

01

How to get started with video mapping.

What is video mapping and how to get started with it - city facades like canvas, bending of reality by audiovisual experience.

02

My name is Petr Šťastný, I have been dealing with video mapping over past seven years and i have completed tens of video mapping projects.

As many of you also I have demoscene background. Demoscene and video mapping are similar thanks to similar genre limitations. Both genres deal with picture and music synchronization and also the search for new and interesting effects.

03

Content

1. **What is it?**
 2. **Process**
 3. **Content**
 4. **Tips & tricks**
 5. **Inspiration**
-

04

What is video mapping?

I will start by asking who has ever seen video mapping show?

- A) So, most of the people know how video mapping looks like.
 - B) Great, so I will have some hints in the end of this presentation where to go to see a good video mapping show.
-

05

Just to sum it up. Video mapping is not much different from classic video projection.

What is important that video is not projected to a clean white surface however the projection surface is very often huge and fragmented, colored or even moving.

To simplify, it is about creation and animation projection fitting the specific projection surface. They might be using better terminology for this type of projection in US - Projection mapping.

The most common video mapping form is a projection on a house facade. However, there are many more surface options for video mapping. For example, projection on commercial products such as cars, shoes or other objects. There is a possibility to project on theater backdrops (VJ performance, or micro mapping). Furthermore, very cool is Dome mapping meaning you can project video on dome-shaped surfaces such as planetarium and cover the picture all around the dome.

Video mapping can be very artistic and abstract - changing a facade of a house, complementing a concert, VJ performance, creative advertising, commercial promotion, educative lecture, or even an interactive game.

Video mapping scenario depends on the event and the event purpose, what is the event content and event main goal and, of course, the area where the event takes place.

06

Let's see a short example...

07

Process

How to start with video mapping

We will show a classical process of a typical video mapping case on a historical building facade

08

The process is following:

First of all, take a frontal photo of the building projecting surface or object you want to video map.

09

Pote fotku vycistite a vyrovnať, a vymaskujete plochy na ktoré sa nebude promítať.

Then, clean up the photo and straighten it up. Mask the surface you don't want to project to.

10, 11

To continue, prepare the lines of main or significant facade elements. Eventually, prepare a 3D building model if you are planning to animate in 3D.

12, 13, 14, 15

Then, the actual work starts and you are working on the content itself, animation, and music, etc.

16, 17, 18, 19

When the animation is ready, prepare the place of projection. To prepare the surface, tape the windows of the building with a white paper, to do so from inside of the building is enough. Install the projector and wait till it gets darker outside.

Then, target precisely the projected picture on the building facade.

Ideally, use a targeting image which might be a grid or the lines of important elements (as I mentioned before).

Correspondingly, you have to fit the details and its sharpness on the building/object.

Depending on the projection software you can either play with the whole projected picture or you can deform the picture by using a net (grid) of points that can be managed (moved) through the surface.

It can take a lot of time to arrive to the desired shape, that is a reason why video mapping is being set a day before the projection itself.

20, 21

At the day and the hour of projection, everything is ready, targeted, tested and spectators are seated.

And you press PLAY!

22

I will press PLAY to play the short example we have seen.

It's a big building and the projection surface was approximately 25 meters long. We hired a company that compounded the picture out four big projectors and supplied high quality sound system.

However, video mapping does not have to be necessarily an expensive project. It can be as big or small project as you want. You can even start with a minimum at home.

Essential is having a computer, cheap projector and tons of free time. That's it.

23

Before we get to projectors. I got three most important things that is crucial to bear in your mind.

24

1. Light

- Light is the main factor for video projection. Light does the job. It is basic to have a light projection surface and at least a bit of dark from outside. A white facade and night video projection is the ideal case, then.
 - Having strong high quality projectors ensures great visibility even with light darkness and on dark medieval masonry.
 - On the picture on top, you can see the graphic animation and how the animation was projected on a grey brick wall.
-

25

2. The projection size

- The bigger surface you want to cover the higher resolution you need to have. With low resolution the pixels could possibly be as big as your head. Subsequently, this issue is also related to growing number of projectors.
 - One projector with resolution VGA placed on the shoe box is enough for interior projection. For the projection we used as an example you could see four big XGA projectors.
 - You can help yourself with optics (lenses) which will magnify the picture or leverage the distance.
-

26

3. Placement of projectors and spectators

- It depends on the area around the object on which we project the video mapping show. Most of the time we should project up front on a building and for sure from the place where the spectators are seated.

- In case of projection on the building you have to look for the best place to place the projectors - it can be a building on the opposite side, however very often forklift trucks are used, or different types of scaffolding.
 - If you are striving for believable 3D effects, to change reality of building facade, it is important prepare an animation under specific angle, so the perspective fits the eye of the spectator who stands in the middle of the crowd.
 - Considering huge and fragmented building surfaces the animation is being tested with office projector and on a small paper model. Testing on paper model is the easiest way how to verify that everything fits the scope and impresses the crowd.
-

27

Projectors

- In general, you have to be interested in the maximum size of the picture and luminosity.
 - Small, household projectors: 1-3k ANSI lumens, VGA resolution, 2-25k CZK
 - Big, professional projectors: 10k ANSI lumens, XGA resolution, FullHD resolution, 50-200k CZK, or more
 - For building projection the requirements for high resolution are higher and that is also why the projection is done by a compound of projectors. In these cases it takes a lot of time to set the video mapping on a building properly, because the pictures have to slightly overlay each other and have similar pixel size, etc.
-

28

Software

- Nowadays, there are a lot of software options starting with apps for tablets ending with robust systems for any video mapping event.
 - Again, it depends on the size of the projection and how much you want to play with the projection
 - I selected couple examples - on tablets, next classic software for VJ, and last but not least robust systems that can manage many types of resources, channels and multi-display projections.
 - You can find updated applications overview on following link
<http://projection-mapping.org/best-projection-mapping-software>
-

29

Content

The most important.

Until now, we were talking about technical aspect of a successful projection. But the most important is to have the content to project. Content is the deal breaker. :)

30

The purpose or your artistic purpose matters to define how the projection will look like. It can be a photo realistic animation or generated geometric chaos.
 It can be a tailored photo realistic animation or generated geometric chaos.

- If you are not able to create all content by yourself there are many already existing video loops (destruction, flower growth, geometric shapes) that might be fitting even building video mapping
- If you are able to animate then it is really just up to your skills and imagination
 - Here you will see on pictures, different video mapping projects from my production experience
 - The most common for me are 2D animations, some 3D, or an artistic abstraction combined with live performances
 - I have seen for example cartoon projection or a video projection when a building facade suddenly changed into human body organs

Where do you create such animations? It is not a purpose of this lecture to describe different apps for animation creation. Basically, any animation editor will do the job, or videos apps such as Adobe After Effects, Blender, 3D Studio, etc) or VJ itself. There are many tutorials for animation and video creation on YouTube.

31

Tips & Tricks

I would be more than happy to share some hacks from my own experience. What impresses the spectators and what they are more likely to react to. I will also mention a business aspect of video mapping.

32

- Light effects and facade destruction is an evergreen
- The demand for micro projections on backdrops (sort of street art) is on the rise
- Interaction is cool - when spectator can influence the projection, this is advanced and increases the level of video projection
- Spectators react well to what they know well - pictures from the places they know, from historical events they are familiar with
- Evergreen is to combine lights with other complementary elements such as lasers, fire, LED screens, live actors, etc.
- Very interesting is projection on water - white surface is replaced by water and projection starts at the moment the water starts running and the picture is projected from behind of the water wall which flips the picture to the front.

If you want to try out bigger projections, it is easy to hire a company which will back up a technical aspect of the projection. From the companies I know it might be: ScreenRental, Borovka, AV media, Quix, nebo treba Lumitrix.

What is the business potential of video mapping?

- Surprisingly still very good
- It has become very popular, there are still many towns that organize great feasts and celebrate anniversaries
- The businesses, and private enterprises like to show off as well and present their services or products by using unusual type of presentation

- Clients understand that they have to pay for the technical aspect of the project on the other hand can hardly understand the amount of hours you can spend with video mapping content creation
 - The simplest is to offer your video mapping services to an agency/group which has video mapping in their services portfolio
-

33

Inspiration

Where to start?

34

Where can you experience different video mapping types and a light show at once? Here is a selection of big events for this year.

- **Signal Festival**
 - Praha
 - 11.-14. 10. 2018
 - www.signalfestival.com
- **Festival Svetla a Tieňa**
 - Banská Bystrica
 - 21.-22. 09. 2018
 - www.svetlo-tien.sk
- **Vary Září**
 - Karlovy Vary
 - 7.-8. 9. 2018
 - varyzari.karlovyvary.cz

List of links for interesting video mapping projections, software, apps, loops, etc.

<https://raist.cz/demobit-videomapping>

35

Thank you for your attention