

NextSlidePlease: Agile Hyperpresentations

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ABSTRACT

In this video presentation, we introduce *NextSlidePlease*, a novel slide authoring and presentation application. The video begins with a dramatization illustrating the shortcomings of existing slide-ware tools identified through our prior research. We then describe our theoretical framework for addressing these identified problems and present a dramatization of the process by which our *NextSlidePlease* application can be used to overcome such issues in a business context. In addition, we illustrate the novel functional aspects of our application algorithm that enable effective time management and flexible presentations. Finally, we present promising results from two user studies.

Categories and Subject Descriptors

H.5.2 [Information Systems]: User Interfaces; H.5.4 [Information Systems]: Hypertext/Hypermedia

General Terms

Design, Human Factors

Keywords

Slide-Ware, Presentations, Hypermedia, Hyperpresentations, Navigation

1. INTRODUCTION

In this video presentation, we introduce *NextSlidePlease*, a slide presentation (slide-ware) application intended for use in discussion-driven presentation contexts. *NextSlidePlease* is inspired by our research into the efficacy of slide-ware tools such as Microsoft PowerPoint, Apple Keynote, and OpenOffice Impress, in situations where question-and-answer or other discussion is a desired or even central aspect of the presentation [4]. This research, including a web-based survey and a series of semi-structured interviews with business and academic expert users of slide-ware applications, suggests that the linear structure of current slideware applications frustrates presenters' desire to interact with their audience. While slide-ware tools are a critical component of modern business, and are used effectively in countless cases [3], we believe this specific discussion-based context provides room for further development and improvement.

We have developed a novel application called *NextSlidePlease*

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that aims at supporting the reflective preparation, mindful composition and discursive communication of information presentations. The purpose of the presented video is to demonstrate the critical aspects in our work, including our observation of the issues of linear-structured presentations, the key ideas behind the development of *NextSlidePlease*, and the promising results from in-depth user studies.

Video Structure. The video contains three parts. First, we examine the issues of linear-structured presentations. Second, we present the key ideas behind the development of *NextSlidePlease*. Finally, we show how the observed presentation challenges can be overcome through *NextSlidePlease*. The three parts are described in section 2, 3 and 4, respectively. In section 5, we present a conclusion of this work.

2. PRESENTATION CHALLENGES

We examine the inherent problems in linear-structured presentations through two dramatic scenarios exemplifying how existing slide-ware tools do not afford the optimal experience for presenters or audience members. These scenarios focus specifically on presentation navigation and time management.

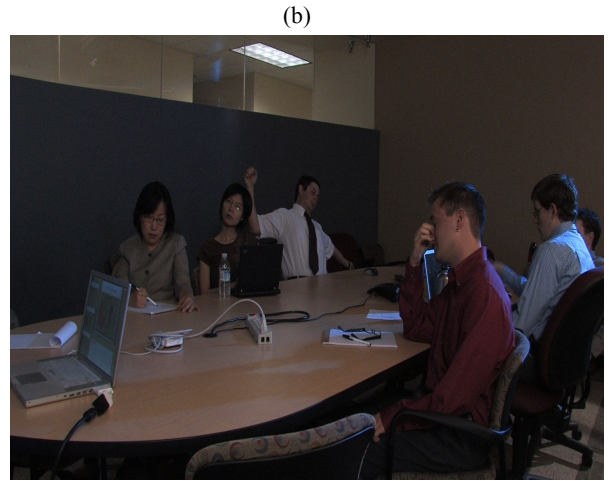
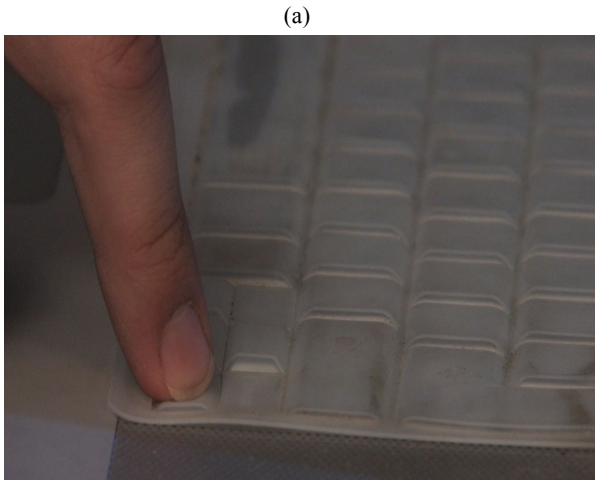
The first dramatized scenario (Figure (a)) addresses the problem of responding dynamically to interruptions or audience questions. The scene depicts the frustrating phenomenon whereby a presenter must flip forward or backward through a presentation in order to locate a slide which responds to a question or unexpected turn in the discussion, consuming valuable time and diminishing the appearance of fluidity in the presentation.

We believe this situation is a consequence of *early linearization* in slide-ware authoring – ideas are rigidly set into a pre-determined linear order in advance of the presentation, when details of the audience's interests may not be fully understood.

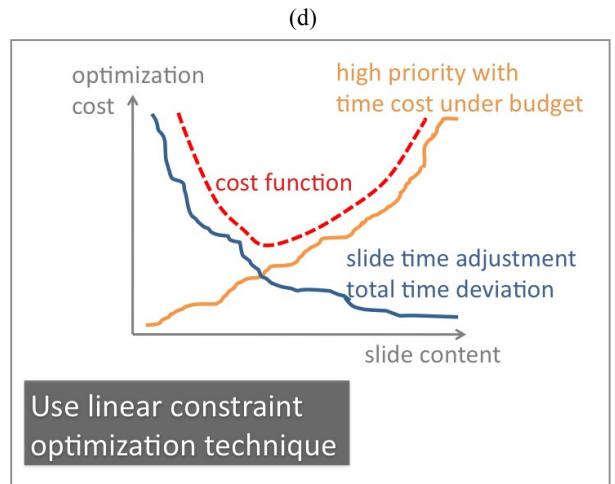
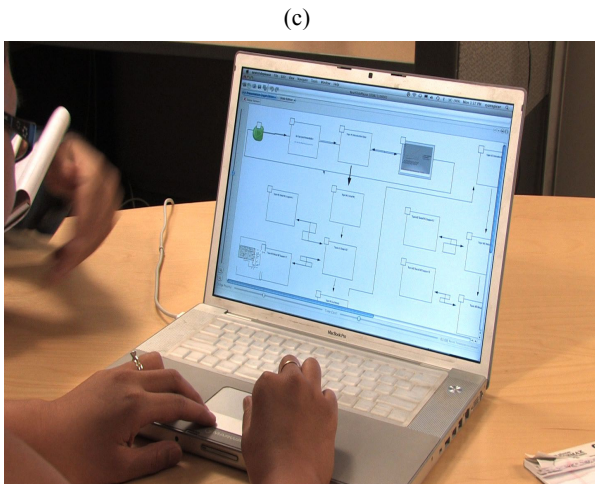
The second scenario (Figure (b)) relates to time management. In many cases, presenters do not adequately rehearse and therefore do not have an accurate understanding of the time required to complete their presentation in a timely manner. This leaves audience members facing interminably long presentations, or potentially constrains the next presenter waiting in line to a much shorter presentation time.

3. Our Approach

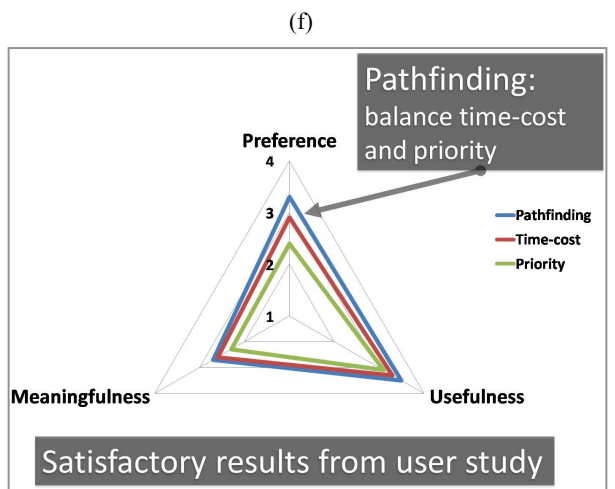
Our approach is introduced in the second part of the video where we describe the key ideas motivating the development of *NextSlidePlease*. Unlike traditional presentations which rigidly fix the content and ordering of presentations at the authoring stage (*early linearization*) the *NextSlidePlease* application is specifically designed for *late linearization*, by offering



Part 1: The issues of linear-structured presentations. This part contains two scenarios for illustrating the issue of presentation navigation (a) and time management (b).



Part 2: The key ideas behind the development of *NextSlidePlease*. This part presents the idea of the “late linearization” enabled by graphical authoring tool (c) and time management function powered by our path-finding algorithm (d).



Part 3: Promising results from user studies. This part illustrates how the identified presentation challenges can be overcome using *NextSlidePlease* (e), with supporting evidence from user study results (f).

Figure: The structure of *NextSlidePlease* video presentation.

computational assistance for time-management and presentation path selection. This approach to presentation authoring asks the author to approach the presentation as a concept map connecting the ideas and concepts on the slides. Prior work resolves non-linear structuring by presenting all potential choices simultaneously as a map or printout [1,2]. *NextSlidePlease*, in contrast, asks the user to identify likely paths between slides during authoring. These potential paths, analogous to hyperlinks, are then presented to the user during the presentation. This constrains path choice to a manageable set of options and limits cognitive load on the presenter.

The late linearization is illustrated in an authoring scenario (Figure (c)) in which a business team uses *NextSlidePlease* to create an agile presentation that anticipates likely questions from the audience, while providing the presenter with enhanced flexibility.

Our research also addresses the time-management challenge. Late linearization further complicates time management because the presentation is no longer a linear sequence of slides that may be carefully rehearsed. To address this issue, we develop a novel algorithm called *path-finding* that uses linear constraint optimization techniques to recommend a tour through the presentation content. This tour must maximize the total user-defined priority of content covered while not exceeding the remaining time allotted for the presentation.

The effectiveness of the late linearization relies on our path-finding algorithm. In this section of the video, we use a narrated animation to visually explain how the algorithm selects an optimal tour through the remaining presentation content based on remaining time (Figure (d)).

3. USER STUDY RESULTS

We have completed two user studies evaluating the *NextSlidePlease* application, the results of which are summarized in other pending publications. In this video, we highlight several salient results from our current research. In a single-blind randomized study of 11 users, participants preferred the linear constraint optimization algorithm to a variant which attempted to minimize time cost of the presentation without regard to content priority, and to a variant which attempted to maximize content priority without regard to time cost.

In an in-depth user test with nine business professionals and academics, users reported excitement with the *NextSlidePlease* interface and concept. These users were asked to provide a previously authored presentation created in a current slide-ware tool, including PowerPoint, Keynote, or Impress, and re-think it using the editing tools provided by *NextSlidePlease*.

The final part of the video demonstrates how identified presentation challenges can be overcome using *NextSlidePlease*. We use a dramatization to illustrate (Figure (e)) how the business team introduced previously might use *NextSlidePlease* to respond in an agile, fluent manner to some of the anticipated audience

feedback. We conclude our video by presenting several promising quotes and usability test diagrams from our user studies (Figure (f)).

4. FUTURE WORK

The prototype application and current results point to several promising directions for future work. The prototype UI offers several promising opportunities for investigating optimal tools to allow users to construct and manipulate graphs, as well as to enable glance-able navigation during the presentation itself. Additionally, results suggest that user experience may be improved if the application assists the user in generating useful paths through existing content. Existing content analysis techniques are currently being applied to this challenge.

Additionally, the application's API is being developed to enable the integration of additional research tools and functionality by interested developers. In one potential application of this framework, we plan to prototype tools to record and annotate a series of presentations of the same material with audio recordings, text annotations, and combine this data with the logging already captured by the application to produce more useful layout advice, or to generate interactive deliverables summarizing the presentation for non-attendees.

5. CONCLUSIONS

This video presentation demonstrates the motivation, design and use of *NextSlidePlease*, a slide-ware application intended for discussion-driven presentation contexts. We describe the challenges presented by certain types of linear slideware applications, our approach to addressing these challenges, and the results of two user studies evaluating our developed application. This video explores one domain in which *NextSlidePlease* proves useful – discussion driven business environments. Current research explores the potential of the application in the domain of educational instruction, and other application areas may be explored in the future including reflection on multimedia collections and ideas.

6. REFERENCES

- [1] L. Good and B. B. Bederson (2002). Zoomable user interfaces as a medium for slide show presentations. *Information Visualization* 1(1): 35--49.
- [2] S. I. Les Nelson, E. R. Pedersen and L. Adams (1999). Palette: a paper interface for giving presentations.
- [3] I. Parker (2001). Absolute PowerPoint: Can a software package edit our thoughts. *The New Yorker*. 77: 76--87,
- [4] R. P. Spicer and A. Kelliher (2009). NextSlidePlease: Improving Slideware User Interfaces for Dynamic Presentations, CHI '09: CHI '09 extended abstracts on Human factors in computing systems,