

Proposed Business Model for SME Farmers in Peri-Urban Sydney Region

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Abstract: Literature indicates that SME (Small to Medium) farmers in peri-urban Sydney, Australia region are faced with uncertainties when selling their produce. Majority of farmers sell produce via agents, some sell produce via markets however in either case farmers do not get the full overview or the transparency of the expected market demands and prices. To identify if a suitable business model could be proposed, a carefully selected group of five peri-urban farmers has been studied in detail. Results indicate that through collaboration and networking farmers would be able to get a comprehensive overview of the markets and the digital-eco-system. In addition it is expected that this would further allow farmers to sell their produce via both traditional sale mediums as well as new more enhance mediums of the digital era.

1 INTRODUCTION

Even from the very early civilizations Agriculture played a major role in human's life. For centuries it was one of the most crucial sources of food and life. With new developments industrialisation started dominating. Tools and technologies started automating the work on and off the field which in turn saw a rise in the use of machines and consequently led to mass productions (Toffler, 1990).

Today, we find ourselves in a knowledge era where technologies abound. Individuals and businesses, all make use of ICT (Information and Communications) tools and systems to create networks, find information, process transactions and do business.

In early developmental days however, aim of the technologies was to speed up production and automate certain tasks (Dutta, 2009). These days' organisations and individuals often require more. They often seek timely, accurate and specific information in a given time and place so that they can make appropriate decisions and complete tasks utilizing new emerging business models. At present times we are witnessing exchanges, transfers and ultimately integrations of information across the various stakeholders. The paradigm where systems

are organic and where its properties can change quickly based on the received environmental or internal stimuli is becoming more and more prevalent in today's business. Such paradigm through literature is referred to as a "Knowledge Eco-system" (Nachira et al., 2007).

To be able to study and further review the knowledge eco-system, where businesses interact with the other agents it is crucial to understand the nature of the environment that surrounds them.

In Australia for example, and many other countries in the world, SMEs (Small to Medium Businesses) tend to pre-dominate the business scene. In New South Wales, Australia 70% of businesses are SME (Griffith and Wilkinson, 2012). This in turn means that for SMEs to be successful they cannot just operate as isolated components of the system but instead be active system components that are able to change and consequently meet the environmental demands of the whole eco-system, its surrounding environment. Out of 70% of businesses that are classified as SMEs, 8.7 % of businesses in some way contribute to the Agricultural industry sector (Connolly et al., 2012), which represents a significant number of businesses that are engaged in the sector.

Furthermore, research indicates that the duopoly of the two major Australian supermarkets, Coles and Woolworths, has been creating in the recent times

has been negatively affecting the peri-urban Sydney regional farmers and in turn has made it very difficult for the farmers to work with the large market players due to their inability to easily meet large market demands (Keith, 2012).

Therefore, to explore how best Sydney peri-urban SME farmers could be assisted to assure their existence and productivity is not negatively impacted a detailed investigation of current most common farm selling process has been conducted. This investigation also reviews most common issues and problems farmers in peri-urban Sydney region are experiencing. Furthermore, this study also helped identify if and to which extent a new business model could be proposed to assure healthy eco-system is sustained. Therefore, to conduct a detailed investigation literature review has been conducted to analyse to which extent SME farmers around the world are currently making use of technology.

2 SME FARMERS WORLD WIDE

Review of the literature world-wide identified that the complex nature of agricultural processes translates into farmers requiring key components of information at particular time of the crop growth lifecycle. For example, farmer advisory services in Africa have been well grounded in literature (Gakuru et al., 2009), where a range of primarily mobile telephony systems are used to disseminate timely information to farmers. Prior research in ICT4D and Human Computer Interaction (HCI) has also evidenced and provided solutions in the form of context-aware ontological systems (Walisadeera et al., 2013) to Interactive Voice Response Forums such as Avaaj Otalo (Patel et al., 2010) that farmers

could utilise to gather context – farm location and time – of the year specific data.

Furthermore, research conducted by The Social Life Network (SLN) project in Sri Lanka is yet another example of the effective translation and marriage of farmer information needs with ICT (Di Giovanni et al., 2012). In the SLN project a system comprising of a mobile application provides a list of suitable crops for the climatic conditions where the farm is located (Context specific information). Based on this information farmer decides what crops he/she is going to grow and what the sale likelihood in the coming season is going to be. Furthermore, such system allows farmers to carefully plan production levels. The system also based on the social pixels integrates this information and based on it derives the current production and demand levels for each of the crops for the various regions (Ginige et al., 2013).

Therefore, to assure farmers do not overproduce in Sri Lanka researchers developed a mobile application that seamlessly informs farmers based on the geographical coordinates of the farm which produce they should grow and which ones not to. Such information is context specific and it directly helps farmers make financial business decisions and also identify the most optimal future business operation.

In addition, international research also indicates that for farmers technologies such as mobile apps and social networking tools have started opening new channels of business exchanges.

This investigation points out that in agriculture, similar as to the other industries, SME farmers are slowly implementing technology. The technologies implemented however as in any other area are strongly determined by business requirement, environmental needs, user skills and finances which in turn represent the business eco-system.

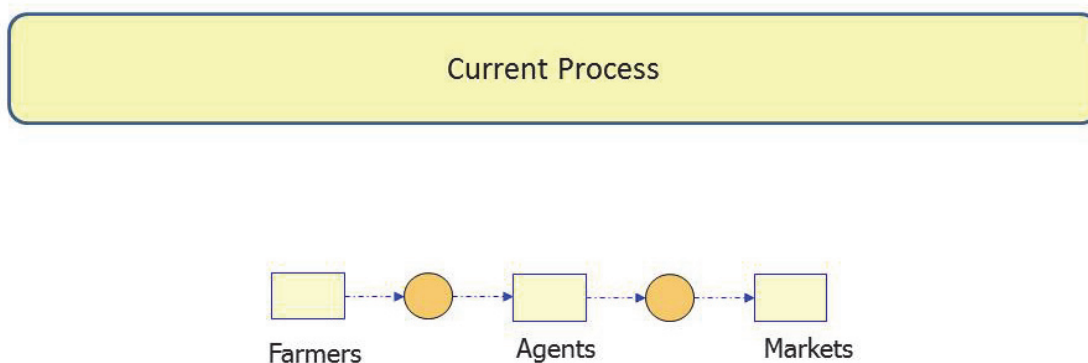


Figure 1: Current farmer processes.

Therefore to assess which technologies would be the most suitable to implement in peri-urban Sydney region a detailed literature review has been conducted.

3 SME FARMERS IN PERI-URBAN SYDNEY REGION

Previous researches identified that farmers within peri-urban Sydney region in the past experienced a range of problems. Such problems ranged from the challenges of being required to close farms that are too close to the city urban areas to having to cope with very high premiums (Parker, 2007). In and around Sydney there are many farming ethnic groups that are distinguished by their languages and cultures (Plant et al., 2012; Parker, 2002). This is mainly because a wide range of immigrants came to Australia and began cultivating. (Parker and Suriyabanadara, 2000). In turn farmers stayed close to their communities, growing expertise and habits. Consequently, the diverse cultural groups rarely came in contact and collaborated. In some instances this is due to the language barriers, while in the others it is just a habit of following traits of their ancestors.

Disparity of farming groups has potentially opened issues such as the duopoly that is held by Coles and Woolworths two Australian largest supermarket chains (Keith, 2012). The power the two supermarket chains have made it extremely difficult for the small peri-urban farmers to remain in the market.

The peri-urban Sydney area is diverse both in terms of the nature of farmers involved as well as the type of produce they grow.

Studies identify that farming cycles have a number of stages and that therefore there may be a number of areas in which farmers could be assisted. Furthermore, researchers in developing countries focused on the stages of on produce selection and growth (Di Giovanni et al., 2012). Considering however that in peri-urban Sydney region farmers tend to grow same produce their grandfathers used to grow and that such knowledge has been transferred through generations it was identified that early farming stages such as seeding or growth may be hard to change and modify.

Therefore, taking into the account that in order to make difference and help farmers survive and regain

competition it was crucial to concentrate on the main profit outcome – the selling.

Currently it appears that farmers sell goods via a very simple unilateral process, see Fig 1. From Fig. 1 it can be seen that currently farmers sell goods via a very traditional Supply Chain process where Farmers sell the picked harvest, via Agents, their supply chain distributors. Following this, Agents the Distributors sell the goods to the Supply Chain Retailers or to the Larger Farm Markets.

In some manufacturing companies such traditional relationship is still present however in many there are numerous other ways how the goods are sold. Today, manufacturers are gaining the power through web 2.0 and 3.0 selling goods directly to the customers (Egol et al., 2012). Businesses are also exploring other non-traditional ways in which to reach the customers. Some utilise crowdsourcing, others auction models or online markets which in turn could also be utilised by the farmers.

Therefore, this research aims to identify most suitable business models that SME farmers in peri-urban Sydney region may consider implementing in order to regain business and keep the peri-urban agriculture alive.

4 METHODOLOGY: SCENARIO ANALYSIS AND SCENARIO TRANSFORMATION

Considering that change within the existing business operations is required it was necessary to conduct a detailed review of the farming stage of selling and identify how Sales within the peri-urban Sydney region are currently carried out.

Therefore to conduct the study of how peri-urban farmers can be assisted five peri-urban Sydney farmers of stone fruit were selected for this preliminary study.

All farmers selected for the study were at least a second generation farmers. All were proficient English speakers and to a large extent used computers, Internet and smart phones.

To collect the required information all farmers were interviewed. Interviews were composed of semi-structured questions where emphasis was placed on a review of farming stage of selling. While interviewing a particular focus was placed on the areas that farmers perceived to be of concern.

Literature indicates that in past interviews and qualitative studies have been effective in

understanding the needs, requirements and behavioural traits of users in regional areas (Dhir et al., 2012; Toyama, 2010). Therefore this research closely focuses on identification of the most crucial issues farmers are currently experiencing. In addition it is believed that such investigation would also assist in determining areas of possible ICT absorption (Kjeldskov and Graham, 2003).

Following interviews, collated data was transcribed and then analysed utilizing the Scenario Based Analysis (Rosson and Carrol, 2002). Scenario Based Analysis helped generate five main scenarios and pin point actual problems and issues each individual farmer was currently experiencing. Consequently, with this principle we in detail assessed farmers' current situations and their primary concerns. For details please see Tables 1-5.

Based on the first scenario it can be seen that one of the most crucial farmer concerns is their

Table 1: Farmer Scenario 1.

Scenario 1	
Situation	-Works on his own. -Proficient user of technology. -Sells produce via agent.
Concerns	-Farming is becoming unprofitable. -Young people are not interested to work on the farm. -Minimum wages are not easy to afford. -Most farmers sell via agents and it is not possible to know if prices are fair. -Farmers are unaware of true product value. -There is no common regional farming association -Farming is community specific -There is currently lack of communication among farmers

Table 2: Farmer Scenario 2.

Scenario 2	
Situation	-Works on his own. -Proficient user of technology. -Comes from a family of farmers. -Sells produce via agent.
Concerns	-Duopoly created by Woolworths and Coles is causing small markets to shrink. -Years ago there were training and subsidy, these days it is not present. -Communication amongst farmers is very scarce. -As a farmer he sells via agent and he expects that he is getting about 50% of selling price but is uncertain. -There are too many agents and not enough farmers

relationship with the agents and their inability to identify the actual product value.

Scenario two further supports issues raised in the first case and also identifies that relationship between agents and farmers is unstable. It also points out that larger supermarkets are holding the market and that for the small farmers to stay they will need to identify best means in how to survive within current marketing demands.

Table 3: Farmer Scenario 3.

Scenario 3	
Situation	-Works on his own. -Comes from a family of farmers. -Uses Facebook, Local Blogs for marketing. Sells via agent and from a farm.
Concerns	-Farmers are sticking to old operation routines. -Farmers do not know how much their products are really worth as they are often sold via agents. -He is one of the rare farmers who does not only rely on the agent but uses Facebook to advertise locally

Scenario three further points out that in order for farmers to survive they will need to move away from traditional operations and to try to identify more flexible business model that could assist them in achieving their much needed outcomes.

In addition, this scenario identifies that social networking tools even in farming may create desired outcomes and may allow farmers to get in touch with their current and potential customers.

Scenario four points out that in and around Sydney there are regular markets that farmers can attend. It is in turn one of the other avenues that farmers may employ to advertise and sell their produce.

Table 4: Farmer Scenario 4.

Scenario 4	
Situation	-Farmer a number of full time employees. -Comes from a family of farmers. -Sells at the local market and via agent.
Concerns	-Farmers are sticking to old operation routines. -Farmers do not know how much their products are really worth as they are often sold via agents. -He also sells directly at the local markets though feels that at the moment it is not an effective and predictable -There is a lack of communication amongst farmers.

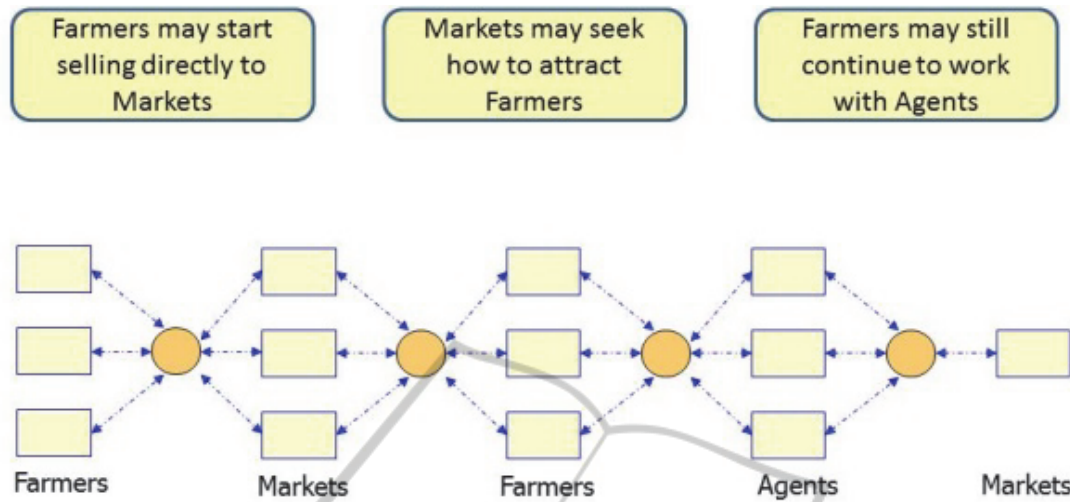


Figure 2: Networked infrastructures.

Table 5: Farmer Scenario 5.

Scenario 5	
Situation	-Works on his own. -Sells via agent.
Concerns	-Works via agent and is unsure of the profit agent is making -Farmers do not have the transparency. It is unsure how much farmers produce is really worth. -Farmers can rarely sell directly to the markets due to the pre-set quantity requirements

Scenario five identifies that at the current stage there is no price transparency. Farmers see that agents are earning on them and that they are often forced to sell their produce via the agents as they are unable to meet marketing demands to sell to the markets individually.

Furthermore from the tables above, it can be seen that most farmers operate within the same environment – effectively the same-ecosystem. It can also be seen that some of their most pressing issues and concerns focus on agents, produce prices and quality transparency, market demands and farmer communication. Following the analysis, the aim was to identify a business model that could suite the interviewed farmers.

5 PROPOSED BUSINESS MODEL FOR PERI-URBAN SYDNEY SME

Based on the conducted literature reviews it is predicted that a new model will closely resemble operations that are currently happening in the other industries, meaning that relationships between Farmers, Agents and Markets will become a lot more dynamic than today. This will mean that at times Farmers may decide to collaborate, same as it possibly could be suitable for Markets or the Agents. This would also mean that new introduced system would allow for new relationships to form potentially even on a need basis dimacially. Furthermore, this would meant that each group of the eco-system components or effectively the sub-systems, would be based on the customer specific market or the environment to respond to the set requirement.

Based on the findings it can be identify that there will be three most likely scenarios that may shape Farmer operations in the years to come.

Firstly Farmers may start selling goods to the Markets directly, secondly with the dynamic ecosystem changes Markets may seek ways in how to attract most suitable farmers and finaly Farmers may still continue to work with the agents however such interaction would require the current power relations within the new eco-system to change.

Therefore, it can be seen that the nature of work with agents would need to change. Moreover, this would mean that farmers may need to look into

Farmers Selling Directly to Markets



Figure 3: Farmers selling directly to markets.

Farmers Working Via Agents



Figure 4: Farmers working via agents.

diversification and the identification of the suitable mechanisms in which to meet the customer demands.

It was also identified that it will be crucial for the price and the quality of the produce to reach transparency where farmers will be aware of how much their produce is really worth.

In addition, it is also crucial for the improvements in communication among local farmers to occur. At present it seems that various communities do not have many touching points where they can exchange information. This also often means that current markets are trying to utilise this to gain the advantage. Therefore if farmers are

to utilise one of the collaboration systems and share farm, agent and price crucial information the system would start creating the much needed knowledge and would help assist the survival of farming within the region.

In the case where Farmers completely bypass the agent, it can be seen that the disintermediation may happen. However, to assure that this model is sustainable it will be essential to identify ways in which Farmers alone would be able to meet the set market demands. Currently, most farmers sell via agents to larger markets. If farmers are to continue selling to large markets they will need to identify the most sufficient way for it so that they can assure that

they can meet the set quality and quantity demands. This would mean that farmers within the region would need to unite, so that they no longer only act as competitors but also as collaborators. In the case that they decide to work as collaborators it would be advisable that they create one regional brand by which their customers would be able to get to know them. Following this a brand could help create an association to local, fresh fruit produce.

Furthermore farmers could explore meeting the demands of local markets. In Sydney area there are currently Sunday markets that are attended by local farmers however at present not many farmers seem to attend them due to the high uncertainties.

Based on this farmers could explore other avenues how best to cater to their local communities. From collected data it can be seen that one of the local farmers is exploring ways to attract younger generations to farming and fresh produce by Facebook, a medium of younger generations to engage with local families and promote his farm produce.

For the SME farmers at this stage it is very hard to compete with the large multi million dollar businesses. To sustain their business operations however they will need to utilise the knowledge they have, their experiences and the environment in order to advance and capitalise on their strengths.

Based on the current scenarios it seems that currently agents help identify markets and sell goods consequently agents tend to know the markets well. The power that agents currently have over the farmers need to be decreased and power given back to the manufacturer, or the actual producer, the farmer.

At present power is with the agents as there is no one single way in how to monitor produce prices and how to identify earnings farmers in a reality deserve. If farmers are to come together and sell as groups to the agents then they can control the markets more. Farmers would need to start collaborating and sharing the information to assure agents are their equal business partners. Giving farmers the ability to overview prices agents are gaining may help support and built future Farmer Agent Relationships.

It is expected that not just one described model will be implemented. Instead it is expected that relationships will form per needs basis and more often than not mashups of the proposed models may occur.

In the new proposed model it is expected that farmers would have a system via which they would be able to collaborate. Consequently, prices of products will start to gain the transparency which

will in turn have the positive effect for the peri-urban Sydney farmers.

Furthermore, it is also expected that farmers will begin to explore use of digital tools more effectively which will help them built the digital eco-system and consequently help them gain larger audiences and powers to compete. This will furthermore open new opportunities amongst the big marketplayers and will inevitably decrease the agents powers.

6 CONCLUSIONS

In the future it is expected that current supply chain operations SME farmers in the peri-urban Sydney region currently follow will in time change. As it is seen within other industries if only unidirectional exchange is to continue to happen agriculture within the region will be likely to disappear. If on the other hand, agriculture within the region is to survive, it will be essential to re-set its eco-system. It is essential to move away from the old natures of operation and identify what is possible today with the currently available technologies. Following this it is crucial farmers within the region act as one because otherwise it may be extremely hard to meet the larger marketing demands. Furthermore, it will be essential to utilize the available technologies, particularly the social networking tools. In addition, it will be important to break down the power agents currently hold over the market prices and allow the transparency so that market prices can be established and farmers be able to predict the earnings.

In the future proposed business models will be reviewed with the peri-urban farmer Sydney community. Following this a suitable change model will be identified, implemented and tested. It is predicted that initial steps will be relatively small while later on much larger and more comprehensive changes will follow.

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