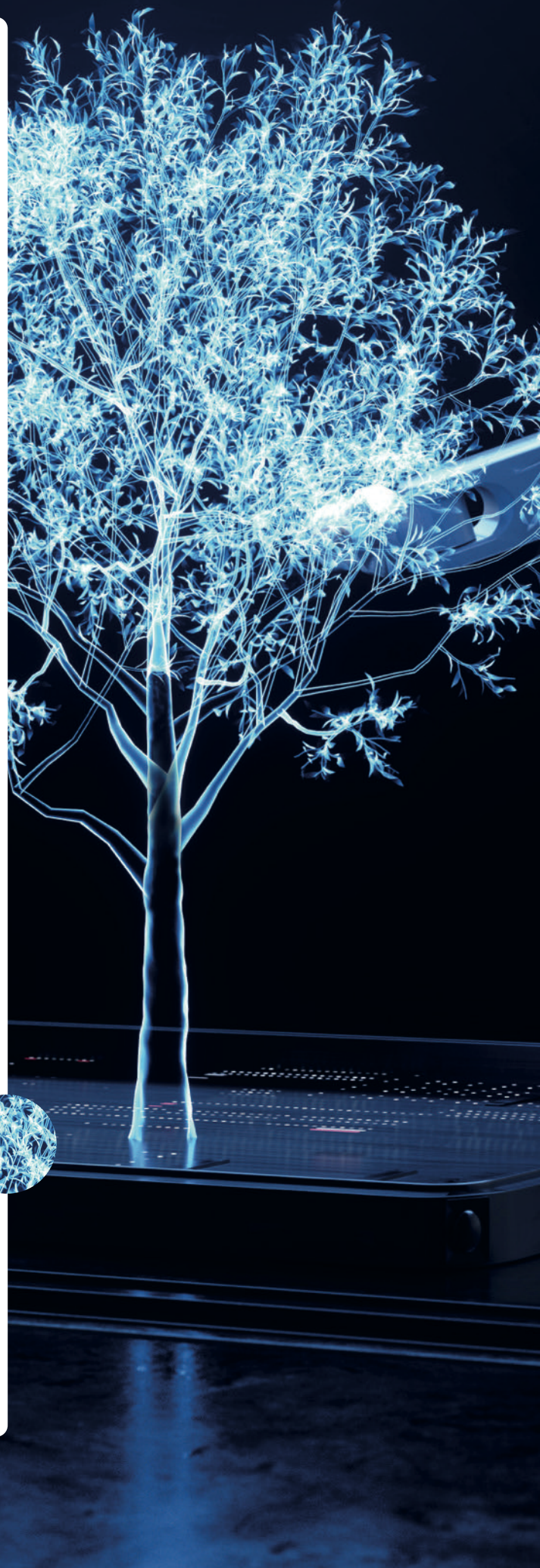


Sci-fi becomes a reality

60 seconds with the
fund manager

APRIL 2023

Marketing communication





Johan Van Der Biest

Johan Van Der Biest, Senior Fund Manager, and Felix Demaeght, CFA, Co-Fund Manager, explain the metaverse and how they identify companies associated with it.



Felix Demaeght

What is the metaverse?

For many, the metaverse, or *Web 3.0*, provides a foretaste of tomorrow's world. Unless you live under a rock, you must have heard that word "metaverse" more than once in recent months, although maybe without understanding its meaning... Don't worry, you're not alone.

The metaverse is where the digital world and the physical world meet. To be more specific, it is a shared 3D virtual reality world where people can interact with each other in the form of avatars.

Let's take as an example a remote meeting with colleagues, where part of your team is at home in Frankfurt and the rest in Barcelona. In the future your avatars will all be able to meet together in a virtual office. You could just as well adapt this example to a hike around Lake Como with friends or a visit to the Tate gallery in London without having to queue up for hours or be bothered by other tourists.

What until recently seemed like science fiction, is now becoming a "virtual" reality!

Why invest in a metaverse strategy?

From computer giants such as Samsung, Intel and Microsoft to luxury firms such as Balenciaga, Dolce & Gabbana, Estée Lauder and LVMH – or artists like Beeple, who sold an NFT⁽¹⁾ artwork in 2021 for \$69.3 million⁽²⁾ – several sectors of the economy have already invested the metaverse.

According to a study by McKinsey, the global metaverse market could be worth around \$5 trillion by 2030⁽³⁾. Even without looking that far ahead, the virtual and augmented reality market is estimated to be \$73 billion by 2024⁽⁴⁾, and the market for NFTs and digital certificates of authenticity at \$80 billion by 2025⁽⁵⁾.

The metaverse could act as a catalyst for the entire tech industry. We are undoubtedly seeing a paradigm shift.

Where do you find the best examples of companies involved in the metaverse?

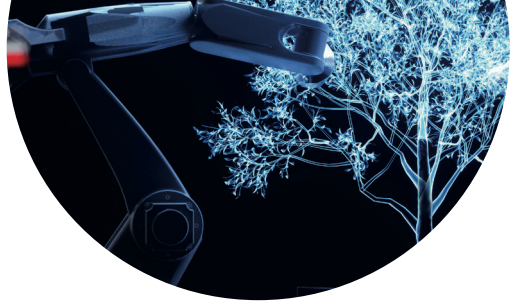
Streaming, blockchain, cybersecurity, augmented reality, virtual reality, education, cinema and travel are some examples of activities contributing to the development of the metaverse.

We think of them as two main categories:

- Backbone: innovative technologies that make the metaverse possible; IT/storage/connectivity, data and content security,

60 SECONDS WITH THE FUND MANAGER

(1) A non-fungible token is a unique and non-interchangeable unit of data stored on a digital ledger called a blockchain. An NFT can be sold or traded. It can be an artwork or a digital asset such as clothes or any other virtual object.
 (2) TOP 10 artists in the NFT sector – NFT FRANCE
 (3) Value creation in the metaverse | McKinsey
 (4) Metaverse Investing: An Investment Opportunity | Morgan Stanley
 (5) GrandViewResearch estimations as at 2021



- Application: practical applications of the metaverse in daily life;

- o For the consumer: music, travel, etc.;
- o For industry: simulation software, digital mobility, etc.;
- o For education: medical applications, distance learning, working from home, etc.;
- o For retail: virtual stores, etc.

These key areas offer significant potential for growth and development. In other words, the metaverse is opening up a new world of investment opportunities.

How do you select the companies in which you invest?

A first thematic filter allows us to build our “investable” universe. Companies are sorted into one of the two categories above: Backbone or Application. As the metaverse is a relatively new concept and many companies are only just beginning to address it, it is difficult to identify relevant companies based on revenue alone. We use Alphasense, a third-party search engine powered by Artificial Intelligence, to screen companies with an obvious connection to the metaverse, mainly based on their technological relevance, their spending intentions or their stated ambition to adopt the metaverse concept.

We then conduct an extra-financial analysis to better understand risks related to ESG⁽⁶⁾ (Environmental, Social & Governance) criteria. Specifically, we pay particular attention to major controversies related to the metaverse theme:

- Harassment, hate speech, etc. mainly for consumer applications;
- Personal data.

To manage these risks, we have decided to favour the industrial sector over consumer applications.

Furthermore, the strategy also aims to exclude companies with the lowest ratings based on our proprietary ESG methodology.

As with all of our thematic strategies, we also assess the exposure of company activities to major sustainability themes as well as assessing their stakeholder management. We exclude companies that do not adhere to the 10 Principles of the United Nations Global

Compact, as well as those who engage in controversial activities such as armaments, tobacco, thermal coal and other activities we consider to be unsustainable.

The portfolio is built from a selection of securities based on five fundamental criteria combining financial and extra-financial analyses: management quality, growth potential, competitive positioning, profitability and financial leverage. Stock-picking and portfolio construction benefit from discussions between managers and other Candriam equity management teams, as well as the contribution of the risk management department, and Candriam’s expertise in managing thematic strategies. The two managers average 16 years of experience.

What makes Candriam different and what are the advantages of a metaverse strategy?

Candriam has more than 25 years of thematic expertise, as well as more than 25 years of ESG investing experience.

Another point is that we have decided to be very vigilant in terms of controversies, particularly involving personal data protection. This is why we have chosen to invest in companies offering industrial rather than consumer applications.

Finally, the metaverse may be still young, but it is already clear, in our opinion, that its growth heralds a new technological revolution. The technological innovations developed for the metaverse will shake up or even revolutionise the education, healthcare, communications and entertainment sectors. The potential and opportunities are enormous and we want to make them more accessible to our clients.

Candriam is therefore concentrating most of its investments in the following sectors:

- Education: the metaverse will allow interdisciplinary learning and the practical application of theory. It makes learning more interesting. Properly implemented, it could revolutionise how we approach learning in schools. We believe the metaverse is the future of education.

(6) The ESG analysis described above for companies is applied to at least 90% of the strategy’s investments excluding deposits, cash and index derivatives.

- Health: the metaverse will offer real added-value during live surgical operations. Superimposing a virtual image of the part of the body being operated on over the actual patient will enable surgeons to track the incisions and movements they planned when preparing for the operation.

- 3D modelling and simulation: “digital twins” will allow product designers and engineers to explore unlimited sustainable innovation possibilities. More broadly, these technologies allow OEMs to reduce the impact of their

products at the design stage, more cost-effectively and with minimal risk, by using virtual simulation, data analysis and enhanced collaboration between designers, engineers and production operators.

We believe that the metaverse will bring about dramatic changes in numerous sectors of activity – and that we have the experience to seize them.

(7) A digital replica of an object, process or system that can be used for a wide range of purposes. Example: Ericsson and Nvidia are working together on a project to roll out 5G. Nvidia has created a digital twin of a city, incorporating traffic, the location of trees, etc. This allows Ericsson to optimise the location of 5G sensors for more efficient reception.

The main risks of the strategy are:

- Risk of capital loss
- ESG investment risk
- Sustainability Risk
- Equity risk
- Currency risk
- Liquidity risk
- Concentration risk
- Derivative risk
- Emerging market risk
- Counterparty Risk
- Risk on A-Shares (China)
- Risk of modification of the benchmark index by the index provider
- External factors risk
- Share Class Hedging Risk

ESG Investment Risk: The non-financial objectives presented in this document are based upon the realization of assumptions made by Candriam. These assumptions are made according to Candriam’s ESG rating models, the implementation of which necessitates access to various quantitative as well as qualitative data, depending on the sector and the exact activities of a given company. The availability, the quality and the reliability of these data can vary, and therefore can affect Candriam’s ESG ratings. For more information on ESG investment risk, please refer to the Transparency Codes, or the prospectus if a fund.



This marketing communication is provided for information purposes only, it does not constitute an offer to buy or sell financial instruments, nor does it represent an investment recommendation or confirm any kind of transaction, except where expressly agreed. Although Candriam selects carefully the data and sources within this document, errors or omissions cannot be excluded a priori. Candriam cannot be held liable for any direct or indirect losses as a result of the use of this document. The intellectual property rights of Candriam must be respected at all times, contents of this document may not be reproduced without prior written approval. Candriam consistently recommends investors to consult via our website www.candriam.com the key information document, prospectus, and all other relevant information prior to investing in one of our funds, including the net asset value (“NAV”) of the funds. This information is available either in English or in local languages for each country where the fund’s marketing is approved.