



Virtual Gallery Software Review

Technology in the Arts | <http://www.technologyinthearts.org>

Technology in the Arts explores the intersection of arts management and technology to spark dialogue around the role of technology in our planning and programming, share best practices, and provide training in the use of online tools. Our services include consulting, professional development training, webinars, an online resource directory, monthly podcasts, and a discussion-based blog.

Center for Arts Management and Technology | <http://camt.artsnet.org>

Technology in the Arts is a series of services from the Center for Arts Management and Technology (CAMT), an applied research center at Carnegie Mellon University exploring ways in which arts managers can employ online technologies to more effectively meet their organizational goals and engage audiences.



2009

Virtual Gallery Software Review is registered with the Creative Commons Attribution-Non Derivative Works 3.0 United States License by Carnegie Mellon University's Center for Arts Management and Technology.

Thanks!

CAMT would like to give special thanks to Haebin Kim, Corwin Christie, and Jessica Chuang for their efforts in preparing this report.

INTRODUCTION

The idea of 3D virtual space on the Internet existed before the 1990s, but it was a difficult concept to implement. Development of 3D virtual space was impeded by numerous factors, including limited hardware capabilities, slow Internet connections, and a lack of standards for 3D technology. Over the past decade there have been significant advancements in 3D virtual technology and its application in online games and virtual worlds.

In the visual arts community, 3D virtual technology can be a tool to provide an alternative experience for audiences who cannot physically access artists' or organizations' live exhibitions. Yet the process of creating 3D virtual galleries or exhibitions is often both daunting and costly for artists and organizations. Despite the introduction of software to facilitate the development of 3D virtual environments for conferences, commercial expos, and education, software solutions for creating virtual art exhibitions have been scarce.

To assist artists and arts organizations interested in creating 3D virtual exhibitions, the Center for Arts Management and Technology (CAMT) released this report comparing existing software systems designed to meet the needs of artists and art galleries. This research was initiated by the CUE Art Foundation which sought to find an existing software system that will allow artists to create and display virtual exhibitions easily. For this reason, two of the most important criteria for evaluation were ease of use and user-friendly design. The primacy of these criteria prompted CAMT to exclude Second Life from the analysis due to its steep learning curve for environment creation. Keeping these criteria in mind, CAMT evaluated three specific software solutions - Virtual Galleries, Image Armada, and SceneCaster/3D Scenes - that also contain the following attributes:

- The tool is currently available for commercial use.
- The tool's creators provided a demo version with the researchers could test.
- The tool includes the necessary elements that artists and arts organizations will need to create a virtual exhibit online.

While there are other technologies that meet the latter two requirements, many of them are still in the prototype stage and not ready for commercial usage.

WHAT DID WE LOOK FOR?

We began our research by creating a list of features necessary to make a 3D virtual gallery application useful for artists and arts organizations. The most important requirements are as follows:

Ease of creating exhibition

We sought software that could be used, without coding or programming, to create a virtual art exhibition. The process of creating an exhibition could include a variety of elements, such as creating a 3D gallery space, modifying the walls, uploading and altering image files, adding images to the walls, and more. Our testing focused on the ease with which a new user could undertake the process from start to finish.

We also evaluated features that enhance user-friendliness and ease of use, such as drag-and-drop, auto scaling of images, intuitive menus and function keys, as well as the availability of instructions.

Quality of images

The quality of images in the 3D space is more critical in virtual art exhibitions than other commercial applications. The software should preserve the original image quality even if users resize the images after uploading.

Flexibility of creating exhibition

The experience of creating an exhibition virtually should be analogous to doing so in the real world. Some of the evaluated software tools have lighting options, frame options, wall color options, and the ability to add furniture, doors and windows in the gallery space. Such features enhance users' experience and the realism of virtual exhibitions.

Ease of navigation in the 3D space

Navigating in 3D spaces is not always intuitive. The tools must provide easy and intuitive ways of navigating within the virtual gallery.

Ease of publishing or distributing the gallery

Once finished creating an exhibition, users should be able to publish it on their website or distribute it via email and social networking sites. Viewers should not have to install any software to access the published exhibition.

SOFTWARE REVIEW

virtual gallerie [<http://virtualgallerie.com>]

Virtual Gallerie has two components:

Virtual Gallerie Curator and Virtual Gallerie Walkthrough. VG Curator is the tool for creating a gallery space and adding works, and VG Walkthrough is the free tool for viewing the gallery created by VG Curator. CAMT tested the demo versions of VG Curator and VG Walkthrough.

To run either tool within a Web browser, users must install the Pulse Player plug-in which can be downloaded for free from the Virtual Gallerie website. Installation of the plug-in is both quick and seamless.

Creating a 3D space with images:

CAMT could not test the features that are not available in the Demo (or "Lite") Version of VG Curator. These features include creating a gallery space from scratch, the Advanced Version ability to import AutoCAD¹ files to generate 3D gallery space, and others explained in the Versions & Prices table on page 6. CAMT was, however, able to test many other useful features of VG Curator.

Adding image files to the walls from within the system is easy. Users simply drag and drop the image to any place on any wall. Users can change the width, height, and depth (for sculptures) of the work by selecting an image and typing new dimensions. Users can scale an image so that both width and height change as they drag it in or out (this feature is unavailable in the "Lite" version).

VG Curator provides many features to customize the gallery space and environment. For example, users can set up new partitions in an existing gallery space and change the colors of walls. Users can also select a frame and matte size and color for each artwork.

In addition to 2D images, VG Curator has the pability of adding 3D works such as sculpture, although to do so users must either pay Virtual Gallerie to create 3D models of artworks or create the models themselves

by using 3DS Max², Maya³, or AutoCAD. (This feature is only available in the Advanced Version.) If choosing the latter, Virtual Gallerie charges a minimal fee to import those files. With 3D artwork, users can choose among pedestal options for individual sculptures and rotate the sculpture to a customized position.

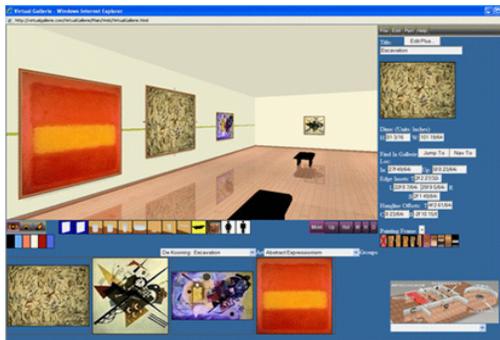


Figure 1 Virtual Gallerie Curator screen shot

Navigating in 3D space:

Using the free tool VG Walkthrough, users can navigate within the gallery space created with VG Curator. Unfortunately, gallery presentation and navigation were less user-friendly than gallery creation. Viewers must use both a mouse and arrow keys in order to navigate in all possible ways. The quality of image is determined by the original resolution of the imported image, therefore users should make sure their image files have a high resolution images to retain quality after importing.

By clicking on a piece of artwork, viewers can see detailed information for the item. There were options for individual audio and video guides for each piece, and an option for a museum store, but CAMT was unable to use these. Presumably these features are available in higher-end versions of the product.

While CAMT found that VG Curator provides the most useful features for creating art exhibitions among programs tested, it may take a while for creators to become truly comfortable with VG Curator due to its less user-friendly and intuitive interface.

The most important difference between the basic version and the advanced version is the capability of importing AutoCAD files.

This price estimate is based on an assumption that clients will host all user-created exhibitions on their own server. There is an additional hosting charge for Virtual Gallerie to host the exhibitions on its server.

1 AutoCAD is a CAD (Computer Aided Design or Computer Aided Drafting) software application for 2D and 3D design and drafting, developed and sold by Autodesk, Inc. AutoCAD currently runs exclusively on Microsoft Windows desktop operating systems.

2 Autodesk 3DS Max, formerly 3D Studio MAX, is a modeling, animation and rendering package developed by Autodesk Media and Entertainment.

3 Autodesk Maya is a high-end 3D computer graphics and 3D modeling software package originally developed by Alias Systems Corporation, but now owned by Autodesk as part of the Media and Entertainment division.

technical requirements		
	Windows PC	Mac
Operating System	98 / ME / NT 4.0 SP6 / 2000 / XP / Vista	OS X
Web Browser	Internet Explorer 6.x Firefox 2.x	Firefox 2.x Safari 3.x
Software	QuickTime Player/ Windows Media	QuickTime Player
Hardware Requirements	Pentium 233 Mhz, 32MB RAM	Mac G3/350MHz, 128MB RAM
Resolution	1024 x 768 Resolution (can be designed for 800 x 600 as well)	
Supported 3D hardware Acceleration	Direct3D	OpenGL v1.2 3D
Ideal Settings	1280 x 1024 Resolution 3D Graphics Card 64MB Video RAM	

versions

List of Features	Lite*	Basic	Advanced
Create a new gallery from scratch		●	●
Open/Save/Create a gallery (using existing templates)	●	●	●
Import/Load/Save a DXF gallery			●
Load images	●	●	●
Load works update		●	●
Scale an image by dragging it	●	●	●
Edit player size	●	●	●
Edit wall paint	●	●	●
Edit frames	●	●	●
Edit floor and ceiling	●	●	●
Edit artists	●	●	●
Load/Record walkthrough	●	●	●
Collect local images		●	●
Make screen grabs		●	●
Costs estimating feature (materials, construction, and labor)			●

* The demo version contains all of the functionality available in the "Lite" version.

prices

		Lite	Basic	Advanced
Software price	1st year only	\$2000	\$2500	\$5000
Installation and Training	1st year only	\$500	\$500	\$500
Account and Technical Support	1st year only . After the 1st year, can be purchased on either an hourly or annual basis.	\$500	\$500	\$500
Annual software license for internal use (Curation)	Annual fee. Can be purchased as a long-term (up to 5 years) basis with discount.	\$500	\$500	\$500
Annual software license for external use (Web publishing)	Annual fee. Can be purchased as a long-term (up to 5 years) basis with discount.	\$250	\$250	\$250
Total		\$3750	\$4250	\$6750

image armada [<http://www.tangent3d.co.uk/armada/home/home.php>]

Image Armada has three versions – Image Armada Freeware, Image Armada Professional and Image Armada Creator, all of which include a free viewer tool. CAMT tested the Image Armada Freeware version, which lacks some features found within the Professional and Creator versions. The list of features available in each version is included in Versions & Prices section on page 8.

Image Armada is a stand-alone software product which must be downloaded from the web site and installed on the user's computer.

Creating 3D space with images:

The space templates available in Image Armada cannot be modified, so users must select a software-provided template and add images to pre-defined spots. If users want to create templates, the Creator version has the capability of importing Autodesk 3DS Max files and converting them into the Image Armada format.

Except for the ability to customize image placement, Image Armada provides almost that the same features that Virtual Gallerie does. An additional, notable feature of Image Armada is lighting: users can modify the lighting settings for each piece as well as for the entire space.

A gallery template can be saved and retrieved for modification at any time. Users can save the template in CD/DVD format or in the .exe file format. The CD/DVD option creates a folder containing the viewer program and the gallery files that can then be saved to a CD/DVD. The file option creates an EXE file which can be run on any computer. Viewers do not need to install the viewer program, but save the EXE file on their computer and simply open it to walk through the gallery. Currently, there is no option for viewing the gallery within a Web browser.

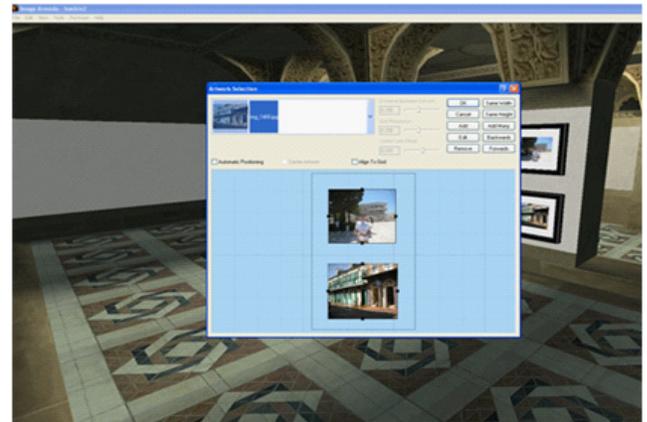


Figure 2. Image Armada – Resizing images



Figure 3. Image Armada – Full screen view

Navigating in 3D space:

The viewing experience in Image Armada is better than Virtual Gallerie. Navigation is easy and the 3D graphic quality is more refined. Users can navigate the space by using a mouse and the Shift key, or they may also use the arrow keys. Image Armada provides an experience much like walking within the environment of a video game and presents a stronger 3D experience than Virtual Gallerie. One notable drawback is that, due to the stronger 3D quality, Image Armada requires higher quality hardware than Virtual Gallerie - sometimes the software crashes on computers with low memory (less than 514MB).

Like Virtual Gallerie, the image quality is still dependent on original image resolution. CAMT tested uploading the same image using both tools, and Image Armada showed the slightly better image quality than Virtual Gallerie.

versions and pricing

	Freeware	Professional	Creator
File import/export - 3D Studio Max file			●
Gallery lighting - add/edit/delete light		●	●
Floor texture		●	●
Ceiling color		●	●
Add URL/Email to each image		●	●
Add audio/background music to each image		●	●
Use watermark		●	●
Software Pricing	Free	£10.00 (approx. US \$15)	£ 22.00 (approx. US \$35)

The only difference between the Professional and Creator versions is the capability of importing 3DS Max files.

Image Armada provides technical support via email or the forum on their web site where users can post questions.

technical requirements

	Windows PC	Mac
Operating System	Windows 98 / Me / 2000 / XP / Vista	Not Supported
Hardware Requirements	1000Mhz CPU 128MB RAM 30MB Free Hard Disk Space DirectX 9.0c or above	
Video Hardware	32MB 3D Graphics Card with "Hardware Transform and Lighting" capability (HT&L)	



Figure 4. 3D Scenes - Full screen view

scenecaster / 3d scene

[<http://www.scenecaster.com>]

SceneCaster started as a 3D social media application on Facebook, wherein users can create 3D spaces, decorate them with 3D objects, and share their creations with other people. 3D Scenes uses the same technology as SceneCaster, but it is specifically designed for creation, personalization and sharing of 3D photo and video slideshows.

Both applications are currently available for free (exclusively through Facebook), but commercial licensing for a stand-alone application is possible. To run SceneCaster within a browser, a user must do a one-time plug-in installation. To create spaces with 3D Scenes, however, the user is not required to install any plug-in.

Creating 3D space with images:

Creating a new space from scratch in SceneCaster is very easy. Users can draw walls, add windows and doors, change the wall colors and textures, and add SceneCaster-conceived 3D objects anywhere within the space by using drag and drop. Users also can create 3D objects using Autodesk 3D Studio Max, Maya or other 3D packages like Blender and Google SketchUp and import them into SceneCaster and 3D Scene. Because it is not designed specifically to create galleries, however, SceneCaster's functionalities are quite limited in terms of displaying and resizing images.

For users who want to simply add images to a virtual 3D space, 3D Scenes has better, though still limited, features than SceneCaster. Users must upload the desired images to Facebook or a photo sharing site (such as Flickr or Google Photos), before adding those images to pre-determined spots within 3D Scene. After the 3D scene has been saved, it can then be shared with other Facebook users, via email (by generating a link), or embedded within web pages (by generating an embed code).

Navigating in 3D space:

Navigating within 3D Scenes and SceneCaster is very easy and may be done entirely with a mouse. Users can see a larger view of each image by clicking on it, and a full screen view is also available with better image quality than that of Virtual Gallerie and Image Armada.

One major limitation of these tools is that users cannot walk through the space as they can in Virtual Gallerie and Image Armada. Views in SceneCaster and 3D Scenes are from cameras that are set up in different corners of the space, and users can view the scene from only one camera at a time. In order to view the entire scene, viewers will need to select different camera views in succession. 3D Scenes, however, has an embedded slideshow function so that users can view all the pictures in the scene by pressing the slideshow button.

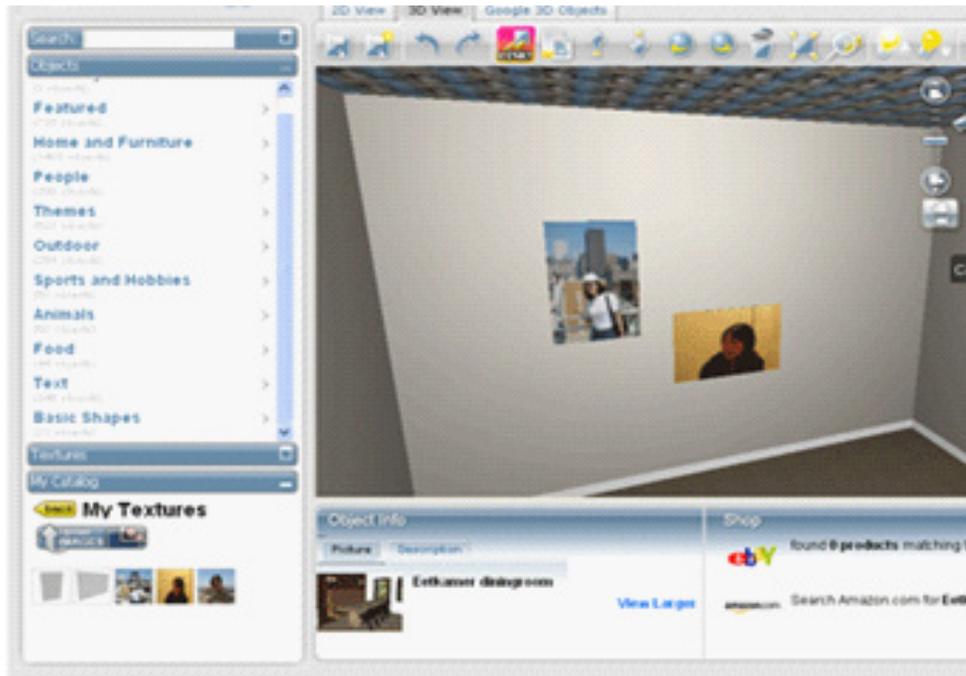


Figure 5. SceneCaster - Creating a scene

Pricing & Information for SceneCaster and 3D Scenes :

SceneCaster and 3D Scenes are free on Facebook. According to the phone conversation with SceneCaster, customization and a stand-alone version of SceneCaster technology is about \$10,000; however, this may change based depending on the level of customization.

technical requirements

	Windows PC	Mac
Operating System	XP / Vista	OS X
Web Browser	Internet Explorer 7.x Firefox 2.x	Firefox 2.x Safari 3.x
Software	Flash 8+ player	
Hardware Requirements	Pentium 4 2.8 GHz or equivalent other CPU 256 MB RAM	

Currently SceneCaster only works on Windows platform, but a Mac solution is planned to come out within next 6 months. 3D Scenes works on both platforms.

Comparison Chart

✓ – available x – not available

Platforms/Software	Virtual Gallerie	Image Armada	SceneCaster/3D Scenes
Windows	98, ME, NT 4.0 SP6, 2000, XP, Vista	98, Me, 2000, XP, Vista	XP, Vista
Mac	OS X	N/A	OS X (3D Scene)
Browsers	Windows - IE 6.x, Firefox 2.x, Mozilla 1.x, Mac - Firefox 2.x, Safari 3.x, Mozilla 1.x	No need	IE 7.x, Firefox 2.x
Run on Web browsers	✓	No	✓
Software type	Plug-in	Stand-alone	Plug-in (SceneCaster)
Required software/hardware	3D Graphics Card	DirectX 9.0c or above, 3D Graphics Card	Flash 8+ player
Creating Gallery	Virtual Gallerie	Image Armada	SceneCaster/3D Scenes
Create space from scratch	X	X	✓
Add/edit partitions	✓	X	✓
Change wall colors	✓	X	✓
Change wall texture	✓	X	✓
Upload image files	✓	✓	✓
Add images to any place in the space	✓	X	✓
Resize images	✓	✓	X
Constrain proportion of images	X	✓	X
Add/edit image info - description, artist	✓	✓	X
Add/edit frames and matte	✓	✓	X
Add/edit lighting	X	✓	X
Add audio	✓	✓	X
Add 3D objects (sculpture)	✓	X	✓
Importing 3D models	✓ (DXF)	✓ (FBX)	✓ (Google 3D)
Save gallery as	local file	local file	Web
Form interface/user-friendliness	poor	good	very good
Accepted file types	jpg	bmp, jpg, png, tga	jpg
Navigating in Gallery	Virtual Gallerie	Image Armada	SceneCaster/3D Scenes
Use mouse	✓	✓	✓
Use keyboard	✓	✓	X
Use custom buttons on the screen	X	X	✓
Navigate all the space	✓	✓	X
Real 3D experience (physics, obstacles)	X	✓	X
Full screen view	✓	✓	✓
Large view of images	✓	✓	✓
Quality of image	Depends on the resolution of original image files		
Quality of 3D graphics of space	*	***	**

The number of * indicates relative score among these three tools.

Price (estimate)	Virtual Gallerie	Image Armada	SceneCaster/3D Scenes
Software	\$2,000 - \$5,000	\$35	Free
Installation & Training	\$500	Depends on customization	\$10,000 (Depends on customization)
Support	\$500		
Annual License	\$750		
Total	\$3,750 - \$6,250	\$35 +	+ \$10,000

RECOMMENDATIONS

All three software tools we reviewed have unique advantages and disadvantages, and choosing one over the others can be very tricky. To select the right tool for you, you have to understand your needs and situation. You can compare the three tools by using the comparison chart, but it may be difficult to look through all of the features on the list and determine the best tool for you.

For that reason, we have provided a few scenarios and recommended the best tool for each scenario.

1. You have the budget of \$3,000 or more, and want software that runs on both PC and Mac.

Among the three tools, Virtual Gallerie is the only one that supports both PC and Mac. If Mac compatibility is a non-negotiable requirement, you should choose Virtual Gallerie.

2. You have no or very little budget, and you don't really care if the software is web-based or not. You want to use software to create your own virtual exhibition and distribute in more traditional ways such as CD-ROM or link on the web site.

Image Armada is the best tool in this situation. It is not as flexible as Virtual Gallerie or SceneCaster for creating and modifying a 3D space, but the quality and reality of the 3D space is superior. If you have a very tight budget, but want to create virtual3D exhibitions, Image Armada is your choice.

3. You want to create simple 3D spaces to display your image files and share them easily with other people online.

SceneCaster/3D Scene is probably the easiest tool to use among three. Although it lacks the capability of modifying images and adding detailed information about the work, you can easily create your own 3D space and add images wherever you want within it. This is a good tool to share your work (especially over Facebook) in an online 3D environment.

During our research, we found that all three software vendors are willing to customize their tools (for additional fees) to meet clients' needs. If none of them is right for you out of the box, one of them may be a good fit with customization.

If you decide that you want to develop a virtual exhibition, we recommend you follow these steps:

- Create a prioritized list of requirements you have for the ideal tool.
- Compare this list with the comparison chart on page 8 to determine how much customization each tool would require.
- Send the three companies a Request for Quote (RFQ) based upon the prioritized list of requirements.
- Compare the vendor quotes to see which company will be able to provide the most ideal tool in an affordable and timely manner.

NOTES

At the time of publication, none of these tools provides solutions for a multi-user environment. If you want to let multiple artists work in the same gallery space, there should be a login mechanism built into the system. This would require custom development that may incur additional costs.

APPENDIX: VENDOR INFORMATION

virtural gallerie

Year Founded

2004

Location

San Francisco, CA

Contact

Jordan Klineman, Founder & President
 Phone (415) 288-8645
 Fax (415) 365-1940
 jordan@virtualgallerie.com

image amada

Year Founded

2006

Location

UK

Contact

george@tangent3d.co.uk

scenecaster/ 3D scene

Year Founded

2007

Location

Richmond Hill, Ontartario

Email

Email General: contactus@scenecaster.com
 Business development: bizdev@scenecaster.com
 Marketing: marketing@scenecaster.com

Address

SceneCaster
 111 Granton Drive, Suite 210
 Richmond Hill, ON
 L4B 1L5

Number

Phone: (905) 695-3470
 Fax: (905) 731-9674