SCHEMA
KOMPLEXE DOKUMENTE **EINFACH**.

Animation in Technical Writing

Opportunities and Challenges

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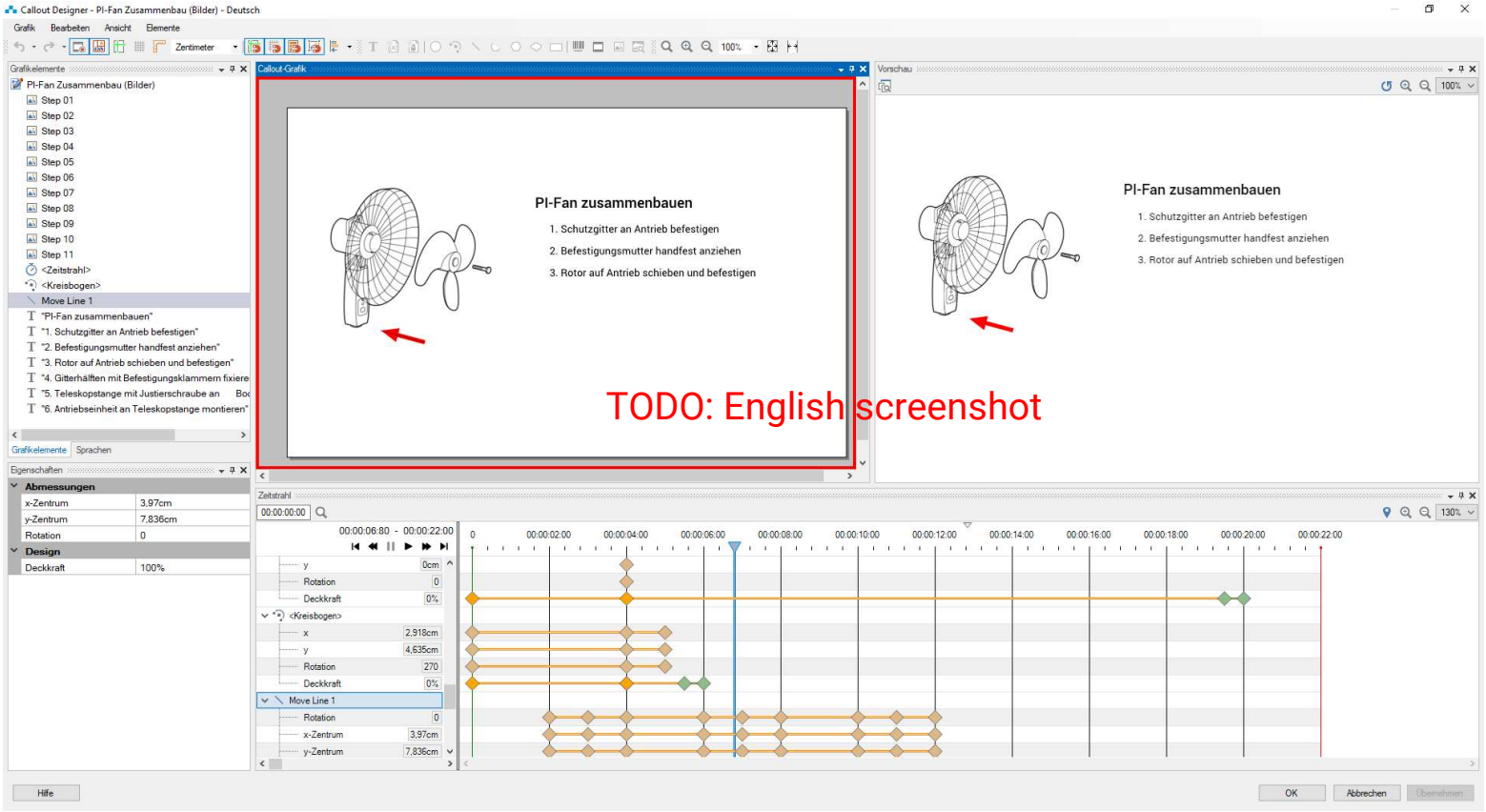
About me

- Matthias Hofmann
- Team Lead @ SCHEMA GmbH
  - Layout generation
  - Publishing pipeline
  - Image processing
- SCHEMA GmbH
  - Based in Nuremberg, Germany
  - Component Content Managment (SCHEMA ST4)
  - Content Delivery (SCHEMA CDS)
  - ~ 600 customers world-wide
    - Core markets: Europe and Japan

Callout Designer / Callout in Motion



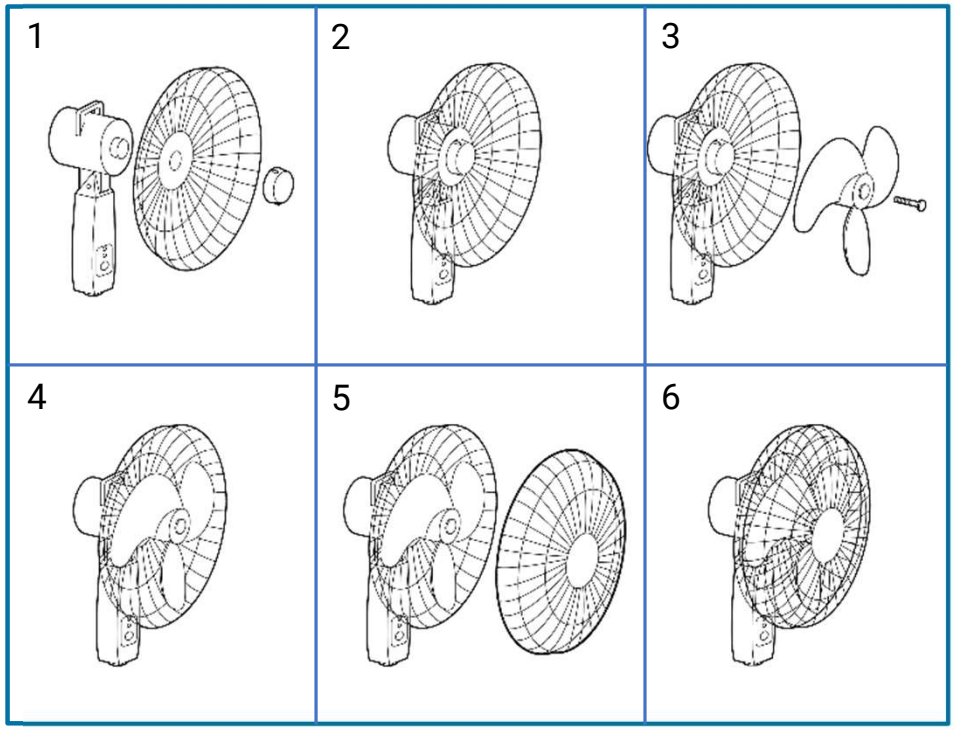
TODO: English screenshot

Classification of content types (1)

Assembling the fan

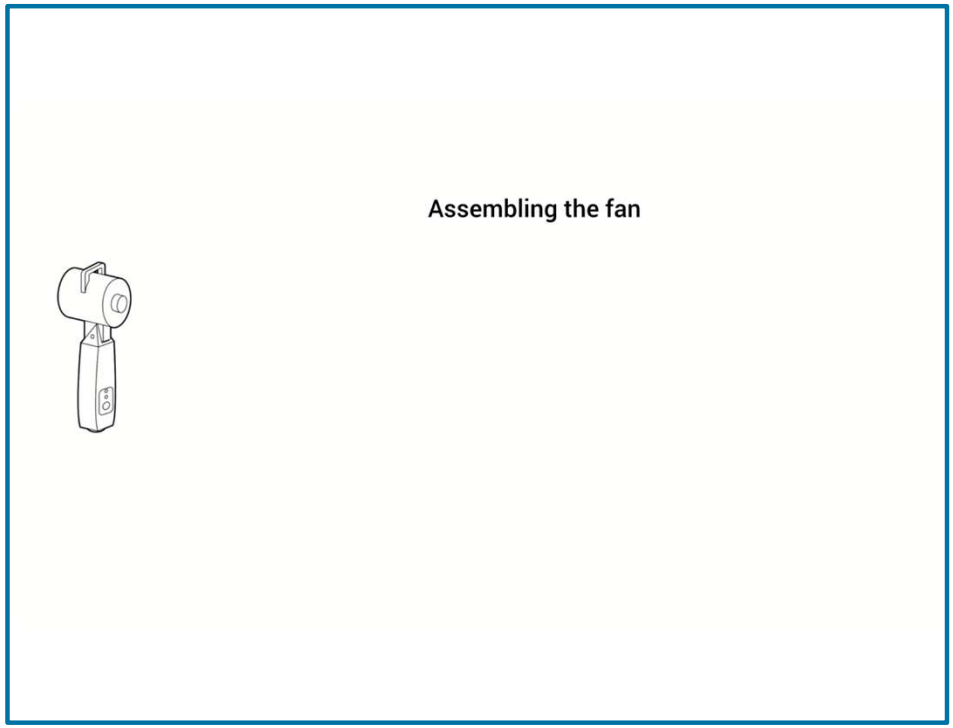
1. Slide the rear safety grille onto the engine unit
2. Screw fastening nut hand tight
3. Push rotor into screw fitting and tighten screw
4. Fix outer rings with fixing clips
5. Fix the adjustment screw onto the telescopic rod
6. Attach the rotor unit to the telescopic rod

Classic documentation (text-driven)



IKEA-style manuals (image only)

Classification of content types (2)



Animation / video

TODO: Image

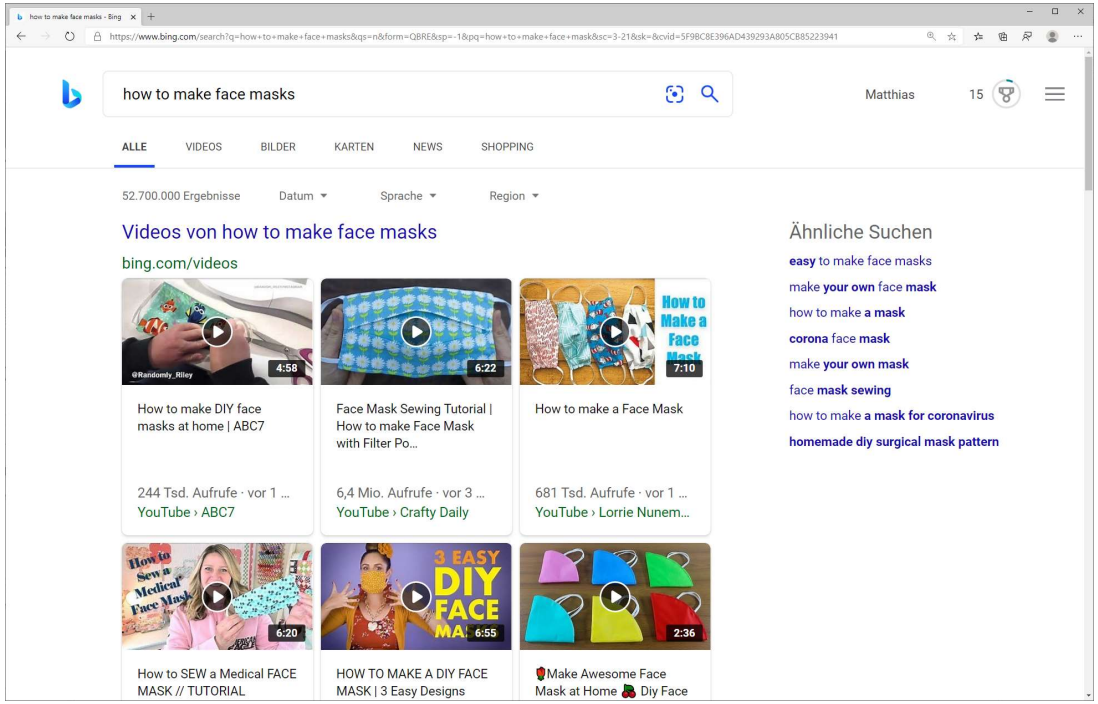
Virtual / Augmented / Mixed Reality

Why use animations?

- Changed user behavior / expectations
  - Video tutorials are everywhere and widely acceptes by users
  - Special platforms (Youtube, Skillshare, Udemy, Pluralsight, …)
  - Established form of learning new skills
- Advantages of animations
  - Better at showing "space" or "movement“ related actions
  - Easy to follow / movement easy to replicate
  - Can show multiple angles or slow motion
- BUT:
  - Feasibility of using animations is dependent on domain and problem
  - Classic documentation (text- or image-based) will not be replaced

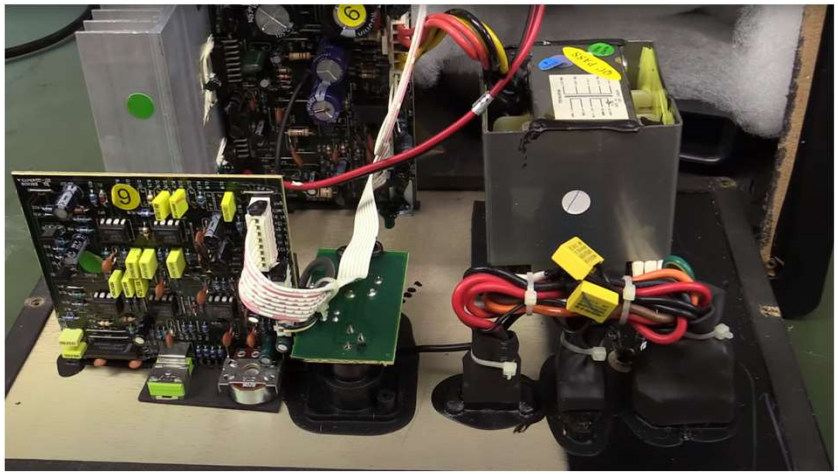
Case study 1: Manufacturing face masks

- Regulation in Bavaria (since April 27th)
  - Wear face mask in shops or public transportation
  - At the beginning: no face masks available
  - Government: “Fabricate your own”
- How to do?
  - Google “how to make face masks”
  - First search results: video tutorials
- Lessons learned
  - Better face mask with tutorial
  - Video tutorials were a lot easier to follow than written tutorials



Case study 2: Move beyond active skillset / knowledge

- Speaker repair
  - Known problem for the series (corrosion of insulation / soot causing loss of signal)
  - Professional repair costs (130€) near price of a new unit (without guaranteed repair)
- My knowledge
  - Basics in electrical engineering
  - Repair way beyond what I could do on my own
  - Repair tutorial on Youtube
- Lessons learned
  - Repair was possible using video tutorial
  - Only investment: 10€ for spare parts and time



Source: EEVblog (https://www.youtube.com/watch?v=dftkoD7LG0A&t=377s)

Case study 3: Professional domain (manufacturing)

- Mechanical engineering company
  - Customers all over the world
  - Machine / equipment used on local sites all over the world
- A few select expert technicians who can do complex maintenance tasks
  - In case of an outage have to travel to the machine to perform maintenance
- Prioritize maintenance task according to
  - Frequency of a part failing (ensure in delivery chain that spare parts are available)
  - Impact of the outage (need for specialist technicians, time to solution, ...)
- Use non-specialized technicians available at the local site
  - Provide prepared video-based instructions
  - Support via specialist technicians via video call or phone

Challenges (1)

- Required specialist knowledge / different skillset
  - Do I need a 3D animator, video editor, voice artist, ...?
  - How to collaborate with another department or external contractor?
  - How to plan animations?
  - Do I need to use audio / music / text-to-speech?
- Management of data
  - How to deal with raw data, finished videos, video project files?
  - What if we must switch external contractors?
- Creating animations
  - When to create animations instead of traditional content?
  - How do I have to reorganize / create my content, so that I can use it for animations?

Challenges (2)

- Integration into workflow and processes of a CCMS
  - Reuse of existing content (i.e. safety instructions)
  - Release mechanics / Workflow
  - Variant management
  - Translation management
- Domain of Technical Communication
  - A lot of variants
  - A lot of supported languages
  - How do I create so many different videos?
  - How do I manage the costs involved?

How to translate images / animations properly? (1)

- Translation as a huge cost factor

Text

- Known and solved problem
- Use content and translation manage-ment system

Images

- Language agnostic images –or–
- Screenshot per language
- Better:
  Use format with separation of text parts and image (SVG, ST4 Callout Image) and translate only text using a TMS

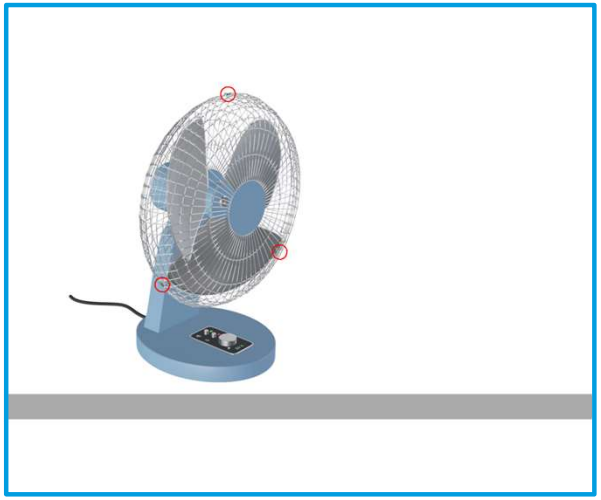
Animation

- Same situation as images
- Additional complexity of dealing with videos
- No real translation tool-chain
- No real format which supports separation of translatable and non-translatable content
- Export and import of texts requires expert knowledge

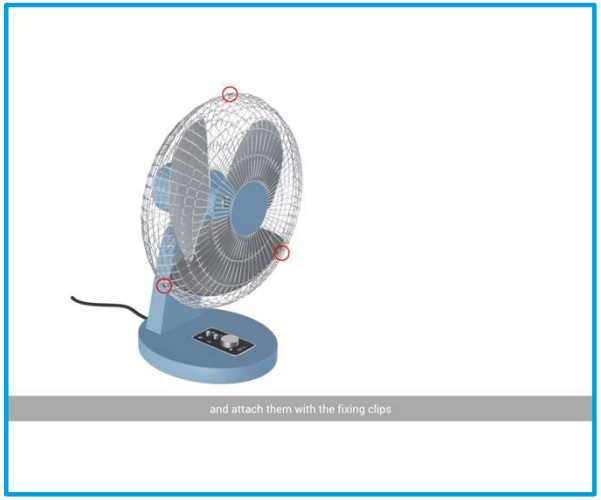
How to translate images / animations properly? (2)

- Separate translatable and non-translatable content

Images / videos



Non-translatable elements
and animation data



Text content

How to translate images / animations properly? (3)

Flexible positioning

Dynamic shrinking of texts

English text
ROBOTO, 10pt

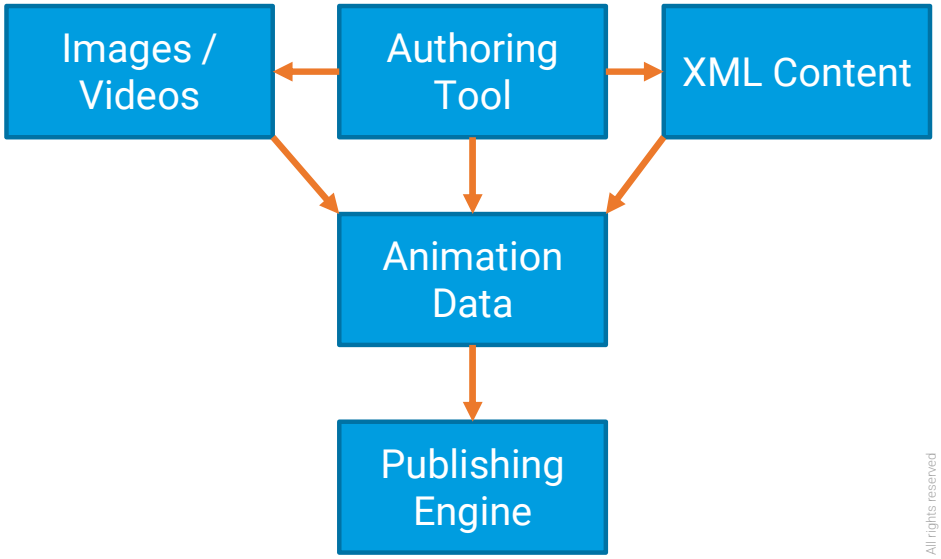
نص عربي
ARABIC TYPESETTING, 13pt

中文文本
MS MINCHO, 12pt

Style switching per language

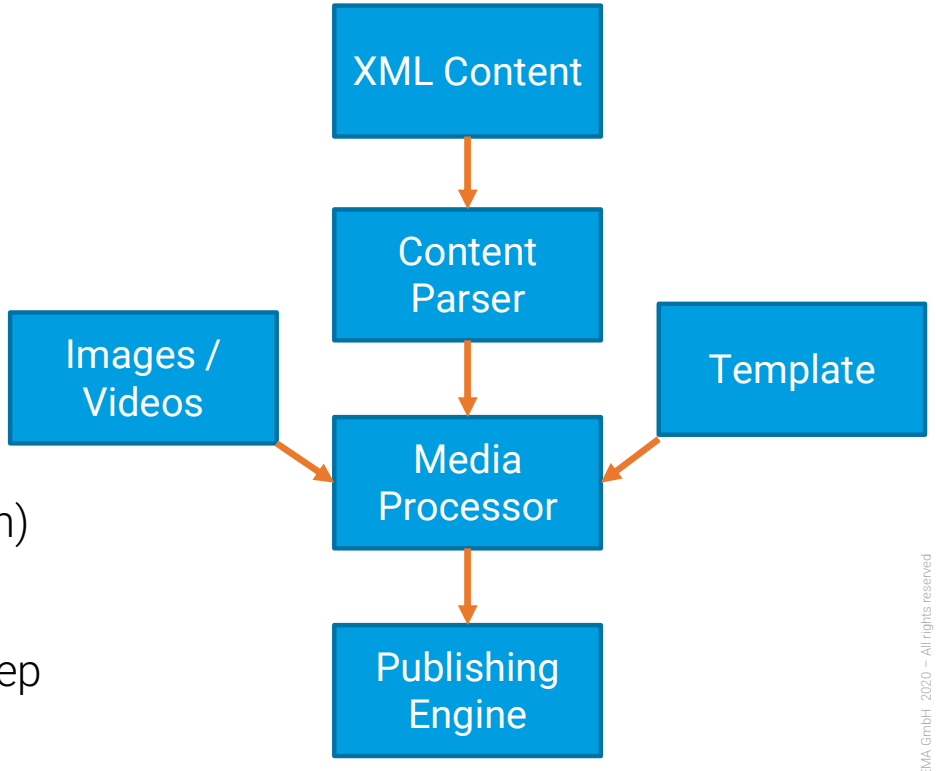
Creating animations using CCMS content (1)

- Top-down approach
  - Create resources in specialized software (Adobe Premiere, Camtasia, Blender, Photoshop, SolidWorks Composer, ...)
  - Create animation in a CCMS provided tool
  - Link contents from CCMS to the animation
  - Chain multiple animation sequences together
- Advantages
  - Degrees of freedom in animation
  - Animation data is created and stays within the CCMS



Creating animations using CCMS content (2)

- Bottom-up approach
  - Start with an (existing) set of procedural instructions
  - Convert procedural instructions into animation using appropriate tooling (and apply variant filtering, conditional texts, ...)
  - Over time enrich each instruction with video instead of image, metadata tailored for animation)
- Advantages
  - Start small and incrementally improve step-by-step
  - Algorithmic approach – less flexibility



Planning animations

- Write a script / screenplay to define the course of actions
  - Which instructions should be illustrated?
  - How long should an instruction be visible?
  - Which images / videos have to be created in advance?
- Define technical parameters
  - Image / video format and dimensions
  - Music / claims / copyrights
- Define workflow
  - Who is involved and in which role
  - Deliverables for each party involved
  - Timeline and production capacity

„Real“ video format as output format – MP4, WebM, …

- Format of choice for video portals like Youtube, Vimeo, Skillshare, Udemy, …
- Third party use (e.g. in Powerpoint slides)
- Drawbacks
  - Rendering videos takes time
  - Needs output to multiple dimensions / resolutions
  - Needs complete re-rendering per variant / language
  - Relatively huge data size (depending on bitrate)
- Possible solutions
  - Use dedicated (cloud-)services for rendering videos
  - Let video portals handle dynamic resolution

HTML-based output for animations

- HTML, CSS, JS, SVG + assets in web-friendly formats
- Plays in every modern browser on every device
- Easy and fast to generate for a plethora of variants and languages
- Relatively small in size (dependent on assets)
  - Lossless (usually no conversion artefacts)
- Can provide additional benefits
  - User interaction (break-points for user interaction, confirmation dialogs)
  - Allows for non-linear content (decision tree, multiple continuations at user interaction)

TODO: Example for user interaction and non-linearity

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