Toonz**PaperlessWorkflow**

for Toonz**Harlequin**
& Toonz**Bravo!**

Click & Kat Case Study

Company Profile

MatitAnimatA animation studio, active in Roma since 1996, is one of the most established Italian animation studios and has been working on several Italian and European productions, both for television (Felix, Hocus & Lotus, Marco e Gina, GB e W, Lupo Alberto) and cinema (Felix, Opopomoz, Three Wise Men, Der Kleine Eisbar). MatitAnimatA runs also the BDB academy, a professional training center with courses for animators and computer graphic artists.

The studio stepped in the paperless animation production with an animation series for television titled Click & Cat, 26 x 5' episodes for Rai Fiction - Cineteam.

They opted for using Toonz 5.0, because thanks to this choice the production could be made completely in-house with no need to subcontract some production steps such as drawing or animation to external studios.

Traditional vs. Paperless

Initially the production had to follow the traditional approach, but before starting the studio decided to analyze the productivity of the paperless approach as well, as it seemed suitable a series of short episodes with a fixed cast of characters.

The paperless approach resulted more productive than the traditional one, required only 142 man-days against 295 to produce 5 minutes of animation (i.e. the animation required for one episode).

The table below contains the required man-days in the traditional and paperless approach, for each step of the production.

	Traditional	Paperless
Models	10	10
Library	-	10
Layout	40	40

Backgrounds	20	20
Animation	100	50
Drawing Cleanup	100	-
Scan & Digital Cleanup	5	-
Ink & Paint	10	-
Special FX	5	7
Render	5	5
Total	**295 man-days**	**142 man-days**

Paperless Production Figures

Production

Type	Animated series for television
Episodes	26
Episode Running Time	5'
Main characters	4
Average number of minor characters per episode	2
Main locations	10
Average number of location backgrounds per episode	25
Average number of props per episode	64
Average number of character per scene	2

Average number of scenes per episode	60

Reuse Rate

Main and minor characters puppets	100%
Props	10%
Scene animation	10% as they are 80% with minor animation editing
Location backgrounds	20%

Staff

The average number of people working at the production was 18. At the beginning of the production, only the staff involved in episodes storyboard and the building of the library was engaged. In the same way at the end of the production, only the staff involved in episodes layout and animation was engaged.

Some of the staff was involved in preproduction jobs, such as graphic design and storyboard, not requiring the knowledge of the Toonz features; the rest was involved in the actual animation production, such as library definition, scene layout and animation, and actually were Toonz operators.

In the following list you can find the professional roles required for the production and the number of people for each role. The number of people resulting from the list exceeds the total number of the staff,

because some of them had more than one role in the production. For example the layout supervisor was also one of the layout artist.

Note: Professionals always involved with a production project, such as production director or production secretary, are not included in the staff list.

Step	Role	Description	Q.ty
Storyboard	Storyboard Artist	Does storyboard drawings on paper or with Alias Sketchbook	3
	Storyboard Designer	Assembles storyboard drawings with text and notes in Flash	1
Videoboard	Videoboard Operator		1
Library	Draftsman	Draws pencil sketches for characters dope sheets and backgrounds	1
	3d Artist	Creates models for location backgrounds and specific props with 3D software.	2
	Background Artist	Edits rendered backgrounds with Photoshop.	1
	Library Operator	Traces the character and prop from scanned sketches; create puppets and reference animations.	2
Layout	Layout Supervisor	Checks the scene layout created by the layout artists.	1
	Layout Artist	Imports scene elements from the library, and define key animation.	4
Animation	Animation Supervisor	Checks the animation created by the animators.	1
	Animator	Defines and calibrates elements animation from the layout scene.	6

Step	Role	Description	Q.ty
Special FX	Special FX Operator	Adds special FX to the animation scenes.	1
Render	Render Operator	Checks output settings and render out scenes.	1

Production Span

Production lasted 15 months, 3 for preproduction and 12 for episodes production. After the production started, it took 2 months to produce the first episode, followed by a production rate of 2 episodes per month in the first stage of the production (5 months), and 3 episodes per month at full capacity (5 months).
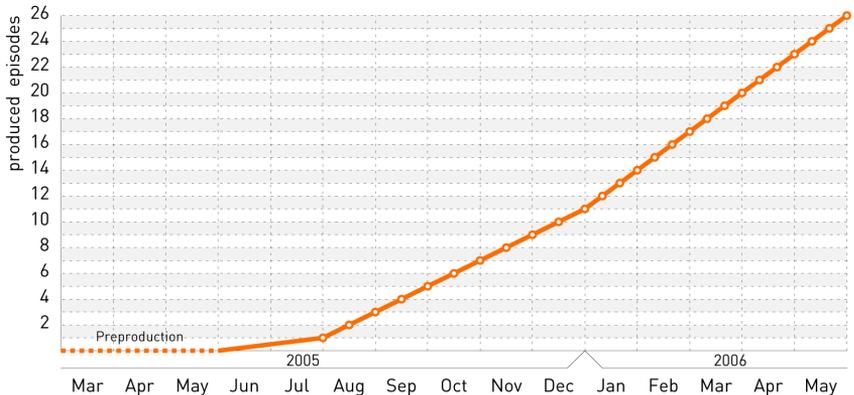

Preproduction	3 months
Production	12 months
Average rate of episodes per month	2.2
Rate of episodes per month at full capacity	3

The staff involved in the actual animation production, such as library definition, scene layout and animation, were Toonz first-time users, and for this reason the production had a ramp-up period.

The production rate increased both because the operators skills increased, and because the library already contained the needed characters and animations that were created for previous episodes.

In the first stage of the production, an episode took a lapse of 50 working days to be completed, where each production step took 10 days. Considering 18 people working on the production in the different steps, it took 8.2 man-months.

At full capacity, an episode took a lapse of 35 working days to be completed, where each production step took 7 days. Considering 18 people working on the production in the different steps, it took 5.7 man-months.
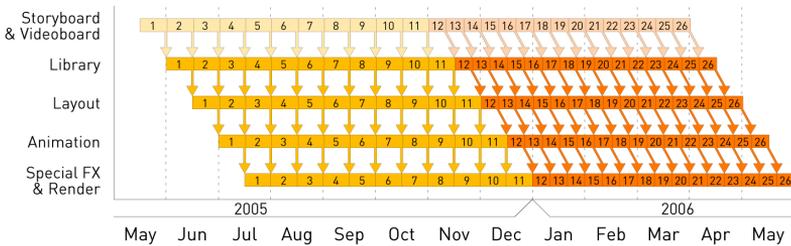
Full Production Span	12 months
Production Span for Each Step	10 months
Average rate of man-months per episode	6.9
Man-months for each episode at full capacity	5.7