

# NARRATIVE: INNOVATION PROCESS IN THAI UNIVERSITY AND ANIMATION INDUSTRY LINKAGE

PERMSAK SUWANNATAT  
Faculty of Art and Design  
Rangsit University  
permsak2007@gmail.com

ACHARA CHANDRACHAI  
Faculty of Commerce and Accountancy  
Chulalongkorn University  
chandrachai@hotmail.com

PONGPUN ANUNTVORANICH  
Faculty of Architecture  
Chulalongkorn University  
p.idchula@gmail.com

## ABSTRACT

Every academic year, Thai universities have been producing graduate students to industry. In the context of Animation studies, students must present their senior project to committee and obtain their approval for graduating. A number of projects were submitted and many surpass the requirements. Unfortunately, these outstanding projects are simply neglected and that therefore become a waste of valuable resources as these projects can be further developed to commercialize in the industry. However, the linkage of University with the relevant industry does not yet exist.

Qualitative approach was implemented to investigate NPD (New Product Development) process used in Universities i.e. senior projects and review literature regarding NPD process in the Animation industry to identify proper connection between both sectors in hopes to optimising existing resources and strengthening Thailand's Creative Economy.

## INTRODUCTION

Having been experiencing in Visual Communication Design field, it was observed that Animation market was an emerging trend in Thailand. A study from SIPA (Software Industry Promotion Agency) reveals that in 2008 the value of Animation industry has increased by 33% from the previous year. Interestingly, more than half of the

value was contributed by imported content value (rather than domestic production).

From Government perspective, the sector also shows supports to the Creative Economy evidenced by granting a budget of THB 20,000 million for Thailand's Creative Economy promotion (in April 2009). This action was a part of the Second National Economic

Stimulus Scheme aiming to stimulate business and service sector within the creative industry (SIPA, 2010)

From University point of view, there is an opportunity to support and drive market growth by cooperating with the industry directly, that is, to create an innovation process (in a form of conceptual model) that draws out any potential students' senior projects and develop them to be able to commercialize later on.

This study therefore attempts to investigate the existing process of New Product Development in both parties in order to outline an appropriate linkage for future implementation.

## LITERATURE AND THEORY

First of all, it is deemed crucial to study NPD process. PDMA (Product Del-



Figure 1: Stage-Gate process

opment & Management Association) defined NPD as “A disciplined and defined set of tasks and steps that describe the normal means by which a company repetitively converts embryonic ideas into salable products or services.” NPD was found to be a common practice since 1960s and known to be adopted first in firm by Booz, Allen and Hamilton. There are typically six stages in the process for new product development i.e. 1) Exploration 2) Screening 3) Business analysis 4) Development 5) Testing 6) Commercialization. (Griffin, 1997)

One of the most popular models used nowadays namely ‘Stage-Gate’ by Cooper comprises of 5 stages and 5 gates i.e.

Additionally, a theory of University-Industry connections is also important to study. In this respect, ‘Triple Helix’ model suggests a new organizational mechanism that promotes innovation and new business formation in cooperation of University, Industry, and Government (Leydesdroff and Etzkowitz, 2001). For this study, only University and Industry would be the key focussed sectors as a starting point of future connection. Universities could be a decent source of innovation for Animation companies. Firms, therefore, can gain advantage to develop differentiating new product. (Schilling, 2010)

Each sector can take the role of others. For example, University could help a company form an incubator with University facilities. Whilst, Industry can take the role of University by holding a training session, or a workshop for students. Government could help provide funding or facilitate regulatory changes.

This theory was found in line with Schilling’s Collaboration Strategies that grant a number of advantages i.e.

- 1) Enable both parties to employ strengths of each other to fasten production process than developing themselves.

- 2) Once capabilities and resources were shared, firm would be able to reduce asset commitment and yield more flexibility (especially high investment industry).
- 3) Transformation of knowledge between both parties would potentially establish new knowledge that it is hardly possible for individual party to achieve.
- 4) Risk and cost of project are shared.
- 5) Allow firms to have the same standard and cooperate in the commercialization.

Last but not least, innovation process concept was explored to answer the key research objective. Koen (2005) suggested that innovation process includes 3 parts i.e.

- Fuzzy Front End (FFE): defined as ‘those activities that come before the more formal and well-structured NPD process.’ They are likely to be ‘chaotic, unpredictable, and unstructured’
- New Product Development (NPD) Process
- Commercialization

**DATA AND METHODS**

Qualitative approach i.e. in-depth interview with 5 lecturers in Animation field from 5 universities (out of 18 universities offering graduate degree in Animation) and relevant literature review were conducted.

These sample profiles should be able to provide detailed information on existing process based on their experiences. Key area of coverage includes:

- Broad information regarding Animation senior project e.g. number of students, participants, timeline, evaluation etc.
- Detailed process of senior project evaluation
- Existing cooperation of University and industry
- Existing problem/concern from both parties
- Unmet needs
- Assessment of potential linkage of University and Industry

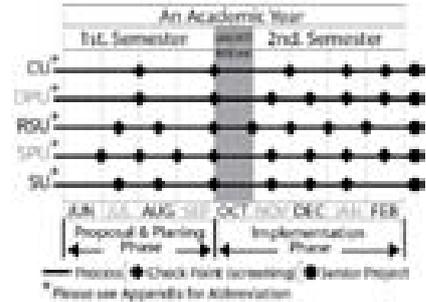


Figure 3: NPD process of senior project among the five universities.

- Area of improvement

**RESULTS**

All five universities offer 4 years undergraduate program. During the fourth year, students have to complete a senior project in order to graduate. At the end of the year, a number of Animation project would be created in a form of computer-generated, 2D hand-drawn, or stop-motion animation.

The findings demonstrate key common ground of NPD process in University both public and private type as following

- Each university will have full-time lecturer(s) who take dual role i.e. teaching and practising in Animation industry (freelancers)
- There’s a clear connection between University and Industry along the process. Practitioners from Animation company would be invited as part of committee i.e. grading, commenting, guiding, even coaching
- Timeline was found similar i.e. two semester to complete the project according to the curriculum
- All qualified project would be exhibited to the public. This is the only existing point of contact with the industry supported by University. Nevertheless, a systematic management was not established just yet.

There are also differences among public and private universities when it comes to NPD process

- Even the timeline is similar but the number of examination or screening varies across all samples i.e. from 5-8 times per academic year. The number of checkpoint (screening) would depend on number of Animation students, and the outlined curriculum.
- Level of involvement from Industry practitioners differs. Most would



Figure 2: Innovation Process

participate in the final examination. Some involve from the beginning stage. Whilst, some partake in every stage throughout the process. The difference is subject to budget allocation and/or timing of both parties.

- It is also found that each university would have different focus on criteria set of evaluation (even the coverage would be more or less the same). For example, Silpakorn University tends to value art direction or aesthetic beauty of animation. Whilst, Chulalongkorn University would highlight more on the creative idea or core concept of animation. Rangsit University and Dhurakij Pundit University put a lot of consideration on market need or trend.

From the diagram, it is a linear process that works through screening phrase after phrase. In each checkpoint, details would be different among universities. But broadly in the first semester, it will have to cover proposal drafting and planning. After the first semester, students will bring their idea to life e.g. developing a character and story, designing a 3D model, or animating the character and so forth. Students would have their advisor and committee supervise until the end of second semester.

In terms of Animation industry, the NPD process refers a process of making a computer-generated (CG) animated film. It was observed that Thai animation firms show tendency to adopt the process used by a leading American animation studio, Disney.

Initially, a group of stakeholders including writers, visual artists, director, and producer would generate possible idea that they could come up with. In broad terms, idea would be rooted from 1) aged-old fairy tales 2) a book adaptation 3) completely original idea. During this beginning stage, the team

would 'explore the who, what, when, where, why, and how of an idea by writing, drawing, discussing, and debating' (Hahn, 2008). The team led by the director and produce would go through gate 1 (Idea screen), stage 1 (Scoping), and gate 2 (second screen). This is considered the most crucial stage. Having a good core idea would yield a promising response from audience. Next, a proper team would be set up and assigned role in developing the animation.

A number of developing steps are concerned in order to make a computer-generated animation.

A story is to be structured (Story structure) by outlining story into three acts i.e. 1) introducing character and their world 2) developing a plot, setting up a problem that character would be involved 3) providing resolution and demonstrating how the character go through all the obstacles and defeat it (undoing of evil, triumph of the good, and the arrival 'home' to a new psychological place, Hahn 2008)

Next step is the pitch when story artist would show their drawn storyboard and tell the story in detail to the team to discuss. This will allow the story artists to take the comments and adjust the board until it is completely worked out for the director.

Editor then would play a role in assembling the story sketches into a timeline, placing a dialogue and ensuring that the continuity of story is there as it was initially envisioned on the storyboards. In the following phase, team will be formed by different role e.g. production designer, art director, visual development artist, the costume designer, animator, and sculptors. These people will be responsible in designing details of the character in every frame.

Then, voice would play role in bringing all the character to life. Voice actor would be involved to do the job.

The crucial stage is to have Modelers to create a three-dimensional digital model of the character and the world they are in to make all the settings and props plausible.

Next step is called 'Cinematography'. Here, cinematographers would adopt tools used in cinema to compose lighting, color, movements to tell the story and work closely with director to plan exactly what audience would see.

Following stages would greatly rely on technology and computer software to fulfil plausibility e.g. hair, fur, plastic texture, fabric, or skin.

After all is built, animator would step in to design gestures and movement of character. The director would cast animator by their expertise.

Peer review would then take place to give critique upon individual scenes of a film to ensure that all makes sense, look for any mistake, suggest any part that can be improved before the director approves the animation to move on to the next step i.e. visual effects.

Visual Effects Animator's role is to create 'feeling of a believable, plausible environment'. They would use computer program to create both natural and unnatural phenomena e.g. explosion, or laser blast.

Up to this phrase, the animation still works under simple lights. In order to make it dimensional and plausible, lighters would work on the final lighting as 'lighting determines not only what audience sees but also what audience feels about what they are seeing.' Finally, all the element i.e. lighting, visual, audio, effects need to be assembled using a number of computers (called 'render farm') to do the composition and rendering due to massive data generation (each second is comprised of twenty-four frame).

## DISCUSSION

In summary, the findings suggested that Universities sector, Animation related program in particular, have also adopted NPD process i.e. senior project of fourth year students. These projects have been closely monitored, adjusted and improved throughout the aforementioned process. Consequently, the quality of work is there to a certain extent. There is a clear opportunity to leverage implementation of those ideas in the Animation market, that therefore, helps facilitate

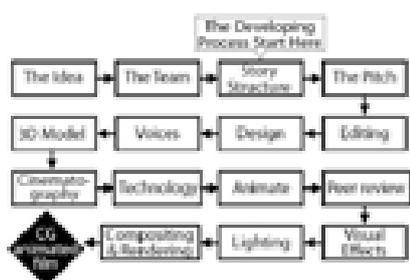


Figure 4: Developing process of animated film



Figure 5: University and Animation Industry Linkage (UAIL) process

faster commercialization by reducing steps, time spent, and cost. While, NPD in animation takes several steps to accomplish an animated film. Fuzzy front end would be more predictable and constructed, which would significantly save time during initial phase (exploring and gather ideas).

This therefore requires intermediaries to carry out the connecting path. This team needs to have a decent knowledge and understanding of both education and Animation field. It is suggested to engage representative from both parties i.e. lecturers in Animation program (Ideally those who are also currently working in the industry) and those in Animation industry i.e. animator, producer, or director (Ideally those are also part-time lecturer in a university)

After team is all set up, process of work could be outlined as follows:

First of all, the team will gather all the idea from the key sources i.e. Animation faculty/school/program by visiting, involving in senior project as a committee or co-advisor, and eventually recruiting some potential works. This stage is called 'DISCOVER' (basically to collect potential idea as much as possible).

Next, the team will work internally with the partners (i.e. Animation companies) to identify their need. This would help a company to save time and resource in order to initiate a new project. Upon full understanding of objective and/or agenda, the team will 'MATCH' the need with relevant idea from the senior project and then propose back to the Animation companies. After the commission, the team will

also act as a consultant (CONSULT) at this starting point. Team will bring together the idea inventor (i.e. students) and the animator to discuss and work on the project. The level of involvement depends on companies and university agreement.

Finally, when roles and direction have been specified upon agreement of both parties. The team will then 'DELIVER' the intended project to the industry in order to develop further in the detailed commercializing process.

The proposed conceptual model would benefit the industry undoubtedly. Once industry connected with universities, it will no longer need to struggle with typical Fuzzy Front Ends. Company will save time and cost for R&D and get to transfer knowledge with universities to gain more interesting new ideas. Universities, conversely, will not be wasting its valuable resource that has been invested on. This will potentially create another opportunity in terms of business value as well. At macro level, this linkage is in line with government's perspective to promote country's creative economy. With the successful linkage, number of imported animated films would be reduced and this would offer a good opportunity for new graduates to contribute to Thai Animation market even better.

#### APPENDIX

CU: Chulalongkorn University (Faculty of Fine and Applied Arts, Creative Arts)

DPU: Dhurakij Pundit University (Faculty of Fine and Applied Arts, Computer Graphic)

RSU: Rangsit University (Faculty of Digital Arts)

SPU: Sripatum University (School of Digital media)

SU: Silpakorn University (Faculty of Information Communication Technology)

#### REFERENCES

Cooper, R. G. (2001) *Winning at New Products Accelerating the Process from Idea to Launch*. New York: Basic Books.

Griffin, A. (1997) 'PDMA Research on New Product Development Practices: Updating Trends and Benchmarking Best Practices'. *Journal of Product Innovation Management*, 14: 429-458.

Hahn, D. (2008) *The Alchemy of Animation Making an Animated Film in the Modern Age*. New York: Disney Editions.

Kahn, Kenneth B. (ED.). (2005) *The PDMA handbook of new product development*. New Jersey: Wiley.

Koen, P. A. (2005) 'The Fuzzy Front End for Incremental, Platform, and Breakthrough Product'. In: Kahn, K. B. ed. *The PDMA handbook of new product development*. New Jersey: Wiley.

Leydesdorff, L. and Etzkowitz, H. (2001) 'The Transformation of University-industry-government Relations'. *Electronic Journal of Sociology*. [Internet] Available from: <http://www.sociology.org/archive.html> [Accessed 10 October 2010].

Schilling, M. A. (2010) *Strategic Management of Technological Innovation*. Singapore: Mc Graw Hill.

Software Industry Promotion Agency (2010) *Thailand's Digital Content Industry 2009 Animation and Game*. Bangkok: Software Industry Promotion Agency.