TurningPoint: Narrative-Driven Presentation Planning

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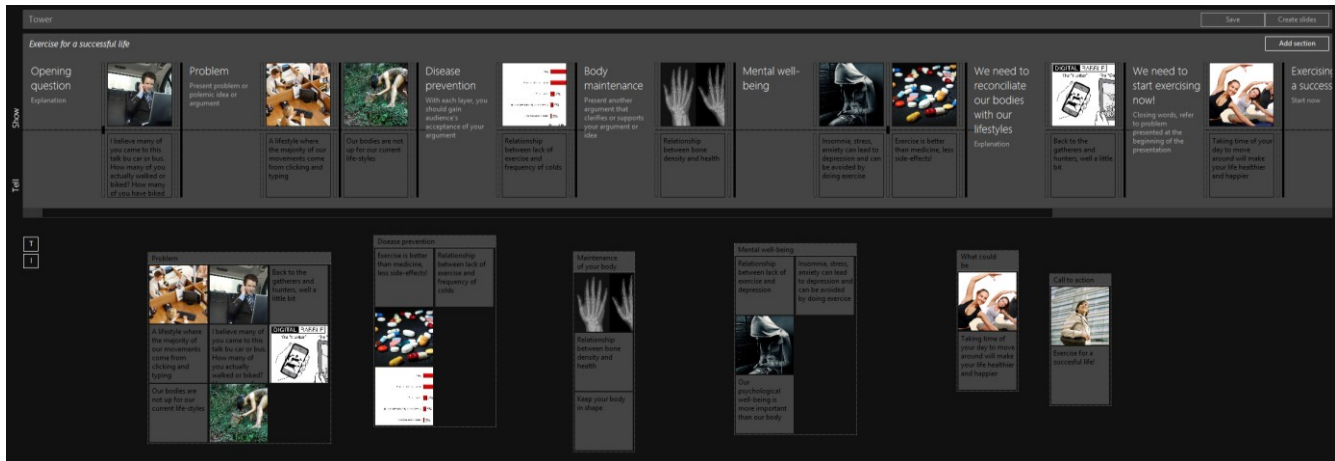lpschetz@ed.ac.uk, koji@microsoft.com, darren.edge@microsoft.com

Figure 1. TurningPoint probe for presentation planning, showing narrative strip (top) and content canvas (bottom)

ABSTRACT
Once upon a time, people told stories unencumbered by slides. What modern presentations gain through visual slide support, however, is often at the expense of storytelling. We present TurningPoint, a probe to investigate the potential use of narrative-driven talk planning in slideware. Our study of TurningPoint reveals a delicate balance between narrative templates focusing author attention in ways that save time, and fixating attention in ways that limit experimentation.

Author Keywords
Slide presentations; narrative templates; storytelling

ACM Classification Keywords
H.5.2. Information interfaces and presentation: User Interfaces

INTRODUCTION & RELATED WORK
It is easy to identify what makes a talk good or bad, but much more difficult to explain what makes a talk great. The "TED Commandments" sent to upcoming speakers at TED [14] offer an insight into the ingredients of a great talk, but the most apparently obvious, "Thou Shalt Tell a Story", is strangely absent from the majority of slide presentations we see today. In contrast, the presentation literature is full of advice to engage in storytelling, since *"it is the story, not the slides that will capture your audience's attention"* [6].

We reviewed ten such books and identified a shift away from slides, software, and visual design to messages, narrative structures, and storytelling (e.g., from [2] to [3] and [11] to [12] respectively). The majority [2, 3, 6, 11, 12, 13, 16] recommend a bottom-up, brainstorming approach to presentation planning, generating as many ideas as possible through divergent thinking. This is followed by the convergent process of filtering and clustering ideas into key messages. The final step before slide creation is to fit this material into one of several *narrative structures* that shape the overall flow of the presentation (e.g., contrasting how things are and how they could be [3]). The converse, top-down approach of generating content to fit a predetermined narrative structure is recommended in two books [1, 9], but the difference is primarily in the ordering of preparation processes rather than the nature of the processes themselves.

Although modern presentation software has evolved in many ways, e.g. by providing new visual paradigms such as 3D environments [5] and zoomable canvases [8, 10], it still fails to differentiate provisional plans and polished presentations. Recent HCI work has identified *telling stories with slides* as a core concern of presenters wanting to "hit the right tones, inspiring, motivational" [4]. The related HyperSlides system generates hyperlinked presentation slides from a structured hierarchy of narrative points, but neither HyperSlides nor any other system offers guidance on how to sequence such points for maximum effect. Within HCI research on narrative and storytelling in general (e.g. [7, 15]), there is also no prior work specifically targeting oral presentations. Based on our analysis of existing literature, systems, and interview transcripts, we therefore developed a probe, TurningPoint, to explore the potential for narrative-driven design in slideware.

PRESENTATION PLANNING IN PRACTICE

To understand presentation planning by real presenters, we reanalyzed 36 transcripts of interviews from prior studies exploring presentation practices in general. Informants (I1-36) had diverse expertise, age, gender, nationality, and background. We discovered three main ways in which actual practices contradicted best practices advised in the literature.

Planning on slides saves time but limits creativity

Many informants open slideware as their first planning step. Some create a text outline first, some create a style first, and several combine the two to create a "prototype" (I5), e.g.:

"I start with the slides that I want to produce – the style, the structure, the title of the slides – then I just start filling it in" (I3)

Others appropriate slides as space in which to draft an overall plan before moving to the prototyping process. Relatively few informants follow advice to "resist the temptation during the initial phase to sit down with presentation software" [3], but there were some mentions of recommend extra-slideware practices such as mindmapping (I1), sketching (I2), and long-term idea collection with paper and digital notes (I6, 7). However, the use of multiple tools incurs transcription costs:

"With my EverNote I start labeling each section [...] then I label each section in PowerPoint, then every time I make changes in EverNote I also make changes in PowerPoint" (I7)

Continuous iteration between collecting, planning, and styling (I4) further encourages the low-cost solution of planning on slides.

Reusing slides saves time but dilutes the message

Informants reported a great reluctance to delete slides, even draft slides representing earlier thoughts and dead ends (I6), because of their potential reuse value. Multiple participants also go to the extreme of creating "megadeck" archives of hundreds of slides that can be hidden or revealed in place or sampled for inclusion in more targeted presentation files (I9). Informants also reported bootstrapping from the last deck:

"I reuse, I take the last one that has everything on it" (I6)

This is justified not only as a way of saving time and being more efficient by "not reinventing the wheel" (I10), but also avoiding the feeling of starting "from a blank sheet" (I11). While convenient, "regurgitating" existing slides in this way weakens the presenter's message whenever the slides do not suit the audience [3] or result in a weak, disconnected flow.

Lack of knowledge limits continual skill development

Various informants were motivated to improve their presentation skills, e.g., by thinking "not about the words but the flow" (I13) and by trying "to do storytelling" (I14). Some informants also identified their own weaknesses, e.g.:

"I see amazing presentations and I'm not there" (I11)

However, knowing how to make such improvements is difficult. While some informants reported judicious use of online videos and articles, very few read presentation books and one believed that only a coach could really help (I3).

Implications for Design Part I

Following our analysis we derived the following guidelines:

1. Support the collection, organization, and reuse of content in slideware, but in a manner independent of slides;
2. Support learning of storytelling forms by providing narrative templates with which to structure content;
3. Support timesaving by quickly generating prototype slides from narrative templates populated with content.

Based on these guidelines, we developed an open-ended technology probe that uses narrative templates to either inspire content generation or fit content already generated.

TURNINGPOINT

TurningPoint, is an add-in for Microsoft PowerPoint that provides a planning environment from which slides can be automatically generated. It comprises two distinct areas.

The content canvas (Figure 1, bottom) is an area in which the user creates sticky-like notes as either images or text. These modular notes can be freely repositioned and dragged into clusters that snap automatically and can be given a label.

The narrative strip (Figure 1, top) supports the sequencing of notes into a narrative structure drawn from the literature and chosen from a menu of templates. The strip is vertically divided into two horizontal streams: show (top) and tell (bottom). In the "show" stream, the user adds notes representing visual content (slide text, images, or descriptions thereof). In the "tell" stream, they add notes representing what they will say verbally to describe and elaborate on that visual content. Dragging a note or cluster to a show or tell placeholder in the narrative strip adds it to the current narrative but preserves the original on the canvas for later editing and reuse. Element text edits are synchronized across canvas and narrative strip, but deletions are localized.

Above the narrative strip is space for the core message of the presentation that should be kept in mind (if known). Each template is also divided horizontally into sections representing the structure of its high-level narrative. Each section includes a description of the target content and guides the user to sequence content accordingly.

We included 6 narrative templates in our TurningPoint probe, adapted from structures proposed in the books of our initial literature review [1, 3, 6, 9, 16]. These templates were:

a) **Ping-Pong**. A repeated *opposition* of two aspects or ideas, e.g., two sides of an argument;
b) **Mystery**. Sets up a *question* or problem that is only resolved towards the end of the presentation;
c) **Melodrama**. A *chronological* account of complications that grow, climax, and resolve among a cast of characters;
d) **Tower**. A logical *progression* that builds up multiple layers of information to support a final conclusion;
e) **Vision**. A repeated *contrast* between how things are and how things could be to share a vision of the future;
f) **Beyond Bullet Points**. An *elaboration* of a set first act through a structured second act to a synthesizing third act.

Once a narrative is created, the user can add markers to define slide boundaries. They can then click a button to generate slides accordingly: within each slide boundary,

content from "show" and "tell" streams is added to the slide and note areas of a new PowerPoint slide respectively. This is a one-way process and requires subsequent slide styling. Users can return to the planning environment at any point to regenerate slides or experiment with different templates. Both canvas and strip content persist across sessions (in the XML of the .pptx file) as well as saved versions of the deck.

USER STUDY

We conducted a formative user study with TurningPoint to investigate how people might come to understand, use, and appropriate narrative templates if they were incorporated into slideware such as PowerPoint.

Data was gathered in single sessions of 4 stages: a semi-structured interview about participants' general presentation practices (10 min); an introduction to TurningPoint (20 min); free use of TurningPoint to create a narrative-driven presentation on "the importance of exercise" (guide time 40 min, actual time 36-82 min, mean time 53 min); and a final semi-structured interview on their experiences of using TurningPoint as well as their thoughts on narrative-driven presentation design in general (20 min).

We recruited 15 participants (6 male and 9 female, ages 18-45, mean 27) of 7 different nationalities, from four organizations working in research and development, sales, marketing, and public relations. All participants give presentations at least once a month and considered them important for their career advancement (half considered presentations to be of critical importance). Self-reported expertise varied from below intermediate (4), via intermediate (2), to above or well above intermediate (9).

Prior Practices

Unlike the informants whose interview transcripts we reviewed in our preliminary analysis of presentation building practices, most participants in this study reported typically starting their planning process outside of slideware. Example tool use included paper (P2, P4, P8, P9, P11), whiteboard (P6, P7), note-taking software (P5), and general text editors (P2, P6, P11, P12, P14, P15). Some still reported going to PowerPoint first to organize their ideas (P1, P3, P10, P13). Three participants (P7, P11, P12) further explained they would go to PowerPoint first if the outcome of the presentation was not especially important.

Findings

We now organize our discussion by the main study findings relating to the order of ideation and template selection, the saving or spending of time with respect to brainstorming, and the focusing but sometimes fixating narrative structures.

Choosing a template before brainstorming saves time by constraining current options for content filling or fitting
Most participants (11 in total) started by choosing a template. One group (P3, P4, P6, P10) had no initial idea of what to include in the presentation and picked the template that seemed the easiest to fill: *"I chose this template because it seemed very easy, I thought if I tried to fill the blanks, very*

likely I would think about a topic I wanted to talk about" (P6). Others chose a template because they perceived a match between the structure of the problem and the structure of the template (P1, P2). These participants (P1, P2, P3, P4, P6, P10) felt that templates reduced the amount of effort necessary to plan a presentation *"it kind of does the work for you"* (P10), *"it's easier than if I try to build the logic myself"* (P4). Another reported reason for choosing a template first was the desire to simply *"try something new"* (P8).

Another group (P5, P11, P13, P14) started the process based on a preconceived idea. They looked for the template that formed the best fit with this idea, then started thinking about the content: *"it's like having a kind of negotiation with the template. I have something in my mind [...] and the template gives me some choices. I will see which one best matches"* (P13). These participants reported that their content would likely be the same regardless of the template chosen, but that the organization would vary: *"at first my thoughts were not 100% logical or not 100% consistent but with the help of the template I kind of rearranged the order of my thoughts so it looks more logical"* (P11). Overall, template-first participants appreciated the ability of templates to guide them through an unfamiliar process and instruct them in the art of crafting a narrative: *"this is educative, this is already a crash course for how to make a presentation better"* (P11).

Participants did not try to modify the structure of the chosen template. When asked about the reasons, most argued that they did not feel like changing it: *"I feel that I'm not really the type of person that really changes templates a lot, like this is the structure and it works and if it is not broke, don't break it"* (P13). Others (P6, P9, P11) said they would change it if necessary, but in this case they preferred to use it as a guide: *"if I have something like a very static story I would change the structure of the section, but in this case it is very comfortable to fill the blanks"* (P6).

The content canvas was still used in the template-first case, but as an area for low-level ideation: *"So this system helps me to not forget the fragmented single ideas, I can just note the single ideas somewhere in here [content canvas]"* (P1). The combination of content canvas and narrative strip also supported fluid reordering of narrative content: *"I like to move things around... It was nice because I didn't have to waste time copying and pasting and retyping and adjusting it again, because it was all in the same area"* (P13). However, two participants totally shunned any use of the content canvas beyond the essential because of the perceived time cost of more divergent thinking and the belief that brainstorming is best conducted as a group activity (P4, P11).

Brainstorming first is a time investment that reduces fixation on the first template tried and increases future options
A much smaller group of participants started by individually 'brainstorming' on the content canvas before selecting a template that best matched their emerging structure (P7, P9, P12, P15). Examples include, *"I was actually surprised that the tower fit what I was thinking, the ideas I was throwing*

around"(P7), and *"I started with the brainstorming, I started like writing random texts and as I was writing the texts I realized what I wanted to do, and what I wanted to do was the Ping-Pong" (P9)*. Only in this brainstorming case did participants change templates during the process (P7, P9, P12): *"I put some things in the brainstorming part and then thought a little bit more... then I fixed the template"* (P12).

The ability to save random thoughts on the content canvas was mentioned by three participants (P7, P9, P12) as an important characteristic of the system: *"the main difference is that this brainstorming area gives more freedom than just PowerPoint which only allows you to put something in front of something else"* (P7). The non-linearity was also seen to be valuable to participants who had adopted a template-first approach to the task: *"when we are writing the script of the presentation in a doc or when we are making the slides of a presentation, we usually start from the introduction and then reason, reason, reason and conclusion. But here is like you can do it in whatever sequence you want"* (P14).

Support for presentation design should carefully integrate narrative templates that elaborate with evolving content
The primary feedback we received regarding the overall system was that it helped participants to keep on track. In some cases "on track" concerned keeping focused on content that really matters for the specific narrative (P7, P8, P9, P11, P12, P14, P15), e.g., *"I think this focuses on the topic... If I weren't using this I would put so many things"* (P12), while in other cases it referred to keeping focused within the given timeframe (P3, P4, P10, P12, P13, P15): *"if I didn't have the tool [...] it definitely would take much longer to already have the idea of the structure here"* (P4). In other cases it referred to keeping focused on the content instead of other features of presentation software (P10, P13), e.g., *"I like it because I'm always messing around... and then I'm just like what have I done, spent like three hours doing that"* (P13).

There are two main ways in which templates kept presenters on track. The first was by providing a high-level overview, e.g., *"I think it is very important to get a big picture... I think in PowerPoint, especially if you have many slides, it is very easy to get lost"* (P14). The second was by providing narrative structures that closely fit the problem or idea.

Among all templates the least popular was the melodrama – it was not chosen by any of the participants for the reason that is was unclear how to tell a character-driven story for the theme of "the importance of exercise". Beyond Bullet Points was chosen only once (P15) and mentioned in several interviews, for being either too long (P7, P14, P15), too typical (P8, P7, P6), or too complex (P13). The Vision template turned out to be the most popular, chosen by five participants, followed by Tower, Ping-Pong and Mystery. Although the templates were explained in the same way to all participants and each one was accompanied by a set of instructions, participants had different interpretations for all of them. Sometimes, when they explained how the narrative related to the template, little of the original logic remained.

IMPLICATIONS FOR DESIGN PART II & CONCLUSION
We have reported on a literature review, interview analysis, probe design, and user study investigating the potential for the narrative-driven design of slide presentations. The main design implication is to be cautious in exposing the full details of a narrative structure at the outset. Templates should be able to elaborate their structure as appropriate for the evolving content matter, in ways that provide initial guidance without being overly prescriptive. With reduced feelings of premature commitment to fine-grained narrative structures, authors may also feel freer to explore alternative templates, without incurring heavy transaction costs that deter the valuable and creative process of narrative experimentation.

Our revised, post-study design implications are therefore:
1. Support the collection, organization, and reuse of content in slideware, but in a manner independent of slides *and only reveal possible narrative structures when there is enough raw material to begin supporting them*;
2. Support learning of storytelling forms by providing narrative templates with which to structure content *and only reveal the next level of narrative structure when it gives an achievable target for the next round of ideation*;
3. Support timesaving by quickly generating prototype slides from narrative templates populated with content *and encourage more time to be spent on experimentation.*

Future work in the form of more naturalistic studies will further develop our understanding of how narrative-driven presentation planning can facilitate content reuse. Controlled comparisons of preparing presentations with and without narrative support will also help us to understand the extent to which such support impacts the final audience experience.

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