

COLLABORATION TECHNOLOGY SPECIAL

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## IN MY OPINION

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# Collaboration Solutions

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# Collaboration - working better, together

By Andrew W Jamison, President & CEO, Scalable Display Technologies, Inc.

The “collaboration” meme may appear to have come into vogue around 2010. In my view, its recent popularity comes many years after researchers first started promoting the core concepts of collaboration. Today the collaboration discussion is morphing into themes of “workspace innovation” and “redefining work”. The scope of this article addresses two discrete categories of collaboration a) online collaboration tools and b) real-time interactive collaboration.

Online web-based collaboration tools have a well-established following with users. Popular examples are Google docs, OneNote, Basecamp and Slack. These tools provide easy access to distributed teams while providing near real-time interaction. These collaboration tools are typically used by individuals on their computer or mobile device and they don’t typically involve real-time bi-directional (symmetric) interaction.

The focus of this article is real-time and interactive group collaboration. The “interactive collaboration” meme is also a relative late bloomer as its roots can be traced back to at least the early days of electronic whiteboards and video conferencing in the late 1980s. In those days “collaborating” meant writing on a whiteboard or looking at fuzzy moving images of each other on a 27” CRT monitor. Document sharing was achieved via video capture on a document camera. During the ensuing decades we have seen a series of incarnations of collaboration: audio conferencing; screen sharing; now “huddle” everything and “cloud” are the buzz of the day.

Why did it take so long and why are users still scratching at the interactive collaboration itch? Perhaps we still don’t have the chemistry right and a quick look at the past can help inform the future.

## Bottlenecks to interactive group collaboration

In my view, there has been several consistent bottlenecks constraining the effectiveness of real time collaboration between remotely located groups: network bandwidth; poor audio quality; limited display size, (note that video quality is not on the list).

First, in the early days before the Internet, for a brief period of time the telecom industry used dial-up circuit switched networks like ISDN for group to group business



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collaboration. To achieve sufficient bandwidth for useable video and audio, multiple circuits were clustered together (think “circuit array”). As video compression algorithms improved and the Internet became adequately robust a mass migration took place from telephony infrastructure onto the internet.

Today, in spite of advances in network speed, users remain frustrated that the responsiveness (latency) of bi-directional screen sharing hovers at the level of being barely acceptable for basic interactive whiteboard collaboration. This due to lack of deterministic networks and highlights the need for yet further

improvements. Fortunately, IEEE has addressed this need with a new and approved Ethernet protocol but that is a subject unto its own.

The second challenge to successful remote collaboration has been poor audio, primarily from poor microphone pick-up and to a lesser extent speakers. Here again we have enjoyed improvements but successful use of high performance “microphone arrays” and “speaker arrays” has failed to become mainstream and thus has not yet fully meet the end-user expectations.

The third barrier to interactive collaboration effectiveness is display size. In the age of “big data”, users have an insatiable desire for more screen real estate. The common approach to achieving large electronic displays is clusters of LCD monitor or a “monitor array”. Users express a desire to scale display size without a bezel obstructing the viewing area and LCDs cannot meet their need. An appropriate alternative to achieve the desire seamless screen at scale is achieved by automatically blending multiple projectors into a “projector array”.

Regarding interactive group collaboration in particular, we know that users want large display surfaces for written collaboration. We know this simply from the popularity of whiteboard wall paint. Across many industries and co-working centers users have embraced white walls for whiteboarding. Ironically the most common technique to digitize the analog whiteboard is achieved view a cellphone picture. Clearly, this form of quasi “electronic whiteboarding” leaves room for radical improvement.

limitations have been noted by users: a) limited PC functionality and b) limited overall display size. Users find that these LFD solutions are okay for presentations to small groups but lack flexibility to run all of the customer’s standard Windows applications. Furthermore the displays are not large enough in the horizontal axis.

There is a new emerging category called “wide format display”. This is a new category of display characterized by displays that have wide aspect ratios and large size. One solution in the WFD category is Huddlewall.

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### **Buying into interactive collaboration**

There is a ground swell of change underway regarding customer buying behavior and the changes apply to collaboration tools as well. The reason is open for debate, perhaps it was the age of the “app”, but now users have an “Everything As A Service” (XaaS) mindset. This goes hand and hand with “Internet of Everything” and leads logically to “Collaboration as a Service” (CaaS). The discussion changes slightly when considering ‘interactive collaboration’ as presented in this paper. When adding the group & interactive components the discussion becomes more about the potential of “Display as a Service”. In such a model, users sign up to a subscription for a capability as described above. The service would be comprehensive enough to span all the elements not required to be provided in-house. I see these changes as positive developments for the industry as a whole because purchasing a service is lower risk for the customer. Lower risk translates to faster decisions and more quickly realized benefits.

### **Conclusion**

Collaboration is a key component of workspace innovation. Collaboration, regardless of how you define it, is essential to the millennial's definition or redefinition of work. We know that the collaboration solutions are still evolving and a perfect solution may never exist. The hope and promise is that with time, industry will continue to help people come closer together and work better together via technology. 

### **Considering interactive collaboration solutions**

This brings us to assessing the new crop of interactive “large format displays” such as Microsoft Surface Hub and Google Jamboard. These solutions are very appealing in that they offer interactivity, high resolution and some PC functionality. Undoubtedly these LFDs will meet some user needs. Two

