



Photo cred: Immerse UK.org from the Immersive Economy in the UK Report, May 21, 2018.

[https://www.immerseuk.org/resources/immersive\\_economy\\_report/](https://www.immerseuk.org/resources/immersive_economy_report/)

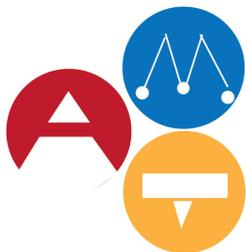
There are so many different types of technologies and combinations of them currently being used and developed in the performing arts industry to produce what is known today as ‘immersive experiences,’ created to enhance the audience experience. According to Josephine Machon, “in theatre discourse ‘immersive’ is now attached to diverse events that assimilate a variety of art forms and seek to exploit all that is experiential in performance, placing the audience at the heart of the work.” (22) However, these immersive experiences have different purposes across performing arts industries, as discussed in [Playing With Reality In The Performing Arts - AR, VR, And MR](#), and each purpose requires a variation of AR, VR, and/or Mixed Reality technology packages for its implementation. But how to choose among all these choices is a question that

has not been discussed enough in the theater industry. Therefore, this research provides a guideline for theater organizations to evaluate whether it is worth it for them to implement immersive technologies within their venues, and if so, which technology package would be the most appropriate to accomplish their goals. In order to answer those questions, six case studies were investigated and their reasons for implementation, costs, revenue models, and project financing analyzed. The resulting answer to the question ‘Is it worth it?’ was a complicated one, as the success of each of the organizations studied was highly dependent on a variety of factors including: mission and goals of the organization, technology package chosen, revenue model decided after implementation, and financing strategies. With that in mind, this report becomes a



# Immersive Technology: Is it Right for Your Theatre?

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guide for theater managers to utilize when considering the implementation of immersive technologies within their organizations.

## Case studies

The case studies presented were used to understand different types of packages of immersive technology implemented in the

performing arts. Is important to keep in mind that these are not the only kinds of immersive technology packages available and/or that have been successful. This study looked deeply into six organizations and within them, four completely different kinds of immersive theater performances. These do not present an exhaustive analysis of all practices.

### *Chained by Madison Wells Media*



Photo Credit: Aaron Sims Creative (<https://www.outerplaces.com/science/item/19122-vr-chained-experience-christmas-carol>)

*This picture shows one of the sets the audience sees through their Virtual Reality glasses.*

This performance was created by Justin Denton, an artist and director that enjoys telling stories through technology, and Ethan Stearns, the Executive Producer at *Madison Wells Media*. They joined forces to create an audience to actor, one-on-one experience, of the original play *A Christmas Carol*. During *Chained*, the audience member takes the role of Ebenezer Scrooge, and is led by a single

actor through the story, allowing them to meet and interact with all characters. This type of performance involves the use of a complex technology package, including a VR headset, and motion-capture technology made possible through a combination of cameras, a suit with Velcro ball markers, and head-mounted rig to record the actor's facial movements.

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### *Draw Me Close* by the National Theater



Photo credit: National Theatre (<https://www.nationaltheatre.org.uk/immersive/projects/draw-me-close>)

An interaction between an audience member and the actress of *Draw Me Close: A Memoir* by the National Theatre. The background of the picture shows what the audience member sees through the VR set. He sees all set pieces and characters in the play in the form of animation.

*Draw Me Close* has a style and technology components that are very similar than the

ones used by *Chained*. However, the purpose of implementation and the



revenue model chosen is quite different. The purpose of this performance was to create a more intimate experience for the audience member. In this performance the National Theater of London utilizes Virtual Reality headsets, motion capture technology, and animation in combination with the live performance to bring the audience into the character's memories. During this show, the audience member is asked to put on a VR headset and is led

through the story by a single actress, who plays the role of a mother who is dying of cancer. This play allows the audience to explore the story of a mother and her son during 25 years through the world of animation that appears in their headsets. This experience is highly intimate as it allows the audience to take the role of actor and interact both verbally and physically with the actress.

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## *Giudizio Universale: Michelangelo and the Secrets of the Sistine Chapel* by Artainment Worldwide Shows



Photo credit: Artainment Worldwide Shows

This picture shows one of the scenes from *Giudizio Universale: Michaelangelo and the Secrets of the Sistine Chapel*, with ceilings and walls projecting art works made by Michaelangelo.

*Giudizio Universale* was created with the goal of putting the audience member in the middle of a historical event, allowing them

to explore the life of Michelangelo and the secrets of the Sistine Chapel as if they were in Rome when it all happened. The

performance takes place in a traditional theater, at Auditorium Conciliazione, and is made possible through a combination of animation, dance, and stagecraft as well as

270-degree projections on the ceilings and walls and a complex surround system to make the audience feel completely immersed in the experience.

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### *Situation Rooms by Rimini Protokoll*



*Photo credit: Rimini Protokoll*



Audience members interact during the performance of “Situation Rooms” taking the roles of people whose lives were shaped by the arms trade.

*Situation Rooms* as an immersive experience utilizes a technology Rimini Protokoll refers to as “app-drama”. This technology involves the utilization of AR using smartphones, iPad, and/or computers that are given to audience members to engage with the piece. In *Situation Rooms* the audience member is provided with both an iPad and headphones through which they hear commands from actors who guide them on “individual paths through a film set that recreates the world of weapons.”

Through this experience “audience members assume 10 different identities for about 7 minutes each” to learn about twenty people, whose lives had been shaped by the arms trade. The goal of this performance was to provide the audience with an intimate view of the characters of the play by making them take the role of several actors. To accomplish this, Rimini Protokoll utilizes iPads, headphones, and multi-video installations.

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## *Hamlet 360* by Commonwealth Shakespeare Company (CSC)



Photo credit: American Theatre

A view inside the VR headset of an audience member watching “Hamlet 360”.



*Hamlet 360* is a VR experience that audience members can enjoy from home. This performance is considered immersive as it puts the audience member in the role of the ghost of Hamlet's murdered father watching everything that happens in the story as if they were a part of it. The goal of the creators was to both provide a fresh, new type of experience to audiences, as

well as to bring theater to a wider audience. To make this possible, Commonwealth Shakespeare Company had to film the entire production when the audience was not present. For this purpose, they used video technology that allowed them to film from 360-degrees that was compatible with multiple VR headsets. This included the utilization of multiple video-cameras.

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### *C.A.P.E. Drop Dog* by CREW



*Photo credit: Dream Space*

*Audience member wearing a VR headset, headphones, and a computer to enter inside the various stories told by "C.A.P.E. Drop Dog" created by CREW.*

For the *Cape* experience, a single-user is equipped with video-goggles, headphones, and a portable computer, through which he/she can enter two different realities at once. This performance was inspired by two texts from Dutch poet and writer Tonnus Oosterhoff. The goal is to allow the audience to transport from one place to another within seconds, allowing them to move around the space physically experiencing stories by looking, reading,

listening, and moving altogether. This performance is a good example of a fully immersive experience that takes the audience member to another dimension in all senses. To make this possible, CREW must provide VR goggles through which audiences are shown 360-degree videos, headphones with omni-directional sound capacity, and portable computers for the audience member participating in this experience.

## Considerations

As noticed in the six cases represented above, there are many types of technologies that could be used singularly or in combination with others to create an immersive experience for theater audiences. However, most of these technologies work as packages, which can make them costly to implement. Hence, it will be important for organizations to evaluate how they may be able to implement immersive technologies, and if so, whether it is worth the investment for them. Based on case-study research, four factors have been found to be the main drivers for theater organizations to succeed when implementing immersive technology: mission and goals of the organization, technology requirements and costs, financing strategies, and revenue model.

## Mission and Strategic Goals

As seen above, each of the organizations from the case-study research showed to have a very specific purpose for utilizing immersive technologies throughout their performances. The purposes, in fact, turn out to be extremely related to either or both mission of the organization and strategic goals. Hence, when considering implementing immersive technologies, it is recommended that organizations ask themselves two questions:

(1) Does this implementation match their organization's mission statement?

**AND**

(2) Does it help them achieve any of their strategic goals?

If the answer to any of those two questions is yes, they will be on the right track, as this is one of the most important factors and the first step to determine if it is worth investing in these kinds of technology. The implementation of such costly feature must always be supported by reason. So, organizations need to think about the core of their existence, what they are trying to achieve in both the short and the long term, who their community is, and what they do for the communities they serve. This last one is important as community readiness is key to the success of the introduction of a new form of art in a specific location.

According to Machon, there are two main reasons why immersive theater experiences are done, as related to organizational goals. The first is an attempt to attract alternative audiences, "those who would not necessarily consider themselves theatergoers." (23). And the second, is to help their organization attract audiences from diverse demographics. Immersive technologies allow companies to do this as they make "people feel involved, invited, or even" unaware that they are attending a theater performance (Machon). In addition, community engagement, audience engagement, reach, and special effects



were found to be good reasons for implementation through [previous research](#).

So, let's take a closer look at one of the case studies that represents a good execution of their mission statement through implementations: Artainment Worldwide Shows (AWS). AWS was founded in 2016 within Worldwide Shows Corporation, with the mission of showing Italy's ***“extraordinary heritage in a new way, addressing the general public and especially young generations.*** Using an unprecedented language and respecting the artistic and historical aspects, Artainment [brings] to life a new (live) entertainment genre where visual emotional codes and contemporary language meet art.”<sup>1</sup> *Giudizio Universale*, was the first show presented by this organization. The show cost them over \$11 million and took them around four years to produce. Considering this expense, AWS had to have a good reason to do this, and they did. The show is a representation of Michelangelo's work and the art that is shown in the Sistine Chapel, both of whom have been very important historically for

Italy. According to Sarah Cascone, this piece could, and was later proven to, work as an “attractive point of entry for a specific kind of tourist with a passing interest in art history”. It could also work as “an amuse bouche ahead of a first-time visit to the Vatican itself, especially for children who might need the added stimulation of the stage to be convinced to engage with a work of art”<sup>2</sup>. Speaking of their mission statement, showing this high-tech spectacle, turned out to attract a significant amount of audiences, a lot of whom experienced the history of Italy for the first time, and has become popular in the theater industry across the world. With 1,763 seats available per show, and premiering in March of 2018, the show has sold over 300,000 tickets, a strong indicator of their success attracting the general public to their venue to teach them about Italy's heritage, allowing them to meet their mission<sup>3</sup>.

While this organization has been highly successful in adding immersive technology while staying mission-oriented, it is

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<sup>1</sup> "Artainment Worldwide Shows." LinkedIn. Last modified, 2016.

<https://www.linkedin.com/company/artainment-worldwide-shows/about/>.

<sup>2</sup> Cascone, Sarah. "Sistine Chapel, the Ride? See Inside Michelangelo's Masterpieces in Rome's High-Tech Theatrical Production." *artnet news*, October 3, 2018.

<https://news.artnet.com/art-world/giudizio-universale-michelangelo-sistine-chapel-1360087>.

<sup>3</sup> "Guidizio Universale: The Sistine Chapel Immersive Show." Artainment Worldwide Shows. Last modified, 2019. <https://www.giudiziouniversale.com/en/>.

important to note that this kind of show would not work in any community around the world. The show works well in Italy, according to Sarah Cascone, because Italians love their heritage and have a high interest in spreading this knowledge amongst themselves and tourists<sup>4</sup>. What made AWS succeed was a combination of audience interest, community readiness, and mission-focused programming.

## Technology requirements and costs

The next section organizations need to tackle before committing to the implementation of immersive technologies is cost. Cost, however, is highly dependent on the kind of experience the organization aims to create. Having a clear

understanding of mission and goals will help organizations decide what the best technological package is for them to have. Following, a breakdown of the individual technologies utilized within the six case studies is provided with their respective cost range, case studies associated with it, and main price variation factors. This breakdown is a tool for arts managers to play with and see which package(s) their organization can afford and/or analyze how much funding will be necessary for the execution of their top choice. Nevertheless, it is important to note that these prices are not all encompassing as they may be missing installation and other miscellaneous costs. In addition, the prices on the table below are expected to change as technology continues to advance.

Technology	Cost Range	Case study reference	Prince variation factors
VR Headsets	\$20 – 800	Most organizations providing headsets during the performance rely upon <i>Oculus Rift</i> , priced at \$799.	(1) Quality of image (2) Motion-sickness likelihood (3) Comfort (4) Mobility possible (5) Compatibility with multiple phones
Motion Capture	\$800 - \$250,000	Model used by MWM on “Chained” is priced between \$3,276.67 (single machine) and \$18,349.34 (multiple machines) per year, per seat.	(1) Level of movement accuracy (2) Quality (3) Easiness of use (4) Technical support offered (5) Number of cameras included And software implications

<sup>4</sup> Ibid.

			Model used by National Theater of London is <i>Orion's</i> Motion Capture set that works with HTC Vive. Currently in development by Ikinema, priced at \$1,400	
Head-Mounted Rig	\$13,499 - \$21,000 (Motion Media)		"Chained" used Vitcon's Facial Movement software and head-mounted rig, however, those prices are only available by contacting them as their prices depend upon the room and style of performance desired	Needs further research as it is very new technology and not many companies offer it.
Mocap Suits	\$860/piece (Vitcon price)		This is based on the kind used by "Chained"	Needs further research as it is very new technology and not many companies offer it.
Facial-video software	\$150/year - \$6,750/year (Face Ware)			<ol style="list-style-type: none"> <li>(1) Software features</li> <li>(2) Availability of support</li> <li>(3) License included</li> <li>(4) Renewal plan</li> <li>(5) Quality</li> </ol>
360-degree video	\$19,521.90 - \$117,131.40 (low range, based on UK's company Visualise)		Model used to produce "Hamlet 360" in the U.S. cost them <b><u>\$500,000 total</u></b>	<ol style="list-style-type: none"> <li>(1) Do you need to hire a VR director, sound 360 sound specialist, riggers, etc.?</li> <li>(2) Days needed for filming</li> <li>(3) Type of camera</li> <li>(4) Quality and features desired for VR experience</li> <li>(5) Time needed to edit</li> <li>(6) Delivery platform</li> <li>(7) Third party costs covered in contract</li> </ol>
270-degree projections	Gobelin Tulle (Scrim material that allows projections to	\$42/yard (Brand: Studio Productions) -	\$98/yard is the minimum price for a "Sharkstooth Scrim"	<ol style="list-style-type: none"> <li>(1) Light reflected back</li> <li>(2) Transparency</li> <li>(3) Clarity of image</li> </ol>



with surround sound	play without reflecting too much light)	\$144.49 (brand: NorthEast Stage)	similar to the one used for <i>Guidizio Universale</i> (brand: Rosebrand)	
	270-degree immersive video projectors using laser projectors (as used by <i>Guidizio Universale</i> )	\$1,300 - \$149,000 per unit	<p><i>*To accomplish this, Artainment Worldwide Shows installed 30 Full HD Panasonic Laser Projectors</i></p> <p>(18) PT-RZ31K with 31,000 lumens for around \$82,000 each</p> <p>(2) PT-RZ12K with 12,000 lumens for around \$30,000 each</p> <p>Panasonic installed and designed the projectors for <i>Guidizio Universale</i> as part of their case studies for the projector's success in sales</p>	<ol style="list-style-type: none"> <li>(1) Uniformity of brightness</li> <li>(2) Color fidelity</li> <li>(3) Consistent proportions for the images</li> <li>(4) Lumens – a measure of light visibility</li> </ol>
	Obtaining videos to project	Price unknown	Price unknown	This is highly dependent on the type of projections the organization is trying to create and their purpose. The projections may be available online, require a team to record them, or require them to ask another institution for their videos, as it happened with <i>Guidizio Universale</i> to obtain High-quality images from the Vatican Museums.
Surround & Overhead Sound System	<p>\$400 - \$3,000 per speaker</p> <p><i>*this range accounts for RoomMatch (surround sound), ShowMatch</i></p>	<p><i>Guidizio Universale</i> got the sound system as a contribution from Bose Professional and only paid for installation by Auris Populi. However, following are the average numbers calculated for what</p>	<ol style="list-style-type: none"> <li>(1) Range: Distance required for sound to travel (size of room)</li> <li>(2) Clarity of sound</li> <li>(3) Feedback</li> <li>(4) Sound distortion</li> <li>(5) Frequency</li> </ol>	



		(overhead sound), and PowerMatch (power requirement)  <b>**this price was derived from Bose's prices</b>	they would have spent in purchasing sound equipment otherwise.  (18) RoomMatch (surround sound) Avg. Price = \$1,500 each  (14) ShowMatch (overhead sound) Price range = \$5,600 - \$3,000 each  (3) PowerMatch (compliment needed for sound system) Avg. price = \$2,500 each  Total: 37,600 – 74,000 <i>*This price does not include installation</i>	
Audio Elements	Microphones/recording devices fit for live performances (recommended to be either omnidirectional or shotgun microphones)	Price not available	Price not available  <i>This consideration is mostly focused on the development of VR experiences that could be enjoyed from home, like "Hamlet 360"</i>	This depends on what the organization desires to record and how. If a life performance is being recorded, sometimes the 360-degree video company will also include sound recording. But cutting costs here is possible by outsourcing this feature through another company.
	Headphones	\$100- \$1,434	Headphones with omni-directional sound capacity as the ones required for "C.A.P.E. Drop Dog" start closer to \$200 a pair	<ol style="list-style-type: none"> <li>(1) Comfort</li> <li>(2) Sound quality</li> <li>(3) Muted outside sounds</li> <li>(4) Omni-directional sound capacity</li> <li>(5) Feedback</li> <li>(6) Bluetooth vs. wireless</li> </ol>
App-drama	iPads/Tablets	\$200 - \$1,200 *range according to <i>Lifewire &amp; Business.org</i>	This item is based on the need for a "pick your own adventure" performance like the	<ol style="list-style-type: none"> <li>(1) Screen size</li> <li>(2) Memory available</li> <li>(3) Processing power (this item requirement depends highly on the</li> </ol>



			one offered by Rimini Protokoll	application/software needed) (4) Data connectivity (5) Camera quality (6) Model and brand (old models are cheaper) (7) Price may vary also if purchased in bulk
	Computers (laptops needed)	\$300 - \$3,000 *range according to <i>Business.org</i>	This item is based on the need for a “pick your own adventure” performance like the one offered by Rimini Protokoll	(1) Processing speed (2) Screen size (3) Weight (4) Memory/storage (5) Operating system (6) Features included (7) Type of equipment (8) Price may vary also if purchased in bulk
	Application/software	Price not available	Price not available	Based on multiple case studies, this price is highly variable depending on the immersive performance being done and the software or application requirements for it

In addition to cost considerations, it is important to mention that each of these technologies comes with pros and cons, which this paper does not cover. However, for the purpose of the implementation, it will be important for organizations to consult a tech professional to learn more about the advantages and disadvantages of applying each technology as it relates to the organizational goals of doing so.

In terms of package costs as invested in each of these case studies, some figures have been provided for the most popular immersive shows, and some others derived from the table above. The following figure shows an estimate of the total costs of the case study projects.

Type of Project	Project Name	Main Tech Required for Production	Investment Required
270-degree projections that immerse the	“Giudizio Universale” by Artainment Worldwide Shows	(1) Panasonic Laser Projectors	\$11 Million Private Investment

audience entirely		(2) Bose Sound System (3) Gobelin Tulle, Sharkstooth Gray Scrim	
VR 360 Video production	“Hamlet 360” by CSC	(1) 360-degree video equipment (sound and cameras) (2) Production team (3) Filming Team	Average \$500,000
One-on-one actor to audience experience	“Chained” by MWM And “Draw Me Close: A Memoir” by National Theater	(1) VR headset (2) Motion Capture software (facial and body) (3) Mocap suit (4) Head-mounted rig for facial movement	Estimated investment range for first year of production \$18,584.67 - \$47,758.34  *This kind of technology requires a minimum investment per year of \$3,426.67 to continue using the software.
Choose your own adventure	“Situation Rooms” by Rimini Protokoll	(1) iPad (2) App or software development (3) Headphones (4) Recording station	First investment on physical equipment, excluding software/app development, estimation \$600 - \$5,634
360-degree physical experience	“C.A.P.E. Drop Dog” by CREW	(1) VR headset (2) Headphones	Starting investment estimate of



		(3) Portable computers	equipment, excluding software
		(4) Software	\$1,199 - \$5,233

After looking at these cost tables, it is evident that the investment necessary to make any of the immersive projects available is extremely variable, even within the same option itself. This is due to the extensive amount of technology companies competing to be on top of this emerging market. It is also, because some experiences require a much lower investment in technology than others. Of course, this table is not fully encompassing of all costs inherent to this kind of projects, as most of this information has been kept confidential within most of the companies considered in this study, with the exclusion of “Giudizio Universale” and “Hamlet 360”. This is to say that creating some types of immersive performance is possible cost-wise, even for small theater companies, start-ups, and nonprofits.

However, for the most advanced and highly successful experiences like “Chained”, “Hamlet 360”, and “Giudizio Universale” high cost investments are necessary. If considering investing in immersive technologies like the ones used in those three examples, a comparative analysis on costs of different combinations is recommended to figure out which package is doable for the organization. Furthermore, note that each package is possible at a minimum and maximum cost. However, it is

not recommended to choose the lower prices for everything, as low prices generally comprise the quality of the performance and can harm the audience experience, and evidently if the audience experience is lowered significantly, the answer to ‘Is it worth the investment?’ would be ‘absolutely not!’.

## Financing Strategies

But don’t be taken aback if the organization would like to put on a spectacle like “Giudizio Universale” in Rome! There are ways to finance this high expense, as exemplified through each one of the case studies in this research. These financing opportunities can help make this investment both affordable and cost-efficient. Some important questions to ask prior to making the final decision of investing are:

- 1) What is the size of your organization’s available budget? Which packages can it afford?
- 2) Can the organization outsource any of the technology requirements by partnering with or getting sponsored by a tech organization?
- 3) Is the organization planning to create this experience alone? Or is

this work going to be done through a co-creation partnership?

- 4) And last, can they make the case to funders to sponsor this project?

A lot of these type of projects have begun by partnering with technology start-up or established organizations, who were planning to shoot a new technology product into the market and needed testers. "Draw Me Close: A Memoir" is an example of a project like this. When the National Theater of London decided to invest in this project, IKINEMA was working on the development of their *Orion's* Motion Capture technology which worked together with their HTC Vive VR set. Needing testers, IKINEMA was happy to provide the product for free to function as a beta-testing project. They were looking to test and continue improving this technology package before putting it in the market. Not having to pay for the most expensive technology involved in this kind of immersive performance, made National Theater's performance affordable and allowed them to invest more money to market the performance and attract broader audiences to the theater. This partnership also allowed them to perform in festivals like the Sundance Film Festival. That being said, this partnership is a little hard to do, as organizations need to be aware of emerging technologies during their development period, before they become popular, to get technologies supplied for free in exchange for free testing in performing arts.

If the previous recommendation does not work, other case studies also proof that partnering with a tech-giant to "market" their products is also a good way of financing this type of projects. Take "Giudizio Universale: Michael Angelo and the Secrets of the Sistine Chalep" as an example. When the producer decided to proceed with this investment, he contacted specialized tech companies including Panasonic and Bose to develop their sound and projection systems entirely. With the offer of a marketing opportunity for their companies, both Panasonic and Bose agreed to sponsor part of the technology materials required for this production, lowering the cost to Artainment Worldwide Shows. Similarly, the Commonwealth Shakespeare Company, being one of the first theater companies to decide to offer a VR theater experience for free to audiences who could not attend the performance, attracted the interest of tech giants like Google, who agreed to partner with them in this endeavor and pay for part of their production costs. Another example is "Chained" who also being the first in the U.S. to try a theater performance with such high-tech requirements involving motion-capture technology and Virtual Reality, both emerging technologies, was able to raise interest by their current partner, Sony Pictures, who provided part of their technology. They were also able to get investments from Facebook, Google, and Samsung, all of whom had been trying to gain a competitive edge in these



technologies and thought that implementing these technologies to performing arts was a good challenge for that purpose.

As seen from these examples, it does not seem like such a bad idea to invest in emerging, cutting-edge, technologies, especially considering the high interest of tech giants who are constantly looking for ways to improve their products. The entertainment industry has recently been noticed by companies like Sony, Google, Facebook, IKENEMA, and Vitcon as an opportunity to improve tech products. It was pointed out that performing arts require complex technological settings that

are not yet sufficiently produced in the market, posing opportunities for new products to emerge in the future.

### Revenue Model

As a last step, after the decision has been made to get this project started, it is important to start thinking of revenue models to evaluate if this implementation will pay off or not. To answer this question, the case study organizations were investigated to see what they were doing and put together a table comparing the revenue models for each one, to discover patterns and differences among them.

	Chained	Draw Me Close	Situation Rooms	CAPE Drop Dog	Giudizio Universale	Hamlet 360
Ticket price	\$40	£15 (around \$20)	20 € (around \$23)	-	€16.20–34.56 (\$18.80–40.11)	Free
Capacity	Single user	Single user	13 people	Single user	1,763 seats	Single user
Duration	25 minutes	60 minutes	80 minutes	20 minutes	60 minutes	60 minutes
Frequency	-	Open from 10:45am - 8:45 pm every day	From 6:00pm to 12:00am	Dependent on touring bookings	6-8 shows per week all year round	Unlimited
Financing	Partners and investors	Co-creator, partners, and collaborato	Co-producers & funders	Commissio ned by two organizatio ns &	Sponsors, partners, collaborato rs	Partner



		rs		multiple partners		
Profit	For profit	non-profit	for-profit	for-profit	For profit	non-profit

From this it was learned that three factors are relevant to making revenue or break-even:

- 1) Size of the venue/Capacity per production
- 2) Ticket price charged
- 3) Frequency of performance
- 4) Partners, sponsors, and ability to raise funds from donations

This demonstrates that there are multiple ways of making revenue back. It is just a matter of how fast and how sufficiently the organization can do so. Overall however, the answer to how fast and how efficient, and the ability to make revenue after this investment also depends on the purpose of implementation. So, for instance, the CSC did not charge any audience member to experience “Hamlet 360”, as this was part of their strategy to expand reach and bring new audiences to the theater. This matched their organization’s finances, being a nonprofit, as they were also able to raise funds, get sponsors, and partners to make this project possible. On the other hand, a project like “Giudizio Universale,” created as a for-profit organization, had both a mission-oriented goal for this project but was highly tight to their goal of making revenue. Hence, they present their performances in a big venue of 1,762 seats

and collect a higher ticket prices than other immersive performances do. Nevertheless, overall, note that the highest ticket price currently available is \$40 charged by two of the most trending immersive theaters available today. If the community the organization is serving is not ready for this types of shows, it is important to keep the ticket prices accessible, as these case study organizations are currently doing.

## Conclusion

In conclusion, the answer to whether or not is worth it for theater organizations to invest in immersive technologies is not a simple one, as it really depends on the organization’s mission, strategic goals, financing opportunities, and chosen revenue models, which very often must adapt to fit the communities the organization is serving. Nevertheless, according to Joan E. Solsman from CNET and other reporters claim, immersive theater experiences are becoming an opportunity to “serve up something people are willing to pay for” (Solsman, CNET,

February 2019).<sup>5</sup> Not only that, but Ben Formaker also states that immersive technology is here to stay. Hence, this is just another opportunity for theater organizations to embrace looking forward to attracting new audiences to their venue. However, it remains on top of their priorities to check first if this implementation matches their mission and goals to ensure their current relationship with patrons remains positive and the audience experience continues to be satisfactory.

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<sup>5</sup> Solsman, Joan E. "This VR-live actor mashup is like your best absinthe-fueled nightmare." *CNET*, February 25, 2019.

<https://www.cnet.com/news/chained-vr-live-actor-mashup-is-like-your-best-absinthe-fueled-nightmare/>.



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