Four Lessons to Kickstart Your VR / AR Program

Key Takeaways from the IT Forum Panel on Augmented and Virtual Reality

Background

The IT Forum recently launched the Teaching & Learning Functional Collaborative, which has brought together over 50 Heads of Teaching & Learning from across the IT Forum membership and provided them the opportunity to voice top-of-mind issues. Throughout this process, members articulated interest in virtual and augmented reality (VR / AR) and sought guidance on how to determine whether these technologies are a good fit for their campus. The IT Forum felt that the range and scope of these questions could be best addressed through an opportunity to speak with peers in a moderated panel discussion. To this end, the IT Forum hosted the Panel on Augmented and Virtual Reality, during which four panelists shared their experiences adopting VR / AR technologies and answered questions that audience members submitted live. This document highlights the key takeaways from this conversation.

The Panelists

Mr. Dave Pfaff, Washington & Lee University: Dave is the Academic Technologist for Washington and Lee University's Integrative and Quantitative (IQ) Center. In the IQ Center, he helps faculty find innovative ways to integrate emerging technologies into their classes and research. His mission is to make technologies, including virtual and augmented reality, easily accessible to the widest audience on campus. Dave has also designed standalone virtual projects that can be entirely student-run.

Ms. Maya Georgieva, The New School: Maya is the Director of Digital Learning at the New School in New York. At the New School, Maya leads innovation in the design of technology-enhanced learning and VR, AR, and Mixed Reality initiatives in the new XReality Center. Previously, Maya was the Associate Director of the Center for Innovation in Teaching and Learning at the Stern School of Business, New York University. At NYU Stern, Maya spearheaded efforts related to educational technology, experiential learning, and space design.

Dr. Tom Lynch, Suffolk University: Tom is Chief Information Officer of Suffolk University in Boston, Massachusetts. He is responsible for the management, leadership, and vision of Suffolk's IT Department and Academic Technology Units. He and his IT team are supporting the work of Professor Walter Johnson in the creation of a Center for Multiple Realities (CMR). CMR is a cross-disciplinary AR/MR/VR collaborative effort among faculty, students, and staff to radically enhance human learning, teaching, and collaboration through the use of emerging and advanced AR/MR/VR technologies.

Dr. Walter Johnson, Suffolk University: Walter is Professor of Physics at Suffolk University. He teaches a variety of courses ranging from introductory to advanced physics. His most recent efforts have been in the area of augmented, mixed and virtual reality. Using the Microsoft HoloLens and the Oculus Rift, he and a group of physics majors have been working with faculty in different departments to find new approaches to curricula using these emerging technologies. With strong support from the Dean of the College of Arts and Sciences and the IT team, Dr. Johnson is in the process of establishing a Center for Multiple Realities.

1

Incremental Adoption of VR / AR Technology Prevents Overinvestment

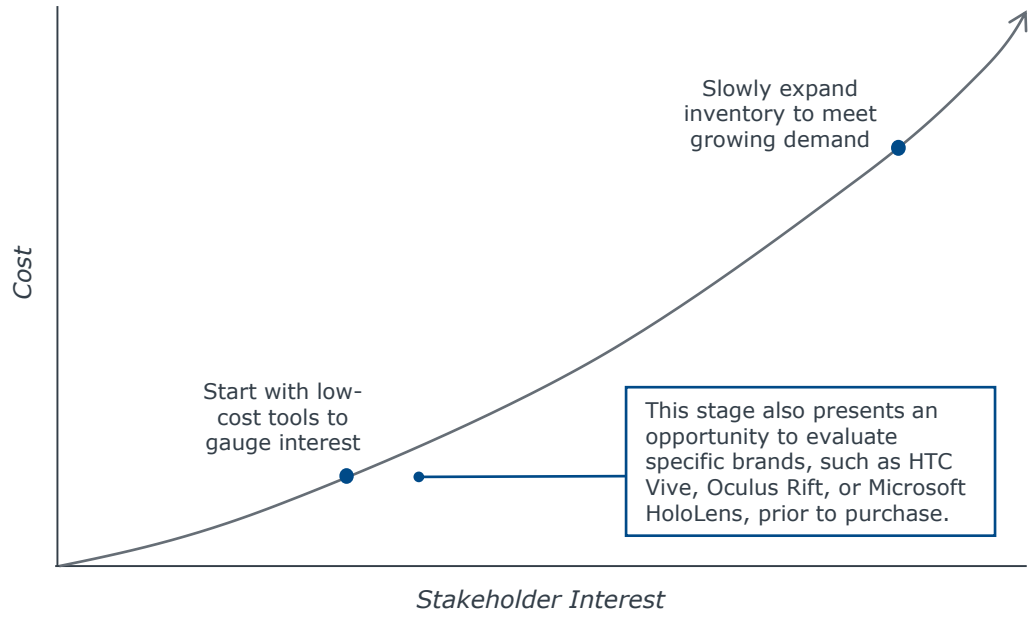
VR / AR technology requires a significant investment of resources. However, it is possible to "start small." To ensure high ROI, begin incrementally with a modest investment in either low-cost tools such as Google Cardboard or a small number of more costly VR headsets. If campus stakeholders show interest, slowly acquire more expensive VR / AR technology, gauging student and faculty engagement prior to each purchase.

> If the technology had not grown in popularity as quickly as it did, we likely could have stayed with one HoloLens and one Oculus Rift. However, in our conversations with faculty outside of the Physics department, we realized we could use the HoloLens to support students' thesis projects in other departments, such as the School of Art and Design. I went back to the CIO and told him that we needed to order two more HoloLens. This was an incremental decision; we didn't spend $50,000 upfront on several pieces of technology that we weren't sure how to use."
>
> *– Suffolk University*

> We started off with affordable Google Cardboard, but the technology was impressive enough that we soon acquired a true VR headset. The results were so dramatic that we bought several more."
>
> *– Washington & Lee University*

Start Small: VR / AR Costs Can Increase Over Time as Excitement Rises

Cost of VR / AR Technologies, By Stakeholder Interest



2

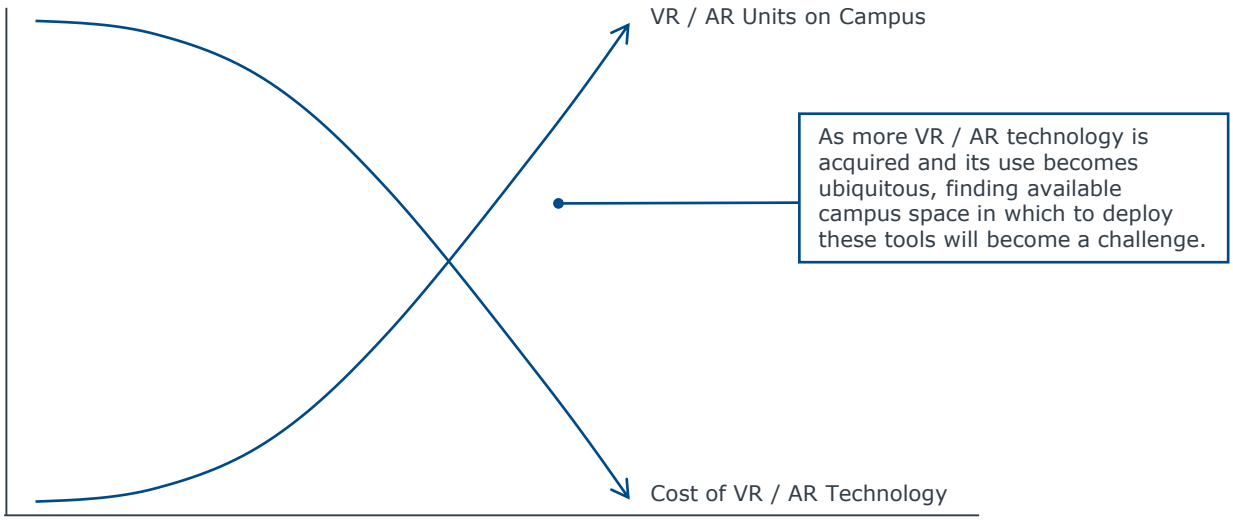
Cost of VR / AR Technology Will Decline, but Space Will Remain at a Premium

As VR / AR technology becomes cheaper, higher education institutions will face a new difficulty: allotting the campus space necessary for students to use this technology to its fullest potential. At many institutions, campus space is already at a premium, and future limitations to scaling student access to VR / AR technologies will likely stem from the traditional challenge of space allocation.

> The price of VR / AR technology is decreasing. Now, for $1,000 to $2,000, you can bring VR / AR to campus. It's probable that a standalone VR headset might soon cost just $200. As VR / AR technology continues to get cheaper, conversations about bringing this technology to campus will be less about cost and more about space, which determines how students interact with these tools."
>
> *– The New School*

Campus Space: The Next Frontier as VR / AR Costs Decline

Cost and Quantity of VR / AR Units, Over Time



> Now, our HTC Vive headsets are tethered; in the future, they will have what is called 'inside-out tracking,' which allows you to move in and out of a physical space without being connected. This will have new implications for the space students need to use VR headsets."
>
> *– Washington & Lee University*

3

Students Independently Learn and Evangelize VR / AR Technologies

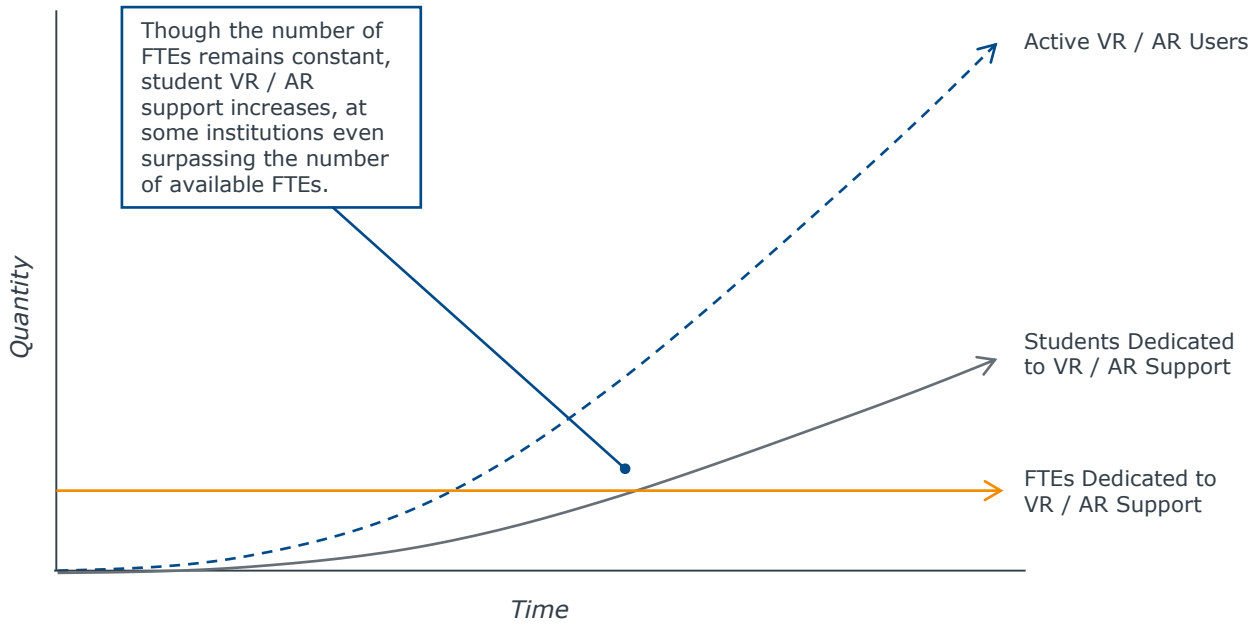
Staffing does not necessarily need to increase as VR / AR technology gains popularity. Students are learning to use VR / AR tools independently, and their enthusiasm and expertise is drawing others interested in virtual and augmented reality. As campus excitement about VR / AR grows, students can help support their peers as well as faculty who are experimenting with these emerging technologies.

> We don't have staff to support VR / AR! There are students, and some are being paid through work study but others work for free because they enjoy experimenting with VR / AR technology. We assign students familiar with Oculus Rift and HoloLens to support courses that want to try them."
>
> *– Suffolk University*

> We support courses that use VR / AR technology by assigning them student research assistants, who work with students and faculty multiple times over the course of a semester to apply this technology to course design and specific projects."
>
> *– The New School*

Scaling VR / AR Support by Leveraging Early Student Adopters

Quantity of VR / AR Users and Staff, Over Time



4

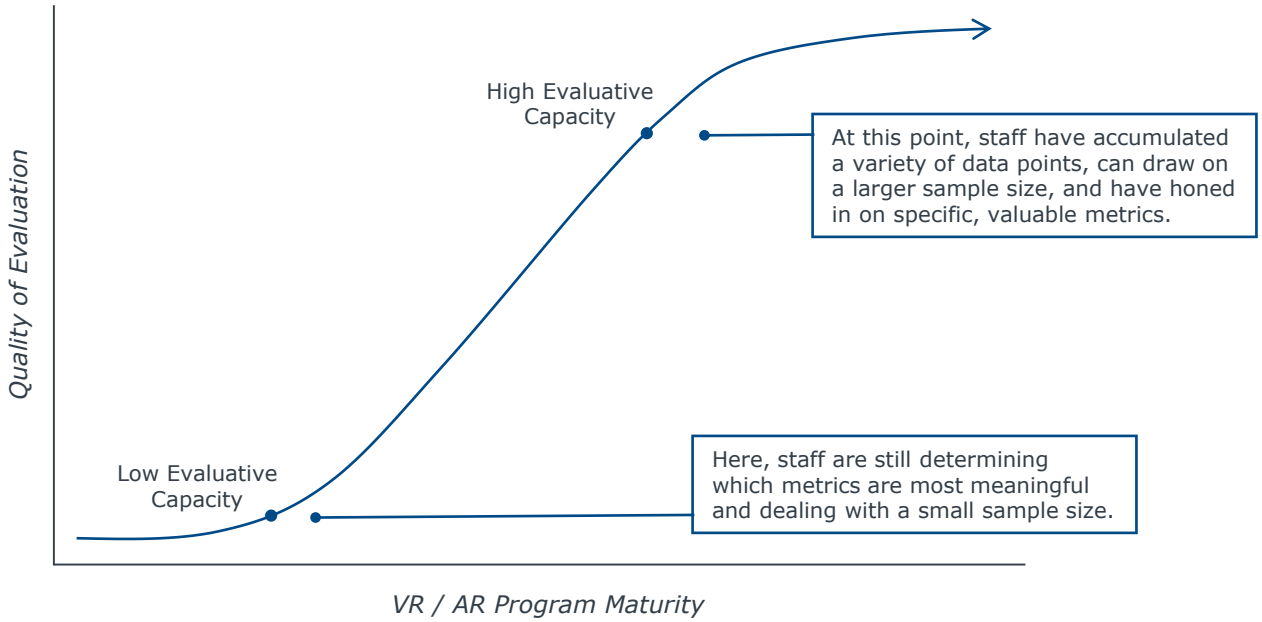
Anecdotes, Not Numbers, Still Predominate as Primary Evaluation Metrics

Since the student populations utilizing VR / AR technology are small, and because these tools have only recently come to institutions, evaluating impact on student outcomes is difficult. Most institutions have focused their evaluation around qualitative criteria such as student engagement and faculty interest.

> Engagement of students and faculty is one metric used to demonstrate VR / AR technology success. Some larger-scale pilots are conducting ethnographic analyses of the technology's impact, but at smaller institutions, we're asking ourselves, "How does this technology have an impact on students' understanding of course material?" Another way to measure success is through accessibility. Can students use VR / AR at any time, in multiple places, in several different ways?"
>
> *– The New School*

Capacity to Evaluate VR / AR Relies on Program Maturity

Quality of AR / VR Program Evaluation, by Program Maturity



> We'll likely include questions on our normal end-of-semester evaluations that ask students how they enjoyed VR / AR technologies incorporated into the courses. I think the strongest indicator is the interest inside the university; if it weren't working, so many faculty wouldn't be seeking me out, trying to learn how they can incorporate these emerging technologies into their courses."
>
> *- Suffolk University*

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