How Professionals Use Visual Asset Management: An Exploration through Interviews

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Abstract

Visual Asset Management (VAM) is imperative for designers facing challenges in organization and productivity. Designers encounter hurdles in asset management, leading to impeded productivity and collaboration. This paper explores the VAM landscape and challenges through user interviews and literature analysis. Proposed design opportunities, Visual Roadmap History, Streamlined Collaboration Tools, and Efficient Capacity Management offer practical solutions for designers. The implications extend to the broader design process, providing insights and actionable strategies. The paper contributes to bridging gaps in VAMs and enhancing workflows and communication for design professionals.

Keyword

Visual Asset Management, Visual Asset Creation, Collaboration in Design, Workflow Challenges

1. Introduction

A growth in digital asset creation has led to the development of diverse management systems. While programmers handle code efficiently [2, 12], designers often rely on categorizing and assigning distinct names to assets. This practice results in significant data accumulation, potentially impeding storage and productivity with ambiguous files [19].

In the realm of Visual Asset Management (VAM), Adobe offers collecting, grouping, and seamless transition between their software [1]. Unfortunately, these may have limited applications beyond their ecosystem. Researchers have explored how creative practitioners are exploring and integrating new Creativity Support Tools (CST) [21]. A comprehensive literature review has mapped the landscape of digital CST [11]. Still, existing systems lack the flexibility to empower individual design experts to control visual asset versions across various software [20]. In response, researchers have produced applications such as automatically creating clone versions, and detecting file lifecycle events to record complex file events [15, 18, 25].

However, the processes of how designers co-create or share visual assets within VAMs remain obscure. Therefore, our primary goal is to provide a snapshot of the VAM focusing on collaboration. In this paper, we delve into three research questions, addressing the current landscape in a comprehensive visual asset management process, exploring designers' primary challenges in managing and sharing visual assets, and proposing features for integration into visual editing software to assist designers. Through a methodical examination of existing literature and extensive user interviews, we aim to address these questions comprehensively. Our goal is to contribute valuable insights and opportunities to the field of VAM and understand contemporary challenges faced by design professionals. We seek to discuss design opportunities for fostering collaboration and advancing the collective knowledge of asset management in design.

2. Related Work

The Creativity Support Index assesses a specific tool's creativity support level with six factors in a quantitative way [7]. These factors include results worth effort, exploration, and collaboration. Also, researchers claimed that combinations as a divergent process, and iterations positively affect the creativity of concepts [3, 5, 8]. Hence, we concentrate on discussing related works with asset versioning, branching alternatives, and collaborating among the broad range of papers regarding in design process.

2.1 Documentation of Visual Assets

As for novel ways to document the visual assets, D.note brought control flow diagrams with features such as annotation and immediate modification testing [14], and non-linear, node-based revision control for images with user editing operations was also invented [6]. Chronicle enabled users to view the workflow history in a video [13], and the Process Reflection Tool showed an opportunity for web-based cross-project navigation around the design process [9]. GEM-NI, a graph-based tool, supports designers to parallelly explore alternatives in generative designs simultaneously [24]. And Mixplorer helps novices to generate creative designs by mixing alternative options in garden design [17].

2.2 Collaboration in Design Workflow

Research has proven that visualization increases efficiency and conveys or produces ample insights in collaboration [4, 10]. Kaleidoscope deployed a novel documentation tool for a remote interaction design course and implemented expert strategies [23]. For three-dimensional, NCCollab contributed to live collaboration and demonstrated differences between collaborator alternatives in game development [15], and C-Space supports spatial design exploration that integrates reference retrieval and prototyping in augmented reality [22].

3. User Interview

To understand the comprehensive process and specific user requirements throughout the visual design and its collaboration, we recruited professionals for in-depth interviews. Semi-structured (Table 1) based on the factors of the Creativity Support Index [7], interviews were conducted for one hour each online using Zoom from Oct. 26 to Nov 5, 2023.

3.1 Interview participants

We recruited six professionals (4 females, 2 males), aged 23-30 (Mean (*M*) = 25.5, Standard Deviation (*SD*) = 2.43) via word of mouth. Interview participants reported 7.33 years of visual editing software experience (*SD* = 3.88), with different backgrounds related to design (Table 2). P1 and P3 closely work with two-dimensional visual assets, P6 only works in three-dimensional, while the others (P2, P4, P5) work in both ways.

Table 1. Interview Questions

Category	Question
Demographics	Gender, Age, Occupation
Background	Graphics editing software: Years in use, Service name, Experience level
Version	Difficulties in managing file versions, Specific examples, Issue occurrence frequency
Handling	Impact of the issue, Management system usage
Collaborating	Percentage of work done independently versus collaboratively, Challenges in collaborative work

Table 2. Self-reported participant demographics

	Occupation	Years	Software (experienced level)
P1	Graphic designer	10	Photoshop (6), Illustrator (7), Figma (4), XD (5)
P2	Illustrator / 3d Renderer	6	Photoshop (4), Illustrator (4)
P3	Design academy instructor	5	Photoshop (6), Illustrator (3), Figma (2)
P4	3D Motion designer	4	Photoshop (5), After Effects (3), Unreal Engine (6), 3ds Max (6)
P5	Graphic / Set designer	14	Photoshop (6), Illustrator (6), InDesign (5), Premiere Pro (6)
P6	Game level designer	5	Unreal Engine (3), Blender (3)

3.2 Methods

All participants evaluated their level of experience on a 7-point Likert scale for each software in use. On average, they hold a software experience of 4.43 (*SD* = 1.07). Specifically, five have an experience level of 5.4 in Photoshop (*SD* = 0.89), and four participants reported an experience with Illustrator, at the level of 5 (*SD* = 1.83). Additionally, two are experienced in Figma (*M* = 3, *SD* = 1.41), and another two in Unreal Engine (*M* = 4.5, *SD* = 2.12).

After the interviews, we manually transcribed every interview recording into a segmented text format. The thematic coding method was applied to categorize themes of meaning within passages [16]. In total, four are derived from thematic analysis.

3.3 Results

3.3.1 Asset Management Challenges

Capacity Issues. Four participants expressed concerns about large file sizes, impacting storage capacity and overall file organization,

"Dealing with large files … entire workflow is held back by the sheer file size." – P2.

particularly emphasized in collaborative settings.

Version Control Difficulties. Keeping track of various changes and ensuring a seamless workflow emerged as a recurring theme. Five participants mentioned problems searching for different versions or formats once a week (*M* = 0.94, *SD* = 1.02),

"… lost in versions. … confusing multiple iterations, and keeping them organized is a challenge." – P4

Collaboration Complexity. Collaborative efforts introduced complexities in sharing intermediate results, coordinating changes, and organizing files effectively for joint projects.

"Following small changes like color with teammates can be tricky. … need consistency without constant back-and-forth." – P5,

3.3.2 Workflow and Collaboration

Collaboration Strategies. Participants reported varying degrees of sharing work (share:non-share, 7:3 to 9:1), emphasizing methods such as providing PDFs or JPGs for effective communication.

"I mostly work independently, but for feedback, it's essential to have collaborative sessions." – P1

They regularly shared files, with variations in frequency based on the type of content. Messenger tools played a crucial role in communication.

"… heavily relies on Zoom … need to remember everything being talked about or constantly writing …." – P3

Organizational Preferences. The importance of effective file organization was mentioned for streamlined workflows.

"Having a consistent organizational structure is like a roadmap … collaboration smoother and reduces the chances of errors." – P6

3.3.3 Use of Previous Versions and Elements

Importance of Previous Versions. Participants emphasized the importance of maintaining previous versions for client comparisons and backtracking to ensure flexibility in the creative process.

"Clients sometimes want to revisit older versions. That's why I always keep them saved." – P1,

Collaborative Element Usage. When participants needed to use elements from previous versions of collaborators' files, it appeared common. Effective collaboration and asset sharing were highlighted.

"Reusing elements save time and maintain consistency, especially in large projects." – P4

Handling Collaborators' Files. Varied practices were observed in handling collaborators' files like organizing them in different folders, distinct file names, or even nothing.

"Knowing how another person organizes files is key. … integration much smoother … less time searching." – P2

Feedback Integration. P1, P2, and P4 desired feedback integration like comments for specific design parts to be built-in to check the revision process. P6, experienced in the Perforce, appreciated the system, however, reported constant hassle documenting each modification through external tools like Jira or Confluence.

3.3.4 Suggestions for Improvement

Tool Suggestions. Participants recommended enhancements in version control tools, collaborative platforms, and communication methods for more intuitive and user-friendly workflows.

Training and Onboarding. P3 and P6 emphasized the importance of training and onboarding for efficient collaboration to reduce errors, especially for those who are less familiar with specific software.

4. Discussion

Research provided foundational insights into asset management challenges and the practitioner perspective [3, 10]. User interviews further enriched our understanding, capturing nuances in the daily practices of professionals.

4.1 Pain Points of Professionals from Interviews

The interview distilled key pain points faced by design professionals: Capacity issues, version control complexities [5, 8, 9, 11], and challenges in collaboration. Participants expressed the importance of improved file location and effective organizational structures to enhance smooth collaboration. Searching for asset versions and formats emerged as a common hurdle, and pointed out the urgency for more streamlined and efficient asset management systems [19, 20].

4.2 Design Space and Opportunities

We propose the corresponding design opportunities.

Visual Roadmap History. Designers often face challenges in coordinating changes, sharing intermediate results, and organizing files effectively. As researchers and professionals underscored, we encourage future VAMs to indicate interactive documentation from modifications in real-time and relationships between versions and assets in node-based snapshots and mood boards [4, 6, 9, 23]. Also, this will allow coordinating with the collaborator's asset for co-creation and sharing.

Streamlined Collaboration Tools. We recommend feedback integration within VAMs and visual software, facilitating seamless sharing of progress, real-time feedback, and organized joint-project files [15, 22, 23]. Features like in-context comments and annotations from voice-to-text technology aim to reduce the reliance on external platforms.

Efficient Capacity Management. In response, future VAMs should implement tools that assist designers in handling large file sizes. This includes capabilities for automatic file compression, and lightweight version creation, to ensure optimal storage capacity, preventing workflow hindrances caused by the struggle of dealing with large files [18, 19].

These opportunities focus on fostering a system where designers collaborate efficiently within VAMs, minimizing complexities in their workflows.

4.3 Implications and Future Works

The implications of our findings extend to the broader design community, offering insights into the challenges and opportunities. We will develop the practical VAM, implement the proposed design guidelines and features, and evaluate their impact on real-world design processes in the future with user testing. Additionally, the continuous evolution of creative practices necessitates ongoing research to adapt VAMs to emerging needs.

5. Conclusion

This paper navigates the landscape of Visual Asset Management (VAM) along with insights from reference research papers and user interviews. We interpreted this by discovering the challenges faced by professionals. The proposed opportunities aspire to bridge these gaps and offer practical solutions for improved workflows over visual assets.

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