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Navigating the Challenges and Benefits of Virtual Reality Learning in Exports

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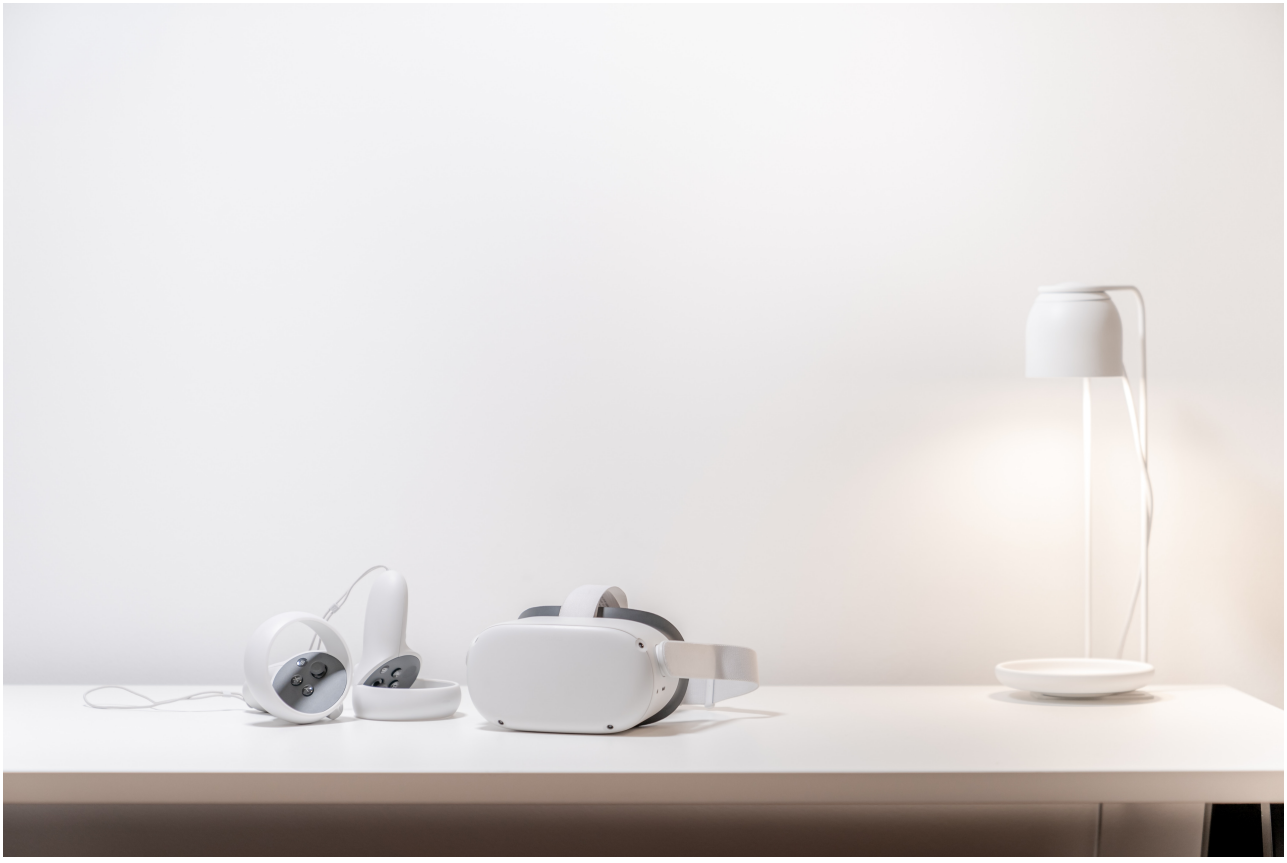
Have you ever wondered how Virtual Reality (VR) could revolutionize learning within small and medium-sized enterprises (SMEs)? In today's rapidly evolving business landscape, continuous learning is the cornerstone of growth and sustainability for SMEs. The adoption of cutting-edge technologies, such as virtual reality, has become paramount in enhancing workforce skills, driving competitiveness, and fostering innovation. (Kuhmonen & Heiskanen 2022).



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In this article, we explore the challenges faced by SMEs when adopting virtual technology in competence development, drawing insights from Laurea University of Applied Sciences' VIVA project, which targeted exporting businesses (www.vivaboost.fi). The VIVA project organized VR training sessions for businesses and utilized the WondaVR tool in customized co-creation workshops.

WondaVR is a virtual reality (VR) platform that enables users to create, share, and experience interactive VR content. WondaVR was chosen as the tool for the VIVA project through a market dialogue process due to its accessibility and cost-effectiveness. It is also marketed as an easy-to-use tool which doesn't require coding skills or the use of VR goggles, but it can also be used on a computer or mobile devices.

As a result of these tailored workshops, the participating companies developed trainings for various stakeholders, including employees, foreign customers, and retailers. Furthermore, these companies had the opportunity to pilot test the potential of WondaVR. The project's highlight was the development of the "Export Skills Basecamp", a continuous learning platform, created in collaboration using the WondaVR tool.

The integration of Virtual Reality learning in SMEs, especially within the export sector, brings forth a set of distinctive challenges. These hurdles can be categorised into three main areas:

1. **The business landscape**: SMEs face a constantly changing and unpredictable global environment with economic shifts, geopolitical complexities, and disruptive events like COVID-19 pandemic.
2. **Internal company factors**: Within SMEs, internal constraints such as limited resources, resistance to change, traditional learning approaches and different learning capacities of employees' can slow down the adoption of innovative technologies like VR.
3. **Technology-related obstacles**: Despite its potential, VR adoption in SMEs can be hindered by problems like usability, costs, and integrating VR into existing workflows.

It's important to understand that the factors discussed can vary significantly among SMEs. This variation is due to industry-specific factors and the unique characteristics of each company's culture and operations. In fact, the challenges, and opportunities in adopting virtual technology and co-creation are as diverse as the SMEs themselves.

SMEs' transition into survival mode due to various external factors

In today's rapidly changing and uncertain global landscape, SMEs confront a multitude of challenges. The COVID-19 pandemic disrupted operations, while geopolitical conflicts like Russia's invasion to Ukraine and rising inflation rates compound the complexity.

These factors force businesses to grapple with cost pressures and supply chain disruptions, pushing many into a state of "survival mode." In this mode, companies focus on mitigating impacts and ensuring resilience amid the dynamic and demanding environment.

Company-related internal obstacles

SME exporters encounter specific internal hurdles on their path to competence development. Limited financial, technical, and human resources hinder their ability to adopt emerging technologies. Time constraints, driven by daily operational demands, leave little

room for innovation or co-development efforts.

Creating high-quality VR content for export-related training can be time-consuming and costly. This includes also ensuring the content is accurate and up to date in a rapidly changing global trade landscape. Keeping VR content up to date with the latest export regulations, market trends, and industry standards requires ongoing effort and investment.

Resistance to change and reluctance to embrace new technologies are common, often due to a lack of awareness about the benefits. Immediate business objectives often overshadow long-term learning and skills development goals. Risk aversion adds to the complexity, as SMEs weigh the timing and value of tech investments like WondaVR.

Uncertainty surrounds co-development initiatives, with concerns about information security. Skills gaps and hesitancy to experiment, especially among non-IT companies, can impede progress. A traditional view of learning, relying on off-the-shelf training, hampers the adoption of innovative methods.

Developing effective methods for evaluating learner performance in VR environments can be demanding. Additionally, quantifying the impact of learning on business performance is challenging due to a lack of effective metrics. Concerns may arise about the completeness of export skills development resources in platforms like the Export Skills Basecamp. Finally, changes in key personnel can introduce instability, potentially delaying competence development. SME exporters must strategically address these internal challenges to unlock growth and innovation.

Challenges with WondaVR

WondaVR is a virtual reality content creation platform, which was utilized by VIVA project's target SMEs. User feedback revealed several challenges with WondaVR:

1. Usability concerns: Some companies find WondaVR cumbersome, questioning its "easy-to-use" reputation for SMEs.
2. Time-consuming content creation: Content creation of learning environments requires time, know-how, planning and updating.
3. Lack of "wow factor": Environments created with WondaVR may not always deliver the expected "wow" factor.
4. Compatibility issues: Computers may struggle to run WondaVR smoothly, affecting the user experience.
5. VR goggles preference: Some users report a better experience with VR goggles compared to a web browser. However, not all companies have access to VR goggles. On the other hand, some prefer to use browser due to "VR sickness" they suffer from, meaning nausea from wearing the headset.
6. Misalignment with goals: For certain SMEs, WondaVR didn't align with their original project goals, particularly in creating learning environments for trade interactions like contract negotiations.

7. AI integration challenges: Integration of AI into WondaVR was reported as unsuccessful. The AI transformation in the spring 2023 led Wonda to embark on the integration of AI. We were not able to utilize this opportunity during VIVA project, since the project ended in the summer 2023.

Sparks of joy and success in the VR experiments

Despite numerous obstacles, the VIVA project experienced moments of joy and success during its VR experiments. The target companies, which created customized WondaVR environments, discovered practical applications for this new technology within their businesses. They responded positively to the introduction of this innovative tool and curiously explored its capabilities. Here are a few comments from VIVA project companies about their experience with the new virtual reality tool:

> *"Participating in hands-on experiments with the WondaVR tool during tailored workshops was eye-opening. The practical nature of the work allowed us to immediately apply what we learned in our daily operations."*

> *"The end result has been beneficial, and we've identified opportunities to integrate the VR platform into our business, particularly in areas like training and onboarding."*

Despite facing challenges, companies using customized WondaVR setups discovered practical applications for this new technology, hinting at its potential in corporate learning.

Unlocking Virtual Reality learning in SMEs

The ideas and suggestions shared here are the result of our discussions and interactions with SMEs involved in the VIVA project and the technology service provider. These insights are aimed at guiding SMEs in making the most of VR learning while being aware of the challenges and considerations they may encounter.

Topic	**Action for SMEs**	**Challenges and Considerations**
Tailored support and training for SMEs	Seek customized support and training to demystify VR.	Evaluate technical skills of staff and ensure that the skills are at adequate level. Motivate staff to use VR. Assess available resources. Find cost-effective training.
	Explore cost-	

Affordable VR solutions	Explore cost-effective pricing models for VR solutions.	Define the need for VR learning and carefully allocate budgets.
User-centric VR design	Prioritize user-friendly VR environments and equipment.	Implement user-friendly approaches. Establish a structured feedback process.
Demonstrating Return on Investment (ROI) and implement metrics and performance tracking	Showcase ROI through case studies and metrics.	Define meaningful Key Performance Indicators (KPIs). Set realistic ROI expectations. Ensure data security.
Cultural shift toward learning and development	Initiate a culture emphasising learning and development.	Implement change management and coaching leadership to address resistance. Recognise the long-term commitment required for cultural transformation.

Table 1: VIVA's suggestions to tackle virtual learning challenges of SMEs.

To enhance utilization of VR learning, SMEs should consider tailored support and training to simplify VR adoption, explore affordable VR solutions with well-defined budgets, prioritize user-centric design, demonstrate ROI through case studies and metrics, and foster a culture emphasizing learning and agile development. These strategic actions can help SMEs overcome challenges and benefit their employees.

Charting the Path Forward

According to VIVA team's observations, further research is needed to understand SMEs' behavior in the dynamic environment. This research should explore what motivates them, their concerns, and how their perspectives change over time. It's essential to keep adapting to the ever-changing landscape of technology and business.

In addition to great potential, various recent expert opinions have also raised risks and threats, such as cyber security. It is important for exporting SMEs to weigh both the benefits and risks of VR technology.

Despite challenges, VR learning offers unique future benefits for exports, like realistic trade simulations. As technology gets better and more affordable, more SMEs may use VR for export-related training. The VIVA team emphasizes that export companies need to keep up

with the pace of technological change, because new technology is constantly emerging and the opportunities for its use in business are improving. Even if the company doesn't want to implement virtual technology right now, it is essential to follow the development of technology. VIVA team estimates that in the future, for example, creative artificial intelligence will improve the content production possibilities of virtual reality environments. and expand the opportunities of using virtual technology in business. (Velasco, Adserø & Wik Heltne 2022; Bove 2022.)

In conclusion, as SMEs embark on their VR learning journey, they should do so with a sense of wonder and curiosity. Embracing technological curiosity and recognizing its significance in future business endeavors can further empower SMEs and their employees.

Sources

- Bove, T. 2022. One week working in the metaverse led to 19 % more anxiety and 16 % less productivity, new study finds. Retrieved 16.9.2023.
- Kuhmonen, A. & Heiskanen, M. 2022. Virtual Reality in Continuous Learning. Laurea Journal. Retrieved 5.9.2023.
- Velasco, C., Adserø, I. & Wik Heltne, H. 2022. Are we ready for business meetings in virtual reality? BI Business Review. Retrieved 16.9.2023.

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