resonite

The Future of Virtual Reality Whitepaper

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The Future of Virtual Reality

1   Overview

The world of tech is in the middle of an incumbent revolution greater than any of the social media innovations of the past two decades. The pivots of major companies like Meta and Apple into the world of spatial computing have cemented the future of XR technology and its applications across all industries. Virtual reality offers a completely redefined vision of how we interact with technology which is deeply tactile, organically human, and fundamentally social. As VR continues to gain attention and acceptance in the mainstream, the potential for virtual reality technology to have a monumental impact on every industry grows ever clearer. The future of VR will be decided by its scalability, flexibility, and widespread consumer appeal.

No platform offers a stronger or more innovative foundation for the future of VR than Resonite. Launched in 2023, Resonite uniquely offers what no other VR platform does: a virtual reality universe that can be simultaneously created and experienced in a deeply collaborative social environment. At the core of Resonite is the FrooxEngine, an efficient, accessible, and infinitely powerful system designed to enable technical and non-technical creators to build and improve upon the tools offered to them and create previously unimaginable experiences together in real time without using external legacy engines. Resonite continues to be shaped by its active and growing community, which regularly pushes the boundaries of these tools and generates valuable input to refine the development of the platform. The applications of Resonite's uniquely powerful technologies are limited only by the imaginations of the end user and the will to implement them.

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2   The Landscape of VR

Despite the incredible potential of virtual reality and The Metaverse, the VR industry has seen sharp decline in recent years. At the core of this decline is a major disconnect between the needs of consumers and the key offerings of the most major VR developers. VR has always suffered from a hardware first approach - a focus on producing advanced headsets and equipment for consumer-friendly prices, without an abundance of high quality and high retention VR experiences to back them up. These experiences were largely restricted to what a handful of companies could create in Unreal Engine or Unity. As VR has struggled to find its "killer app" and break through to find mainstream appeal, various attempts have suffered from limited scope, usage of outdated development engines, and a design approach that is based in a flat-screen mentality. In addition, 90% of startups in the VR space have failed due to a business model focused on rapid, unsustainable growth based on investments with limited runways.

Meta's $10 billion-plus investment into the dream of a Metaverse has failed because of its fundamental inflexibility to the needs of consumers, providing limited creative and development options for the technical enthusiast and a lack of compelling and customizable experiences for the general user, in addition to stilted marketing and unappealing aesthetics. Likewise, other Metaverse focused companies have relied on faulty business models based in artificial scarcity, virtual real estate, mass accumulation of low-revenue users, and restricted creative and expressive potential. Additionally, consumers' trust has been eroded due to poor and fraudulent cryptocurrency implementation and the use of consumer data to train AI or sell to advertisers.

Resonite does not follow the inflexible top-down approach of these platforms. Rather, Resonite is fueled by the innovative passion of its users, and relies on a bottom-up approach where the creative community plays a key role in shaping the platform by building out its landscape of worlds, assets, items, tools, avatars, and experiences. This grassroots appeal facilitates exponential growth by directly appealing to consumers and giving them total freedom and

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control over their environment. As the community grows, the speed of interconnection rapidly increases, resulting in a huge spread of technical and creative knowledge across the community, leading to populist innovations in art, science, development, IT, entertainment, social connectivity, community development, education, and academic study. The user-focused business model of Resonite is stable, optimized for the consumer's interests, and scales alongside the growth of the platform, rather than relying on investor capital with an uncertain path to profitability.

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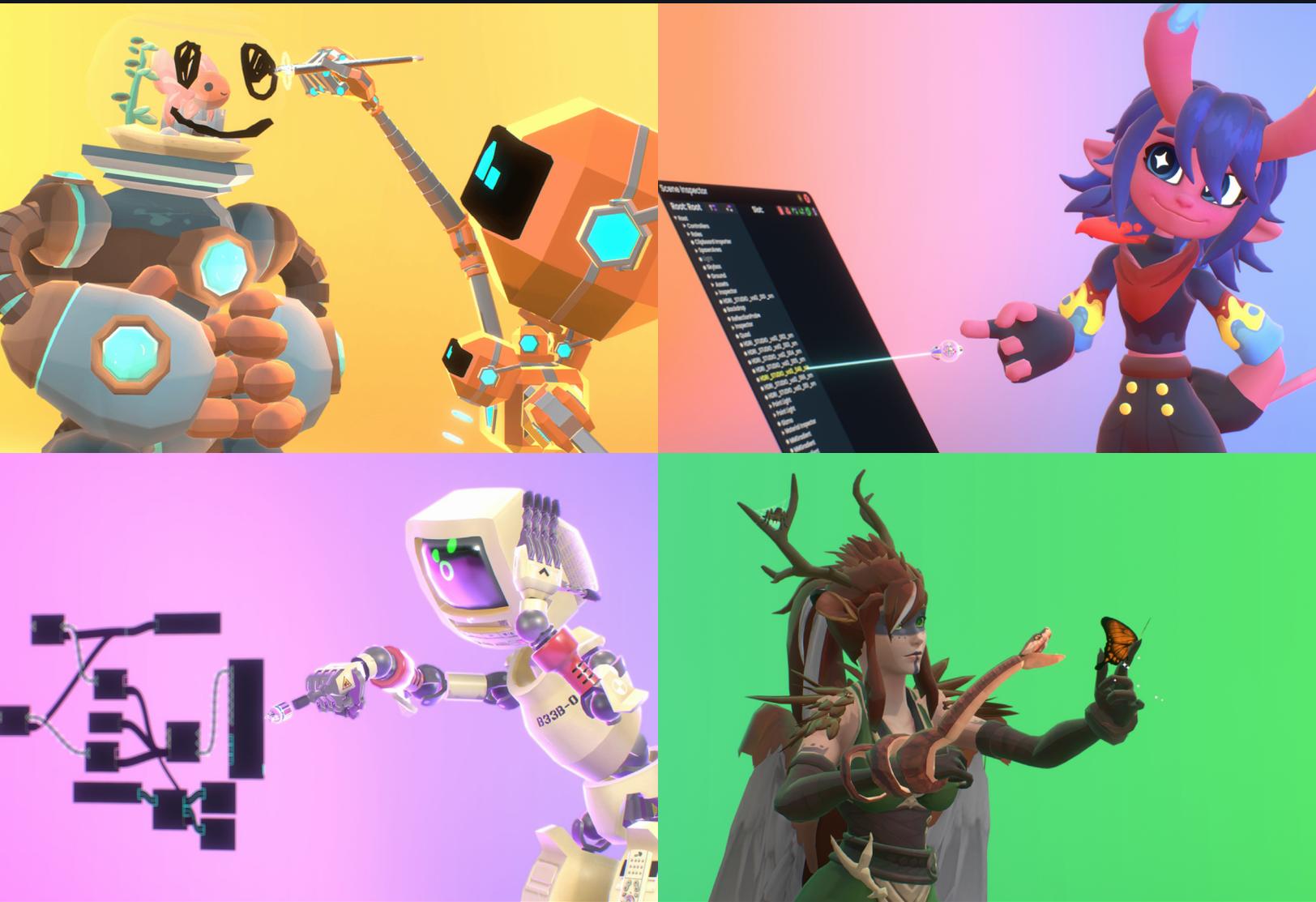
3   History

"FrooxEngine presents a paradigm shift to how we design and build real-time collaborative and persistent virtual experiences and games. Similarly to how the paradigm shift from low level assembly programming languages to high level ones (like C/C++, C#, or Java) enabled developers to do more in less time, FrooxEngine/Resonite allows a single individual to achieve what only large teams could before. It is designed for rapid iteration, unprecedented editing flexibility, and immediate collaboration. It completely abstracts network synchronization, hardware support, and persistence, ensuring the end users does not have to worry about these problems. All this combined enables an effect dubbed "Creative Resonance." Creators from different backgrounds and different goals can very easily share and complement each other's skills, very rapidly transforming their ideas into a shared reality." – Frooxius

Resonite is the brainchild of prodigious programmer Tomáš Mariančík, known to most as Frooxius. In 2003, at the age of 12, he got his first computer and taught himself game development using an engine called GameMaker. He then began to learn more advanced programming languages and continued hobbyist game development throughout his teens. In high school, he designed and built a series of experimental processor architectures called WPUs (Weird Processing Units), for which he won 1st place in the Czech National Science Fair. He represented the Czech Republic at the prestigious The Intel International Science and Engineering Fair in 2012, where he placed 4th in the computer science category.

Beginning with the Oculus Rift Kickstarter campaign in 2013, he immediately became enthralled with the enormous potential of virtual reality and the paradigm shift it offered. He began exploring the possibilities of VR development and won several awards for his work including:

- Third Place in the 2013 Oculus VR Jam with the narrative experience SightLine, built around concepts of lack of object permeance where the users' observations change reality.
- Third Place in the 2014 Leap Motion Jam with the educational VR experience World of Comenius, combining VR with Froox's passion for learning and education.
- Third Place in the 2015 Oculus & Samsung Gear VR Jam with Neos The Universe, a Powers of 10 inspired experience.

From the very beginning of the modern era of VR, Frooxius has been pushing boundaries and creating magnetic virtual experiences renowned throughout the industry. With over a decade of experience under his belt, his visionary and out of the box approach to VR development led to his desire to realize an ultimate goal: a shared universe of VR experiences empowering users to explore, learn, and build together. He began work on the FrooxEngine, a complete re-imagining of how VR experiences can be developed and visualized. In late 2023, he launched the revolutionary VR platform Resonite.

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4   Why Resonite?

A successful virtual reality platform must accomplish three things:

1. Freedom for the end user to do anything they can imagine
2. Infinite and sustainable scalability
3. A business model that derives revenue from scalability

Traditional game development has stayed more or less the same since its inception. In essentially every game engine and programming language, the development of an experience and the testing/consumption of that experience are wholly separate and solitary, and require repeated back-and-forth iteration. By contrast, Resonite is powered by a unique in-engine programming language called ProtoFlux, an accessible visual scripting language capable of engineering complex, high-level tasks. ProtoFlux is easily trainable, and the collaborative environment of Resonite enables users with no or limited prior technical background to easily learn ProtoFlux programming from more experienced users in the virtual space. Users can freely create or modify any object, access its ProtoFlux code, and add functionality. These items can then be saved and shared with the first-ever inventory system in a VR platform. Combined with seamless importing and exporting of assets and creations, as well as API's and other tools, Resonite democratizes the process of VR game development and opens unprecedented possibilities for creation.

Resonite is fundamentally based on user creations, and invites artists and developers from all fields and skill backgrounds excited by the potential of creating in VR. Any user can create worlds, ranging from small scale environments such as an apartment or a coffee shop, to entire cityscapes and alien planets. Published worlds are available to all users to host as openly accessible sessions on their own hardware. Users can travel between sessions rapidly, and even inhabit multiple sessions at once. This rapid rate of travel and connection results in advanced, expeditious community development, with groups forming and intersecting on a massively accelerated timescale. Moreover, the majority of users do not come to Resonite just to create, but to socialize and enjoy recreational activities with each other as well. Users bond and engage in complex social environments and deepen their relationships with one another, while cultivating their understanding of complex topics and researching and developing new solutions and ideas together. The result is a new breed of creator, informed in many fields and uplifted and surrounded by a passionate, welcoming community that works together to achieve impossible goals and continues to grow at a rapid rate.

Resonite follows a sustainable, user-focused business model that benefits creators while offsetting costs. Within the public universe, users are free to explore, interact, and create without bounds, at no cost. Instead of charging for a regular subscription to access the platform or any premium features, users are offered a variety of subscription options to directly pay for additional server space to store their creations. Users who create on a limited basis have a small amount of storage available to them for free, while more advanced users can pay for additional storage based on their needs, along with other benefits. This business model scales directly with the user base, is rooted in logical incentives for creators, and avoids consumer friction from other revenue options such as advertiser funding. Resonite is committed to never selling customer data or utilizing it to train AI, and stands firmly by its core values of user freedom and security. Additionally, Resonite is based in the European Union and complies with all GDPR regulations on customer data and protections, extending those benefits to all users around the world.

5   Licensing and Private Universes

The potential of Resonite's collaborative creation offers countless benefits to universities, organizations, companies, and governments, but open access to the public universe can present issues with security, information leak, and misuse. To this end, these entities can manage their own private universes, completely separated and air gapped from all public access, but still benefitting from the unlimited power and persistence of the ProtoFlux system. Additionally, businesses, schools, and other entities can secure a license to utilize Resonite's accessible development tools to explore virtual reality solutions for their needs. Currently, Resonite offers four types of licenses:

- Educational Licenses
- Commercial & Small Business Licenses
- Enterprise Licenses
- Government Licenses

Education Licenses: In the advancing digital age, and spurred on by factors such as the COVID-19 pandemic, the landscape of education is fundamentally changing. With virtual instruction on the rise and students developing and coming of age within the era of social media, student engagement is a constant struggle for educators and institutions. Virtual reality has the potential to completely reshape the education process into something uniquely engaging, present, immersive, and hands-on. The tactile experience of VR keeps students present and separated from distracting factors such as social media, while giving educators new depths to explore in creating interactive and immersive lessons. This works in conjunction with the other benefits of virtual learning such as teachers that can work from anywhere in the world, virtual field trips and experiments that can be recreated completely safely. Through VR, the school could no longer need to be defined by a physical location, and a child's access to high quality education need not be limited to where they live. Additionally, education and university research costs could be significantly reduced by VR, enabling far greater study opportunities on lower budgets.

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Commercial and Small Business Licenses: Within Resonite, not only do companies have all the benefits of the in-engine creative tools at their fingertips with which to revolutionize their business, but they also have access to an engaged and growing community of users actively seeking new experiences. Media companies, for example, could host and promote interactive events that push beyond the possibilities of real-life venues. Video game and software development studios will take significant advantage of the real-time development offered by Resonite to work more collaboratively and efficiently, able to tap into both their existing userbase as well as the Resonite userbase. Museums, historical sites, and tourist destinations could offer a public global experience to boost their revenue beyond in-person tourism. Brands could establish virtual reality stores for physical or digital items, with the ability to examine or try items directly in VR or interact virtually with support staff. The scope of use is only limited by the entrepreneurial spirit and vision of business leaders.

Enterprise Licenses: VR can be used throughout enterprise workflows to lower costs and drive productivity. VR can offer increased potential for collaboration between remote and in person workers, with entire teams being able to work together beyond the confines of a physical office. Training simulations can replicate dangerous scenarios to provide workers with safe and hands-on ways to develop their skills. Resonite gives industrial designers the ability to create, modify, and examine their designs and schematics in 3D space, and invite unprecedented collaboration. Both cloud-based and on-premises solutions are possible.

Government Licenses: In addition to the benefits of real-time collaboration, for governments seeking to build and incorporate virtual reality solutions, Resonite private universes offer unquestionably the most secure and malleable VR platform and development option. While VR applications can benefit government in countless ways, Meta's repeated misuse of user data, AI training, and other controversies makes them an unacceptable security risk for any government to work with. Data security is absolutely critical in applications such as infrastructure projects

including transportation networks, energy grids, etc. Additionally, the adoption of key business practices around GDPR ensure that necessary approvals can be obtained for government use. Furthermore, while cloud storage and computing are available, the codebase itself can function securely on firewall protected government servers.

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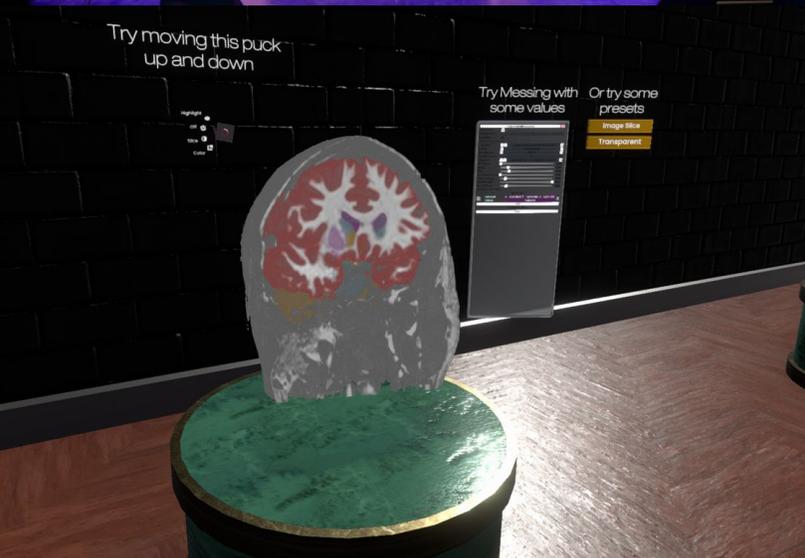
6   The Way Forward

The future of social VR presents us with the possibility of a complete convergence of innovation, community, culture, and social equity, a place where the possibilities of what can be achieved exceed the limits of yesterday's imagination on an ever-expanding basis. Resonite is at its core a new virtual world that is not just a place people want to live in, but a place that they have near limitless control over, a place where the interconnection of its citizens is written into its authorship and identity. As Resonite grows, its easily trainable creative tools offer organizations scalable solutions that progressively increase in value. Visit https://resonite.com/licensing.html to get started with a conversation about how Resonite can help build a solution that meets your organization's needs within your budget.

7   About Yellow Dog Man Studios

Yellow Dog Man Studios and its product Resonite, powered by the FrooxEngine, is a B2C VR social platform and a B2B VR software consulting company. YDMS licenses its technology to businesses, development studios, education institutions, and governments for a wide variety of use cases and provides software development consulting services to build custom virtual reality solutions.

- Classroom Instruction
- University Research
- Transit Training
- Safety Training
- Medical/Emergency
- Responder Training

- Corporate Meetings
- Industrial Design
- Product Prototyping
- 3D Design & Animation
- Data Visualization
- Live Performance

- Social Clubs
- Online Shopping
- Game Development
- Museums & Art Galleries
- Zoos & Amusement Parks
- Historical Sites