

SensoryX

- Part B - Due Diligence Results & Investment Recommendation

*“Should investors participate in SensoryX’s
upcoming Series A Investment Round?”*

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Introduction to Part B

Summary of Investment Opportunity with SensoryX

After recently wowing the audience at the Consumer Electronics Show (CES) in the beginning of 2018, SensoryX, a Swiss-based VR hardware startup is looking to use this momentum to launch a Series A funding round. Although their VR Glove System, named VRFree, promises to deliver a new level of immersion during the VR user experience, does SensoryX offer a promising investment case for potential investors for their next round of funding?

The authors here present our Due Diligence results after a thorough investigation of the SensoryX's investment case and offer a final investment decision recommendation based off our Investment Decision-Making Framework. For a more detailed overview SensoryX as a startup and its history, please refer to Part A's Case Study and the Part B Presentation.

Section 1 - Investment Decision-Making Framework

Based on "How Venture Capitalists Evaluate Venture Opportunities" and discussions with angel investors from class, the authors created a Investment Decision-Making Framework that can be used to evaluate the SensoryX opportunity. Furthermore, we went one step further with our framework and built an assessment model where our Due Diligence team could score the various decision making criteria in order to transform our qualitative judgements into quantitative values as a means of better informing the the inherently qualitative decision on whether to invest or not. A simple overview of our Investment Decision-Making Framework can be found in Figure 1 below.

Market Opportunity	Technology	Team	Go-to-Market	Revenue & Financials	Investor Return Potential
- Size of Market	- IP	- Skills	- Marketing Strategy	- Break Even Timing	- Valuation
- Exit Opportunities	- USPs	- Commitment	- Product Pricing	- Burn Rate	- Time to Exit
- Investment Trends	- Customer Validation	- Composition	- Partnership Strategy	- Margins (as-is & to-be)	- Expected ROI
	- Competition		- Scalability	- Sales Forecast	- Risk
			- Distribution		

Figure 1: Overview of our Investment Decision-Making Framework

Although Figure 1 above describes a concise overview of the entire Investment Decision-Making Framework, it is critical that we also define the underlying evaluation questions for each criteria in order guide our Due Diligence evaluation and scoring process. In the following table, next to each of the key criteria, the specific evaluation questions are listed that were used by the due diligence team during our assessment of the SensoryX case.

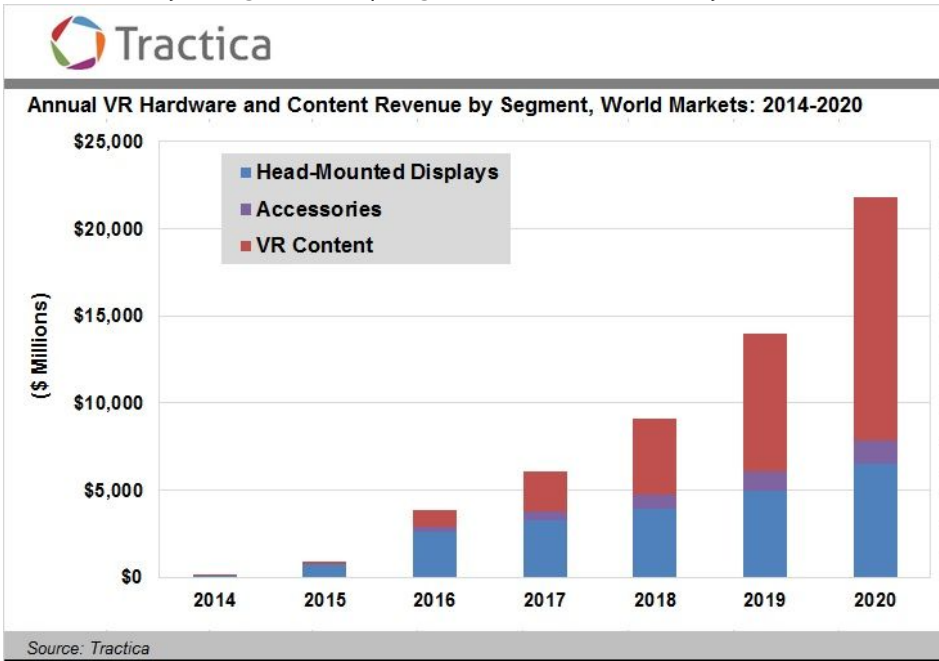
Detailed Overview of Decision-Making Criteria Evaluation Questions

MARKET OPPORTUNITY	
Size of Market	What is the size of the market for VR/AR hardware? How is the market expected to grow in the next years? How will it be distributed among the major players?
Exit Opportunities	What opportunities for an exit are there? What is the likelihood of an IPO or profitable buyout by one of the major players?
Investment Trends	What investments have recently been placed, and where will future investments in the VR/AR market happen?
TECHNOLOGY	
IP	Is the intellectual property of the company protected and valuable? How is the IP protected across continents?
USPs	What are the strengths of the product? Do these strengths set the product apart from the competition?
Customer Validation	How did (potential) customers react to a presentation of the prototype? How does this reaction compare to reactions for competing products? Are there real paying customers using the product?
Competition	Are there a lot of competing products/companies? What are the pros and cons of alternative products and will it be easy for SensoryX to compete with them? Which price ranges and market segments do competitors target?
TEAM	
Skills	Do the founding members(/early employees) possess the required technical/financial/economical/soft skills to successfully implement their idea in the targeted market? Are the skills/tasks/responsibilities distributed among the founders? How exactly? Are they complementary/redundant?
Commitment	Do the founders show commitment to their idea? Investment of own funds? Resignation from previous positions? Are they willing to sacrifice time/money if things get intense? Team spirit?
Substitutability	How likely is it to loose and subsequently substitute an essential team member? In terms of skills/network/...
GO-TO-MARKET STRATEGY	
Marketing Strategy	Does the startup have a clear, feasible, and believable plan for getting their product in the hands of customers? Is there any proven traction with implementing an effective marketing plan?
Product Pricing	Does the pricing model fit the startup's target market while still leaving room for profit?
Partnership Strategy	Does the startup have a clear, feasible, and believable plan for leveraging important partnerships? Is there any proven traction with partners?

Scalability	Is the business model scalable and is it easy to sell products to customers without having to significantly increase costs?
Distribution	Does the startup have a clear, feasible, and believable plan for the distribution channels that will deliver their product to customers? Is there any proven traction with implementing an effective distribution plan?
REVENUE MODEL & FINANCIALS	
Break Even Timing	How much time does it require for the company to make enough profits so that they cover the costs that they have spent? In other words, how many units must be sold to recover all the money spent?
Burn Rate	How much money does the company spend per year from its initial money pool?
Margins	Does the company make enough margin on its products, so as to make enough profits on the number of units it sells? How do the margins look like in different market sectors and different sales channels?
Sales Forecast	Does the company have a strong sales order for the future to justify further investments in the company? Are there sales orders already signed off or expected to be finalized soon? Is this believable?
RETURN ON INVESTMENT	
Valuation	What is the economic value of the business? Are there investors who believe that this economic value is correct, such that they are willing to invest further into the company?
Time of Entry	Is the market at the right point to enter into a particular industry or company? Is the investor too early or too late to enter into the market, because of which they will not be able to get the expected ROI?
Expected ROI	How much money can an investor expect to get back by investing in a startup company? Does the estimated return justify the investment in the first place?
Risk	What are the risks associated with investing in the company, keeping in mind the technology, market, pricing, sales and other aspects associated to the success of the company. How risky is it to invest now? What could be the risk-reward ratio?
Time to Exit	How long does it take an investor to exit from the investment, after having reaped the expected ROI?

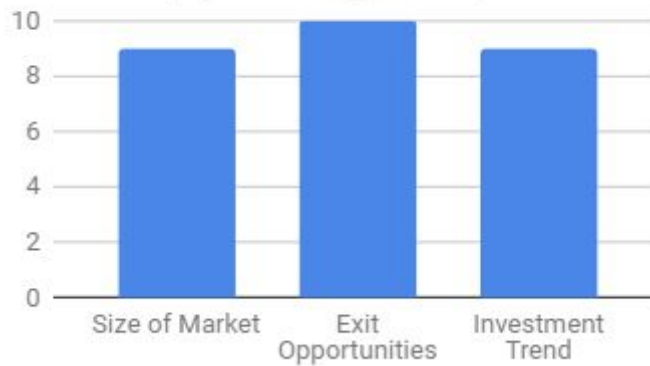
Section 2 – Due Diligence Results for SensoryX

Market Opportunity Analysis – High growth market with excellent exit opportunities

SENSORYX – MARKET OPPORTUNITY ANALYSIS		SCORE – 9.3
Criteria	Score	Justification
Size of Market	9	<p>The market for virtual and augmented reality is one of the hottest right now, and Gartner projects it to mature and be productive in 2 to 5 years, according to their latest technology overview, called the “Hype Cycle”. Projections for the entire VR/AR market as well as for the hardware accessories market vary depending on the institution that conducted them, but they all agree on rapid growth in the next few years.</p>  <p>Source: Tractica</p> <p>One recent report by Tractica (shown above) suggest that the hardware accessories market will reach the \$1B revenue mark in the years 2019 or 2020. The distribution of market share depends on the strategy of the major head-mounted display producers. If they can agree on open standards, there will be a primary manufacturer of hardware accessories for all platforms. We expect that this will not be that case, based on experiences with the smartphone market, that has a wealth of companies offering accessory products. The market opportunities will thus be manifold, and the timing is right to participate in the highest growth phase of this market.</p>
Exit Opportunities	10	<p>Two major exit opportunities should be considered. First, an IPO will make company stakes publicly tradeable. Second, one of the major players acquires the company. We deem the second option to be much more likely. Since the market is highly competitive and the market leader position is up for grabs, the big companies are desperate to position their product as technologically superior and with better user experience. Past experience shows that the same companies have a high liquidity and do</p>

		not shy away from buying startups for large sums, both to acquire intellectual property and talent. We believe that startups in this market will be fought over by big companies, which can lead to lucrative buyouts.
Investment Trends	9	Although only sparsely reported, several recent investments have taken place in the VR/AR hardware sector. The biggest investment rounds were closed by Thalmic Labs with Intel Capital over \$120M in September 2016 (source), and by Leap Motion with JPMorgan Asset Management over \$50M in July 2017 (source). Most of the manufacturers of head-mounted displays are either big software companies themselves (Google, Facebook, Microsoft), or have established connections with software companies (Sony, Samsung, HTC). Therefore, investing in either VR software or VR primary hardware (head-mounted displays) is near impossible. This leaves investments into a VR hardware accessories company as the only option with high expected investor returns.

Market Opportunity Analysis - 9.3

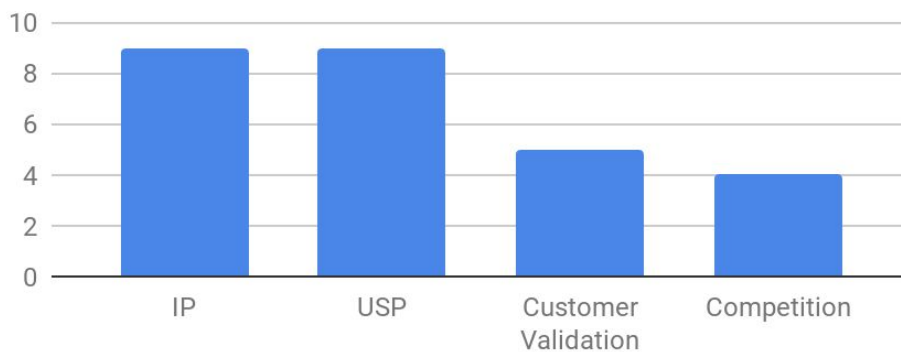


Technology Analysis

SENSORYX - TECHNOLOGY ANALYSIS		SCORE - 6.75
Criteria	Score	Justification
IP	9	<p>The main IP of SensoryX constitutes the algorithms developed by the team, and the specific combination of sensors. They have taken several steps to protect their IP. The first step was taken after the initial Angel Investment from StartAngels in May 2017. Part of the money that was received in the investment was used to patent their technology (patent pending at time of writing). The patent includes the concept of usage and positioning of the sensors, the combination of the different sensors, and the inhouse-developed algorithms. The patent was submitted for the European as well as the American market. A second step that has been taken to protect the IP has to do with the assembly. SensoryX has chosen to outsource some of the production to China. However, to make sure that the most important parts of the product could not be easily copied, assembly and algorithm design was implemented in Europe.</p>
USPs	9	<p>The main use case of the virtual reality gloves is to provide a way to naturally interact with a virtual world. To do this, there are several specifications that determine the usability of the gloves. The first important specification is the sensors that are used, one of SensoryX's biggest strengths. Existing technologies consist of controllers that are both unnatural (ie. do not provide an interaction between the user and the virtual world that is familiar to the user). In addition, these controllers are interfaced through cables, leading to hazardous situations in which the user could be seriously injured. Other companies tried to solve this problem by using cameras. However, this would lead to problematic situations in which the visual connection between the transmitter and receiver would be occluded, disrupting the experienced fluency for the user. SensoryX solved these problems by directly implementing the sensors in the wearable glove, and interfacing through a receiver that could be attached to the virtual reality headset. The sensors are directly implemented in all fingers, which gives them the ability to separately register individual finger movements, leading to a more immersive experience. In addition, this approach also makes the external references obsolete, allowing for even more freedom in mobility.</p> <p>A second important property of the product involves the compatibility of the device. Where the competition has been bound to one platform (ie. PlayStation VR), the virtual reality headset produced by SensoryX is compatible with a wide range of different platforms. This compatibility between systems allows users to choose their preferred headset, while still being able to use the gloves. In addition, this allows SensoryX to capitalize on the strengths of individual headsets, without having to do any of the development themselves.</p> <p>Finally, perhaps the biggest strength of SensoryX virtual reality gloves is the algorithms that are used to process the motion tracking. These algorithms enabling the tracking of very small movements of individual fingers in a very precise manner. Because this precise tracking, the experience becomes more immersive, but it also greatly expands the possibilities for usage of the gloves in areas other than gaming (medical training, flight simulation, and other</p>

		fields).
Customer Validation	5	<p>SensoryX biggest product reveal was at the Consumer Electronics Show (CES 2018) in Las Vegas. Initial reception of the product was overwhelmingly positive. Headlines included positive sounds ranging from 'VRfree gloves feature great hand and finger tracking' too 'Meet the Swiss startup with a VR glove that wowed CES'. One interesting observation comes from the fact that none-staff reviewers (ie. interested early adaptors that attended CES), were also overwhelmingly positive.</p> <p>In addition to consumers liking the product, even their competitors were interested, some even inquiring about licensing options. However, B2C could potentially be only a small market due to the heavy competition, low profit margins, and high marketing costs. B2B on the other hand has the potential to move large volumes of the product. The SensoryX team is currently taking meetings with a large South Korean theme park interested in the product, which could potentially be a high volume customer.</p>
Competition	4	<p>Unsurprisingly, the market for VR hardware accessories is highly competitive. There is a multitude of companies offering a wide range of possible solutions for motion capture. Leap Motion produces a camera-based gesture tracker, which is priced below the VRfree gloves at 80€. A simpler and less conspicuous solution is an armband (Myo, UnlimitedHand) that measures arm motions as well as muscle contractions. The Myo armband is priced at \$199. Naturally, there are also other competitors offering a virtual reality glove very similar to SensoryX's product, most noticeably Manus VR, Senso Glove and Noitom Hi5 VR Glove. They are priced a bit higher between \$599 (Senso Glove) and €1990 (Manus VR). Manus VR clearly targets companies as their target group, while Senso looks to sell to consumers directly. To cover an important aspect for a true immersive experience, the companies Dexta Robotics and HaptX have developed an exoskeleton glove that can also exert pressure feedback to the user's virtual actions. These products are still in development and have yet prove their viability. All in all, the space for VR hardware is very crowded, and it will be tough for SensoryX to establish a position as industry leader. Some of the aforementioned companies have already received sizable investments, but none have delivered a convincing technology solution yet, so we see an opportunity for SensoryX, both in offering a better price as well as superior technology.</p>

Technology Analysis - 6.75



Team Analysis

SENSORYX - TEAM ANALYSIS		SCORE - 8.3
Criteria	Score	Justification
Skills	8	<p>From a technical and financial perspective it can be assumed that the founding team is highly qualified: Rolf possesses a PhD in electrical engineering, Fabian possesses a PhD in finance; the team is complemented by Hagen Seifert (2D and 3D display technologies) and Jane Doe (no additional information available). The founding members appear to have a clear and complementary distribution of tasks and responsibilities. They are convinced that they are able to fulfill each role/requirement including legal, distribution and production challenges. However no immediate background in production or distribution was apparent, which could be considered a key element for large volume sale of consumer electronics. An estimate of the personal requirements for a potential future upscaling is difficult as the exact implementation of the go-to-market strategy could remain a bit unclear. The team might benefit from temporary expert knowledge/coaching during a ramp-up.</p> <p>From a first impression the founders seem to possess the ability to resolve conflicts quickly and constructively within a team and communicate them accordingly. They are aware of their own limitations, but seem to rely on their fast learning abilities to overcome shortcomings quickly. They feel reinforced in doing so due to some negative experience, where supposed professional consultations yielded very poor results. Nevertheless they seem to be open for advice from collaborators/mentors they consider worth their time and trust.</p>
Commitment	10	<p>The founding team is highly motivated and seems deeply convinced of their technology and its USP. They demonstrate commitment by employing own personal funds for the company and by resigning from their former positions to work full-time on Sensoryx. Their hands-on and can-do attitude for overcoming obstacles and quick problem solving (e.g. by sewing glove prototypes themselves) is living proof of their attitude.</p>
Substitutability	7	<p>The risk, that one or even the whole team needs to be replaced is evaluated low. Due to the perceived well-balanced skillset among the founders and their high motivation to make their business thrive, the risk of an opt-out of one of the founders is considered low. However as the success of the business is linked to the technology and its development there remains a residual risk for not being able to substitute a key player in the required time-frame in the case of unforeseeable events.</p>

Team Analysis - 9



Go-to-Market Strategy Analysis - Lack of strategic clarity & distribution headwinds

SENSORYX - GO-TO-MARKET STRATEGY ANALYSIS		SCORE - 5.4
Criteria	Score	Justification
Marketing Strategy	6	Although SensoryX does indeed have a Marketing Strategy for getting their product in the hands of customers, it is not fully clear how this will really work in the B2C market, how they will work with distributors and leverage partners. There is still lots of discussion about who their ideal early adopters really are (i.e. theme parks, studios, arcades, corporates) and the team lacks a consumer electronics marketing specialist. Once SensoryX gains a more focused and clear vision for their marketing strategy, these scores could be improved.
Product Pricing	7	In the high-end VR gaming space, \$350 is not prohibitively expensive but will most likely create issues for the mass market just as experienced by the expensive headset manufacturers. If they take a 'Tesla Roadster' approach and offer only high-margin high performance gloves in the beginning as a means of funding a more mass-market model, this could be a solid way forward although their pricing is still very unproven with real customers.
Partnership Strategy	6	In order to be successful in the consumer electronics space, partnerships are key in order to ensure wide scale adoption and leveraging partner's sales channels without having to build a direct sales force. Although, SensoryX has some ideal partners in mind and may have started some discussions, there is little evidence of getting the important technology giants as partners.
Scalability	4	Since their business model revolves around selling Hardware in a complicated technology space like VR where emerging standards and trends are constantly in flux, it is difficult to consider their model scalable.
Distribution	4	Although they have yet to sell a product, they plan to adopt a direct to customer model during their Indiegogo campaign and then transition to their own ecommerce site after that. Although this is a valid plan for now, significant headwinds remain as they will have to work hard to penetrate or circumvent typical consumer electronics distributors. Since the distribution is unproven and very difficult in consumer electronics, there are still significant risks here.

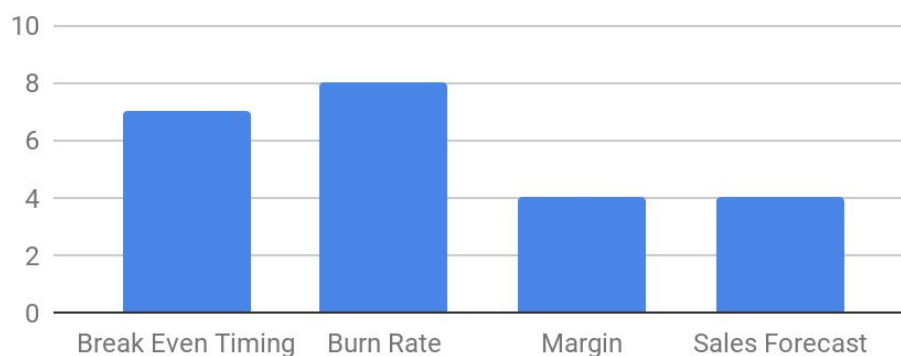
Go-to-Market Strategy Analysis - 5.4



Revenue Model & Financials Analysis

SENSORYX - REVENUE MODEL & FINANCIALS ANALYSIS		SCORE - 5.8
Criteria	Score	Justification
Break Even Timing	7	SensoryX has been active as an <i>aktiengesellschaft</i> (corporation) since early 2015. The team has been small since its inception. They have been able to reach the point where the hardware is almost ready for production, without having to break the bank. The break even time would depend on how good the sales take off. Since the burn rate has been low, this time could be pretty fast.
Burn Rate	8	Since the team size has been small (4 members) until now, and all the activities have been done in-house, the company has managed to spend as little money as needed. SensoryX has a burn rate of \$500,000 per year that includes, salaries, rent and expenses like trade shows. As a startup, they have done a good job at keeping the spending in check.
Margins	4	Since the competition has accessories for consumers priced in the range of \$200 to \$400, SensoryX has to keep its prices in the same range. The production cost of almost \$200 does not allow them to get any reasonable margin when going through distributors and dealer channels or through third party websites like Amazon etc. The only way to make decent margins is to sell directly to business or partner up with other companies to sell hardware.
Sales Forecast	4	In terms of sales, it is still early days for SensoryX. The sales forecast are not clear and they do not have substantial customers at the moment. The kickstarter campaign will be the first production batch, but the date for start is not known yet. The reaction from consumers about this product will make or break the future sales deals. Hence future sales is an area of concern at the moment, but it could change rapidly if products are proven and if there is rapid change in market.

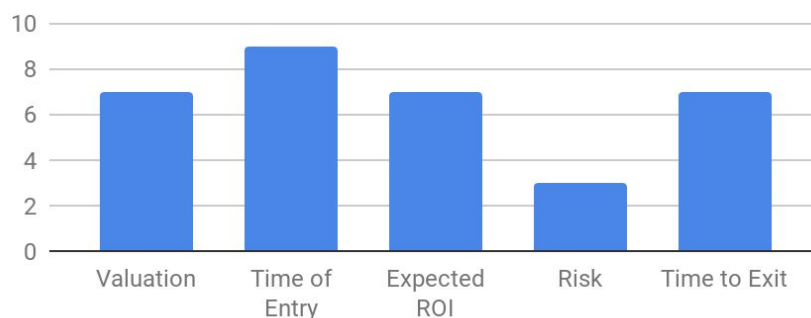
Revenue Model & Financials Analysis - 5.8



Return on Investment Analysis

SENSORYX - INVESTOR RETURN POTENTIAL ANALYSIS		SCORE - 6.6
Criteria	Score	Justification
Valuation	7	With the seed funding round by angel investors, and assuming around 30% share dilution, current valuation of the company is around \$3Mn. This valuation seems right for a company that has a good team and a proof of concept product. SensoryX is looking at a \$15Mn VC funding for 20% of the company stake, which takes the valuation to \$75Mn. For a company that does not have established sales yet, this number seems to be a bit on the higher end. Startups in VR have been able to attract a lot of attention in the last months and it could be possible that SensoryX can pull this through. Although a lower valuation would give them realistic chances of getting the funds.
Time of Entry	9	The time of entry into the market could not be better for SensoryX. According to the gartner hype curve, VR in general has gone through the ups and down phases associated with a new technology and now could be on the trajectory of exploding as the next big thing. In terms of investment, VR is at a low point with a seemingly bright future and thus it is a great time to invest money into VR.
Expected ROI	7	If the product is accepted by users and the sales start to pull in, the investors will easily make very high return on their investment within a few years time. The success of the company will also depend on how well the team is able to scale up itself and its production.
Risk	3	Although the market looks very amicable, the fact that the product is not completely proven yet and that there are no sales to show yet, indicates a high risk. The risk can be mitigated with investment into a solid go to market strategy. Looking at all the other factors, it still looks like the risk-reward ratio is quite good compared to other markets.
Time to Exit	7	If things go as planned, the investors can get their expected ROI in a relatively small time frame.

Return on Investment Potential - 6.6



Section 3 – Investment Recommendation

Summary of Due Diligence Results:

Overall Investment Analysis - SensoryX



Figure 2: Overview of SensoryX’s Due Diligence Results

Based on the results of our Due Diligence and Investor Decision-Making Framework assessment, SensoryX looks to have the typical profile of a early-stage hardware startup in a hot industry - a strong foundation in the Technology, Market Opportunity, and Team categories but still has several weaknesses in the Go-To-Market Strategy and Revenue/Financials categories due to their still unproven business model. Furthermore, from an investor return perspective, SensoryX’s business plan does meet the general criteria for potentially offering investment returns in line with Venture Capital return expectations but still with plenty of uncertainty risks. This puts SensoryX in a difficult situation where they could be still too unproven for typical Venture Capitalists interested in Series A investing while also being beyond the Angel investing stage since the capital required to take them to the next level is beyond what a typical Angel consortium can offer. Therefore, SensoryX must consider which type of investor would be most suited to invest in the SensoryX case considering their unique situation.

Investment Recommendation:

Overall, our Due Diligence Team’s investment recommendation is very conditional and depends heavily on the type of investor. Since it is not a clear yes or no investment decision unless you know what type of investor we are addressing, we have broken down our recommendation into 5 categories, Already Invested Angel, New Angel, Typical High-Tech VC, Specialized VR VC, and Strategic VR Investor. Please refer to the following table for a complete explanation of our recommendations for each type of investor.

Should investors participate in SensoryX's upcoming Series A?

Investor Type	Decision	Justification
Already Invested Angel	Yes with Conditions	Angel Investors who have already participated face a tough choice, but if they can offer direct expert support that can help improve SensoryX's weaknesses, then the serious risks ahead could be minimized and therefore a positive rationale for investment could be made. Furthermore, if the Angel has limited exposure to consumer electronics, VR, or gaming without any interesting startups in the pipeline, then a follow-on investment would be a good idea if you are certain you can directly address the weaknesses.
New Angel	No	New Angels should not consider SensoryX because the amount they are looking to raise is much higher than a group of Angels can offer and based on the small portion of ownership that would be given in return, the risks are simply too high for SensoryX's unproven model at the moment. Better to wait and get into a similar type of startup in a seed round instead. Buy \$GAMR for gaming exposure.
Typical High-Tech VC	Maybe, but better to wait	In general we would recommend that the typical High-Tech VC wait for additional customer validation before investing, since most VC's require proof of customer traction before investing. Only if the VC can very confidently assume they will be able to directly support SensoryX in overcoming their main weaknesses should they consider investing at this still early-stage.
Specialized VR VC	Yes, great fit!	For VC specialized in investing in the VR space, SensoryX's case is very interesting due to their superior technology. Therefore, SensoryX could offer a great addition to the overall portfolio since it is important for specialized VC's to build a portfolio of several "bets" as a means of ensuring at least 1 of them achieves the big returns necessary to keep the fund alive.
Strategic VR Investor	Yes, great fit!	Strategic VR Investors like Oculus, Vive, Sony, etc have a track record of investing hundreds of millions into VR. For the venture arms of these strategic investors, SensoryX makes an ideal investment opportunity due to the startup's strong IP and the opportunity to leverage the glove-based system across the VR industry potentially as an emerging standard.