

# An Interpretive Analysis of Factors Contributing to Issues in Agribazaar's Implementation

NOR FARZANA ABD GHANI, FAUDZIAH AHMAD  
School of Computing, College of Arts and Sciences  
Universiti Utara Malaysia  
06010 UUM Sintok, Kedah Darulaman  
MALAYSIA  
farzana@uum.edu.my, fudz@uum.edu.my

*Abstract:* - Agribazaar, a one stop center for the Malaysian agricultural community is developed to facilitate agricultural community conduct businesses locally or globally online, specifically in terms of buying and selling agricultural products. After seven years of its implementation, no study has been made to evaluate the performance of the portal. The study conducted in the year 2007, evaluated the performance of Agribazaar in terms of utilization, awareness, satisfactory level of Agribazaar users and identified issues and challenges to the implementation of Agribazaar. The study adopts a qualitative research approach where qualitative data were collected through gathering users' comments on Agribazaar from a specified range of date. Interviews were conducted with users, administrator, and developers. Focus group discussions were carried out to verify results. Interpretive analysis was used to evaluate data. Analysis on the total comments revealed seven major issues: portal usefulness, system administrator support, portal usability, content accuracy, relevant features, portal usefulness, and privacy and legitimacy. Agribazaar is considered as successful as it has helped to create business leads and has attracted many individuals and companies who are not directly involved with producing the agriculture product. A few suggestions were made to guide future enhancement on the portal. A concerted effort between the users, developers and owner of the system is most crucial in leveraging the business matchmaking potential of the portal.

*Key-Words:* - agribusiness, portal, Internet-based application, evaluation, issues and challenges

## 1 Introduction

In line with the emphasis made on *New Agriculture*, Malaysia has moved to consider agriculture as a business and thus, resulted in the formation of "agribusiness" [1]. The term "agribusiness" has existed since the mid-1950s and implies the shift from "farming as a way of life" to "farming as a business" [2]. The paradigm shifts have made Malaysia one step ahead in producing agricultural products not only for sustainability of local food consumption but at the same time expanding the economics growth development.

Agriculture has long been part of Malaysia's economic sectors. However, in 1980's the focus has been diverted to industrial developments. Nevertheless, the importance of agricultural sectors to the development of the country is undeniable. This has been strongly proven when agriculture receives a very significant emphasis in

the Ninth Malaysian Plan. Throughout the period, the agriculture sector will be revitalized to become the third engine of growth where emphasis will be on *New Agriculture*. This involves large scale commercial farming, wider application of modern technology, production of high quality and value-added products, biotechnology discovery, increased convergence with information and communications technology (ICT), and participation of entrepreneurial farmers and skilled workforce [3].

ICT initiative is seen as the alternative platform for the agriculture business to promote and market their services and products online. In light of this, the Malaysian Government has implemented Internet based applications to help small scale farmers grab the benefits from the current Internet technology. Among the initiatives which have been undertaken by various agencies are (i) Agribazaar, which operates under

AgriTIGeR (Agriculture Technology Industry-Government-Electronic Revolution), initiated by Malaysian Institute Of Microelectronic Systems (MIMOS) and Department of Agriculture (DOA); (ii) Myfruits.org initiated by Malaysian Agricultural Research and Development Institute (MARDI); and (iii) FAMAExchange initiated by Federal Agricultural Marketing Authority (FAMA). The main objective of these applications is to increase farmers' productivity competitiveness as well as to bridge the digital divide.

As mentioned above, Agribazaar is an Internet based portal initiated by the Department of Agriculture, Ministry of Agriculture and Agribased Industry. The portal offers an internet-based commerce infrastructure for buyers and sellers of agriculture products [4]. The Agribazaar is considered as a marketing channel which allows individual or organizations to register with the application in order to promote their businesses. According to [5], marketing channels can be of different types, ranging from advertising channels, order processing channels, to customer support channels. Promoting the agricultural products is a challenging tasks due to the nature of the products itself. This requires a good strategy of marketing. Agribazaar has been designed to support the agribusiness entity via providing a platform to promote agriculture-based products and services.

Agribazaar was launched in 2003 and its objectives are to improve market reach, efficiency, and productivity among individuals or businesses involve in buying or selling agriculture products. The opportunity given by the Department of Agriculture (DOA) is hoped to improve economic growth of the agriculture community. This is due to the fact that Internet-based applications are easy to access at anytime and anywhere around the world.

In spite of these initiatives, literatures have shown that many Malaysian agropreneurs face problems in distributing their products to customers and many do not know the existence of internet based applications that can be used for improving businesses [6,7]. Thus, to ensure the agriculture community benefits from the ICT initiatives, the study has investigated the "performance" of the portal in terms of utilization and identify the barriers to successful adoption of the application. Results obtained provided important feedback on the ICT projects for agriculture community initiated by the Malaysian government.

Performance in terms of website evaluation has been defined by [8,9] as the expectancy of users in terms of comprehensiveness and the reliability of the information, whether or not the use of a website can increase the productivity, and whether or not the use of the website can increase the chance of getting business [10]. Performance was also measured by the confidence level of a person using a system [11]. When most of the criteria meet the expectation of users, confidence arises and business opportunities increases.

Based on these facts, this study defined performance and efficiency as the accomplishment of the portal in terms of giving users' satisfaction, comprehensiveness and reliability of the information, increasing users' productivity, and creating business opportunities. The study has investigated the levels of achievement in those criteria and highlighted

### 1.1 Problem formulation and objectives

Agribazaar is one of the Internet based application initiated by the Malaysian government to help small scale farmers to benefit from the current Internet technology. The aim of the application is to increase farmers' productivity competitiveness as well as to bridge the digital divide. After seven years of implementation, no study has been made to evaluate its performance. In order to know whether the initiative has brought some significant changes to the agriculture community and to continuously provide funds to sustain the portal, the government needs some input on the performance of the portal in terms of utilization and barriers to successful adoption of the application.

Regarding to this fact, the study was aimed at providing some feedbacks on the successfulness of Agribazaar. The objectives were to investigate Agribazaar's performance in terms of utilization and to identify important issues on technical and non-technical aspects of Agribazaar. Questions addressed were: i). "What is the satisfactory level of Agribazaar in terms of agriculture business usage?", ii). "Can Agribazaar be considered as a successful initiative by the government?", and iii). "What are the issues of Agribazaar's implementation?".

This paper begins with an overview of agribusiness and later explains on the role of ICT technology focusing on internet-based application as a platform for conducting agribusiness. In order to make the discussion in context, Agribazaar has

been chosen as a case study. Analysis on the implementation of Agribazaar is presented in the later section. This study is an initial phase of a larger scope of research and was conducted between 2008 and 2010. The discussion presented in this paper is confined to the findings obtained during those periods.

## 2 Agribusiness

Several definitions of agribusiness are found from the literature. [12] defined agribusiness as the generation of income from the sale of a product or service or both, which facilitates the decision making of a farmer or land manager. Agribusiness has also been described as the activities that occur after harvest and prior to final sale to consumers [13].

[14] defined agribusiness as the sum of all operations in the economy involved in the production, processing and wholesale marketing of agricultural products. Another definition of agribusiness by [15] refers to aspects of agricultural production, processing and distribution. This includes food, forest and fiber production including their byproduct utilization, agricultural chemicals and pharmaceuticals, agricultural finance and trade, agribusiness/farm management, agro-environmental considerations, and land development. In short, it comprises of all major elements essential to the establishment and operation of efficient agro-food enterprises [15].

Though all definitions stated above are true to the meaning of agribusiness, in this research agribusiness will be referred to as any activities that are conducted to produce, distribute, market, or transport agricultural products to generate income.

In the past, problems on agribusiness have been investigated by several researchers. [16] have identified problems in disseminating the agricultural information and thus affect the circulation of agricultural product in the market of China. Among the problems are (i) The ratio of utilizing information is lower; (ii) Inadequate infrastructure of information service system such as essential hardware and software in rural areas; (iii) Information available from the network is sometime inaccessible; and (iv) Limitations of information channels and slow in upgrading them.

[17] raised the problems in adopting Internet-based application for agricultural business in Italy and France as follows: (i) Users' awareness of the

existence of such Internet-based applications; (ii) Information gap between the intended users and the providers that has caused mistrust between them; (iii) Internet-based application is very demanding in terms of organization, manpower and financial resources compared to the conventional methods (newspapers, magazines, leaflets etc.); and (iv) Users are reluctant to pay for the services.

In Malaysia, the scenario of agribusiness is no different from other parts of the world. The agribusiness entities in Malaysia cover various types of agricultural products from fresh fruits and vegetables to handicraft products made of agriculture waste. The agribusiness entities have generated incomes for millions of Malaysian and have contributed to the economic growth of the country.

Heading towards the sustainability of agriculture and agribusiness sectors in Malaysia, the government provides support and assistance through multiple agencies, led by MOA. The ministry has organized numerous approaches in promoting agriculture and agribusiness as a fundamental economic sector. One of the strategies is to provide an electronic platform for marketing products through Internet.

### 2.1 ICT in Malaysia

In the Ninth Malaysian Plan, the Malaysian government has identified information technologies (ICTs) as the major determinants of national development in order to achieved the proposed developed status by 2020. In addition to its impacts in moving the economy forward, ICTs are now employed as a means of reducing the socio-economic gaps of the less privileged sections of the society [1].

The Malaysian government aims at establishing more community-based telecentres to achieve the coverage of all districts within the country, a project of multi-million dollars. This will break the barrier between living in the rural areas and urban areas since location will no longer be referred to as being remote. Malaysia's approach to the problem is viewed from three main perspectives: Access (making ICTs infrastructure available to all), Adoption (encouraging ICTs usage in everybody's daily life) and Inclusion (achieving social-economic value of ICTs by all Malaysians).

According to [18], connecting rural people to the Internet was the initiative of Rural Internet

Centres (RIC) program and Universal Service provision (USP). The initiative being one of the earliest rural Internet initiatives in Malaysia was launched on 3rd of April, 2000. This program was designed to present a radical approach of making Internet accessible to people of rural areas by looking into areas such as infrastructure needs, capacity building and content development.

During the first phase, RICs were deployed to post offices in the semi-rural areas within the reach of ISDN enabled exchange. As at now, 42 RICs have been equipped with five to six personal computers connected to Internet via ISDN throughout the country. According to the result of the statistics compiled in July 2004, it was revealed that more than 53,000 users now use RIC services while more than 35,000 users have undergone training under RIC programme training scheme since its inception.

## 2.2 Internet-based Applications for Agribusiness in Malaysia

Internet-based applications for agribusiness in Malaysia are generally accomplished by government agencies. The MOA is the key government agency which persistently providing supports via multiple channels in improving and sustaining the agriculture sector in Malaysia. The ministry performs its roles through various agencies which responsible for specific roles in supporting the agriculture sector. All agencies are vital to the agriculture growth in Malaysia and various efforts have been carried out to ensure that the growth of agriculture sector is constantly increasing.

Table 1 depicts the MOA's agencies and their roles. An early observation was made in 2007 to comprehend the internet-based applications initiated for the MOA's agencies. Out of 11 agencies, three implemented internet-based applications to support business activities. The three agencies and their Internet-based applications (in brackets) are Department of Agriculture (AGRIBAZAAR), Federal Agriculture Marketing Authority (AGROBASED PRODUCT.COM), and Malaysian Agricultural Research and Development Institute (MYFRUITS.ORG).

AGENCIES	ROLES
Department of Agriculture	Supporting various agricultural fields, particularly in food crops and agro-processing industries to ensure sufficient food

	production.
Department of Fisheries	Managing and developing the fisheries sector of Malaysia.
Department of Veterinary Services	Managing and monitoring the animal industry and food from animal products.
Federal Agricultural Marketing Authority (FAMA)	Coordinator of food marketing and agricultural resources.
Malaysia Agricultural Research and Development Institute (MARDI)	Implementing research activities on food and agriculture.
Malaysia Fisheries Development Authority (LKIM)	Improving the social-economic status of fishermen with focusing on enhancement and development of the fisheries sectors.
Farmer Association Authority (LPP)	Improving farmers' economic and social perspectives.
Malaysia Agricultural Bank	Providing financial assistance for the agricultural activities.
Muda Agricultural Development Authority (MADA)	Supporting and managing the economic development of Muda Irrigation area.
Kemubu Agricultural Development Authority (KADA)	Supporting and managing the economic development of Kemubu area.
Malaysia Pineapple Industry Board (MPIB)	Managing and monitoring pineapple industry

Table 1. The MOA's Agencies

## 3 Methodology

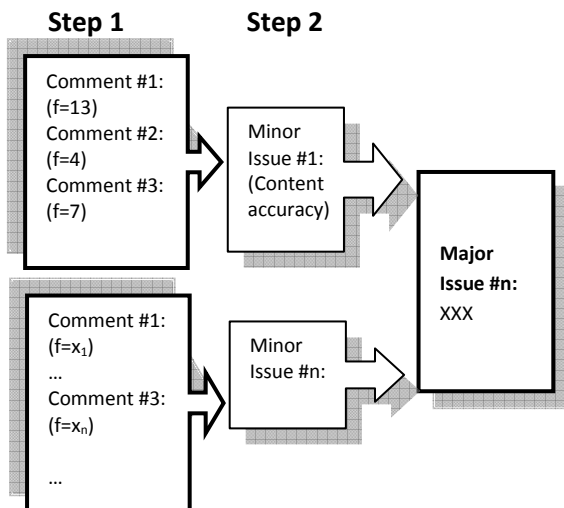
The research conducted on Agribazaar Portal covers four phases. First, comments posted by the Agribazaar's users in the User Feedback section were gathered for a specific range of dates. A start and end date were set for gathering users' comments to qualify the justification of finding the issues and challenges of using Agribazaar from users' point of view. The comments and feedback was obtained freely from the portal administrator. It took three months to gather the data and 353 comments were extracted.

Second, these comments were then checked for any duplicate entrees, and irrelevant comments. Any comments found to be duplicated or irrelevant were removed.

Third, remaining comments were examined based on interpretive analysis approach. The interpretive analysis has been employed to further understand the Agribazaar portal's user and their point of view when using the portal. According to [19], the goal of interpretive analysis is to understand the phenomenon from the point of view of the participants and its particular social

and institutional context, when the quantified textual data is unable to explain this.

The interpretive analysis conducted in this study involved two steps namely, Step 1). Reading each user's comment and Step 2). Classifying them into several major issues. An example on how interpretive analysis was achieved is shown in Fig. 1.



**Fig. 1.** Example of a classification of related users' comment into a specified issue

Comment #1 till comment #3 are related as the comments refer to a specific problem e.g problems on information that are not "up to date". Comments #1 or similar comment was mentioned by one or more users for 13 times (f=13). Comment #2 or similar comment was mentioned for 4 times (f=4) and Comment #3 or similar comment was mentioned for 7 times. All together there are 24 comments on the problem. Since problem on information that are considered as "up to date" refers to information relating to correctness or accurateness, thus, the three comments are classified as an issue on content accuracy.

A more specific example is shown in Fig 2. The figure shows on how comments related to system administration support were classified. Other comments were similarly grouped and classified into specified issues. The number of issues depend on the number of groups formed. Results from the analysis were then verified in the next phase.

The last phase involved verifying results using focus group discussion. This phase was to verify interpretive findings and discussed answers to the

questions addressed. The discussion was organized by MIMOS on 18 and 19 November 2009 in Port Dickson, Negeri Sembilan. The workshop facilitated by MIMOS was attended by officers from related agencies of Ministry of Agriculture, and selected users of Agribazaar according to business types defined in the portal (e.g. IKS/SMI and Manufacturer, Retailer and Supplier, Farmer and Breeder). The main objective of the workshop was to conduct a post-mortem of the existing Agribazaar portal based on the interpretive findings obtained, obtained feedbacks from users in the focus group and gathered recommendations for future enhancement of the portal.

## 4 Results

The deliverables in phases 1, 2, 3 and 4 were a case study and comments gathered from specified range of dates, users' comments used for analysis, interpretive results and findings from focus group discussion. The following sections present findings based on the deliverables.

### 4.1 Case study and comments gathered

Agribazaar (<http://www.agribazaar.com.my>) is a web portal designed to offer an Internet-based commerce infrastructure for buyers and sellers of agriculture products [4]. Agribazaar has been launched in 2003 and the aim of this portal is to improve market reach, efficiency, and productivity among individuals or businesses involve in buying or selling agriculture products. Features such as e-Buy/Sell, e-Stock, ePayment, e-Logistic, eMake, ePlan have been included to the portal for achieving an efficient flow of conducting business transactions [4].

Agribazaar is considered as a marketing channel which allows individual or organizations to register with the application in order to promote their businesses. Marketing channels can be of different types, ranging from advertising channels, order processing channels, to customer support channels [5]. Promoting the agricultural products is a challenging tasks due to the nature of the products itself. This requires a good strategy of marketing. Agribazaar has been designed to support the agribusiness entity via providing a platform to promote agriculture-based products and services.

Buying and selling activities takes place when the customers contacted the sellers through email or telephone after the sellers posted the product

information. It can be seen that the portal is still in first stage of the e-business model as discussed by [20]. Agribazaar is a web site that provides broad services including searching, yellow pages, and link to other sites. Agribazaar classify the agriculture product information into categories by subject. Therefore, the sellers are able to go direct to the customers without having to go through the middleman [21].

The opportunity given by the Department of Agriculture (DOA) will broaden of market size of agriculture products. This is due to the fact that an internet-based applications are easy to access anytime at anywhere in the world. It is proven by the number of foreign registered users of Agribazaar. These registered users are from various countries in the world which includes Bahrain, Bangladesh, China, Indonesia, India, Maldives, Mexico, Morocco, Mongolia, Nigeria, Netherlands, New Zealand, Pakistan, Switzerland, Spain, Vietnam, Sri Lanka, South Africa, Syria, Taiwan, The United States of America, the United Kingdom and some other countries in the world.

The number of registered users has increased gradually over the period of this study. As reported in the portal [4], the current number of registered users of Agribazaar has increased gradually to a hefty number of 55,821 members as at 4 January 2010. Back in 2007, the total of registered user reached at 28,371 members and increased to 41,737 members in 2008. Collectively, within three years, the average number of newly registered user per month was between 1,100 to 1,160 users. They can be classified according to business types or subsectors (Fig.3)

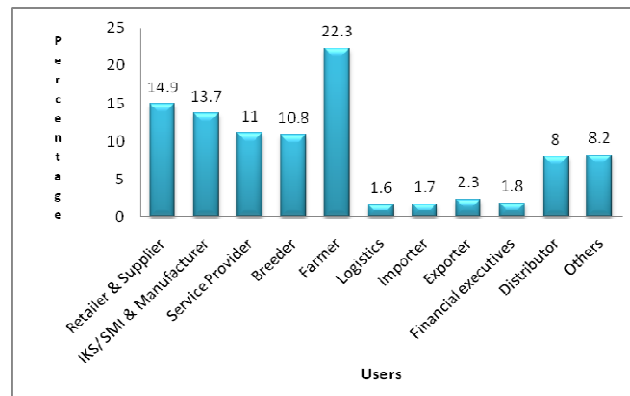
**4.2 Users comments used for analysis**

Comments gathered from users’ feedbacks are processed for duplicate entries and irrelevancy. Table 2 shows the results.

**Table 2.** Comments analysis

Description	Total
Total comments received	590
Duplicate Entries	20
Irrelevant Comments	217
Comments Analyzed	353

For the interpretive analysis, 353 comments were used.



**Fig 3:** Percentage of Agribazaar registered users as at 23 December 2009

**4.3 Findings from interpretive analysis**

Results from interpretive analysis identified several issues:

**4.3.1 Portal Usefulness**

From the comments, none of the respondents feel the Agribazaar portal is useless. However, they feel that the portal can be improved into an active and effective marketplace. Active trading activities conducted through the portal include establishing contacts with prospect buyers or sellers, advertising products, and seeking advice on matters related to farming, plantation and animal rearing.

**4.3.2 System Administrator Support**

Most of the respondent, which is 23.66% have revealed that they cannot access their account. Most of their accounts have been blocked due to incorrect login id or password. From the focus group discussion, a few users highlighted they fail to login even when the correct login ids and password have been used. In addition, 9.41% of the total comments are also concern on the registration problem.

Among the issues highlighted are: (i). registration could not be conducted using the 3G phone - an international user could not register as the user did not have an identification number, (ii). Users did not get any confirmation or acknowledgement after registration, application rejected, unsuccessful registration, (iii). the waiting period after registration is too long and (iv). user can only receive the login id and password after three days of registration. The registration process is too complicated as the users

need to wait the approval from the portal administrator.

The role of portal administrator was also queried in terms of their late and sometimes no response to the request and complaints by the users in the comment section on the portal. This has resulted to users failed to get a new password if they forgot their existing password, and unsuccessful to personalize their offer in the e-Buy/Sell section. For example, a user needs to wait for approval by the portal administrator in order to add a new category in the e-Buy/Sell offer form, or categorize their product specifically.

#### 4.3.3 Portal Usability

4.84% of the users were concerned on the services provided. Most of them had revealed that the loading of pages was slow and sometimes reaching up to ten minutes for one page. 4.30% of the users' comments also revealed that they had problems with their emails. Users could not access their emails, spam problem, and email could not be sent to the portal administrator.

Several comments on upgrading current services have been obtained. These include offering after office services, increase categories on products/services displayed on the website, user friendlier interface, speed up response from the system administrator, and encourage users to be more active in discussion or interaction.

Other issues (stand between 1% to 3 %) as highlighted by the user comments consist of general problems such as (i) non user-friendly interface, (ii) language barrier problem as all offerings are mostly in native language (Bahasa Malaysia), therefore it is difficult for the non-native speaker to understand the language, (iii) difficulty to edit the postings e.g. selling and buying, (iv) difficulty in searching for specific information due to unorganized website content, (v) the staticness of the website, (vi) lack of related pictures, (vii) computer literacy problem amongst the users, and (viii) broken links. The users in the focus group discussion also highlighted the same concern whereby the pages are too cluttered with information and unrelated images.

#### 4.3.4 Content Accuracy

About 10.75% of the users shared that the portal provides inadequate information. Users commented that various agricultural/farming materials specifically should be included, for example category 'Herbs for traditional medication', 'Landscaping plants', 'Product

packaging and marketing services', 'Pesticide', 'Recipe Trading', 'Training Courses' and etc. On top of that, they commented that general information such as contact details e.g. telephone and fax numbers and address of the State Agriculture Department should be updated from time to time. The respondents (3.49%) also highlighted the need to filter old postings in the portal especially the unnecessary posts in the comment and e-Buy/Sell section.

#### 4.3.5 Relevant Features

Feedback during the workshop revealed that users only prefer to use the e-Buy/Sell feature and not other features such as e-Stock, e-Logistic, e-Support, e-Plan, e-Payment and e-Make. Further feedback from the users also raised the issue of knowledge sharing amongst the registered users, as currently there is no Forum or Chat feature to communicate and share ideas between the interested parties. Hence, the users feel less interactivity on the portal.

#### 4.3.6 Portal Unawareness

Standing at the 3.49% from the user comments is the issue of portal promotion. The users stated the needs of promoting the website extensively, as in their opinion, there are many community members are still unaware of the portal existence. More over than that, with the promotion, the users perceived that there will be more activities/offerings for selling and purchasing. Collectively, all the users in the focus group discussion agree to the fact that DOA did not manage to promote the portal extensively to the public, hence create minimum awareness of the portal existence.

#### 4.3.7 Privacy and Legitimacy

Other comments from a user raised the privacy issue as in the dissemination of personal details, such as full name, telephone number, and address of the business owner. The portal has no control in terms of exposing the user profile to the public. Furthermore, the legitimate company registration information for a registered user in most cases is unavailable under each user profile. According to the feedback from the workshop, company registration number is important to determine between individuals who are interested to do business, or individuals who are casually registered with the portal and not actively or directly involved in getting business leads from the portal.

All issues highlighted above were discussed and verified by way of a focus group in a workshop.

#### 4.4 Findings from focus group discussion

Focus group verified findings from the interpretive analysis and discussed answers to the three questions addressed, "What is the satisfactory level of Agribazaar in terms of agriculture business usage?", "Can Agribazaar be considered as a successful initiative by the government?", and "What are the issues of Agribazaar's implementation?".

*"What is the satisfactory level of Agribazaar in terms of agriculture business usage?"*

The portal have not been upgraded or enhanced since it was implemented seven years ago. Thus there have been many dissatisfactions and limitations of the application back in its implementation in 2010. The portal is slow, and unfriendly. Mainly, usability issues have been the concerns of users. The comments posted on the portal showed that users have been unhappy with the usability of the portal and services facilitated by the administrator. These complaints have also been raised in the focus group discussion.

The new version of Agribazaar is still in the pipeline as of the case study is written. The Department of Agriculture who is the owner of the portal and together with the developer, MIMOS have decided to upgrade the application in order to address the dissatisfaction and limitation provided by the users.

*"Can Agribazaar be considered as a successful initiative by the government?"*

Feedback from the focus group discussion revealed that the portal has created business leads. Through the portal, customers contacted business entrepreneurs via email or telephone after posting information on their products or offerings. Although Agribazaar was designed to allow buying, and selling online, the portal only allows information of the products to be posted, while the transactions occurs through secondary channels such as email, telephones or face-to-face.

Thus it can be seen that the portal is still in stage 1 of an e-Business model. According to [21] in stage 1, sellers are able to go direct to the customers without having to go through the middleman. However, in spite of the limitations, users of the Agribazaar portal have grown from 28,371 in 2007 to 55,821 members as of January

2010. This shows that the web based application has allowed farmers and other related agencies to increase their business opportunities.

*"What are the issues of Agribazaar's implementation?"*

The interpretive was conducted to address this question and answers are discussed in section 4.3.

## 5 Discussion and Conclusion

In this paper, Agribazaar's performance was investigated. Specifically two questions addressed the concerns on performance, "What is the satisfactory level of Agribazaar in terms of agriculture business usage?", "Can Agribazaar be considered as a successful initiative by the government?". In addition, the research identified important issues on technical and non-technical aspects of Agribazaar were identified. Question related to this was "What are the issues of Agribazaar's implementation?".

### 5.1 Performance

In terms of Agribazaar's performance, through feedbacks from users, it is clear that the portal has indeed help to create business leads. Buying and selling activities takes place when the customers contacted the sellers through email or telephone after the sellers posted the product information. It can be seen that the portal is still in first stage of the e-business model as discussed by [20]. Agribazaar is a web site that provides broad services including searching, yellow pages, and link to other sites. Agribazaar classify the agriculture product information into categories by subject. Therefore, the sellers are able to go direct to the customers without having to go through the middleman [21].

Agribazaar has attracted a huge portion of individuals and companies who are not directly involved with producing the agriculture product. They can be identified as under the categories of Retailer and Supplier, SMI Manufacturer, Service Provider and etc. Their role is significant to complete the Supply Chain of agriculture product right from producing to delivering the goods to the consumer. Therefore, the portal is the right place for them to meet and discuss potential business engagement.

On the other hand, the participation of the farmers and breeders, who play the part as the



original suppliers that provide products, services and information represent only a one third of the total users using the portal. Agribazaar is seen as a crucial platform for the original supplier to not liaising through middleman to sell their product. This enables will increase their income and maintain products' quality and freshness. The positive impact received, indicates that more promotions of Agribazaar should be conducted to create awareness and educate the original suppliers to embark on selling their product online.

## 5.2 Implementation

In terms of issues on Agribazaar's implementation, analysis on the total comments revealed seven major issues that concerns portal usefulness, system administrator support, portal usability, content accuracy, relevant features, portal usefulness, and privacy and legitimacy. Therefore, in what ways can the issues be handled?

Since Agribazaar has now evolved to draw in local and international users that sells from agriculture produce to land, machinery, logistics, and other products totally unrelated to farmers or farming. It has open many opportunities to do agribusiness. The issues and challenges with the portal's usage as highlighted by the users should not to be taken lightly.

Challenges in handling the issues are discussed in two separate sections: challenges on technical issues and challenges on non-technical issues.

### 5.2.1 Technical issue challenges

In this paper, technical issues are issues that are directly related to the technology incorporated in the portal development.

**System administrative support:** Some of the basic system administrative supports such as forget password facility, new member registration, email facility administration, or adding new product category can be automated instead of manually handled by the system administrator. This will reduce backlog in the system and reduce complaints from the users. More interactive features such as customization of the product/item offering, in which users can add pictures, video and include more description of their product should be added to the portal.

**Portal Usability:** In order to enhance usability, needs of the users should be the determining factor for all design decisions such as the site structure,

page layout, colors, graphic design, style and navigation. By understanding users' needs and designing the portal to suit their needs, effective portals can be achieved. In addition, timely update on the news and latest information are necessary in order to ensure that business opportunities are not missed. Apart from that, the website page loading time should be decreased by upgrading the back end of the system. Back-end services that could be upgraded are the database system and network management systems. The back-end systems are used to process the requests, searching and sorting data, serving up files, and providing other services and upgrading the back end services would speed up these processes and improve the portal operation effectively.

**Unnecessary features:** Features such as e-Stock, e-Logistic, e-Support, e-Plan, e-Payment and e-Make were not popularly used because users are not skilled in using those features. It is suggested that DOA conducts regular trainings to improve users' hands on skills.

**Privacy and legitimacy:** For some reasons, the legitimate company registration information for a registered user in most cases is unavailable under each user profile. The privacy of the users should be protected in terms of controlling the amount of information to be published to the public, such as phone numbers, real names, emails, company details and others. However, the portal does not offer full control for the users to be able to do that. On another aspect, some users need to have a sense of trust when doing business with the potential buyer/seller they meet online.

It is suggested that some security mechanism be incorporated to establish trust without revealing sensitive information. An example would be using VeriSign Authentication Service that allows companies and users to conduct online business with confidence. VeriSign Authentication Services is an SSL Certificate provider that has issued over 2 million VeriSign® Identity Protection (VIP) credentials to consumers for strong authentication on a network of leading Web sites [22]. Therefore, it is difficult to determine between individuals who are interested to do business, or individuals who are casually registered with the portal and not directly involved in the business.

### 5.2.2 Non-technical issue challenges

Non-technical issues refer to issues that are related to the users of Agribazaar. These include

intangible matters such as satisfaction, awareness, and concerns of Agribazaar users.

**Portal awareness:** On the other hand, the participation of the farmers and breeders, who play the part as the original suppliers being those that provide products, services and information that add value for customers and other stakeholders represent only a one third of the total users using the portal. Agribazaar should be a crucial platform for the original supplier to not liaising through middleman to sell their product. This will help them increase their income and as well as maintain their product's quality and freshness. More promotions of Agribazaar should be conducted to create awareness and educating the original suppliers to embark on selling their product online. Having frequent road shows all over Malaysia can develop interest in using the portal.

**Portal Usage:** Although there are modules to perform the supply chain process like eMake, eBuy, e-Stock, e-Plan, and ePayment, the feedback from the users showed that the portal are only used to post information and these module are underutilized. Reason being, the users feel that the modules are not necessary to them. As the main purpose of getting into the Agribazaar is to meet potential buyer/seller, therefore, the Buy/Sell feature is the most preferred as compared to other modules.

## 6 Limitation and Future Work

The study was conducted between the year 2007 and 2010. The discussions presented in this paper are confined to the findings obtained during this period. Current state of the portal should be discovered as enhancement of Agribazaar is in the pipeline.

The sample used in this study analyzed data from qualitative point of view. In the future, it is recommended that a research on determining factors affecting the actual usage of Agribazaar portal among users to be conducted quantitatively. Additionally, the applicability of Unified Theory of Acceptance and Use of Technology (UTAUT) constructs or from other spin-off models from Technology Acceptance Models may be applicable in this context. A study using a pre-implemented and post-implemented method would be another way of analyzing the successfulness of the portal.

More researches can be conducted to further understand specific issues and challenges as highlighted by this paper, namely usability aspect of the portal, online trust, technology adoption and awareness of certain features, and privacy and legitimacy issues when conducting business online. By solving these and other issues certainly will transform the mindset of the people to treat agriculture as a lucrative business, increase interaction, and better relationship within the Agriculture community.

### References:

- [1] The Malaysian Government, *The Ninth Malaysia Plan 2006-2010*, The Economic Planning Unit, 2006.
- [2] Sutton, K., Agribusiness on a Grand Scale – Felda's Sahabat Complex in East Malaysia, *Singapore Journal of Tropical Geography*, Vol.22, No.1, 2001, pp.90-105.
- [3] Wong, L.C.Y., Development of Malaysia's Agricultural Sector: Agriculture as an Engine of Growth, *Proceedings of the ISEAS Conference on the Malaysian Economy: Development and Challenges*, 2007, pp.13—18.
- [4] Mimos Berhad (March 3, 2010). Agribazaar [Online]. Available: [www.agribazaar.com.my](http://www.agribazaar.com.my)
- [5] Chaudhury, A., Mallick, D.N. and Rao, H.R. Web Channels in e-Commerce, *Communications of the ACM*, Vol.44, No1, 2001, pp.99-104.
- [6] Zahurin Mat Aji, Huda Ibrahim, Nor Iadah Yusop, Rafidah Abdul Razak, Wan Rozaini Sheik Osman. (2007). Rural Internet Centre (RIC) as a Mean for Bridging the Digital Gap in Rural Communities: Assessment of Current Situations. In *Managing Worldwide Operations and Communications with Information Technology. IRMA 2007 Vancouver, Canada*. Khosrow-Pour, M (Ed). (pp. 1167-1171). Idea Group Publishing.
- [7] Zulkhairi Md. Dahalin, Suhaidi, Hassan, Huda Ibrahim, Wan Rozaini Sheik Osman, Azman Yassin, Md. Khairuddin Kasiran, Mohd Nizam Saad, Mohamad Amir Seman, Nor Iadah Md. Yusof, Osman Ghazalli, Abd. Razak Rahmat, and Suwannit Chareen Sop Chit. (2008). *Kajian Keperluan Aplikasi dan Kandung ICT (Penggunaan Jalur Lebar di Kawasan Luar Bandar Negeri Kedah and Perlis)*. Sintok: Universiti Utara Malaysia.

- [8] Lesley University Library. (2007). "Evaluating Web Sites," pp. Retrieved 23 September 2008, from [www.lesley.edu/library/guides/research/evaluating\\_web.html](http://www.lesley.edu/library/guides/research/evaluating_web.html)
- [9] Schrock, K. (2006). Critical evaluation of a web site - Secondary school level. Retrieved July 7, 2006, from <http://school.discovery.com/schrockguide/pdf/schrockwebevalsec.dot>
- [10] Fritz, M., Schiefer, G. (2002) Market Monitoring in Dynamic Supply Networks and Chains: an Internet-Based Support System for the Agri-Food Sector. *Journal on Chain and Network Science* 2 (2): 93-100
- [11] Venkatesh, V., et al. (2003), 'User acceptance of information technology: toward unified view', *MIS quarterly*, 27 (3), pp.425-78.
- [12] Stone, G., *Agribusiness Role in Extension, Education and Training: A Case Study*. Research Report in Capacity Building in Rural Australia, Cooperative Venture for Capacity Building, 2005.
- [13] Stanton, J. V., The Role of Agribusiness in Development, *Journal of Agribusiness*, Vol.18,No.2. 2000, pp.173-188.
- [14] Johnson, M., Malcolm, B. and O'Connor, I. The Role of Agribusiness Assets in Investment Portfolios, *Australasian Agribusiness Review*, 2001, p.14.
- [15] U.S. Agribusiness Council, 2006, *Agribusiness Definition*. Retrieved Nov 7, 2006 from [www.agribusinesscouncil.org/#def](http://www.agribusinesscouncil.org/#def)
- [16] Ying, Z., Wang, Y. and Li, Z., Research on Circulation and E-Commerce of Chinese Agricultural Products, *Proceedings of ICEC'05*, 2001, pp.846-850.
- [17] Waksman, G., and Zanasi, C., Analysis Of Information Resources Dedicated to ICT On The Green Web In France And Italy, *Proceedings of EFITA 2003 Conference*, 2003, pp.177-184.
- [18] Aspirasi Digital Online (2010). Bridging The Digital Divide [Online]. Available: <http://www.aspirasidigital.net.my/>
- [19] Myers, M.D. (1997). "Qualitative Research in Information Systems", *MISQ* Discovery. Retrieved August 16, 2007 from <http://www.misq.or/discovery/MISQDisworld/index.html>
- [20] Ho, J, and Tang, R. Towards an Optimal Resolution to Information Overload: An Infomediary Approach, *Proceedings of the International Conference on Supporting Group Work*, 2001, pp.91-96.
- [21] Applegate, L.M., Austin, R.D. and McFarlan F.W., *Creating Business Advantage in the Information Age (1st ed.)*, McGraw-Hill, Boston, 2002.
- [22] Symantec Corporation (2011). Legal Repository [Online]. Available: [www.verisign.com/corporate/index.html](http://www.verisign.com/corporate/index.html)

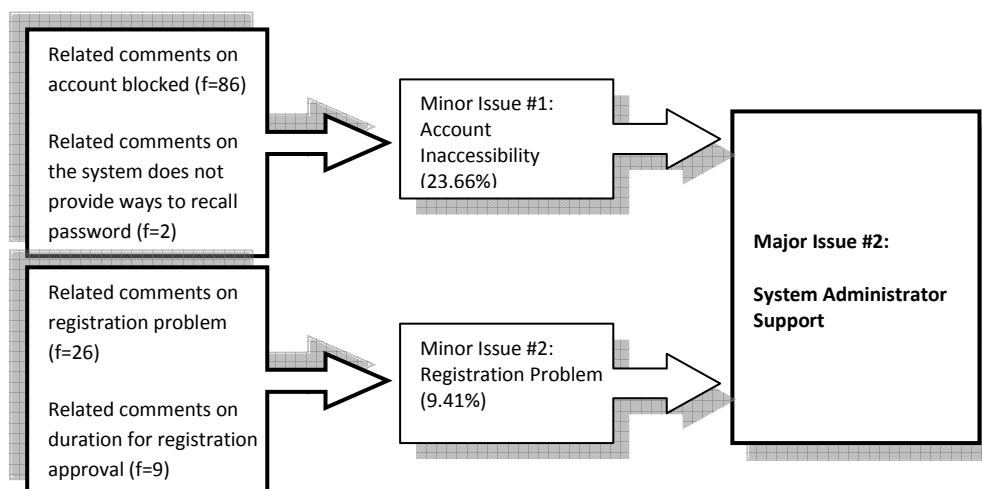


Fig. 2. Major issue #2 – System Administrator Support.