The Art of Storytelling via a Cloud Technology Model to Create an Animation Innovation

Sudarat Srima and Wannaporn Chujitarom

Abstract—The objective of this research is: (1) to develop the art of storytelling via a cloud technology model to create an animation innovation; (2) to evaluate the developed model; and (3) to study the effects of using the model. The research process is divided into 3 parts. First part is to develop the art of storytelling via a cloud technology model to create an animation innovation. Second part is to evaluate the developed model. Third part is experimenting with the sample. The sample group divided into two groups: first group is 6 experts in relate field, and second group is 20 undergraduate students. Tools are arithmetic mean, standard deviation and scoring rubric table. The results of the research showed that : (1) the model consists of 5 elements; Storyteller, Data Transfer, Story on Cloud, Animation Innovation and Audiences Feedback; (2) results from evaluation of the model is at highest appropriate ($\bar{x}$ = 4.63, S.D. = 0.39); and (3) the animation innovation results from the sample group is a very good animation innovation level.

Index Terms—The art of storytelling, cloud technology, animation, innovation.

I. INTRODUCTION

Today's global economy, driven by innovation the aim is to promote production, reduce production costs, save production time, and increase performance. Industries have turned to various technologies to create new innovations in terms of production, and to increase profits. This is just as true in the animation industry, and is becoming increasingly popular internationally. However, animation is an industry that involves a lot of people in the production process and requires a great deal of time until an animation movie can be viewed. Therefore, animation manufacturers have to make use of a range of processes and technologies to save time and reduce production budgets, so that it can produce an animation work on time to meet the needs of the animation industry. One of the processes and technologies that can help a large number of people produce work simultaneously, is cloud technology, and the art of storytelling.

The art of storytelling is a very popular tactic used in modern marketing, because it can encourage consumers to believe in particular products and finally buy that product. Narrative art is a sequence of storytelling aimed at creating interest, persuading the consumer to remember the emotions and feelings associated with the story [1]. By using the art of storytelling together with developing animation, many people will understand the work in a similar fashion. This will make all colleagues want to be part of the story, and want to be part of producing work successfully [2]. Important

elements of the story and storytelling, including plot, characters and the narrative perspective are involved [3], [4].

Cloud technology is a technology that works in tandem with data storage and processing systems to interact with the sender and allow the receipt of information in real time. Therefore, it can be used to make people who work in different locations able to work together quickly in real time, as if they are sitting together and talking face-to-face. Cloud technology is available for group chat, group document creation, data storage for sharing, or for creating animation works together [5].

Animation is a science of digital art. As if making a still life drawing, it is the use of multiple still images which change quickly until the image appears to persists, to produce a moving picture [6].

Innovation is the result of applying and gathering knowledge in various fields. Causing the creation of new things that happen for social and economic benefits. Information and communication technology (ICT), is a tool that will create many educational innovations [7].

Animation innovation in this research mean animation works obtained as part of the creation process using cloud technology, that many manufacturers can produce from different locations, and sorting out various stories in accordance with narrative art. The innovative production of animations can also reduce costs and production time.

II. OBJECTIVES

To develop the art of storytelling via a cloud technology model to create an animation innovation. To evaluate the developed model. And, to study the results of the implementation of the model.

III. RESEARCH SCOPE

The population used in the research is divided into 2 sample groups: group 1 is made up of 6 experts in the field of cloud technology, animation, storytelling and innovation, all of whom have experience in the related field for at least 5 years. They are selected using a purposive sampling method. Group 2 consists of 20 second year undergraduate students from the Faculty of Digital Art, Rangsit University, Thailand, chosen from a group using random sampling. The tools used in the research were statistics in the form of mean and standard deviation, and a rubric scoring table.

IV. RESEARCH FRAMEWORK

The independent variables were the art of storytelling,

cloud technology, Animation production and innovation. The dependent variables were The Art of Storytelling via a Cloud Technology Model to Create an Animation Innovation. The process for synthesizing a framework for this model is provided in Fig. 1.
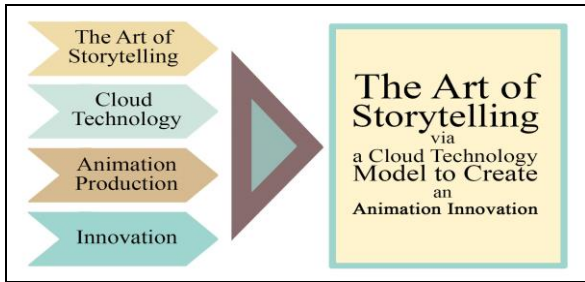

Fig. 1. Research framework.

V. RESEARCH METHODOLOGY

The research methodology used in this research can be divided into 3 parts:

A. Part 1: Development of the Art of Storytelling via a Cloud Technology Model to Create an Animation Innovation

This consists of the study of theories and related research in order to analyze and synthesize the conceptual framework, design the instructional model, develop the evaluation form, and create a scoring table.

B. Part 2: Evaluation of the Instructional Model by 6 Experts Using a Likert Scale

Each expert has at least 5 years' experience in related fields. They have been chosen using a purposive sampling method.

C. Part 3: Experiment Involving the Sample Group

20 undergraduate students from the CPA 242 Animation Studio 4 course, using a cluster random sampling method. The project is to help each other produce one full length animation in a limited time and to a limited budget.

VI. FINDINGS

The findings of this research can be divided into 3 parts:

A. Part 1: The Art of Storytelling via a Cloud Technology Model to Create an Animation Innovation

The model can be divided into 5 elements; Storytelling, Data Transfer, Story on Cloud, Animation Innovation and Audience Feedback. The model workflow starts from a Story on the Cloud Element. The idea is then sent by Data Transfer Element to the Storyteller Element, who then returns the work through the Data Transfer Element again, to go back to the Story on Cloud Element, followed by the Animation Innovation Element, followed by the Audience Feedback Element. The details are as shown below.
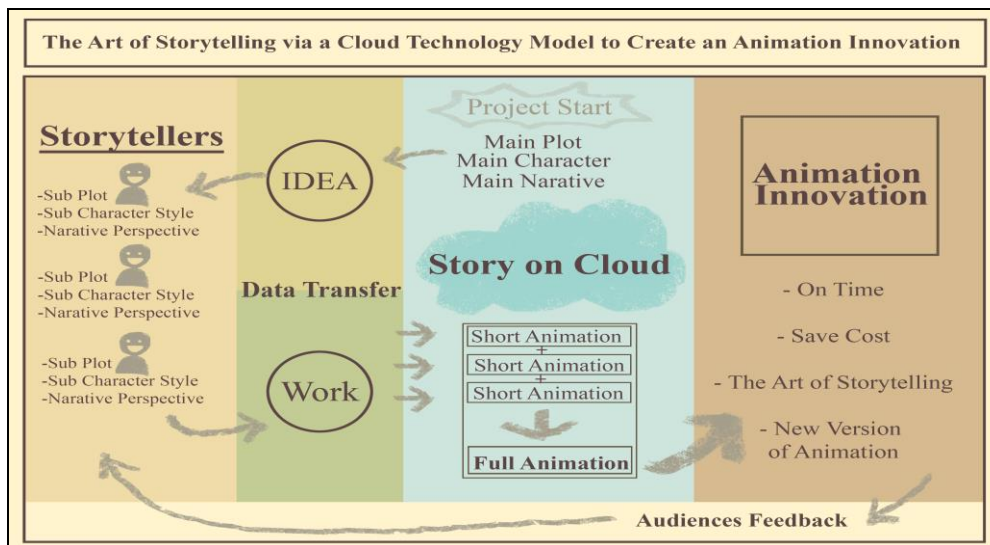

Fig. 2. The art of storytelling via a cloud technology model to create an animation innovation.

Firstly, the animation project starts with the Story on Cloud Element involving the Main Plot, the Main Characters and the Main Narrative. These three main points will provide the scope for the animation project, launched by main storyteller or the teacher. When main storyteller assign plot, from the story begins to the story ends, there will be the main plot. Main storyteller process when project start, provided in Fig. 3.

Secondly, in terms of the Data Transfer Element, when plot, characters and narrative which are three main points have already been set, the storyteller will receive the main idea from the Story on Cloud Element. This process is referred to as data transfer.
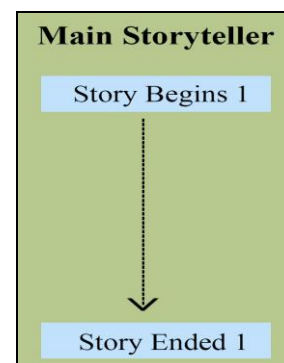

Fig. 3. Main storyteller process.

Thirdly, in terms of the Storyteller Element, when the storytellers get an idea from the Story on Cloud Element, they will create a sub-story again which is set a Sub-Plot, a Sub-Character Style and a Narrative Perspective. Each storyteller will create a short animation, and then send the work back to the Story on Cloud Element via the Data Transfer Element again.

Fourthly, in terms of the Story on Cloud Element again, the short animation works will combined into a full-length animation. That consists of a short story for each storyteller, come together to make a long story, with stories from many authors will cause unpredictable events. These made the story more interesting. For the example, storyteller "A" create story begins episode 1 and story ends episode 1, then transfer the end of story episode 1 to storyteller "B". Storyteller "B" create story begins episode 2 and story ends episode 2, then transfer the end of story episode 2 to storyteller "C". Storyteller "C" create story begins episode 3 and story ends episode 3. When the story of 3 episodes combined together, there will be the long story, which start from story begins episode 1 and ends with story ended episode 3. This element must be done via cloud technology, to facilitate data transmission, save time and save budget. The story on cloud technology from many storytellers, provided in Fig. 4.
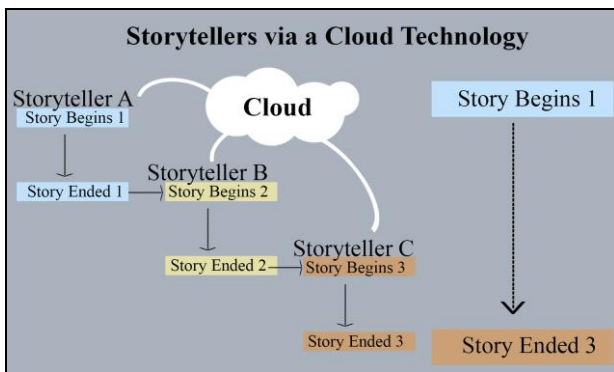

Fig. 4. Storyteller via a cloud technology.

Fifthly, in terms of the Animation Innovation Element, when the full-length animation is created using cloud technology, the storytellers can work together at the same time. This means that the project could finish on time and could limit costs such as traveling expenses, public utilities and wages. In addition, when the animation is created by so many storytellers who used the art of storytelling, it will involve various sub-plots, sub-characters, styles and narrative perspectives. The animation will be the new version of an animation, which can be referred to as animation innovation.

Sixthly, Audience Feedback. When the audiences watch the animation, they will have a response and offer criticism.

This result can be used to improve the storytelling and production work in terms of the Storyteller Element. Shown in Fig. 2.

B. Part 2: Expert Evaluation Results

Six experts, each of whom have at least 5 years' experience in related fields, instrument using the Likert scale showed that all six experts agreed that the model is appropriate at the highest level ($\bar{x} = 4.63$, S.D. = 0.39), elements 1: Storyteller ($\bar{x} = 4.67$, S.D. = 0.52), elements 2: Data Transfer ($\bar{x} = 4.17$, S.D. = 0.41),

elements 3: Story on Cloud ($\bar{x} = 5.00$, S.D. = 0.00), elements 4: Animation Innovation ($\bar{x} = 4.67$, S.D. = 0.52), elements 5: Audiences Feedback. ($\bar{x} = 4.63$, S.D. = 0.39). Shown in Table I.

TABLE I: ARITHMETIC MEAN AND STANDARD DEVIATION RESULTS FROM SIX SPECIALISTS

Elements	$\bar{x}$	S.D.	Suitability
1: Storyteller	4.67	0.52	Highest
2: Data Transfer	4.17	0.41	High
3: Story on Cloud	5.00	0.00	Highest
4: Animation Innovation	4.67	0.52	Highest
5: Audiences Feedback.	4.67	0.52	Highest
Results	4.63	0.39	Highest

C. Part 3: Results of the Innovative Animation

The sample group which created a full-length animation work consisted of 20 second year undergraduate students. An evaluation of the innovation animation was carried out by scoring rubrics, total marks is 15 points. By setting the score criteria that 0-5 points is not an animation innovation, 6-10 points is animation innovation and 11-15 points is a very good animation innovation. The results of the evaluation using the rubrics table was assessed by teachers. The results of the evaluation indicate a very good animation innovation level of success, with 12 points out of a possible 15 points. The results are shown in Table II.

TABLE II: INNOVATIVE ANIMATION RUBRIC TABLE RESULT

Characteristics	3	2	1	0
Production Time Line	Finish earlier	Finish on time	Finish later than scheduled	Not finished
Budget	Below budget	Fit the budget	Slightly over budget	Over budget
Work's artistic	Very good	Good	Average	Poor
Work's creativity	Very good	Good	Average	Poor
Work's quality	Very good	Good	Average	Poor

VII. DISCUSSION AND CONCLUSIONS

The art of storytelling via a cloud technology model to create an animation innovation can be divided into 5 elements; Storyteller, Data Transfer, Story on Cloud, Animation Innovation and Audience Feedback. Six experts agreed that the model is appropriate at the highest level. The results with regard to the evaluation of the animation innovation from the sample group scored at a very good animation innovation level. Which is consistent with the research of Sarnok, K., Wannapiroon, P. and Nilsook, P. [8] they found that using storytelling, can promote creativity and inspiration in work. Also relate with Jantakoon, T., Wannapiroon, P. and Nilsook, P. [9] they found that Digital Storytelling can enhance deeper learning as cognitive and Interpersonal. This was also in accordance with Yoosomboon and Piriyasurawong [10] who found that cloud technology can enhance creative thinking and creative production.

In addition, the animation innovations contained in this research help create work that can help to reduce costs and save time in animation production, and also lead to satisfaction in terms of the work produced. These innovations can be developed for the production of other work.

At the first element storyteller, using techniques for storytelling by taking short stories from many people together. Then creating a new story, it is a technique that makes the story interesting, because it makes the events of the story unpredictable. The author of the story will not be able to guess the ending of another author that brought them together. These made the story more interesting.

The art of storytelling can make the content interesting and it is also an important part of teamwork as well. The art of storytelling can be used to develop teamwork, that everyone can set goals together, which will result in more efficient work, and able to increase the productivity of the work both quantitatively and qualitative.

With cloud technology that can enable everyone to work at the same time, from anywhere and at any time. It is one factor that drives innovation in many areas of the industry, including animation production industry.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Suadarat Srima and Wannaporn Chujitarom are equal contribution. They conceive and design the analysis, collect data, contributed data and analysis tools, performed the analysis and wrote the paper. All authors had approved the final version.

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Suadarat Srima is a lecturer at the Faculty of Education, Suan Sunandha Rajabhat University, Thailand. She was born in Bangkok, Thailand. She graduated Doctor of Philosophy (Ph.D.) in information and communication technology for Education, King Mongkut's University of Technology North Bangkok (KMUTNB) in 2016. Dr. Sudarat Srima's interest is in educational administration, instructional model design and innovation research.

Wannaporn Chujitarom is an assistant professor at the Faculty of Digital Art, Rangsit University, Thailand. She was born in Bangkok, Thailand. She graduated Doctor of Philosophy (Ph.D.) in information and communication technology for education at King Mongkut's University of Technology North Bangkok (KMUTNB) in 2018. He received the master of fine arts program in computer art (M.F.A.) in Rangsit University in 2010, and received the bachelor of fine arts program in computer art (B.F.A.) in Rangsit University in 2008, which is the first class honor. Wannaporn Chujitarom's interest is in animation, augmented reality(AR), instructional model design, digital art and computer art innovation research.