Major Differentiating Points and Advantages
of Deep Knowledge Group Analytics Methods

[Deep Knowledge Group](#) is a consortium of commercial and non-profit organisations active on multiple fronts in the realm of DeepTech and Frontier Technologies (AI, Longevity, FinTech, GovTech, InvestTech), ranging from scientific research to investment, entrepreneurship, analytics, media, philanthropy and more. The Group is known for its sophisticated multidimensional DeepTech [analytics, predictive forecasting and benchmarking](#), and considers its 10+ analytical subsidiaries its most valuable asset.

The DeepTech sector and its numerous component industries (Longevity, SpaceTech, NanoTech, AI, etc.) are developing at an extremely rapid pace of progress and innovation, with hundreds of thousands of companies that five years ago would be considered as just tech companies, but which have evolved enough in terms of technological and scientific sophistication and complexity to be considered as DeepTech. As a result, DeepTech is gradually replacing Tech as the new normal. We consider the Longevity Industry in particular to be at the very forefront of DeepTech.

The complexity and technological intersectionality of these industries is already so advanced that it makes standard methods of analysis, due diligence and forecasting ineffective, and this unprecedented overcomplexity is only growing, exhibiting increasing degrees of fusion and interconnectivity between different domains of science and technology. There is a pressing need for methods of analytics, benchmarking and forecasting capable of matching and withstanding this growing overcomplexity in order to support, formulate and execute effective decision making. Deep Knowledge Group has an extensive track record of designing effective analytical frameworks for managing this complexity.

- Our Group's focus is on the most advanced DeepTech Industries (and especially those that are the most sophisticated from a scientific and technological point of view), with a particular prioritisation of the Artificial Intelligence and Longevity Industries

- We uniquely specialise in the design of multidimensional logic frameworks to define and precisely categorise DeepTech industries and technologies

- These analytical frameworks heavily prioritise the scientific and technological features of projects and companies, and create the only reliable systematic basis for conducting effective DeepTech analysis, benchmarking and forecasting

- We have designed and validated specialised software capable of aggregating information and data on a massive scale and in a structured manner, subjecting this data to proprietary Big Data Analytical methods in order to effectively and actionably analyse entire DeepTech industries on global and regional scales

- These analytical approaches are then integrated with proprietary Big Data Design software that employs advanced visualisation techniques to represent entire industries within one display, reflecting the dynamics, trends, scope and/or categorical dimensions of entire industry

landscapes at a single glance, similar to the concept of 'star maps' (*visualisations of the entire set of stars visible in the night sky*)

- We then use machine learning techniques to extract hidden correlations and latent patterns within this extreme abundance of data, transforming them into actionable insights

- These techniques are further enhanced by applying specific methodologies of technological forecasting across short-term and long-term timeframes. The end result of this process is similar to [Gartner curves](#), but in our case these are also combined with advanced Big Data analysis of DeepTech industries, sectors and segments, and enhanced with regional assessments of each industry in particular

- We aggregate and interpret forecasts of the leading experts as well as initiatives of the key policymakers to track the possible scenarios of technological development and implement it into our vision and strategy.

- While we do have analytics on publicly traded companies (which in general tend to have very significant volumes of information openly accessible), our major focus is on private equity companies (which tend to have lesser volumes of data in the open domain), and we are also conducting sophisticated analysis of matured pre-IPO companies

- For this purpose we strongly prioritise conducting AI-driven *cross analyses* between pre-IPO companies and publicly traded companies that were only recently listed (and which in many respects can be reasonably compared with very matured pre-IPO companies), which yields very unique and actionable insights. In a similar manner we conduct cross-analyses between matured private equity companies and early stage startups, which allows extraction of highly unique insights and valuable correlations not obtainable by any other system we are aware of.

Alternative data in DKG as a cutting-edge solution

Alternative data, by definition, is the data that comes from sources outside of the company. Alternative data analysis can be viewed as an investigation of the traces that the business leaves instead of self-reporting fillings and press releases.

There are many benefits to expanding analytical scope with this type of data, namely:
- better timing - we see the relevant event for the business immediately or with a short lag and don't have to rely on companies' official statements
- objectivity - alternative data is more robust to potential misreporting or fraud because of its externality to company nature and opportunity to cross-validate a few sources
- scope - financial reports are written by the rules and often disclose only details requested by the corresponding standard. The scope of alternative data is limited only by a willingness to look for the data because the number of traces each company leaves during its business is sufficient to obtain a decent understanding of its intangible assets.

The classical approach to valuation relies a lot on financial reports and uses them as a background to build future predictions. However, for private companies, these reports are usually unavailable unless the company is willing to disclose them, which is quite rare, and even in that case, the level of reliability and details can be lower than the one for a public company which has to meet the IFRS, US GAAP or another set of standards.

Our approach is based on two observations:

- when the company of interest is a research-based company which sells (or is going to sell) technology, formulas, and molecules, its future cash flows and therefore value weakly depend on financial numbers of the last quarter or year, but depends on their intangible assets such as intellectual property, experience of employees, projects in progress, etc. As well as its competitive environment.
- if the most relevant data is the data described above, there is really not so much difference between the public and private research-based companies, and the valuation of private companies can be approximated without particular knowledge of all of existing financial details

Luckily, alternative data is available in various open sources. We carefully collect relevant metrics for each DeepTech industry and thoroughly analyse them using public equity and its market price as a reference. Our model is based on more than 150 metrics covering patents, publications, team competence, etc.

Looking at the market pricing of public equity, we are able to determine the key metrics affecting value and use them to find market inefficiencies and thus price private companies with a similar business structure.

Clustering machine learning algorithms help us to define the proper peer group for each company, get a view of the market structure and competition.

All listed above allow us to value a large number of private and public companies and get a broader and deeper view of their business. We are constantly monitoring new data becoming available and incorporating it into the valuation models.