

Summary

In the last few years, we have seen an important increase in the computing capacity of our electronic devices, that is increasing exponentially the possibilities and the pace of technological progress. Nevertheless, not all progress is made about technology. The increasing connectivity between people and companies are bringing scientific & engineering advances together with design thinking and problem solving, identifying problems that have been impossible to solve and whose solution would have a huge impact on the lives of the people. We are only now starting to have a glimpse of solutions for some of these problems, creating innovation ecosystems that can take problem focused approaches, while having economics in mind. UiPath designs and develops robotic process automation software and increased, Infermedica develops AI tools for triage and preliminary medical diagnosis, and it could change the way we understand medical primary attention. AIMotive (Budapest based) has become one of the global leaders in software development for self-driving transportation. Urban aero transportation, as well as self-driven cars are currently being developed and is not a futuristic concept anymore. Cutting-edge advances are happening every day in fields like agriculture, education, commerce, banking, and cloud data, and in many cases, these advances show advantage not only economically, but also environmentally.

This document aims to identify potential investments in Deep Tech companies, providing with the proper background of the sector, analyzing the specifics of each company, and the viability of the project. Even though there is a lot of potential in these companies, there are also many other aspects to consider; they are often very intensive in capital, and they need of economies of scale to be profitable, which can lead to long break-even periods and uncertain outcomes. On the other hand, the current panorama, and the excess of liquidity in the financial market can make these opportunities more attractive than they are, with high valuations for companies that are full of promises but that have little or no real possibilities to prosper. Also, it is worth considering the regulatory framework in Central & Eastern Europe, since while most of the countries in this area are under the European legal framework, others have unclear guidelines when it comes to data protection or artificial intelligence, and some countries have implemented policies that have helped to create a proper environment for these companies to

grow, benefiting not only from tax benefits or clear regulation, but also from the exchange of knowledge in a symbiotic ecosystem.

Data

Since most of the companies analyzed are private, information regarding their financials is scarce, and this will limit the amount of data that we can obtain through the available channels. The data has been obtained mainly through Pitchbook and Dealroom.co, filling the gaps with each other whenever the data was not complete in one of the platforms. The companies selected belong to three groups: 25 deep tech companies with the highest revenue, valuation, and total funding, respectively.

Ideally, we would be using information of revenue, profit, funding, capital structure, growth stage, cash, and information regarding the customers. Revenue and profit (especially their growth) are of the highest importance because it does not only offer valuable insights about the companies but can also be crossed with more data (i.e., valuation) in order to obtain a relative figure that offer a better overview of the situation relative to the environment (country, region or industry). **Return on Investment (ROI)** offers a very easy to understand measure, although it can offer an incomplete view if it is not compared to other figures, such as industry. **Gross Margin** will offer an image of how profitable the operation of the business is, without considering the cost of capital, which can be substantial in tech companies and may distort the prospects of the business. In terms of **cash**, tech companies may be often unprofitable in their early stages, and it would be very useful to have the figures relating the **runway**, which is the amount of cash that the company has before it runs out of cash, or the **burn rate**, which is the rate at which a company loses – ‘burns’- money. Some companies whose operation happens mainly online, would depend on customer-related figures, such as the **Cost-per-Acquisition (CAC)**, **Cost-per-Visitor (CPV)**, **Cost-per-Lead (CPL)**, or the **CAC payback**.

Ideally, with complete data and a larger number of observations, we could also proceed to a multiple regression analysis, test parameters that would have a significant influence in the progression of those aspects that would determine the attractiveness or not, of the companies analyzed.

For the analyzed sample of companies, we have 74 deep tech companies of Central and Eastern Europe, with figures of funding, revenue model, industries, growth stage, number of

employees, revenue, valuation (and date of valuation), technologies used and the list of investors of the companies. Regarding the revenue of the company, the data will be crossed with the maturity segment, industry, and the technologies used, in order to have relative figures of the best companies in each segment. Given the similarities between the countries analyzed, this type of segmentation is significantly more relevant than a country segmentation, which would not be practical in terms of data visualization either (there are 14 countries in the sample and some of them have a marginal representation, like Serbia). The information of the Revenue, although not complete, is available for the years 2016 to 2019, and given the lack of complete data, it has been concluded that in order to obtain relevant figures, revenue data will not be crossed with more than one metric (crossing increases the chances of not obtaining a valid figure, and the resulting data may be useless). For this reason, it has been decided not to use the data regarding the number of employees per company (available from 2018 to 2021).

Also, regarding the regulation, a chapter has been added about the future update coming from the EU in terms of Artificial Intelligence and Machinery, giving more clarity to the current framework. The new regulation intends to guarantee the safety and fundamental rights of people and businesses.

Conclusions

Overall, we can conclude that:

- In terms of valuation over Revenue, Enterprise Software companies have the highest value, and security (and cyber security) companies have the lowest valuation per revenue.
- Companies dedicated to 3D technology and Artificial Intelligence are the ones with the highest average revenue (total figures are to be considered carefully given the lack of complete information), with special mention to the rise of AI average revenue.
- Companies in Early Growth Stage (concretely Series A & B) were the ones that achieve the largest amount of funding, accounting for more than 25% of the total funding, which, considering the data regarding the combined enterprise value for the region, gives us an idea of the atomization of the deep tech sector in this region.