ISY00243 Case Study



http://www.sea-health.net/is-organic-food-useful-for-healthy-life/

**S2 2018**

Concept Raina Mason modified Graham Cooper Session 2 2018

Southern Cross University

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Case Study Part 1

# Note:

This case study is to be used throughout this Session, to answer questions in set activities, which will be compiled into a report. Part A of this report, an “Initial Investigation” is to be submitted at the end of Week 6. The final report (including your Part A adjusted after marker feedback) is to be submitted in Week 12.  
You should use **all relevant parts** of the case study to inform your answers for the report.

# Introduction

**Grow Your Business** produces organically certified foods. It started with the humble beginnings of John’s backyard. It was a large backyard…that had also made use of neighbours’ unused land.

The business prospect has expanded substantially in recent years with Johns return to his family property that historically has been used as a dairy farm. Although it was a major commitment, John has turned much of that pasture land into a vegetable garden. He did not do this all by himself. He has employed farm hands to assist on the farm for several years.

The range and volume of produce and the number of customers is now making it difficult for John to keep track of things. An information System may provide a way to help manage the increasing complexities of the business.

# Background Briefing

The Early Days – Growing up on the Farm

John Jones believes that he had been born to be a farmer, following as he did, in his fathers’ and grandfathers’ love and passion for growing their own food. Of course there were also differences...especially as John was now passionately dedicated to growing vegetables rather than attending to dairy cattle.

John grew great vegetables, and he knew it. He did so without the use of any pesticides or artificial fertilizer. It was all organic.

John still had some cows and had acquired chickens to provide manure, as well as a source of milk and eggs.

He practiced companion planting to help protect crops from insect attack, and he cycled different crops from year to year to aid soil health.

John carried in his memory an immense body of information about soil types, weather, seasons, crops, crop rotations, soil preparation, and composting.

Top Dollar

John had given up his occupation as a mechanic when he returned to the farm that he grew up on to dedicate time to his farming activities. He was now committed to growing and selling vegetables. People happily payed top dollar because of the high quality of the food, and the “organically grown” status that it held.

John did not sell his produce through the local vegetable market. He did not have to, as his customers came to him!

Customers would phone through an order the day before they wanted to come and pick them up and John would work through the long list of vegetables in his mind’s eye that he knew he had on offer, ready for harvest.

This could take a lot longer than most people wanted to spend on the task, because John would always work through the list from start to finish, even though there were some products that various customers never, ever bought, never wanted, and were never going to buy.

John would patiently chat to each customer because this was his nature. It was time consuming, taking him away from attending to his fields, although he usually enjoyed the conversation.

In reality, while all of the customers liked John, and loved his produce, many really wished to have a quicker and easier way of placing their orders without the need to always be asked directly by John about products that they were never, ever going to purchase. Many customers were frustrated that John would always take a long time to write down the vegetables being ordered, especially those clients who purchased the ”same order” every week as a regular, weekly, customer. Surely, they thought to themselves, there must be a better way.

The Produce Pick Up

Customers would drop by to pick up their weekly box of produce. This had been fine in the early days while his farm was quite small, but things had escalated dramatically in the last few years.

John had a growing body of farm hands to assist him. His farm and produce was very well regarded but popularity and demand was now causing congestion at the pick-up area. John was considering the practicalities of beginning a home delivery service direct to customers.

In principle, John would be able to manage the growing customer base because he had almost unlimited access to land and water and sun, but he was now experiencing difficulties organising all of the food boxes for his customers.

The personal details for his customers including their names, phone numbers and addresses where all kept in the “Customer Book” in the barn, but he had generally made little use of this as customers would typically ring him to place an order…and increasingly such calls were coming in at inconvenient times while he was attending to the garden.

John and Jane

Jane is married to John and is fully supportive of his philosophy and approach to growing vegetables. She knew in her heart that it was scalable and that a similar approach could be used for farms in other locations to serve different geographical areas.

She knew, however, that some of John’s business practices in dealing with customers would need to be documented to enable standardisation, and altered to be made more efficient… for both the farm, and the customers.

The Farm Hands

John and Jane agreed that they should each focus on a different aspect of the business.

John would attend to all aspects of production and harvesting, while Jane would oversee all aspects of dealing with customers, their orders, their payments and their order pick-ups.

Both were happy by this because John was skilled and enjoyed the farming aspects and Jane was skilled in customer relations and service due to her previous work in accountancy and finance. Jane was keen to acquire an Information System to handle the customer base, their orders, and their bills. She knew that it had other potentials to ease their business dealings and that new and emerging technologies could also be beneficial. John, however, remained unconvinced of the benefits of computers.

The number of people working on the farm had grown substantially.

On the customer side of things Chris, Christina, Cathy and Charlie were each now sometimes taking orders from customers by phone, and reporting the orders directly to Jane. These four people also assisted at times with gardening activities along with some other staff who were dedicated to gardening activities.

A collection of lists had been written up for some of the customers who would always simply order “their usual” (subject to availability and season)…and this collection of lists had been stuck to the wall in the barn next to the phone book to aid quicker processing. The people who were on these lists came to be referred to as “The Regulars”. To acknowledge such regular support, each was given an automatic 20% discount off the cost of their purchase.

As the produce available each week was subject to change due to weather and harvest readiness, there was sometimes confusion about what was actually available (or not) and so increasingly there were instances of customers being disappointed when they picked up their produce because it was not always what they had expected to receive.

Sometimes there was also confusion about who had payed, or not payed, or partially payed. Sam and Samantha both attended to the accounts side of things, and again, answered directly to Jane on this account. As the business had increased in size there were apparent inconsistencies emerging in how payments were made, sometimes in cash and sometimes by credit.

There had also been some unpleasant scenes at the pick-up point due to too many customers arriving at the same time, only to create a traffic jam. Arguments had erupted over confusion of who was to take away which box of vegetable produce.

Jane hired Mark and Marsha to take over the pick-up. They made the firm decision that customers would no longer be able to come and pick up their box of produce, unless specifically pre-arranged…but would have it delivered to their home. An imposed home-delivery service. Dirk was also hired as an assistant for both Mark and Marsha to do some of the heavy lifting and sorting of the customer produce boxes.

There was no risk of spoilage due to a delivery needing to be left at a customer’s door because John had acquired individual customer eskies good enough to keep all things cool for 48 hours.

Deliveries could thus be made to a client on any day of the week, but there was a need to minimise the number of trips to make the deliveries. Customers either lived North, South, East, West, or “close” to the Grow Your Business Farm. There will be more to say about delivery timetables later in the case study.

John was saddened by how some aspects of the business had evolved. He was still committed to producing the best possible products for his client base, but there was a need to find some ways of better managing it all. In particular, there was a need to release himself from the client side of the business to attend to the production aspects, which he had always taken pleasure in.

To assist on the production side of things John had hired Noel, Noeletta, Nick and Netta. Each answered to John directly. Their specific tasks were to assist in all manner of the gardening such as weeding, planting, watering, fertilizers, picking and pruning.

Terry and Tina are both skilled at operating all manner of vehicles and machinery used on the farm. They may be directed by John to perform any of the tasks performed using such machines but for practical purposes they both answer to Tim who is the manager of the tractors and all other farm machinery which he both operates and maintains. Tim answers directly to John on all production aspects, but to Jane on aspects of customers, orders and delivery issues. (THIS PARAGRAHP IS GREEN TO INDICATE THAT IT HAS BEEN MODIFIED at 19 July 2018 … SINCE FIRST RELEASE)

John, having worked previously as a mechanic, can assist Tim if need be for maintenance tasks, but he is really seeking to dedicate himself to the production of vegetables.

Interview with Jane

You have been employed as a consultant to Grow Your Business to analyses their needs for an Information Systems. You were able to catch Jane for a quick orientation to the needs of the farm, especially the customer side of things. You were also able to obtain some insight about future possibilities for expanding the farm. A transcript of your interview with Jane is provided below;

**You:** Tell me about your farm and your business model. I’m especially interested in what kind of information management you think that you need.

**Jane:** John is fantastic with all aspects of farming, and to be honest, he is good with customers too, but he gets side tracked too often in chatting. Besides that, I know many of the customers are frustrated that placing an order, and sometimes even just picking it up, can take much longer than people want to invest, due to all the time spent chatting.

**You:** I thought that John enjoyed dealing with the customers because he is proud to display the quality of the vegetables to them, and that he likes the interaction in general.

**Jane:** That’s true, but the truth is that we need to develop a more efficient and effective way of taking orders from customers, and then getting those orders to them. We know that we produce the best vegetables in the area and John has that side of things in control, but we must develop a better way of meeting customers’ expectations for placing and receiving orders.

**You:** I have been meaning to ask about that. Why has there been an insistence that orders are always taken by phone?

**Jane:** It has always been done that way, which was fine when John had the farm to himself, and served just a few of the locals, but it has become unwieldly. There is no reason, at least from the business side of things, to insist on phone based order taking. I am of the view that customers should at least have the option of placing orders through a regular menu that they could drop off into our letter box…or better still, that they could somehow place orders using the internet. You might be able to offer us some ideas on that.

**You:** You mean using a web page for the farm and placing orders. You could have an on-screen web form that customers select from. That would be pretty easy to produce. And it is super user-friendly if designed correctly. There would also be scope to have it update regularly depending upon availability of produce.

**Jane:** Yes. That would have to be easier for some of our customers, and there may even be other benefits from such a process.

**You:** Well of course. For example, if you logged the customers, you could have the web form automatically update to indicate what had been selected in their previous order to help speed things up, or if you knew that a customer had a passion for certain produce that was rarely available; you could highlight it for them when it was available.

**Jane:** That sounds great, but John usually doesn’t indicate what is available until just the day before.

**You:** Why is that? Does it have to be like that? I understand that John may not know a month in advance, or even a week….but surely there is scope to give an indication a few days in advance, at least for some of the produce range.

**Jane:** I agree, but you will have to discuss that side of things with John. I know, for example, some things like potatoes and carrots and ginger and turmeric John has a very good feel for how they are growing, and how they are going for harvest, but there are other things, such as tomatoes, that he sometimes seems happily surprised at, having ripened in a day or two.

**You:** I thought that “ripened” referred to fruit rather than vegetables. And by the way, I wanted to ask, you don’t seem to have much fruit. Is that correct?

**Jane:** Well, yes and no. We do have some fruit trees. There are some apple and pear trees but they are very small scale and not really productive yet, though what we do get is delicious. We have various berries that are pretty constant, and in season we have mangoes and avocadoes and quite a range actually now that I think about it. We even have some almond nut trees, but they don’t seem to grow so well for us here. We have enough for ourselves, family, and give some to our close friends, but we have avoided bringing these into our produce for sale. These are not a prime focus of business, at least not yet.

The fruit that we do produce is fantastic but there are some major differences involved in doing large scale fruit production compared to vegetables. In some ways John has used fruit as companion planting rather than an orchid approach. We have talked about doing so, but it would just be too difficult to organise with all of our other things. I know that John wants to expand into this as well, and he has had discussions with some fruit growers in the area to see if we could arrange something with them.

**You:** You mean that they provide the fruit and you provide the vegetables?

**Jane:** Well, yes and no. We do seek to use their farms and fruit trees, but John would only take this on if those farms also embraced the organic -only approach that we have implemented here. To do so would be possible in theory, but at the moment it would just be impossible for practical reasons

**You:** What **are** those practical reasons?

**Jane:** Well, John is the brains trust. He knows so much! And he seems to understand exactly what is going on for his plants, but most of it is all in his head. We would need to capture all of his knowledge and approach and somehow disseminate it to all of the farm staff in a controlled manner.

**You:** An information system could help you do that! And what did you say about organic-only?

**Jane:** We are committed to being fully organic. All the produce needs to be dedicated organic only, grown and processed without the use of any pesticides or chemical based fertilizers. There are implications from this because we need to be able to show through documentation that only natural, organic materials have been used at all times. That in itself can cause extra headaches trying to keep track of all the paper work.

**You:** I assure you that if you need to create, track and keep documentation for those things then a computer based information system can help. This of course is a very different issue to servicing customers’ orders, but it could possibly be part of a single information system, or, you could have two separate systems customised for these two different purposes.

**Jane:** Fantastic, that sounds great. I knew that you would be able to help us with ideas.

I don’t mean to be rude, but I will have to go soon, I have an appointment with some bush regenerators who are doing some work on our riparian zone down by the river. You can come along if you like. You may learn something.

**You:** I’m sorry. I know that is a great offer, but I am double booked. I would really like you to show me another time if that’s possible. For now, one last question. I understand that John grew up here, is that right?

**Jane:** Yes. Born on the farm actually. He has very fond memories of his grandfather who took care of him after his parent died in an accident. His grandfather only died a few years back and it was with his passing that John made the decision to come back here and take over, as it were, but he has changed things to be his way with a focus on the vegetable farming.

**You:** I am sure that his grandfather would be proud of what John is doing with the place, if he could see it.

**Jane:** (laughing) He sees it all right! He wanted to be turned into compost after his death and John would have been happy to oblige, but the government would not allow it, so he did the next best thing.   
  
*(Jane bent down, picked up some soil and crumbled it in her right hand as she slowly circled it before her. The soil gently fell back to the Earth.)*

**Jane**: Ashes to ashes, dust to dust, lay me to rest, in land that I trust.   
  
His grandfather is still here and sees everything that happens.

You left in your car and headed back to the office. You were not sure about all of the business practices, but you knew that their motivations were good.

On the front seat bedside you, Dirk had placed a box of vegetables along with some fruit that you feel privileged to receive…”like part of the family or a close friend” you thought as you picked up an apple and took a bite….CRUNCH.

Crisp, sweet, juicy…

Ok, so they know how to grow fruit as well as vegetables…you think to yourself.

CRUNCH!

“If these guys could produce fruit like this at sufficient scale to go with their vegetables…”

You look at the apple, with fresh brittle texture gleaming in the light filtering through the trees and into the car.

“This is going to be a great project” you say out loud. “The people are great, I know that I can help them, and I’m even getting prize winning produce thrown in as well”

You are already imagining various possibilities, but first, there is a need to address the basic task at hand. There is a need for an information system to help customers to place an order and to then receive it. And there is also the issue of certification for “organically grown”.

# Activity 1

1. Use the background information to create a short summary (one short paragraph) about the “Grow Your Business”.
2. Create an organisation chart for the business.
3. Use the information above to describe the area of the organisation under study (i.e. the business functions that will be handled by the new information system).
4. Add the background information, organisation chart, and business functions to your Report document in Part A: Initial Investigation.

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|  | There are examples of each of the things listed above in the text. However, make sure you do some other research. Use internet searches to find other examples and to look for examples that could use to help you construct the things you need. |

Case Study Part 2

At your initial meeting, you and Jane discussed some initial steps in planning an information system for the farm. The next morning, you worked together on a business profile, and talked together about various types of information systems that could provide the best support for handling their customers’ needs, and mindful that there was a need to also track certification documentation to demonstrate the fully ‘organically produced’ nature of the farm produce. You also discussed the longer term plan to expand the operations of the farm to include farms that supplied fruit, which would also have to be demonstrated to be fully ‘organically produced’.

You start by creating a System Vision Document for Grow Your Business, so that Jane can use this to define a vision for the new system and present this to John.

# Activity 2

1. Either by yourself or with another class member, brainstorm all the functions that the Grow Your Business Information System might fulfil. Keep it at a very high level.
2. Prepare a draft System Vision Document for the Farm Information System. This System Vision Document will be revised when you find out more about the requirements for the system. An example System Vision Document can be seen in Figure 1.8 of your textbook (Figure 1.5 in the 6th ed).
3. Add your System Vision Document to your Report document in Part A: Initial Investigation.

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|  | You have been given a little information about what is required but there are a lot of gaps. You are expected to fill these gaps to work out details and additional information that is needed. This also gives you some latitude to explore farming and their operations as they apply to your background and experience. Make sure you explore other vision documents and know how they are worded and what needs to be expressed in them so that an organisation knows where it is headed and what it is trying to achieve. |

Case Study Part 3

Jack has agreed that Janes’ argument for an information system has merit. Your System Vision Document helped to demonstrate some of the potential benefits.

Jane wants you to get ready for the next set of systems development tasks, which will be requirements modelling for the new system. Yesterday Jane called you into her office out at the farm to discuss the specific tasks she wants you to perform. After meeting with Jane, you sit down and review your notes. She wants you to treat the set of tasks as a project, and to use project management skills to plan the tasks.

Jane is fully supportive of your involvement and excited that you carry so much practical knowledge in computer systems and that you are quickly learning about farming issues. Jane is also excited that she too can become involved with her previous knowledge and skills in technology.

Jane has authorised you to have full access to people and documents as required, and enabled you to use your time as you determine.

Jane has suggested for you as a work breakdown structure, including the duration she estimated for each task:

* First, you need to meet with all farm staff that support all aspects of the business including a farmer who is a likely first inclusion in the production of fruit (2 days);
* You can then conduct a series of staff interviews (5 days);
* When the interviews are complete, you can review farm records of produce, season, customer purchases, costs and profits, (2 days) while observing business operations (2 days);
* You have been tasked with also interviewing some of the customers, if possible (1 day)
* When you have reviewed the records and observed business operations, you can
  + analyse the accounting processes currently used (2 days),
  + study a sample of orders and payment transactions (2 days), and
  + undertake some field work regarding the intended home delivery service (2 days)
* After completing your study, prepare a report for Jane and John (1 day).

# Activity 3

1. Create a table, listing all tasks separately, with their duration;
2. Identify all dependencies, and indicate what predecessor tasks are required;
3. Construct a Gantt chart in Microsoft Project or other project management software;
4. Identify the PERT/CPM chart in the software, and identify the critical path;
5. Determine the overall duration of the project;
6. Take clear screenshots of the Gantt chart and PERT/CPM chart and paste into your Report document in Part A: Initial Investigation under Project Management.
7. Include the overall duration and critical path in your report.

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|  | You will have to offer ideas here and make sure that you cover the tasks needed. As well, you need to make sure that the tasks are at an appropriate level of detail to enable you to make an informed and professional decision about how long the project will take. Obviously there will be tasks that you will have to list at this early stage that you might not have to do or that depend on what direction the project will take. For example, the tasks needed if you implement an off-the-shelf package are different to the tasks needed if the system is developed in-house. Perhaps you need more than one project plan. |

An Aside

Chance meeting between Frank and Mick

While shopping for groceries Frank runs into Mick. They have not seen each other for several years. A transcript is provided below.

**Frank:** Mick! How you doing? You’re looking better than the last time I saw you down in the city.

**Mick:** Yeah, picture of health I am ...or will be soon now that I’m back in country air full time. I could go off and be a movie star if I wanted I reckon.

**Frank:** But you don’t want to?

**Mick:** Nah mate, this place will do me. I much rather the morning smell of farm land after fresh rain than parking lots after peak hour rush.

**Frank:** What, your back here to stay?

**Mick:** Yeah, if I can. I‘ve just got put on at Johns’ farm. I’m lucky as! Beautiful spot, and he grows the best veggies. It’s funny…we all used to joke with him at school about his vegie patch and chickens, but I got to tell you…he has now got it all happening. A bit chaotic at times, I must say, but it’s like he can talk to them…the veggies and the chickens…and they all respond by just growing and growing.

**Frank:** Is John just being nice to you or has he got something specific in mind?

**Mick:** Things are still to be fully worked out, but at the moment he’s got me mixing and turning together these giant mounds of cow manure and chicken manure and grass cuttings and the scale of it is enormous.  
  
I’m not doing this by hand, mind you, I’m using one the tractors, but he says he is doing some testing on compost preparations. He has laid out these giant mixes of composting manure that he says he is preparing.   
  
I know that he wants to add into this mix some other things, including sugar cane off cuts, but he has held back because he is worried that the sugar cane was grown using pesticides and would jeopardise his “all organic” status.

Still, I know that he is trying to source a supply of organic sugar cane mulch, and it’s a question of whether he can transport to the farm at an economic cost.

So, early days, but he and Jane seem to be working on some kind of major expansion plan for the farm, but I know that he is insisting that he needs to find a way of doing so that still maintains the quality of his produce.

*(Mick nodded towards the trolley of vegetable produce that Frank was pushing.)*

**Mick:** He’ll do a lot better stuff than that for you Frank.

**Frank:** Ahh…yeah, I know. We used to get vegies from him, and they were fantastic, but it just became a hassle to do the whole order and pick up routine every week.

**Mick:** Oh really! How so?

**Frank:** Life has become quite busy for Heidi and myself with the twins born last year and the run out to his farm was just taking too long for us, especially since he was always keen to have a chat and the pick-up itself had also become a mud wrestle at times. Literally.

His vegies have become so popular that the pick up traffic has turned the field area into a bog a few times, especially after rain. Cars would get stuck, people would get cranky, and there was also increased confusion about who was to get what box, and how to pay. It got to the point where he had one of his tractors on stand-by just in case someone needed to have their car pulled out.

Don’t get me wrong, lovely guy, and his misses is a win for humanity. Smart too. Look, maybe she can sort him out on the business side. Heidi and I miss their vegies and absolutely would prefer to be eating theirs, but it just became difficult and this supermarket, although not as good, is just convenient.

**Mick:** You know that they are thinking about doing home deliveries? Well, Jane is anyway.

**Frank:** No way. I’m sorry that we stopped buying from them.

**Mick:** It’s not happening yet, but I am pretty sure that it will be, and they would be happy to get your business again. There’s no grudge, and there is no problem about supply, some of it just gets left to rot sometimes because they get confused about what is needed to be picked for each days orders.

**Frank:** For sure. I’m in. In fact there’s a few people I know in the office who were a bit like me…it just got to be more hassle than it was worth, so stopped going out there. Perhaps they would be willing to do a drop off to the office if there were a few people interested in the delivery service.

And I know that Dave would jump at it. And Wilbur would be happy because he’s always complaining of having to get out there every few days to always have “only fresh”. Oh… “and organic!”. Wilbur is a total health freak since his bout of cancer. He swears that he is never again eating anything that is not fully guaranteed to be wholly natural.

**Mick:** I heard about Wilbur, I’m so glad that he is in the clear. I am not surprised if he thinks that the health foods helped him. He was always inclined to that side of things with his Paleo diets and stuff.   
  
So when are we getting together for something more meaningful than trolley pushing?

**Frank:** How about next Saturday afternoon. I’ll put the call out to all who are still around. There will be some who will be very keen to catch up with you. Up at the lookout a few hours before sunset.

I’ll do the meat with one of our “happy cows”! But you do the vegies since your working at the Garden of Eden… and see if you can pinch some of Johns stuff for a fruit salad. He can be a bit chatty at times, but his fruit is always just a pleasure.

**Mick:** I should be able to do better than that! I’ll see if I can bring along John and Jane. They are always busy, but I’m sure that one of the farm hands can cover them for a few hours.

An Aside

Jane clarifies a few things on the phone

You had left a phone message with Jane asking about what is involved to be certified as “organically grown” and why the farm adopts this approach. Jane has got back to you and indicated that to be certified as organically grown it needs to be documented and demonstrated that the farming process has not used any chemical fertilizers, any herbicides, any pesticides, and has not used any additives for farm stock.

Jane acknowledges that the overall yield is often reduced compared to non-organically grown methods in broad scale farming, but that she and John are committed to it because they believe it results in a healthier food produce and is better for the environment, making it sustainable. There is also a need to ensure that there are no genetically modified foods present.

The customers of Grow Your Business are willing to pay more for the organically grown produce than what they would spend in a supermarket because they are happier with the overall quality and perceived health benefits from their produce, and some customers also like to be consuming foods grown in a more sustainable manner.

Jane also addresses some aspects of budgeting. She acknowledges that you have been asking for information on how much can be allowed for budgeting for the implementation of an information system and indicates that for now you are to focus on analysing needs to include all essential aspects of the proposal. That means needing to include how people place orders, payments, deliveries and documenting the organic status of all farm produce.

Jane has also acknowledged that there is a vision to perhaps expand in the short to medium term future to include other farms as part of their supply chain.

Case Study Part 4

As an analyst working on the development of the new system, it is your role to ensure that the project is feasible. Some of the reasons that projects fail are: incomplete requirements, lack of executive support, lack of technical support, poor project planning and lack of required resources. At this stage, you decide to do an initial project feasibility analysis, to see whether Grow Your Business should continue with its plan for the new information system.

# Activity 4

1. What are the risks associated with this project? Create a list of up to 10 risks and their likelihood of happening (see Study Guide topic 4, activity 4.6 for an example of how this should be set out).
2. Define the anticipated benefits of the new system. This should include both tangible and intangible benefits. Wherever possible, translate the intangible benefits into anticipated tangible benefits.
3. Define the expected costs of the new system. Look at the examples given in workshop activities for some examples of expense categories. It is OK to give estimates at this point.
4. Use two or more cost-benefit analysis techniques to decide whether to proceed with the project.
5. Identify any assumptions and interpretations that you are making with respect to the information that you have been given, that you are estimating, and that you are projecting (into the future).
6. Create a new section in Part A of your report: Risk and Cost Benefit Analysis. Insert your work from above, and give a clear indication as to whether it is feasible to continue with the project.
7. Does the proposed system present a strong business case? Why or why not? Include a recommendation as to whether the system should proceed, as the final part of your preliminary report. The Preliminary Investigation part of your Report can now be submitted.

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|  | Most of the activities you need here is in the text and you work on during tutorials. Look carefully at how the ‘risks’ are worded and how the costs and benefits are laid out in a ‘good’ feasibility plan. Always use ‘good’ examples as your template and don’t forget to look for these. Search the internet for examples soget a good feel for ‘best practice’. |

Case Study Part 5

You have been given a list of tasks to do, which includes interviewing staff with various job roles. This is part of the investigation, where fact-finding is conducted to find out more about the requirements for the proposed system.

# Activity 5

1. What fact-finding techniques, apart from interviews, do you recommend to find out the requirements for the new system?
2. Identify at least two staff members with different primary job roles of interest to this project.
3. Develop a list of questions for an interview with each staff member. Identify the time anticipated for the interview. Review your topic on creating interview questions, and make sure you include suitable question types.
4. Include the interview plans in the Appendices for your Report.
5. Include the recommendations for other fact-finding techniques, in your Report.

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|  | The questions and information you need to ask need to extend further than simply asking about design options. You need to get information that helps you plan the entire project from start to finish. For example, you will need to find out whether some aspects of task procedures done currently on the farm can be modified to better align with how an information system may be used, and who may be called upon to use such an information system.  This will lead to other questions about range of vegetable types, time of year for availability, how an information system report may be desired to be formatted and used, etc.  Part of the project then needs to include options for getting that information onto the system – will it be straight data entry or can some things be scanned? How long would it take someone to enter the information if it’s straight data entry? So – questions and information raise more questions and result in more information. |

An Aside

The barbeque was enjoyed by all

The barbeque was interesting. The barbeque was useful. The barbeque was friendly. The barbeque was delicious. The sunset was brilliant and you had a great time!

John and Jane came along with Mick. Although Jane had met many of the people in the area before through John, she had not generally had much interactions because she had been so busy since moving to the area to be with John.

Like many social events in the country the barbeque had an easy relaxing atmosphere and people from all kinds of backgrounds made the effort to catch up with the old crew.

Unusually for a barbeque, some of the meat was left over. Not because people did not like it, but because, for a change, there was something better on offer. All of the vegetable dishes that Jane had produced disappeared real fast. Janes’ heritage included Thai, Chinese and Indian-Malay. This background gave her a striking appearance, but it was the interactions that these heritages produced in her cuisine that was truly astonishing.

You are extremely glad that you made it out to the barbeque. It made complete sense to do so as an effective way to learn about some of the dynamics of the local community and besides, everyone that you had met so far had been extremely welcoming and hospitable.

You had mentioned to Jane, though it was only half-jokingly, that she should write a cook book because her knowledge and skills in merging the various styles of South East Asian cooking with the vegetables from her farm were clearly happily consumed by all, including the children who were present. You are now increasingly starting to think that this could be a serious option. Well, sort of. Not so much for the production of a cook book per se…but to provide recipes customised to go along with the produce of the farm.

By utilising the combinations of vegetables and various herbs that were in-season at the farm, and providing a box of veggies and herbs to go along with various recipes for specific dishes, you are now thinking that this could provide a way to moderate the forces of supply-and-demand that had historically been problematic at times for the farm.

You are realising that this approach would provide a means to manage the demand of the vegetables and their interaction with the season. The recipes could work as an incentive, and it was clear that these recipes for South East Asian styled vegetable dishes could attract additional customers. The gado-gado was a relatively new taste for many people at the barbeque yet it was an instant success. However, the rujak is clearly an acquired taste and was simply too spicy for some of the people at the barbeque.

Although you are personally wishing to see this happen you are also seeking to remain objective, as a consulting systems analyst, and mindful that this may be something better to put off until the essential aspects of the current investigations are addressed.

Jack too, had had a great time, and was so glad to have been introduced to Larry who was running ten thousand laying hens, all free range. Larry had agreed to provide Jack with free range eggs to supplement his vegetables and herbs, and this was also going to intersect well with the prospect of providing recipes to go along with the vegetable boxes because it opened up the options of vegetable bakes, vegetable pies and frittatas.

However, the aspect of this new relationship that had Jack particularly excited was the fact that Larry free range chickens also produced a lot of chicken manure, and it was all organic due to the free range management of his egg farm. John anticipated that he had now secured a steady source of the organic certified chicken manure that he so desperately wanted. This would enable him to pursue the option of incorporating other farms as part of his supply and distribution chain because he would be able to ensure the organic-certification of their fertilizers.

Johns interest and respect for Larry had also provided leverage into another feature of Larry’s’ farm that John had still been in two minds about…technology! Larry had acquired several drones that he used to keep aerial surveillance of his chickens. If a drone detected a threat such as a fox it would alert Larry to its presence and he could then seek to round up the chickens into safety, or send the drone to “buzz” the fox and scare it away…or both. John would likely not have believed all of this if it had not been for the fact that Larry had brought a drone along to the barbeque to capture some aerial shots of the event. Larry had encouraged John to have a go at flying it, which he did, and found that it was fairly straight forward, captured good video with a really sturdy and stable gimbal system, and was a lot of fun.

When Larry explained to John that drones were being developed to assist in various farming activities John was quick to express excitement and a desire to acquire some.

John explained to you some of his newly found enthusiasm for drones and the vision of incorporating them into the farm to use for surveillance and testing of moisture content in the air, and for weed flaming, which would relieve the farm hands from some of the more mundane tasks.

You know that for professional reasons you need to pause, and reflect upon the potentially widening scope of the project. You know that you will need to prioritise capabilities and that while some additional features may be incorporated, that it is important to ensure that the project does not fail because of trying to do too much at once.

Case Study Part 6

During requirements modelling for the new system, you met with the farm hands and owners of several farms who were in discussions with Grow Your Business and intending to join as part of an expanded company, all coordinated in a direct delivery model to customers. Things were moving very quickly, and positively. You conducted a series of interviews, reviewed planting and harvesting records, observed business operations, analysed the payment processes, and studied a sample of sales, billing and account settlement transactions. Your objective was to develop a list of system requirements for the proposed system that would unify the farms at a business level. You found the following:

* A typical farm has capacity to provide produce to 150-200 customers, with two customer types: “Regular” and “Standard”. Regular customers seek a relatively “regular” mix of vegetables each week trusting the farms discretion to determine what vegetables to provide for them for the week if need be, while “standard” customers place orders most weeks, but are much more varied in what they may order for that week. If there is going to be a short fall in availability of vegetable produce, then first priority is given to meeting the orders placed by regular customers over standard customers.
* All customers are able to provide their order using the existing “phone-in” system, but there is a preference for customers to order using an online web form. The on-line form “stores” each customers previous weeks’ order and so presents a “defaulted selection” with the aim of speeding up order placement for most customers, though there is capacity to change the selections through a check-box interface.
* All orders are defaulted to be delivered to home premises, though there is capacity for a customer to pick up their order from their “local” farm should they choose to do so. The home address thus needs to be identified, along with any special instructions regarding hazards on premises such as dogs being present. Each farm will thus need to establish a delivery service, and it is envisioned that there could be some overlap with respect to which farm may fulfil and deliver for customers who fall near a “boundary” between two or more farms.
* All customers have credit privileges. Credit purchases for vegetables are currently recorded on a paper credit slip, which is signed by the customer, and to be invoiced at the end of the month. The electronic form of ordering vegetables is to maintain such a credit process, though customers may choose to pay as each order is placed, or as produce is delivered.
* At the end of each day, cash/EFTPOS sales and credit charge amounts are entered into the GYB Accounts (Grow Your Business Accounts) accounting software, which runs on a local computer at each farm. Daily cash takings are deposited in a local bank in the corporate GYB Account. The GYB Accounts program produces a daily activity report with a listing of all sales transactions.
* At the end of the month, each local farm owner uses GYB Accounts to transmit an accounts receivable summary to the GYB head office at John Jones’s farm, where member statements are prepared and mailed either by email or physical mail, depending upon the customers selected preference. Members may physically mail their payments to John Jones’s farm, where the payment is applied to the member account, or use an on-line credit card payment system, which is being promoted by the farm as a preferred method of payments.
* The GYB Accounts program stores basic customer information, but does not include information about customer vegetable preferences…although such information would, in principle, be available by interrogating a customers’ purchasing history.
* Currently the GYB Accounts program produces one local report (the daily activity report) and three reports that are prepared at the head office location (John Jones’s farm): a monthly customer sales report, an exception report for inactive customers and late payers, and a quarterly profit-and-loss report that shows a breakdown of revenue and costs for each separate line of vegetables.

During the interviews you received a number of “wish list” comments from farm staff and indeed, owners of other farms, who were now becoming more interested in becoming involved commercially with John and Jane.

For example, many farmers want more analytical features so they can spot trends in demand, especially those tied to season, and so prepare by planting more of certain crops. Farm hands are frustrated when there is an over-yield of some crops which are thus left to rot, and would prefer a means by which temporary discounts could be provided to help clear such stock, or better still, to have these used to complete short falls experienced at other farms that are to be part of the GYB business network. The farm owners also want better information about the profitability of specific vegetables, instead of bottom-line totals.

Several farmers want to offer various social networking options, including email communications and Facebook groups, which it is envisioned could provide recipes for meals. You are of the view that these features may be added in the future as “enhancements” but that they should be deemed to be out-of-scope for the current project. Despite these views you are also increasingly identifying advantages of offering customers “cooking bundles” that provide suggested recipes accompanying selected vegetable boxes as a way of “evening out” the supply-demand nexus because you could influence the demand of each type of vegetable each week by how it is included (or not) in the suggested recipes for that week.

Several farmers want better ways to handle information about part-time farm hands, and several farm hands have requested flexibility in being able to work at different farms.

# Activity 6

1. Write down a list of the main functions needed to be handled by the new system.
2. What are the roles that will be interacting with the system?
3. Write down a list of additional features which in principle could be included in the new system, but are more likely to be held back for now and considered in the future if and when the resulting information system is subject to later review and enhancement(s).
4. Using all the information that you know about the GYB business so far, create a use-case diagram for the new system.
5. Select four use-cases and write a brief use-case description for them.
6. Pick one of these use-cases and write a full use-case description for it. Use an activity diagram in the full description.
7. Include the following in your report:
   * the use-case diagram;
   * the brief use-case descriptions;
   * the full use-case description, including your activity diagram.

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|  | The functions you document here will need to show the specific things you have decided on during your analysis. Make sure that you use the correct symbols on each diagram and adhere to the standards required for each of them. |

HINT!

“You can’t see the trees for the forest” (origin unknown).

There are two popular sayings:

* You can’t see the forest for the trees, and
* You can’t see the trees for the forest.

Both are truisms about perspective regarding up-close fine detail verses far-away broad context.

In the specifications provided to you in Case Study Part 6 there is an important omission, even though it is implied.

It does not specifically state that each specific vegetable product (be it a kilogram of potatoes or pumpkin, or a bunch of parsley or sage) has associated with it a cost per unit measure.

Of course, if one is in the business of selling anything, be it “goods” or “service”, there must be a unit cost, and as it happens, in the world of fruit and vegetables, these often vary on a day by day basis.

Many of the people that you have chatted to have missed stating this explicitly. You may have missed this too. Such omissions of “the obvious” can occur when one is too close to an issue. It may occur because one starts to think “automatically” on content that he or she knows expertly and so forget to state the obvious.

Even so, there were hints at the need for taking account of price. The last item on the requirements list indicated a “profit-and-loss report that shows a breakdown of revenue and costs for each separate line of vegetables”.

There were also two “wish list” requirements specifying:

* “a means by which temporary discounts could be provided to help clear such stock”, and,
* “the farm owners also want better information about the profitability of specific vegetables, instead of bottom-line totals.”

Each of these can only be obtained if explicit accounting is captured of the sale price per unit.

To determine aspects of profitability there is a need to account for cost of production, which thus needs to establish the price for seed and planting of specific crops, time taken to attending to specific crops, the cost of specific fertilizers for specific crops, the likelihood of damage and loss to each specific crop (risk analysis) due to dry weather, hail, and possibly even, locust plague. This is likely way beyond the scope of the current project…but it has been provided in the “wish list”, so you may address these aspects if you can argue that it fits in to the current scoping.

With respect to cost per item there will be an absolute need for inclusion, because without this, there will be no way to enact a billing to customers for what they order…even if it is a single kilogram of potatoes, or a single bunch of parsley.

Be willing to *critically analyse* and review your work…and that of others whose documentation you are dependent upon.

With respect to determining a profit-and-loss report, you may find that you need to raise this with ‘GRB’, because currently, they may not be providing you with sufficient information.

There are options here. Either such additional information will need to be provided and captured …or…the requirement for an account of “loss” will need to be modified or defined with respect to “wastage” of vegetables produced…but never sold.

Note too that this request has appeared in some form in both the “system requirements” and the “wish list”. Perhaps it was only ever envisioned as part of a wish list…

Case Study Part 7

You have been preparing the System Requirement report for Jane. From your investigation so far you are leaning towards a recommendation for either in-house development or outsourcing options for the new system. You does not feel that a commercial software package would meet the needs of GYB.

Based on your research you feel that it would be premature to select a development strategy at this time. Instead, you recommended to Jane that an in-house team should develop a design prototype, using a relational database as a model. You argue that the prototype would have two main objectives:

* it would represent a user-approved model of the new system, and
* it would identify all system entities and the relationships between them.

You explained that it would be better to design the basic system first, and then address other issues, including Web enhancements and implementation options. You proposed a three-step plan:

1. data design
2. user interface design, and
3. application architecture.

You explained that systems analysts refer to this as the system design phase of a development project. Jane agreed with your recommendation and has asked you to go forward with the plan.

# Activity 7

1. Review the GYB fact-finding summary and all other information you have about the required system. Be willing to critically analyse this for duplications and inconsistencies.
2. Draw an ERD with crows-foot cardinality notation. Assume that system entities include farms, customers, status as Regular or Variable, orders, vegetables with associated price per unit, and delivery person (at minimum).
3. Design tables – making sure each table only refers to one “thing”. As you create the database design, identify primary and foreign keys by underlining primary keys, and making foreign keys italic.
4. If you add primary keys which use codes – for example a code for the farmID, then identify the format of these codes.
5. Create suitable sample data to populate the fields for at least three records in each table.
6. Include the following in your report:
   * The ERD you have completed;
   * The database design (schemas);
   * Formats of codes used;
   * Sample data for each table.

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|  | You are going to have to demonstrate some initiative to develop the tables, data items, keys etc. The project narrative has provided you with *some* information but left information out that you would be expected to define as an analyst. Conduct internet searches to identify examples of customer invoices, range of vegetable types and their associated information, regarding their growing conditions and prices, etc. All of this will help you to design the tables and data items.  MAKE SURE that you follow the formatting standards listed above! |

Case Study 8

You are now making sure that you have sufficient models to understand the new system. In reviewing the models (use-cases diagrams, including activity diagrams) you realise that you have not included a system sequence diagram for any of the use cases.

After creating this, you are now ready to review the options for a new system, and make a recommendation to Jane and Jack.

# Activity 8

1. Create a system sequence diagram for one of the use cases identified in Activity 6.
2. Add this system sequence diagram to your report in the appropriate area.
3. Search online for potential commercial software packages for Grow Your Business. Identify two packages, and compare their features, and their suitability to be used as the new system.
4. Present at least three options for the new system in your report. One of these must be in-house development, and two of the others may be the commercial packages as identified in (3) above.
5. Review your feasibility analysis for the new system. Taking all options into consideration, make a recommendation for the new system, in your “Conclusion and Recommendations” section.

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|  | Your primary role is to produce a report that presents clear and concise information from your analysis to your clients to review in order to make their decision.  In this context you are to provide consideration for a range of options on how to respond. While you do not need to include in the report all of the data and evidence supporting your recommendations such data and evidence should be available as appendices so that if management seeks to review the evidence then they can easily do so. |

Final Steps

You have completed the contents of your report, and now need to make sure that the report is presented professionally, as it will be shown to Jack, Jane and owners of farms intending to work with Grow Your Business, as well as any potential investors in the new system, and the expanding prospects for Grow Your Business.

# Activity 9

Ensure your report is professionally presented. This means your report should include:

* a title page, with the name of the Report, and the analyst’s name (your name);
* an executive summary;
* a table of contents, with page numbers;
* page numbers on all pages except the title page;
* Headings, sub-headings, dot-points and numbering where necessary. Headings should be numbered or the structure should otherwise be easily identified;
* Appendices where necessary;
* Formatting and whitespace (space where there is no text or pictures) used appropriately; (Be willing to start each new section on a new page);
* Page orientation used appropriately. For example, if you have an ERD that will show better in landscape orientation than portrait orientation , set a Section break (Page Layout > Breaks) before this page, set the page to landscape and then set another Section break to start the new page in portrait again.

Hand in your report via the Assignment Link on MySCU.