

Operations report- scenic rim dairy farm

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There are many things that go into the production of milk at dairy farms in general. At the Scenic Rim Robotic Dairy they input a number of important items to produce the best quality milk they possibly can. Some of these items include; the cows (to produce the milk), good feed for the cows (mix of nutrients, and essential vitamins needed by the cow to have the highest quality milk), the facility (the farm itself, as well as sheds for the equipment and also some minor labour).

1. 2 Transformation of Inputs/Processes: For a business to have outputs they will need to first transform the inputs. This is also known as the ' process' stage of a product.

At the Scenic Rim Robotic Dairy Farm, this is a fairly simple yet time consuming task as the process stage requires firstly milking the cows (Approx. milking 260-280 cows a day, being milked between 2-3 times). This is a very easy step, as the cows are milked by a robot that has it's best interest in the comfort of the cow. The robot performs a specific sequence of actions in order to milk the cow correctly which involves;

1. Check in the cow (weight and scan of tag on collar)
- 2.

The tits of the cow are cleaned and sterilized by two rollers that helps with lactation (meaning that the rollers feel like a calf, which then helps the mother cow to feel more comfortable and also to release milk a little quicker)

3. A laser then scans the cows udder to find the individual position of each tit
4. The cups then attach individually to each of the cows tits and starts the milking process. An advantage of each cup being attached individually would be if one tit started to produce less than 400ml per/minute, then the cup drops off, but the others keep going until each tit stops producing over 400ml per/minute. As the cups are milking, a reader on the side of the

machine is identifying how much of each component (butter fat & protein) the cow is producing whilst being milked. 5.

Once the cow has finished the milking process, it then gets a light spray of a solution made to kill any bacteria and to help reduce the risk of infection to the tit. After this, the cow is then able to exit the robot and go and graze.

The second step of the transformation stage would be to pasteurise the milk that has just been produced. The reason that the Scenic Rim Robotic Dairy pasteurises their milk, not only because of law, but to kill both good and bad bacteria so that the milk, is basically just milk. The last stage of processing the inputs is the bottling stage.

This stage includes the pasteurised milk being moved down a pipe into bottles in the bottling room (that are sitting on a conveyer belt). After the milk as been bottled a worker then places a lid on the bottle and manually puts the bottles into a create, ready to be distributed. iii Shakai E. Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time dc: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm 1. 3 Outputs: A factories output is what the factories result is by the end of processing the inputs. In this scenario, The Scenic Rim Robotic Dairy Farms' output is obviously their milk.

ivShakai E. Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time dc: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm 2. 0 Decision Making 2. 1 Strategic Decisions: Within a business there are a lot of opportunities that come about requiring strategic thinking about some big decisions. The farm are not often faced

with big decisions, but the decisions they need to make require some what of strategic thinking.

Some of these decision could include; broadening their product range & widening their product distribution. Whilst at the farm, Farmer Greg Dennis mentioned both of these decisions. These are major parts of the factory as they both have potential in being great ideas. Take broadening their product range. Dennis said he wouldn't mind branching out into having cheese as well as milk.

This is a great opportunity for the factory because its allowing consumers to not only enjoy ' Scenic Rim 4Real' Milk, but also cheese that has been made from ' Scenic Rim 4Real' milk. Another decision Farmer Greg mentioned was to widen their distribution. This is also another great opportunity for The Scenic Rim Robotic Dairy as more customers will be able to try their milk and compare it to the milk they are already consuming. Farmer Gregie also indicated that milk sales have gone up by 15% over the last two and a half years, thanks to not only the introduction of robots but to the 110 stores that are currently selling ' Scenic Rim 4Real' milk. He also said that they are currently only selling within a 1-2 hour radius of the farm.

They would like to eventually bring their products to places like Toowoomba and Caboolture to maybe increase sales even more.

2. 2 Production, Planning & Control Decisions: While working in a business, there are many decisions that you will have to control and plan if you want the output to be the best it can. On the Scenic Rim Robotic Dairy Farm they have to plan and control decisions such as; 1. Their staff level: Although there are two farms,

Greg stated that there were only 15 employees between the two, and that no other staff is required.

This would arise simply because on the farm visited, most of the workers were family. 2. Their maintenance schedules: At the farm, Farmer Greg explained that the Dutch milking robots ‘Lely’ are correctively maintained (meaning that maintenance that has been performed is to correct the broken down piece of equipment, back into working order) at least once every year. If something was to break down, Dennis used to get a phone call from the Dutch company, saying that ‘just to make you aware, but, this part of the machine as broken down’. He also said that when these things did break down, the calls would be in the early hours of the morning, so he turned it off.

Since then, he has hired an electrician/handy-man to help with day-to-day preventive maintenance (meaning the maintenance that has been performed is to prevent the item breaking down). v Shakai E. Nichols
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2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm 3. 0 Process & Product Strategy 3.

1 Stages they go through for introducing a new product: When a business wants to introduce a new product it may seem simple. What people don’t realise is the steps involved with introducing a new product. The Scenic Rim Robot Dairy are looking to invest in making cheese from their milk as well as continuing milk production (for drinking). The steps that The Scenic Rim

Robotic Dairy would have to undergo if they were to introduce cheese, proceed in the following manner. .

Exploring & Generating Ideas: In this step new ideas for the business are generated. This then includes researching suggestions from consumers, analysing competitors products, and also retrieving suggestions from factory employees. 2. Rough Screening: This is when the new ideas are screened to see whether or not they would fit into the factories strategy plan and they would also need to consider how long this development will take and are the resources available already or would they need to be introduced? 3. Business Analysis: At this stage the idea is costed and the initial financial projections are made.

4. Prototype Development: A prototype (a model or sample of the new product) is produced for further development of the idea, the total product concept and also to come up with a marketing strategy for the new product.

5. Testing: The new product is tested on a 'representative sample of the market'. This could be a disadvantage to the factory as competitors could see the quality of your product before it actually hits the market so if they want to they can improve their product.

. 2 Technology Resources: In business, technology can play a big part in production. There are many types of technology that a business can use to improve production and therefore increase output, like; Computer Aided Design (CAD is a graphic computer program which is used to create and/or modify product specifications), Computer Aided Manufacturing (CAM is the use of computers and specialised software to aid in the manufacturing of an

item or work piece), Robotics (Robotics are defined as the technology that deals with design, construction, operation and application of robots), Flexible Manufacturing Systems (FMS is related to CAM, but instead of having just one onset function, FMS allows several different programs to run, so that the machine has more than one function) or Computer Integrated Manufacturing (CIM allows digital information and computer control of production process to be inter-twined within the factory). The Scenic Rim Robotic Dairy Farm use and have previously used a number of these pieces of technology and programs to benefit their production over the years.

One of the major pieces of technology the farm uses would be robotics. The farm's robots are the Dutch robots known as 'The Lely' robots and were the first of their kind to be used in Queensland. They have had a big impact on the way the farm runs. For instance, the farm don't have to pay many wages as they have vi Shakai E.

Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time dc: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm minimal staff (that is required), and also they don't lose production time (meaning that the robots can work 24/7, thus more production) 3. Human Resources Used In Production & Impact of Technology on HR: Human Resources (HR) are used to help run any business. At the farm, HR is a big thing, seeing as though most of what is being produced is being made with the assistance of robots. The farm as been in Greg Dennis's life for 3 generations. Throughout this time there have been some major changes to the way that the farm runs, and the impact of technology onto

human resources has been dramatic. With having 15 staff members spread out between 2 farms, Farmer Greg still has no reasoning for hiring anymore people to help, seeing as though most of his staff members are family.

Technology has impacted human resources immensely in general. The impact of technology on the farm has has been phenomenal seeing as though in the earlier years of the farm they once used a method called ‘Rotary Milking’. This process takes a lot more time than what the robots do because the cows would be manually connected to the cups and would walk around in a circle in a paddock or shed, and then would exit out the other side. Dennis said that this method created discomfort for the cow and the production rate was much slower.

With the addition of the robots on the farm (approx. wo and a half year ago), they have seen a massive increase of 15% in the production rate of their milk. 3. 4 Process Flow: There are many differences between the ways in which business will run.

In this scenario, we are talking about whether the Scenic Rim Robotic Dairy has an intermittent production process or a continuous production process. The Scenic Rim Robotic Dairy Farm has a continuous flow as they never stop producing milk during the running times of the factory. This is the best option for them as they are currently selling to 110 stores (locally and within a 1-2 hour radius) and in demand by approximately another 50. .

5 Capacity: (output) The output of the business is probably the most important aspect of all. For good output you need to have good quality

inputs & a quick production flow. The farm, have seen both of these increase over the past two and half years, thanks to the introduction of robots. There as been a 15% increase in the production rate, simply because the robots are efficient and 99% of the time, very reliable. The Scenic Rim Robotic Dairy can output up to 4200L of milk, per day, milking between 260 and 280 cows in that day. vii Shakai E.

Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time c: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm 4. 0 Facilities Strategies 4. 1 Location: Many business have some sort of problem with the location of their business for example; there's to much competition in the area, there's no room to expand the business (if necessary) and the distribution rate of your product may be low due to a non-busy area or is there is no demand for your product. The Scenic Rim Robotic Dairy Farm have take consideration of these factors and have taken action in order to minimise these issues.

Take the competition factor. The Scenic Rim Robotic Dairy are the only dairy farm producing consumer worthy milk that is getting sold across 110 stores on the south side of Brisbane. Farmer Greg explained that even though there is no competition close by, their main competition within the stores that they sell their milk would be ' Maleny Dairies' closer to the north side of Brisbane who's radius of milk distribution reaches up to 3-4hrs from the farm through vendors like; ' Juicy Lucy', ' Moo Juice 4 U' and also ' Crowhurst Milk Supplies'. Another factor that the Scenic Rim Robotic Dairy would have had to take into consideration is their opportunity to expand the business. When

Dennis opened the Scenic Rim Robotic Dairy, he made sure that there was enough room to expand the business if needed. He mentioned that they have already considered expanding to have more output, but he also said that even if there were more robots, more cows and more staff that they couldn't possibly keep up with the demand for the staple food.

The last factor that Greg explained was about their distribution. As stated previously, The Scenic Rim Robotic Dairy are looking to distribute their milk into places such as Toowoomba and Caboolture. Farmer Greg Dennis said this is a possibility but also said that it will have its downfalls. One of those downfalls includes the milk's freshness. Although the trucks that deliver the milk are refrigerated the milk only retains freshness for so long.

This is why The Scenic Rim Robotic Dairy only delivers to a 1-2 hour radius of the farm. 4. 2 Factory Layout (function, product or fixed position): The way that a factory has been laid out is very important for the production process to flow smoothly and without problems. The Scenic Rim Robotic Dairy Farm has a process-orientated layout. This means that the farm organises their layout so that each workstation (the milking robots, the pasteurisation canisters and the bottling station) has an order of operations and flows smoothly to produce as much output as possible. viii Shakai E.

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1 How is quality maintained? The quality of a product relies solely on how the business manages their inputs. If the inputs are of low quality the product is probably going to be low quality as well. At The Scenic Rim Robotic Dairy, they make sure that their cows are of high standard and are fed the best, to produce high quality milk. Greg explained that are many ways that they can manage their milk quality that includes; – By abiding by the laws & legislations of dairy farming (by having to pasteurise their milk, not only is it a legislation, but apart of the food health and safety law) – Making sure the cows are well fed, and comfortable wherever possible (by being comfortable in the robots while being milked, and also by having gel pads underneath the cows feet whilst feeding) – Making sure that the robots are up to date with maintenance and are correctly reading and recording the butterfat, protein and the rate or flow of the cows milk – By meeting milk standards that other dairy farms try to meet as well 5.

Does this fit with any of the following approaches; quality control, quality assurance, TQM? The Scenic Rim Robotic Dairy use both the quality control and quality assurance approaches towards maintaining the quality of their milk. They use the quality control approach whilst the milk is in production and also before they distribute their milk. Although they are confident that their milk is always the same, they still sample the batch to make sure that it's all good. For milk that's not consumer worthy (the robots, when milking the cows check whether or not the milk has enough butterfat and protein. If

there is not enough of each, the milk is then not consumer worthy) they feed it to the calves, that stay in another paddock until they are just over 2 years old.

The farm uses the quality assurance approach to meet the standards set by 'Standards Australia'. There are many standards that a dairy farm must reach before they can start to distribute their product(s). A major standard that not only the Scenic Rim Robotic Dairy but every other dairy farm that is distributing to the public have to abide by is, pasteurising their milk to kill the good and bad bacteria. Whilst other dairy farms may put heaps of additives and preservatives after being pasteurised, the Scenic Rim Robotic Dairy Farm doesn't add anything after the milk as been pasteurised so that 'Scenic Rim 4Real Milk' is just milk.

The following pictures are some of the aspects of which 'Standards Australia' have set for dairy farmers to follow and meet. x Shakai E. Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time dc: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm Figure 5. 1 Figure 5. 2 xi Shakai E.

Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time dc: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm Figure 5. 3 xii Shakai E. Nichols Sunday, 25 August 2013 8: 35: 20 AM Australian Eastern Standard Time dc: 2b: 61: fc: 16: de Operations Management Report Scenic Rim Robotic Dairy Farm 6. 0 Inventory Management 6. 1 Methods of Inventory Control A business's

inventory is classified as the 'stock' of a business whether it be sporting goods at a sports retailer or certain type of dress at a retail outlet.

At The Scenic Rim Robotic Dairy Farm the inventory they would have stored in sheds or rooms in buildings would be the hay (feed) for the cows and also the bottles (1L glass and 2L plastic) for the milk when it has been produced. There are particular control methods that a business can take when trying to manage their stock levels. One of those methods is 'Physical Control'. This method involves stock storage, physical movement of stock and also regular stock-takes. Another method used is 'Accounting Control'.

Accounting Control includes regular comparisons between account records and physical stock levels. The last control method used by many business's to date is 'Just In Time (JIT)'. This control method includes inputs being delivered just before their time of use so they don't need to be stored. The Scenic Rim Robotic Dairy Farm would use predominantly the 'Just In Time (JIT)' method but also with occasional glimpses of the 'Physical Control' approach.

The reason being is for the milk to retain it's freshness it needs to be distributed basically immediately. If not immediately it spends minimal time in the fridge at the farm before the next delivery truck comes for the orders. The farm would use the 'Physical Control' approach when moving and counting hay bails for the cows. Depending on which paddock the cows are grazing in, will depend on where the bails are needed to be distributed and when they need to be distributed. xiii Shakai E. Nichols Sunday, 25 August

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0 Environmental Sustainability 7. 1 Issues, pressures, responsibilities or initiatives surrounding the factory Being environmentally sustainable should be a goal of every business. By being environmentally sustainable a business makes decisions to help reduce the negative impact that it will or has had on the environment. One of the major factors the farm has to take into consideration is the power they use for the robots.

Their average quarterly power bill can range between \$40, 000\$50, 000. The Scenic Rim Robotic Dairy Farm have thought about the long term effects of this and have decided to add solar panels to one of the sheds roofs to help reduce the cost. They are looking at investing in additional solar panels to reduce the cost of power even more. Another component related to environmental sustainability is environmental responsibilities. One of the farms main responsibilities is looking after the cows and making sure they aren't injured and making sure they are comfortable with whats happening.

If a cow is injured they won't move, meaning that the farm will have less milk production. This will then result in less income. Also if a cow is not comfortable being milked, this will also mean that there will be less milk production and therefore, less income. The Scenic Rim Robotic Dairy Farm use many methods and approaches to make sure the cows are injury free and comfortable like; having gel pads on the ground whilst the cows are feeding, and also by each cow being milked individually. xiv Shakai E.

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Robotic Dairy Farm 8.

0 Appendices – Text Book (pages, 261, 250, 249, 246, 235, 264, 265, 268, 269, 270) – Figure 4. 1, ‘ The Robot Layout In The Shed;’ retrieved on 11th August 2013, from: [http://sphotos-a-ord.xx.fbcdn.net/hphotos-ash3/p480x480/600824_572689676127775_1883398086_n.](http://sphotos-a-ord.xx.fbcdn.net/hphotos-ash3/p480x480/600824_572689676127775_1883398086_n.jpg)

[jpg](#) – Figure 5. 1, ‘ Production of dairy produce for which the dairy scheme applies;’ retrieved on 14th August 2013, from [https://www.egislation.qld.gov.au/LEGISLTN/CURRENT/F/FoodProdSafR02.](https://www.egislation.qld.gov.au/LEGISLTN/CURRENT/F/FoodProdSafR02.pdf)

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[gov. au/LEGISLTN/CURRENT/F/ FoodProdSafR02. pdf](#) – Figure 5. 3, ‘ Dairy Produce other than unpasteurised goats milk;’ retrieved on 14th August 2013, from: [https://www.legislation.qld.](https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/F/ FoodProdSafR02. pdf)

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