

August 2016

236	149	245	118	252	93	86	108
280	185	153	146	248	194	285	95
275	230	185	126	185	185	213	58
164	110	178	202	247	195	273	252
95	201	92	218	202	270	128	137
239	224	294	278	199	191	239	67
294	203	194	159	291	169	273	212

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Evaluation of the Prysm Visual Workplace Solution

Hands-on testing of a leading collaborative environment

This evaluation sponsored by ...

PRYSM



Background

Founded in 2005 (and known as Spudnik, Inc. until 2010), Prysm, Inc. is a privately-held, 300+ employee company headquartered in San Jose, California, with additional offices and experience centers in the US (Boston, Los Angeles, Chicago, Indianapolis, New York) and internationally (Belgium, India, China, the U.A.E., and the U.K.).

The company's original focus was the design and manufacture of large-format displays and video walls using Laser Phosphor Display (LPD), a technology invented and patented by Prysm in 2010 as an alternative to other display technologies such as liquid crystal display (LCD) and plasma display panel (PDP). According to the company, the LPD technology is more energy efficient and is produced in a more environmentally friendly process than competing technologies.¹

In 2014, Prysm acquired Anacore, an Indiana-based software development company focused on the creation of collaboration and content sharing applications for multi-touch displays. The mash-up of Prysm's advanced display technology and Anacore's software resulted in the company's current offering, the Prysm Visual Workplace – a collaboration environment that enables users to present, engage, and interact with various type of content through on-screen touch, PCs, or mobile devices.

The company's solutions can be found in lobbies, briefing centers, collaboration conference rooms, auditoriums, and command rooms while primarily serving clients in many markets including retail, financial service, technology, manufacturing and media sectors as well as governments and universities.

In Q2 2016, Prysm commissioned Wainhouse Research (WR) to conduct a third-party assessment of the Prysm Visual Workplace Solution. To facilitate this effort, Prysm created a company accounts on its cloud service for WR, and sent a team of engineers to WR's South Florida test lab to install a Prysm 85" Display solution. As per WR's request, Prysm treated this activation and installation the same way as any other end-user customer installation.

This document contains the results of our hands-on testing of the Prysm Visual Workplace Solution.

¹ Source: <http://gadgetwise.blogs.nytimes.com/2010/01/12/is-lpd-the-next-lcd/>

The Prysm Visual Workplace Solution

The Prysm Visual Workplace Solution² is a cloud-based virtual work environment that allows teams to simultaneously create, edit, share, and store various forms of content.

The best way to explain the Prysm experience is to compare it to the experience provided by *teaming solutions* such as Cisco Spark, RingCentral Glip, and Slack.

- Both Prysm and the teaming solutions allow users to create virtual work areas.
- Both Prysm and the teaming solutions allow users to invite / include specific team members in their virtual work areas.
- Both Prysm and the teaming solutions allow users to add various forms of content to virtual their work areas.

At this point, the workflow and functionality of the two types of solutions begins to diverge. While teaming solutions are geared toward asynchronous collaboration (e.g. a user posts a document, and other users post comments about it along the next few days), Prysm is focused around synchronous collaboration in which all participants work in the same session together, and at the same time.

Examples of common Prysm use cases include agile development, data visualization, recurring project meetings, active learnings in higher education or corporate training, brainstorming sessions, R&D sessions, creative development sessions, etc.

The Prysm Visual Workplace Solution includes the following elements:

- **Prysm Cloud** – Built on the Microsoft Azure platform, the Prysm Cloud stores user data, configuration information, content, and Prysm collaboration sessions. Prysm Cloud also makes collaboration sessions accessible to users via a standard web browser.³
- **Prysm Application Suite** – A software package that allows users to present and interact with documents, web content, digital whiteboards, and other content within a virtual “wall” or “pixel-canvas” that can be shared simultaneously with multiple users across many locations.
- **Prysm Displays** – A line of touch-capable displays available in a range of standard and custom sizes that include a pre-configured Windows PC running the Prysm Application Suite.



² Within this document, we will refer to the Prysm Virtual Workplace Solution as simply the Prysm system or solution.

³ The software powering the Prysm Cloud can also be deployed on premise and behind the corporate firewall if so desired.

A typical Prysm customer deployment will include the following:

- A company account on the Prysm Cloud
- One or more Prysm Displays (each running the Prysm Application Suite)
- Some number of user licenses

This package allows licensed users to create, access, and participate in private and shared Prysm collaboration sessions, hosted on the Prysm Cloud, from within a meeting room (using a Prysm display) or remotely using Prysm Mobile via a laptop or mobile device.

Prysm system pricing starts at US \$15k (MSRP) for a single display, and \$69 per user per month (and lower with volume discounts) for the software. Prysm LCD displays are available in the following sizes; 65", 85", dual 85", and 98". Prysm LDP displays are available in 117", 190", and other custom sizes.

System Installation and Configuration

Physical Installation

Our demo Prysm Display unit arrived in three boxes – one containing the 85" 4K display with embedded PC, one containing the mount / stand, and one containing the rest of the equipment (e.g. PC, keyboard, mouse, cables, adaptors, etc.). The physical installation of the system, including the assembly of the stand, mounting of the display, and configuration of the Application Suite running on the integrated PC, took the Prysm field team approximately four (4) hours to complete.

System Activation / Configuration

Prysm Application Suite Manager is an administration portal that Prysm staff and/or system integrators use to activate and configure customer accounts. Key functions within the admin portal include:

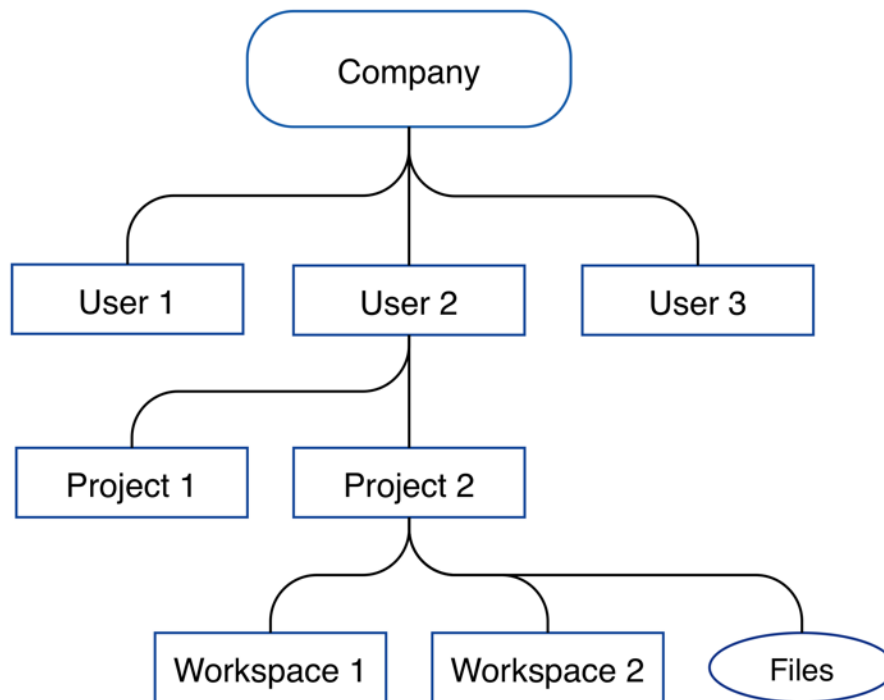
- Registration of Prysm Application Suite instances to the customer's cloud account.
- Creation of Deployment Profiles including Application Suite settings (color schemes, menu structure, etc.) and Prysm Display settings (display types / sizes in use, touch sensitivity, etc.).
- Creation and management of user accounts and associated user permissions (and/or integration with external directory system e.g. Active Directory).
- Access to various other account-related settings.

The Prysm staff used Prysm Application Suite Manager to configure the Prysm solution within our lab environment and create two initial user accounts: a process that took less than one hour to complete.

A detailed review of each of the features and functions within the admin portal is beyond the scope of this assessment. Suffice it to say, however, that the portal contains literally hundreds of configuration options and ways to customize the overall customer experience.

Understanding the Prysm Environment

The drawing below highlights the structure of a company's Prysm environment.



Each company's Prysm environment includes the following:

- **Users** – As shown, each company can have multiple named users.
- **Projects** – Each user can have one or more Prysm Projects, and each Project ...
 - Has a name (e.g. Project Baseball)
 - Can contain one or more files (e.g. documents, videos, images, etc.)
 - Can contain one or more Prysm Workspaces
 - Can be shared with one or more additional named users within the same company ⁴
- **Workspaces** – The workhorse of the Prysm world, a Workspace is an interactive virtual work environment where teams and individuals come together across physical screens or the mobile interface to simultaneously share content items (project files, web pages, etc.), view live sources, and collaborate using virtual whiteboards.

⁴ While not available at the time of our testing, our understanding is that Prysm will soon release the ability to include guest users and those from other companies into Prysm sessions.

Using the Prysm Solution

Creating Projects and Workspaces

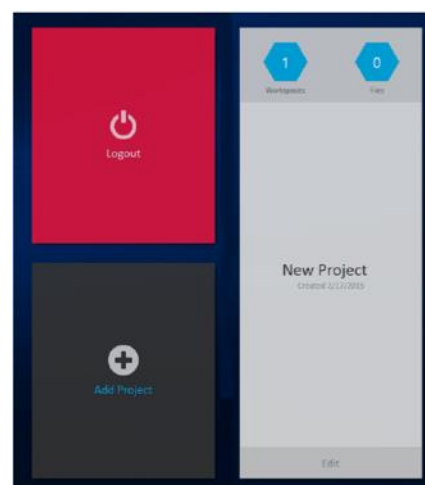
Users interact with the Prysm environment (Projects, Workspaces, etc.) in two ways:

- 1) Via the Prysm Mobile Portal – Go to Prysm.com, click on “Login”, and enter your user credentials.
- 2) Using a Prysm Display – Walk up to the display, login using the on-screen keyboard, and work within the Prysm Application Suite.⁵

For the most part, the Prysm Portal and Prysm Display offer users the same basic functionality, and both user interfaces support touch.

For our first round of testing, we used the Prysm Display. After logging into the system, we arrived in the Project Menu. From this menu, we were able to create our first Project; a relatively simple process that required us to enter only a Project name (e.g. “Sales Meeting”) and define the aspect ratio (or size) of the Workspaces that will reside within our new Project.

The Prysm Cloud supports Workspaces of varying sizes and shapes (e.g. a 16 x 9 ratio, or a 4 x 1 ratio). For situations where the viewing surface used (e.g. a Prysm Display or a user’s internet browser window) is smaller than the size of the Project / Workspace, the system provides a scrolling function.

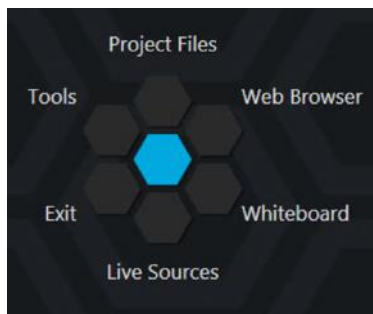


For our first test Project, we chose a 32 x 9 aspect ratio. At this point, the system automatically created our first Workspace (called “Default”) within the new Project. To access the new Workspace, we simply selected our new Project from the Project Menu.

A newly created Workspace is essentially a blank canvas. To start collaborating within the Workspace, we pressed a finger on the Prysm Display for a few seconds until the hexagonal menu appeared.

Interesting Note – Prysm Displays do not include any pens or styluses (although they can be used if a user prefers). Instead, the standard way of interacting with a Prysm Display is using a finger. The Prysm Display and Application Suite do an excellent job detecting finger presses and accurately tracking finger movements with limited delay (~ 120 ms based on our testing). In addition, the Display surface is smooth enough for easy touch control. Overall, we were pleased with the touch and digital inking performance of the Prysm Display.

⁵ The Prysm Application Suite offers users access to various collaboration tools, but specifically does not provide access to standard Windows functions or applications (e.g. Office).



The hexagonal menu is the main user interface that lets users open new objects on screen. The hexagonal menu includes a number of sub-menus that can be re- configured by the system admin / installer if required. Our default installation contained the hexagonal menu sub-options shown in the image on the left.

Workspace Objects and Functions

This section highlights the various objects and functions available within a Prysm Workspace. For the most part, all of these capabilities are available to users from a Prysm Display or via the Prysm Portal.

Whiteboard - The first tool we tested was the integrated whiteboard. Clicking on the Whiteboard icon in the hexagonal menu opened a new Whiteboard object.



The Prysm Whiteboard object supports a standard set of features including freehand drawing with several colors and pen sizes.

We then repeated the above process and opened a number of additional Prysm objects on screen. Prysm Workspaces allow users to open, resize, move, and manipulate many objects at a time.

Web Browser – Prysm’s built-in web browser leverages an embedded, streamlined version of Google Chrome that allows the user to resize the window as he sees fit. To enter URLs, the system provides an on-screen keyboard. In our testing, both the browser and the on-screen keyboard worked quite well.

During our testing, however, we discovered that each open browser object maintains its own set of cookies. Therefore, logging into a site in one browser object does not automatically log the second browser object into that same site as it would on a PC or mobile device.⁶

⁶ While not available at the time of our testing, our understanding is that Prysm will release a software update that resolves this issue in the near future.

Note that participants accessing the Workspace via a web browser cannot open Web Browser objects during a session. They can, however, see and interact with Web Browser objects opened by others, although with limited functionality. Some enhancements in this area would be well received.

Live Sources – Each Prysm Display supports four live HDMI sources out of the box (more can be added if needed), the first of which also supports a USB connection to send control commands back to the source device from the Prysm UI.

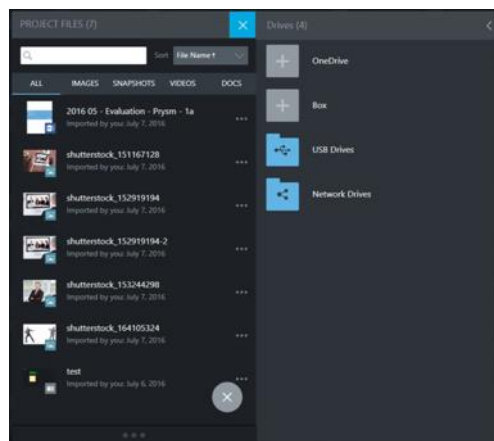
Within our test environment, we connected an Intel NUC PC running Windows 10 and a few collaboration applications to the first live source input and the USB port. This allowed us to open a window displaying what “felt” like a Windows 10 instance on the Prysm Display. In addition, the USB connection let us control the Windows 10 PC as we would a standard tablet. The Live Source feature proved to be easy to use and worked extremely well during our testing.

We connected a wireless presentation system to the second live source input, which let us present PC content wirelessly on the Prysm Display. Ideally, wireless presentation capabilities would be embedded within the Prysm solution. However, the Live Source inputs make it very quick and easy to add this feature using third-party products.

Project Files – The Project Files function allows users to add various types of files (e.g. Office files, images, videos, PDFs, etc.) to their Prysm Projects. Once uploaded, these files are then stored within the Prysm Cloud. The Prysm Cloud offers unlimited storage at no additional cost.

There are two ways to add files to a Project:

- Via the Prysm Portal – After logging in and selecting a Project, the system showed us a list of the existing files and gave us the option to upload additional files from our PC.
- Via the Prysm Display – After selecting the Project Files option from the hexagon menu, the system showed us a list of existing files and let us upload files from the following sources:
 - USB drive connected directly to the display PC
 - Microsoft OneDrive
 - Box.com
 - Network drive mounted on the display PC⁷



As a part of our testing, we added dozens of files from various sources to a number of different Projects. Project files may be downloaded easily using the Prysm Mobile interface or by sharing the file from the Prysm Display.

⁷ It is relatively easy for admins (not users) to define network drives / mappings on the system. In many cases, the drive mappings will happen automatically once the user logs in with his credentials.

Additional Built-In Tools – Prysm also offers “Text” objects and “Sticky Note” objects that can be placed anywhere within the Workspace. Text objects support six different colors of text on screen, and Sticky Notes function like the Whiteboard object but can use one of three background colors.

Additional Features / Functions – Prysm allows users to annotate on any object including live sources. In addition, users can take snapshots of any object or of the entire Workspace at any time. Those snapshots (JPEGs) are automatically stored within the Project.

Prysm Displays allow multiple users to interact with Prysm objects at the same time. This is especially interesting with large displays as it allows multiple people to contribute simultaneously.

The Prysm Portal offers a “Focus” function that allows web users to select and open an object in a full screen view. This helps browser users overcome the limited display size of most PCs and notebooks. (See image at right)



Sharing and Collaboration Features

The Prysm solution offers several ways to share and collaborate with others including:

Sharing an Object

Users can share a snapshot (JPEG image) of any object within a Workspace by simply selecting that object, clicking on the “Share” option, and entering the recipient’s email address. We tested this function and it worked exactly as expected.

Sharing and Collaborating on a Project

The Prysm solution allows multiple users to access each Project, and each user has the same level of access. In other words, there is no Project “owner” – all users with access to a Project have the same rights and capabilities. User access is granted on a Project, not Workspace level. Ideally, Prysm would add more granular access control (e.g. per-Workspace access, view-only access, etc.).

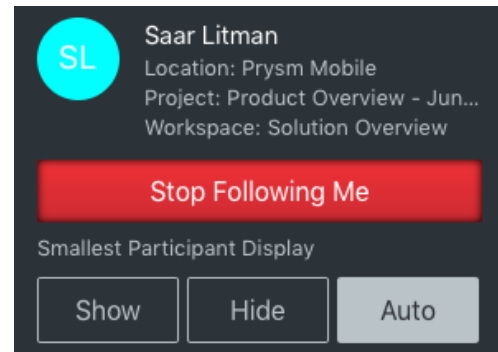
For example, user A can create a Project and then add user B. Once added, user B can remove user A from the Project. Interestingly enough, user B could then remove himself from the Project, resulting in an orphaned Project that only an administrator can then share with others. However, the data within that project is not lost.



Once a user has access to a Project, he can open the Project, add files to (or remove files from) to the Project, and use any of the Workspaces within the Project. In addition, multiple users can access the same Project and Workspace simultaneously, resulting in a real-time, synchronized collaboration session. During our testing, we conducted numerous sessions involving our Prysm Display and several browser users, and the experience was exceptional. In some cases, our sessions included multiple people in the same room – some using the Prysm Display, and others using the Prysm Portal.

In addition, to avoid confusion, the system does not allow multiple users to manipulate the same object at the same time. When a user selects an object, all other users see a red border around that object indicating that the object is currently in use by another user.

Prysm also offers “Follow Me” mode, a special function that automatically adjusts each participant’s view to show the host system (or user’s) active content. In this context, the host is the one who activated Follow Me mode. While in this mode, the other participants can no longer control their view. Instead, they can only view the host user’s content until Follow Me mode is disabled. We tested Follow Me and found that it worked exactly as expected, turning the session into a presentation instead of a collaboration experience.



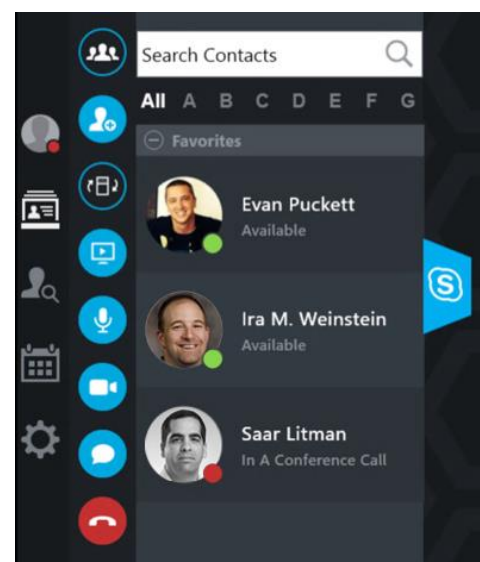
Skype for Business Experience

Prysm recently added Skype for Business (SfB) capabilities to the solution. Instead of the quick and easy approach of displaying the standard (non-group friendly) Skype for Business client in a separate window, Prysm leveraged the SfB engine and APIs to offer an integrated experience. The result is a group-ready, Skype for Business user interface fully embedded within the Prysm Display user interface.

Each Prysm Display includes integrated speakers in the back of the unit, and ships with a Logitech C930e webcam for installation on top of the display. The C930e’s integrated microphone acts as the system microphone for SfB calls.

To use SfB, a user simply clicks on the SfB icon on the left side of the screen. The user then enters his SfB credentials (unless single sign-on is in use), at which point the user can access all of the standard SfB features including the dialer, contact / favorites list, and even his personal meeting calendar.

In addition to offering the typical SfB in-call video / audio / chat functionality, Prysm enhanced the standard SfB content sharing function by adding a dynamic content sharing window to the Prysm UI. Once content sharing is activated, a 16:9 rectangle appears on the Prysm Display. This rectangle (dubbed the “Broadcast Zone” by Prysm) can be moved and resized like any other Prysm object, and only the information physically located within the Broadcast Zone on screen is shared with the other SfB meeting participants.



We conducted a number of SfB test calls, and all calls connected as expected. However, the camera location atop the display caused some camera angle issues, and the use of the webcam's microphone meant only people using the board could be heard well at the far end. We then disconnected the Logitech C930e webcam and connected a Logitech Group system (includes PTZ camera, mic / speaker unit, etc.) we had in our lab. This immediately improved the audio and video experience. However, the integrator and/or customer will need to decide where to position the camera in the room.

The strongest part of the Prysm SfB experience was the Broadcast Zone, which provided a fully integrated, highly controllable and very "fluid" content sharing experience.

Overall, Prysm's Skype for Business integration worked quite well.

The Prysm Display Effect

The Prysm "Display Effect" is an example of how the whole can be greater than the sum of its parts.

From a technical perspective, Prysm brings many valuable functions to the table including:

- Large display size (at least larger than a typical PC user's display).
- Multi-touch display surface with standard gestures (e.g. pinch, drag, etc.).
- Streamlined and specific workflow (objects offer only one function).
- Ability to resize and reposition objects quickly and easily.

When combined, these items create an immersive experience that is both fun and somehow liberating (in a content creation and collaboration sense) for the user. Touch the screen. Open an object. Resize it. Move it. Share it with others. Include it in the SfB Broadcast Zone. Open another object. Then do it again – and again – and again. Once you're done with an object, toss it to the side.

Thanks to Prysm's touch UI and streamlined workflow, in just a few minutes a typical user will go from a Prysm-newbie to a Prysm-empowered collaborator. We tested this concept with a few non-techies in our office, and the proof is in the pudding. Our sales staff and even the folks in the next suite over in our building are now Prysm-users.

That is the Prysm Display Effect. Remove any of the above four elements and the effect diminishes.

Note re: Prysm Portal / Web User Experience – While not as immersive as the Prysm Display experience, Prysm web users also enjoy a strong collaboration experience. This is especially true for users on touch devices (e.g. tablets, touch-notebooks, etc.). During our testing, we accessed Workspaces from our touch-capable Microsoft Surface Pro 4, and used the touch display and pen to control the session. Overall, the experience was quite strong.

Note re: Keeping Things Organized – The ability to easily create and manipulate objects is a double-edge sword. On the one hand, it fosters a collaborative environment. On the other hand, it lends itself to a cluttered and disorganized Workspace. This is especially true for sessions conducted over many days or those involving a large number of objects. Fortunately, Prysm has provided tools to help keep Workspaces manageable:

- Multiple Workspaces – Users can add additional Workspaces to Projects as they would add pages to a flipchart. The Prysm UI makes those new pages (Workspaces) easily accessible (see image below).
- Snap Grids – The Prysm snap grids function allows users to define an on-screen layout to use within a Workspace. For example, a 2:1:2 grid creates five “slots” (2 on the left size, 1 in the middle, and 2 on the right side), and users can drag and drop any object into any slot. When an object is dropped into a slot, the system automatically resizes the object as appropriate.

By default, the system comes with seven pre-defined snap grids, and system admins can create / remove grids as they see fit.



Note re: Workflow – While easy to use, there are ways that Prysm could streamline and improve the user experience. For example ...

- When an object is selected, the system should automatically select a function (e.g. when a whiteboard object is selected, the default function should be annotate). Today, the user must manually select annotate before he can draw on the whiteboard.
- The ability to select and use multiple objects at a time is very powerful. However, the system does not offer a “deselect all objects” function. This simple feature would be a great time saver.
- We appreciate the ability to annotate over any object, but sometimes we want to undo our last entry. The addition of an “undo” function would be well received.

Analysis and Opinion

The Prysm Visual Workplace Solution is powerful, flexible, and enterprise-ready, and offers wide array of customization options to optimize the system for specific use cases and environments. And with a starting price of only \$16k for a Prysm Display, the Prysm experience is well within the reach of almost any size company.

But more than that – Prysm is easy and fun to use, and takes much of the stress, and almost all of the complexity out of real-time collaboration and brainstorming sessions.

For this study, we conducted a series of tests on the overall Prysm solution. We used the Prysm Display to create and use Projects and Workspaces. We accessed Workspaces from the web on desktop PCs, notebooks, and tablets. We shared content and sessions with others. And we conducted numerous Skype for Business meetings, and shared Prysm content during those meetings. The Skype for Business integration and intuitive approach to content sharing during conference calls are areas of particular strength for this offering.

But a few weeks into our testing, something special happened. We found ourselves turning to the Prysm system for more than just testing. We began using Prysm within our daily workflow. Often with evaluation projects we have to force ourselves to use the subject offering within our production environment. In this case, however, this happened naturally, which is a testament to the power of the Prysm experience and the Prysm Display effect described above.

There's quite a lot to like about the Prysm Visual Workplace Solution. And while there are a few functions we would like to see added or refined, we give this solution a rousing thumbs up.

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About Wainhouse Research



Wainhouse Research, www.wainhouse.com, is an independent analyst firm that focuses on critical issues in the Unified Communications and Collaboration (UC&C). The company conducts multi-client and custom research studies, consults with end users on key implementation issues, publishes white papers and market statistics, and delivers public and private seminars as well as speaker presentations at industry group meetings.

About Prysm

(Copy provided by Prysm)



Prysm is defining a new way of work. One where applications, content, video conferencing and the Web can all be easily combined into a visual workspace where teams can create, edit and share. These interactive workspaces are stored in the cloud and available on any sized screen. Prysm's Visual Workplace solutions span from executive briefing center to home office — and every size workplace in between. Today, Prysm powers 20 percent of the Fortune 500 and our customers are leaders in all industries including technology, energy, finance, healthcare, media and universities. To define your company's new way of work, visit www.prysm.com.