the required mobility and the needed accuracy in data collection. Extensive involvement of the *CFS* in various stages of application development and testing made it a robust, well-designed tool satisfying a strong business need.

The tool allowed access to a WebCane Management System (Web CMS). Apart from allowing the *CFS* to monitor and record cane growth information and field updates, the tool also allowed access to information from the WebCMS against the farmer's identity. Information such as availability of cane sets at nursery for planting, availability of fertilizers and pesticides stock, past paymentsmade to the farmer by Cheeni, loan outstanding against the farmer, cane crushed and recovery details at the factory site, etc. are also available to the *CFS* to be provided to the farmer on request.

Rapid adoption of the PDAs and use of tool by the *CFS* resulted in significant improvement in data accuracy and monitoring of cane production in the farm sites. The company is further strengthening the system by generating timely alerts and providing text messaging services through which it can reach the farmers and the *CFS*, which would enable them to plan their next set of activities. It is also contemplating extending the implementation to multiple sites through the use of existing infrastructure. Based on the inputs received from the CFS the firm is also introducing other features such as touch screen for grower information, weather monitoring system at factory locations, cane yield improvement activities capture and voice based data capture through mobile phones.

Exhibit 1: Evolution of the Cane Management System

Cane Management System – Application Development Evolution	
1984	WDOS – Mini Computer COBOL based applications
1990	Winix OS – Mini Computer Wipro COBOL
1994	Integrated on line CMS in Softech COBOL
1995	Divisional Office Computerization
1996	Connectivity for Cane Division Office
1999	New CMS in SQL/VB Based
2001	Grower information through a special project
2004	Palm top Computer – Pilot
2005	Section Office Computerization
2006	Web Based CMS
2008	PDA introduction for field data capture
2011	Call Centre Introduction
2011	Netbook introduction to Cane Field Staff