



Sugar Industry Prototype Animation (Machinima) Evaluation Report

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Executive Summary

Overall Findings

- *Initial response to the machinima* by most interviewees was generally positive except for a minority view which would have preferred the use of real actors rather than animated characters.
- Most interviewees were able to identify readily with the *characters and setting* depicted in the video, and relate the animation to an attempt to replicate a meeting of farmers or other sugar industry stakeholders on a cane farm.
- The *length and pace* of the video were appropriate.
- *Key messages* identified by respondents were generally consistent with the informational objectives of the script developed for the machinima except for the lack of clarity about the link to the current climate forecast.
- The *target demographic* for this product may currently not attract interest from farmers who have a higher level of understanding of climate and production risk.
- *Improvements to the machinima* graphics would significantly improve the visual appeal of the video for viewers.
- Comments across stakeholder groups indicated that the machinima could be a *useful tool to support discussion* in the context of climate risk as well as other topical industry issues.
- *Development of SMS or Apps* as delivery platforms bringing weather and climate data together, customised for the sugar industry would be an asset to the industry.

Summary Recommendations

- Improve the machinima graphics quality.
- Refine machinima setting and characters based on respondent feedback including consideration of an explanation for the use of animated characters rather than real actors.
- Develop and refine an understanding of the target demographic for this product.
- Develop a more explicit and seamless link to the current climate forecast within the machinima.
- Develop further machinima with discussions about other production issues.
- Develop an SMS or App to deliver a refined climate information product and machinima for the end user through further consultation with industry.

Research Background

Between 18th April and 24th May 2013 a semi-structured interview process was conducted to evaluate sugar industry stakeholder responses to a machinima video animation as a prototype climate risk management discussion support tool. The machinima was developed by the DFCRN Project 3 team and consisted of an animated farmer discussion about climate risk in the context of a harvest management decision using a particular climate forecast outlook.

Interviews were conducted in person with seven farmers, six extension officers and four Canegrowers Organisation representatives from six Queensland sugar growing regions and the central office for the Canegrowers Organisation in Brisbane. Interviews were recorded with the consent of interviewees using an iPad and Voice Record, a free downloadable App, with a back-up copy made using a portable digital voice recorder. Interview duration varied between 18 minutes to 44 minutes with most interviews taking 25 to 30 minutes to conduct.

Interview recordings were manually transcribed verbatim into individual word documents. Data was hand coded to develop key thematic elements highlighted by interviewees within each of the interview questions. In most cases in this early data consolidation and evaluation stage, and depending on the question concerned, comments were coded as Good, Neutral or Improve to develop crude frequency indicators for the data. Comments by interviewees were then selected to represent a richer contextual understanding of the frequency information that had been calculated.

Data was collected and collated in three sections:

Part 1: Machinima evaluation

Part 2: Climate information digital delivery platform needs. (Note: Mention of Roger's email or 'Dr Roger Stone's email' in this report relates to an email update that has been distributed widely to sugar industry participants who attended Climate Workshops conducted during 2012. The email has since been distributed more widely to other industry members. Funding support to develop and distribute the email as been supported by Queensland Sugar Limited.)

Part 3: Demographic information.

Interviews were conducted in accordance with USQ Ethics approval processes (Ethics approval No. H13REA014).

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I would like to sincerely thank all the farmers, extension officers and Canegrowers Organisation representatives who gave freely of their time and shared honestly their views and opinions as part of this research. I gratefully acknowledge my supervisors, Dr Roger Stone and Dr Jeff Coutts, Dr Shahbaz Mushtaq and Dr Kathryn Reardon-Smith for their guidance, support and assistance in developing the survey approach and through the ethics approval processes. I also gratefully acknowledge the DFCRN Project 3 team for their roles in developing the prototype machinima and supporting this research activity.

Part 1 Machinima evaluation

Can you describe your reactions as you viewed the video? (to capture immediate response to the video to provide feedback on the overall appeal of the product...)

First impressions after viewing the video:

Comment frequency:

Comments characterised and coded as 'Good': 16

Comments characterised and coded as 'Neutral': 6

Comments characterised and coded as 'Improve': 9

Most interviewees felt the video was a well put together product, representing a realistic scenario, demonstrating a typical conversation that farmers might have in a shed meeting situation.

One farmer commented that it was *'reasonably lifelike'*, while an extension officer said that *'realistic farmer reactions and conversation'* were portrayed. A Canegrowers Organisation interviewee indicated that the video was *'easy to watch'* and *'kept my attention'* and that *'it's a really good, innovative way to get information to growers'*.

Some interviewees felt that the message was fairly basic and would appeal more to growers who were uninformed about climate risk in general and who were not as familiar with the message presented in the video. One farmer said that *'more able growers may find the message childish, a bit demeaning and too basic'*.

Several interviewees commented on the jerkiness of the animation with one farmer saying that the *'graphics were choppy and difficult to watch'*. Two interviewees, one extension officer and one Canegrowers Organisation representative, indicated that they would prefer real actors and a real shed, and did not like animations, with the latter interviewee indicating that it was *'not a credible shed meeting'*.

Conclusion:

Overall, on first impressions, the animation was well received by most interviewees. The product would appear to be acceptable in general terms to the target audience of farmers and extension officers, as the positive comments suggest. The most significant negative comments were provided in minority views by one extension officer and one Canegrowers Organisation representative. The jerkiness of the video quality adversely affected the visual experience for several of the interviewees.

Recommendations:

1. The graphics quality should be improved to allow characters and their voices to flow more seamlessly.
2. Regarding the messages delivered in the product, the team needs to consider how the target group is segmented and which segment of the target group this product should be targeted to. Alternatively, the team should determine how the product is modified to appeal to all or most segments of the target group.

How would you describe the length and pace of the video? (to capture information about the appropriateness of the length and pace for the prospective audience to provide technical feedback for future development ...)

Comment frequency:

Comments characterised and coded as 'Good': 17

Comments characterised and coded as 'Neutral': 1

Comment characterised and coded as 'Improve': 2

Almost all interviewees indicated that the length and pace of the video were good.

One farmer said *'concise and reasonably paced'*, while one extension officer said *'kept interest and attention'*. One Canegrowers representative said it *'would work well in extension with shed meetings and group education'*.

One interviewee suggested that some current climate information should be inserted so the video could be stopped for the group to have a discussion.

Conclusion:

Video length and pace are appropriate.

Recommendation:

1. Maintain existing machinima length and pace characteristics.

How would you describe the characters in the video? (to capture information about the appropriateness of the characters for the prospective audience to provide technical feedback for future development ...)

Comment frequency:

Comments characterised and coded as 'Good': 14

Comments characterised and coded as 'Neutral': 12

Comment characterised and coded as 'Improve': 6

Most interviewees indicated that the characters were generally appropriate for the situation, and represented a good cross section of farmers in the sugar industry. However there appeared to be general recognition that they were 'idealised' characters in the sense that they were too fit, too clean and too young, compared to real farmers.

Most interviewees were also able to label the characters as farmers, although some felt that some individual characters could have been identified as extension officers, or in one case, possibly a *'rep from a machinery company'*. In one case a Canegrowers Organisation interviewee felt that the characters *'could have been a harvesting co-op'* group.

Several interviewees identified different personality types within the characters, for example, *'the thinker'*, *'the sceptic'*, *'the informer'*, *'the questioner'* etc.

One female interviewee said that it *'would have been good to have a woman actively involved in the discussion'*, while several others indicated that it was normal to have only men represented in this situation.

Conclusion:

In general the characters depicted in the video reasonably replicate the diversity of characters who might be involved in a shed meeting discussion. However they are idealised in their depiction and there might be some benefit in modifying their appearance to make them more distinctly younger or older and identifying them as farmers, extension officers or other personalities in the industry.

Recommendations:

1. Identify characters either with subtlety or more overtly as farmers or other identities through modifications in the script or graphics.

2. Develop a female character to actively participate and contribute to the conversation, perhaps as an extension officer or productivity services staff member.

How would you describe the setting for the video? (to capture information about the appropriateness of the setting for the video to provide technical feedback for future development...)

Comment frequency:

- Comments characterised and coded as ‘Good’: 6
- Comments characterised and coded as ‘Neutral’: 10
- Comment characterised and coded as ‘Improve’: 2

The majority of interviewees indicated that the setting was good and appropriate and that the viewer could locate themselves on a cane farm.

A farmer said *‘what I would expect’* and another, *‘that is where you have a meeting’*. An extension officer said the video scene was *‘appropriate for the audience, content and characters and as a setting for a farmer discussion’*. A Canegrowers Organisation representative said it was *‘identifiable as a sugar shed with the machinery and harvester’*.

One interviewee said that it’s *‘not a realistic shed, should be machinery everywhere’*. A few interviewees suggested adding a boat to the shed scene, as many farmers have boats and are interested in fishing.

Conclusion:

The setting for the video is good and with a few minor improvements could further enhance the visual effect for the viewer.

Recommendations:

1. Consider adding some further pieces of machinery and a boat to the scene, provided this does not lead to a cluttering effect which could detract from the overall setting.

What do you think are the key messages that are discussed in the video? (to capture the viewer’s perceptions of the key messages that flow from the discussion in the video to compare with the messages we were trying to convey...)

The most commonly mentioned key messages mentioned by interviewees related to ‘decision making focussed on harvesting’ and ‘raising awareness of climate forecasts and predictions’. ‘Planning of farming activities’, ‘discussion between growers to share ideas’ and ‘using forecast tools’ were mentioned a number of times. The ‘source of climate information’ was mentioned twice as a key message, along with ‘forecast probabilities’ and ‘attitude to risk’.

The key message described by one farmer was *‘planning and decisions about farming activities, cutting blocks early or late, rotation of blocks’*. Two extension officer comments included, *‘discussion of decisions’* and *‘using a climate forecast for harvesting planning’*.

Key messages grouped into themes across all interviewees	Number of mentions
<ul style="list-style-type: none"> • <i>Decision making, particularly focussed on harvesting</i> 	10
<ul style="list-style-type: none"> • <i>Raising awareness of forecasts and predictions</i> 	9

• <i>Planning</i>	5
• <i>Using forecast tools</i>	4
• <i>Discussion between growers to share ideas</i>	4
• <i>Source of climate information</i>	2
• <i>Forecast probabilities</i>	2
• <i>Attitude to risk</i>	2
• <i>Pretty basic message</i>	1

Conclusion:

The key messages described by interviewees are consistent with the informational objectives of the message that was developed for the machinima. However, only two interviewees noted the 'source of climate information' as a key message. The link between the decisions discussed in the animation and where viewers could access information to support their own decisions may therefore be unclear. One farmer noted that the message was 'pretty basic' and this may be a concern depending on what farmer or industry demographic the machinima is targeting.

Recommendations:

1. The link to the source of climate information to support the planning and decision information provided by the machinima needs to be made more explicit or woven more creatively into the animation.
2. The farmer noting that the information was pretty basic highlights again the need for the team to think about the target group for this product.

What parts of the video were appealing? (to capture the elements of the video that were appealing to the viewers to consolidate/reinforce the good aspects of the product in future development...)

The majority of interviewees across the stakeholder groups found the video appealing, with generally positive comments about the setting, characters, structure of the conversation and the topic covered.

A farmer commented that it was *'good using caricatures rather than real people it's a real strong point'*. Extension officers noted that it could be *'a catalyst for discussion, because it focuses the discussion'*, that *'animations add humour that real actors might not'* and that it was *'good to have a sceptical character'*. A Canegrowers Organisation representative suggested that *'Older farmers might be mesmerised by this, that someone had invented it. They'd engage with it'*, while another said *'I didn't like it'*.

Conclusion:

The majority of interviewees found the machinima generally appealing, with many positive comments collected across the stakeholder groups. The comments supporting the use of caricatures rather than real people are at odds with two of the interviewees preferring to see real people in a real setting discussing the issue. The concern raised by those concerned by the use of animations may be allayed if the introduction to the machinima attempts to explain unobtrusively, the rationale for use of animated characters rather than real actors.

Recommendations:

1. Discuss rationale for machinima approach in an appropriate way as part of the introductory narrative to the video.

What parts of the video could be improved? (to capture elements of the video that could be improved for future development of the product...)

Aspects of the video that could be improved included improving the message, by providing more useable content and going into greater depth, improving the graphics and linking the product explicitly to the current climate outlook.

One young farmer indicated that he would have expected more from the production and suggested more money be invested in *'graphics to make it smoother with a higher frame rate'*. In relation to accessing forecast information, another farmer suggested to *'explain at the start where to access this information'*.

An extension officer suggested that the video *'would appeal to a demographic with a more basic understanding, 50-60% of the industry, but might not appeal to a more educated group with higher knowledge level'*. Another

suggested having the *'characters moving more smoothly by putting sensors on actors to improve the jumpy animation and flow'*.

A Canegrowers Organisation interviewee suggested there be *'more explanation of what is available from the website and forecast information'* and to *'consider targeting some of this information directly at women'*. One interviewee suggested that having *'real actors, a real shed or real farmers not contractors'* would improve the video.

Conclusions:

The visual appeal of the video would be enhanced if the video animation moved more smoothly as viewers would find the product easier to watch. Providing a better link in the discussion and video content to the current climate forecast information will assist viewers to take more useable information out of the product to apply in their own situations and discuss in a group situation.

Recommendations:

1. Improve the graphics quality.
2. The link to the source of climate information to support the planning and decision information provided by the machinima needs to be made more explicit or woven more creatively into the animation.
3. The extension officer noting that the information would appeal to a certain demographic highlights again the need for the team to think about the target group for this product.

How could the video be improved to better simulate a real canefarmers discussion? (to capture how well the simulated discussion mirrors a real farmer discussion and provide information to improve the product for future development...)

Several interviewees suggested including discussion about other farm management decisions that are relevant to the use of a climate forecast. The issue of discussion of the current forecast, providing more detailed information and linking discussions to making or saving money was also mentioned.

One farmer suggested that *'discussion of other decisions, fertiliser, spraying and replanting in relation to the forecast'* could be included. Another suggested that *'growers are more advanced than the video suggests'*.

Extension officers suggested that the video *'simulated discussion well'* and the *'structure of the discussion was okay'*.

A Canegrowers Organisation interviewee suggested the video discussion *'talk about the actual current forecast and where to get it quickly and easily'*. Another suggested including *'banter about fishing or footy'*.

Conclusion:

Comments provided by interviewees appear to support development of future machinima which address discussions about other relevant farm management decisions. Linking the video more explicitly to the current forecast is highlighted again as important to include in the machinima design and construction.

Recommendations:

1. The link to the source of climate information to support the planning and decision information provided by the machinima needs to be made more explicit or woven more creatively into the animation.

- Incorporate comments from interviewees into development of future machinima.

How appealing is this style of video format as a way to convey messages to canefarmers? (to capture how appealing this platform is as a way to convey information to farmers in a general sense...)

Many interviewees indicated that the video format was appealing as a way to convey messages to farmers. Interviewees across all three stakeholder groups made comments about the video having the potential to generate discussion in farmer group situations with one farmer suggesting the video format had *'high value'* and one extension officer saying *'I'd like to see it tested'*. Over twice as many comments could be characterised as good compared to those that suggested improvement was needed to make the format palatable to farmers (Coded comments: Good – 28/Improve – 12).

Comments that were categorised as neutral or suggestions for improvement included several suggesting that there would be a *'mixed reaction'* from viewers and that the reaction would depend on the demographic that the viewer was a part of, e.g. young/old, computer literate or not, climate savvy or not.

Comments characterised and coded as 'Good': 28

Comments characterised and coded as 'Neutral': 8

Comment characterised and coded as 'Improve': 12

Comment Category	Comment Count	Interviewee Quotes
Good	28	<p>Farmers: <i>'Very real, a good way of doing it'; 'Good tool for prompting and helping a discussion and opening a discussion up'; 'It gives an opportunity for questions to be asked in a discussion'; 'High value'; 'It will promote discussion, that is the strong point'</i></p> <p>Extension Officers: <i>'Excellent to use at a workshop or shed meeting to get discussion going'; 'It has the capacity to create interaction and discussion'; 'I'd like to see it tested'</i></p> <p>Canegrowers Organisation: <i>'Very innovative'; 'With increasing costs and climate change this information needs to be made available to growers to support their decision making'; 'I'm passionate about it'; 'Run by someone in a group, quite effective in the context of a group discussion'.</i></p>
Neutral	8	<p>Farmers: <i>'There might be a mixed reaction in a shed meeting, from some saying it's a joke to others saying it's useful'; 'Could be part of a package leading up to the start of the season'</i></p> <p>Extension: <i>'You'll get a mixed reaction'; 'More appeal for use by extension officers to take out and use it with growers, one on one or in groups'; 'It's more appropriate now a normal group of farmers and less appropriate for more informed growers'.</i></p>
Improve	12	<p>Farmers: <i>'Older growers won't look at it on a computer'; 'Younger growers are more to speed so you don't want to talk down to them'; 'Need other discussions related to forecasts, especially extremes of wet or dry'; 'you need more meat [in message]to promote a robust discussion'.</i></p> <p>Extension: <i>'If the characters flowed and moved more naturally, that would enhance the visual experience'; 'For a more knowledgeable audience, incorporate an expert character into the video'; 'If changes were made its usefulness as a tool for creating discussion and information transfer would improve and its value would go up'.</i></p>

		Canegrowers: <i>'For individual growers, not as effective'; 'Younger growers will not need this prompting'; 'It's not appealing at all as farmers would relate more to real people than animations'.</i>
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Conclusion:

The majority of comments appear to indicate that the video format is appealing as a way to convey information to canefarmers and generally support the potential for the product in supporting discussion in farmer groups.

Recommendations:

1. Design the next product iteration in the light of feedback about the target demographic and comments provided by interviewees.

Reflecting on viewing the video and the feedback you just gave, overall, how would you rate the value of this sort of video in supporting canefarmers to take some action, small or large, in relation to the information presented in the video?

Farmers: 6.9 (5, 6, 6, 7, 7, 8, 9)

Extension Officers: 7.2 (6.5, 6.5, 6.5, 7.5, 8, 8)

Canegrowers Organisation: 6.4 (3, 7, 7.5, 8)

Part 2: Climate information digital delivery platform needs.

Can you describe where canefarmers access seasonal climate forecasting information currently? (to capture information about what, where and how users currently access climate forecasting information...)

Summary of climate information sources accessed by cane farmers:

Information source	Number of mentions
<i>USQ (Dr R Stone Email Update)</i>	13
<i>Bureau of Meteorology</i>	11
<i>Other internet sites</i>	6
<i>ABC/ABC radio</i>	5
<i>Elders website</i>	4
<i>Newsletters</i>	3
<i>Smart phone Apps</i>	2
<i>Newspapers</i>	2
<i>Long Paddock</i>	1
<i>ECMWF</i>	1
<i>CliMate</i>	1
<i>TV</i>	1

How well do these information services currently meet canefarmers needs? (to capture information about the level of need for development of a product to support their needs...)

Comments characterised and coded as 'Good': 6

Comments characterised and coded as 'Neutral': 3

Comment characterised and coded as 'Improve': 5

Interviewees varied in their responses with some indicating that services available met their needs while others felt that improvement was required. Several positive comments were made about the regular email update provided by Dr Roger Stone. The update was considered to be timely, concise, provided sugar industry regional information, covered shorter and longer term and was perceived to be very useful information for farmers.

A farmer commented that *'short term forecasts are not really long enough, not specific to cane growing areas and could be fine tuned'*.

Canegrowers Organisation representatives observed that *'Growers seem to have confidence in Roger's information'* and that *'Roger's email should be distributed more widely'*.

What improvements to the way that the information is delivered would better support canefarmers needs? (to capture information about the preferences for users about how information is best delivered to service their needs...)

Interviewees highlighted a need for improvements to the delivery of information which would further customise weather and climate information for the sugar industry. Development of Apps for smart phones and iPads, SMS services (for example for Dr Roger Stone's regular update), customising information on the web, improving understanding of probabilities and delivering more workshops were mentioned as potential improvements to the delivery and understanding of climate information.

A farmer specifically requested that data be customised *'for cane farmers by region, with its effect on industry decisions, that is site specific, covering radiation, wind conditions and rainfall'*. Another farmer indicated that *'Roger's update with a coloured map would be good'*.

An extension officer requested that *'websites and products are easy to access rapidly, are relevant and have understandable forecasts to help in decision making'*, while others indicated that a *'mixture of text with some imagery'* and *'value adding forecast information regionally'* would be useful improvements.

Canegrowers Organisation interviewees indicated that *'customising information on the web'* would improve delivery of information, and observed that *'climate workshops in the areas were good'* and that *'machinima would complement other communication methods'*.

Conclusion:

There appears to be an opportunity to improve the delivery of climate and weather information for the sugar industry which would add value to the delivery systems that currently exist. Customised information that is easily accessible and relevant to the industry and has a regional focus could directly support the perceived needs highlighted by the interviewees.

Consolidating climate and weather forecast information from a range of sources into a single product, delivered more traditionally in SMS and web based format, along with more innovative approaches through App development would appear to be supported by comments made across the stakeholder groups interviewed.

Recommendations:

1. Consider developing an App and SMS product which builds on the current success of Dr Roger Stone's existing regular email update.
2. Consult further with industry to understand the need and develop in-principle and funding support for App and SMS product development.
3. Further refine machinima to include reference to and linking to web-based, App and SMS products.

Thinking about the electronic and digital delivery of information generally, can you describe what an ideal delivery mechanism for climate information for canefarmers might look like? (to capture information that may inform us about what an ideal digital delivery platform might look like...)

Interviewees across stakeholder groups mentioned:

- Websites with an appropriate mix of text and mapping information;
- Downloadable Apps;
- SMS;
- Email;
- DVDs; and
- Videos (viewable on multiple devices from computers to phones).

One extension officer observed that *'The smart phone will become the computer in your pocket in the paddock'*.

A Canegrowers Organisation interviewee referred to the ideal delivery platform of the future in general as *'Videos on computer, phone, tablet etc.'* and machinima in particular *'I think this is a really innovative approach and I can see it being applied across extension in our industry and other industries as well'*.

Conclusion:

Existing delivery platforms such as SMS, internet and email remain very useful. Increasingly, farmers are accessing and will continue to access smart phone technology and it appears likely to be a significant delivery platform for information in the future.

Recommendations:

1. Consider developing an App and SMS product which builds on the current success of Dr Roger Stone's existing regular email update.
2. Consult further with industry to understand the need and develop in-principle and funding support for App and SMS product development.
3. Further refine machinima to include reference to and linking to web-based, App and SMS products.

Part 3 Demographic information

What sugar cane producing region do you come from?

Farmers: Mossman 2; Babinda 3; Proserpine 2

Extension Officers: Proserpine 1; Mossman 1; Mackay 1; Bundaberg 3

Canegrowers Organisation: Mossman 1; Mulgrave and Babinda 1; Bundaberg 1; Brisbane 1

What sugar industry stakeholder group or groups do you belong to?

Farmer 7

NRM Body 1

Productivity Services 3

DAFFQ 2

Canegrowers Organisation 4

What is your gender?

Farmers: 1 female/6 males.

Extension Officers: 1 female/5 males.

Canegrowers Organisation: 2 females/2 male.

What year of birth bracket do you fall into?

Farmers: 2 67 + yrs (pre 1946)

4 50-64 yrs (1946 – 1963 Baby boomers)

1 22 – 32 yrs (1981 – 1991 Gen Y)

Extension Officers: 5 50-64 yrs (1946 – 1963 Baby boomers)

1 40-49 yrs (1964 – 1973 Hippie babies)

Canegrowers Organisation: 2 50-64 yrs (1946 – 1963 Baby boomers)

1 40-49 yrs (1964 – 1973 Hippie babies)

1 32-40 yrs (1973 – 1981 Generation X)

How many years experience have you had in the sugar industry?

Farmers: 37.4 (Range 3-69)

Extension Officers: 15.3 (Range 5-45)

Canegrowers Organisation: 23.3 (5,20,30,38)

How would you rate your level of expertise in using computers and the internet?

Farmers: 6.1 (Range 3-10)

Extension Officers: 8.1 (Range 7-9)

Canegrowers Organisation: 7.8 (Range 7-9)

What is your highest level of formal education?

Farmers: 6 Secondary (1 TAFE Certificate and 1 Trade qualified)

1 Tertiary (graduate)

Extension Officers: 2 Secondary

1 Tertiary (graduate)

3 Tertiary (postgraduate)

Canegrowers Organisation: 1 Secondary

2 Tertiary (graduate)

1 Tertiary (postgraduate)