



“AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations



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Introduction

Over the last few years, there was a tendency that has shown a decline in the pharmaceutical industry. This is connected to the numerous facts, starting from the R&D inefficiency and ending with the world markets landscape.

Therefore, pharmaceutical companies have a strong interest in improving their positions. For this purpose, they use AI in various areas of their activity, namely, medical image analysis and elaboration of electronic health records (EHRs), building disease ontologies, preclinical drug discovery, and clinical trials. In such conditions, the demand for the ML/AI talent, as well as for ML/AI technologies, is growing in pharmaceutical and healthcare industries and driving the formation of a new interdisciplinary field – data-driven drug discovery/healthcare. This is, undoubtedly, one of the key options for the further development of the pharmaceutical industry.

Progress accelerates at the same time as people with the background in the field of AI occupy leadership positions in top companies. Main market trends are driving the growth in the AI implementation in pharmaceutical and tech research, but the overall success depends strongly on the presence of highly skilled interdisciplinary leaders. They must be able to innovate, organize and guide in this direction.

That is why, **the goal of this report** is to identify CEOs and board members, who are driving AI development in pharma and tech industries. This serves as an indicator for the companies, who are committed to using AI in their innovations processes and thus have a potential to improve their market position, comparing to their peers. To this extent, the presence of AI-friendly CEOs and Board members also indicates that the company is focused on increasing its R&D efficiency and thus is more likely to succeed in the drug discovery sector.

The general mechanism is as follows:

the decline of the pharmaceutical industry -> need to implement AI -> need for knowledge in the sphere of AI -> occupation of leading positions by people who have qualifications in AI -> accelerating applying of AI -> “restoration” of the pharmaceutical industry.

Thus, **the relevance** of this topic is explained by the need to advance the pharmaceutical industry, and in particular, the healthcare industry. The goal of the report is providing a “bird’s view” on the global leadership scene in the area of adopting AI-driven methods in drug discovery and healthcare to serve as a benchmark tool for indication of the most perspective pharma and tech corporations. Experience of tech corporations applying AI can be crucial in this framework.

Goal of the Report

The goal of the report was to establish a benchmarking of pharma and tech corporations representing their prospects and opportunities regarding the development of AI.

This benchmarking shows the level of commitment of corporations to applying AI methods and tools in their businesses. We assume that in the future we will be able to observe a correlation between such benchmarking and market and investment prospects of pharma and tech corporations. Namely, the level of AI-commitment can serve as an indicator of market capitalization growth.

A proprietary report by Deep Knowledge Analytics Pharma Division [Pharma AI Stock Index](#) aims to assess financial dynamics of pharma and tech corporations applying AI for drug discovery and advanced healthcare in order to enable investors, corporations and other industry participants to develop effective short and long-term strategies. Applying AI for Drug Discovery and cooperation with pharma AI companies may indicate the prospects for competitive advantage on the market.

One of the indicators representing corporations` openness and involvement in AI development is the presence of AI-friendly CEOs and board members who proved to be leaders stimulating the implementation of AI in their corporations.

Also, the level of commitment of corporations to applying AI methods and tools in their businesses may be considered as a sign of general innovativeness and ability to apply novel techniques which is even a more significant factor positively influencing the market and investment prospects of corporations.

We can assume that in the next few years positive dynamics of Pharma AI Stock Index will be observed, with its growth exceeding the growth of the vast majority of traditional market indices. The presence of AI-friendly CEOs and board members will probably enable corporations to outperform general market trends in the sector via a more effective and complex application of AI.

Furthermore, AI-friendly CEOs and board members are predominantly those who show general ability to innovate their corporations which is an additional reason why they may reflect market prospects of pharma and tech corporations.

AI for Drug Discovery, Biomarker Development and Advanced R&D Landscape / 2019 Q1

Companies - 150
Investors - 350
Corporations - 50

Drug Discovery

Advanced R&D

Investors

AI Companies

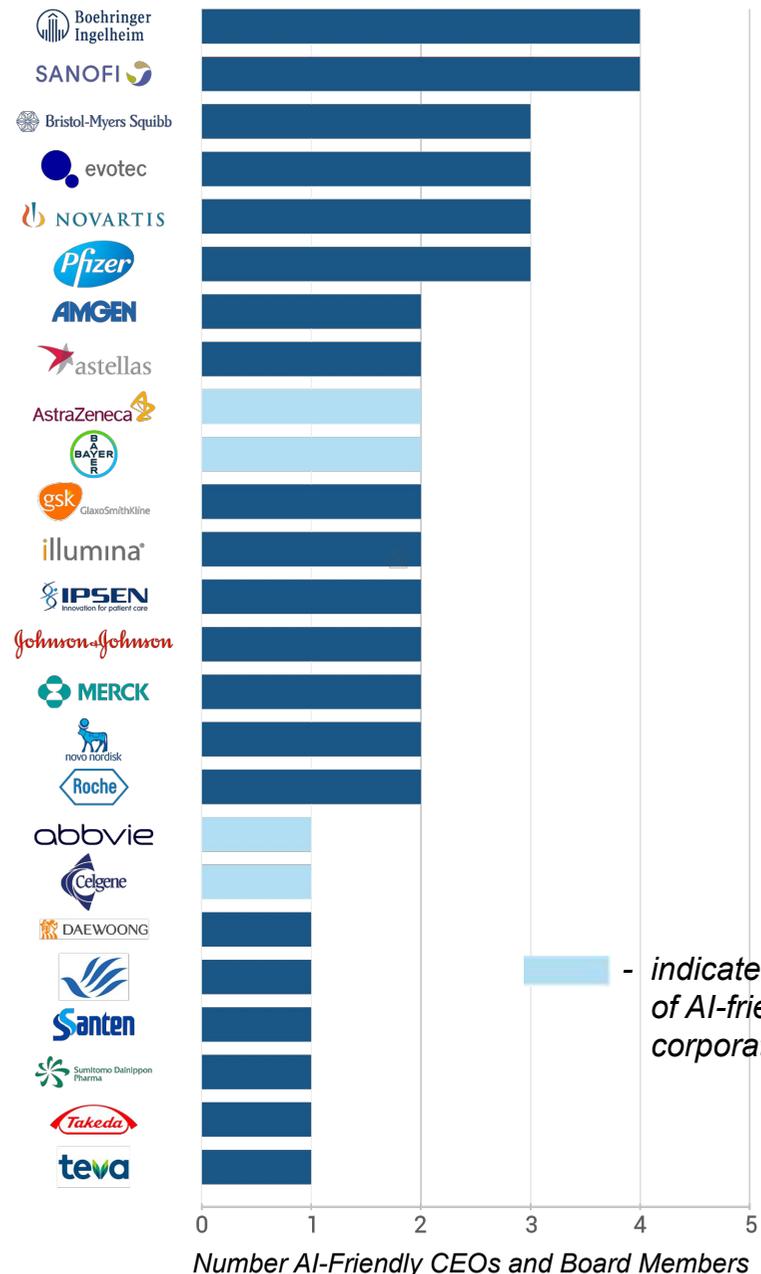
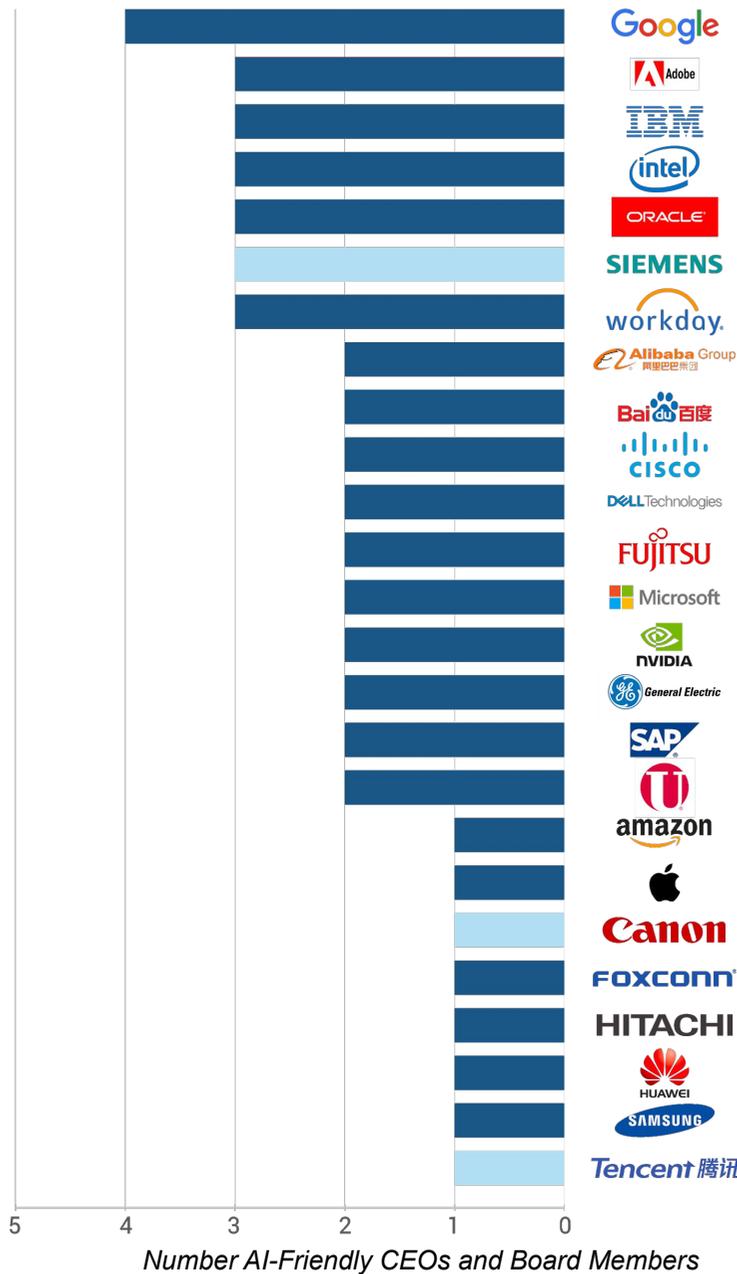
Corporations



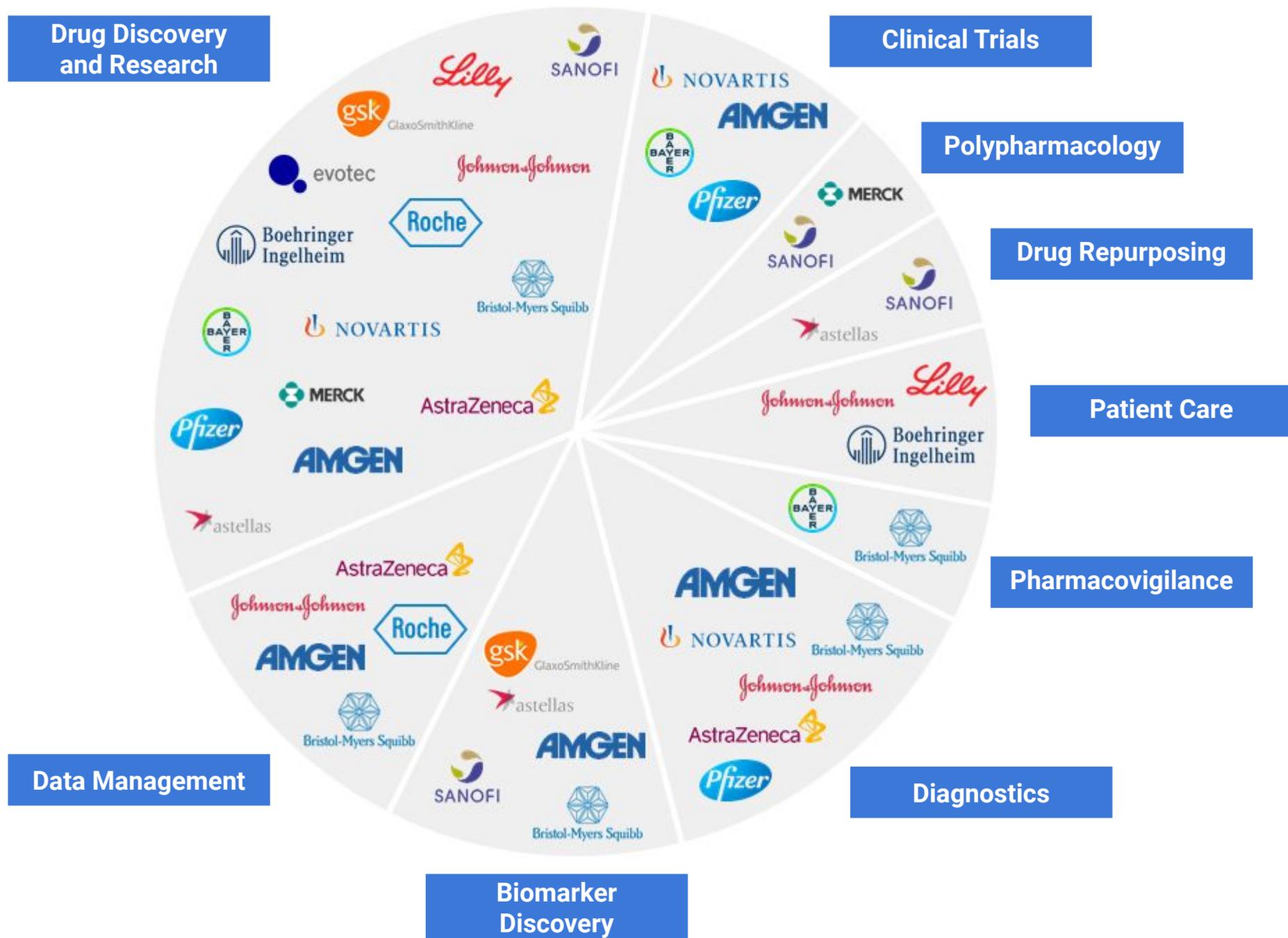
Biomarker Development

AI-Friendly CEOs and Board Members Distribution by Tech Corporations

AI-Friendly CEOs and Board Members Distribution by Pharma Corporations

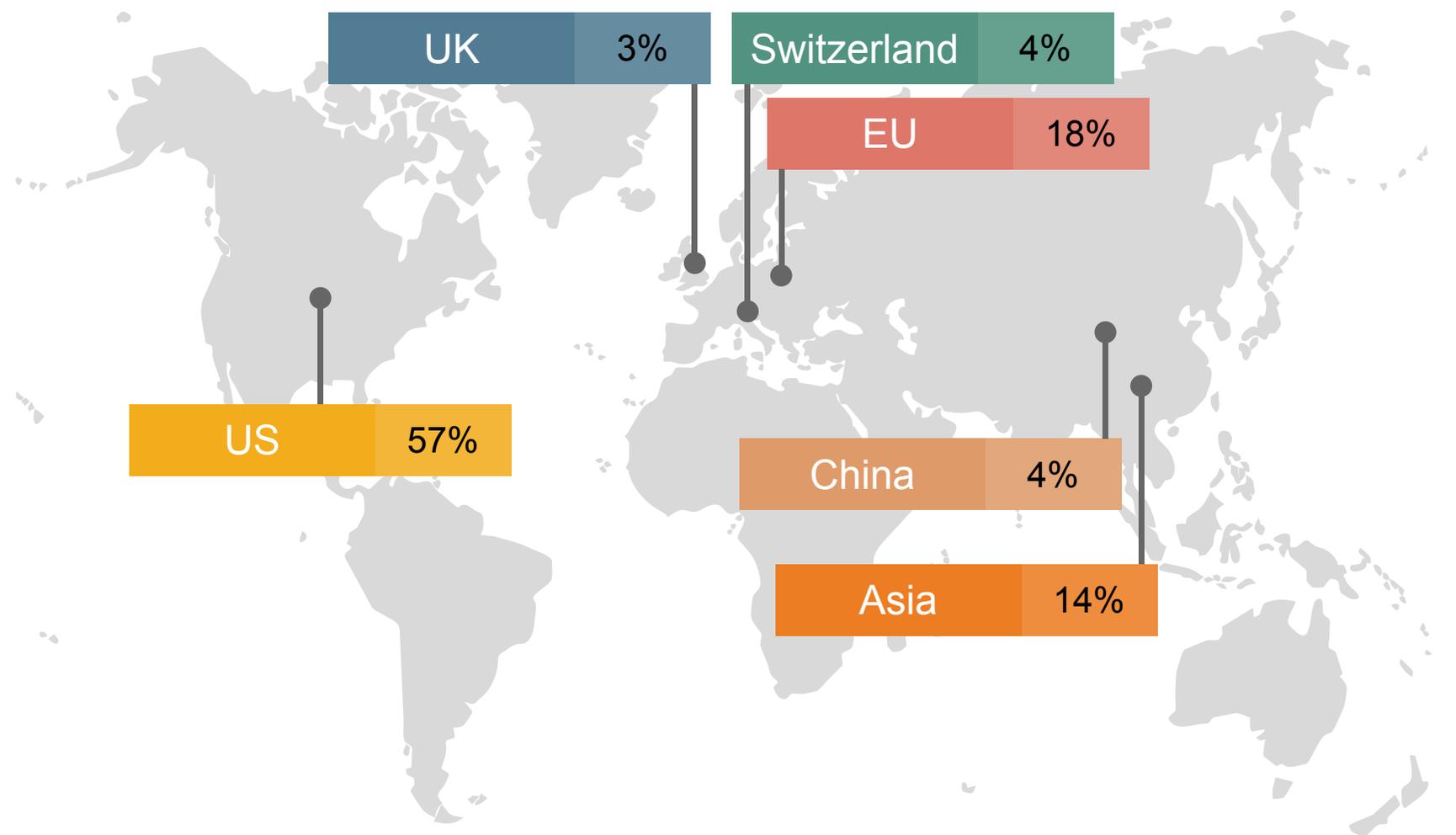


AI Applications by Pharma Corporations



50 Corporations

Applying Advanced AI in Healthcare and Drug Discovery



The industry is seeing an increasing level of regional diversification. Whereas historically the US has dominated the AI for Drug Discovery race in terms of number of AI companies, volume of investments and number of industry specialized conferences, in 2019 we are seeing an increased level of activity from the Asia and EU..

Methodology for Ranking

The initial large pool of candidates (around 300) for the TOP AI-Friendly CEOs and Board Members list has been selected from multiple sources including:

Top pharmaceutical and healthcare AI conference program lists

Google Scholar

Databases

News

Pharma and Tech corporations activities

Ranking is based on the analysis of the descriptive criteria (personal page descriptions, biographies, LinkedIn and Bloomberg pages, public awards, article titles, news and PRs, and other text resources) and derived categorical metrics and formal numerical metrics (number of research citations in Google Scholar, RG score in ResearchGate, number of books/talks and articles, social media activity, number of educational diplomas in the field of AI etc).

Categorical variables are considered to be dimensions, descriptive attributes for univariate and bivariate analysis, and classification. Numerical variables are considered to be measures of the initial dataset.

To be nominated for the TOP 100 AI-Friendly CEOs and Board Members list, it was set to be a prerequisite for a candidate to have interdisciplinary technical skills and/or business/entrepreneurship/decision-making skills in both of the area of AI.

The initial pool of around 300 top candidates has been shortlisted down to the top 100 list following an iterative approach, starting with the obvious differentiating parameters (top tech or business achievements) and gradually specifying additional parameters for the final rating.

The ranking calculation model

Is a first-order homogeneous polynomial that calculates a person's assessment variables and their relative impact weights (coefficients). Numeric variables were standardised. The weights of each variable have been logically designed to underline major contributions and impact (innovations, business achievements etc) and only augment them with less important, yet valuable, contributions (conference talks, social media activity etc).

The biggest emphasis was put on the activities of CEOs and board members in their corporations regarding AI applications and development.

“AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations



Albert Bourla
Pfizer



Allan Hillgrove
Boehringer Ingelheim



Andre Hoffmann
Roche



Andreas Fisch
Novartis



Andreas Neumann
Boehringer Ingelheim



Andrew S. Plump
Takeda



Aneel Bhusri
Intel



Arleen Paulino
Amgen



Benoît Potier
Siemens



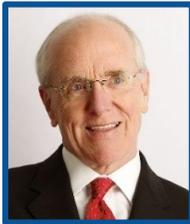
Bernard Charlès
Sanofi



Bob Pi Bill McDermott
SAP



Bob Picciano
IBM



Bruce Burlington
AstraZeneca



Camilla Sylvest
Novo Nordisk



Chano Fernandez
Workday



Charles M. Geschke
Adobe



Chuck Robbins
Cisco



Claus Braestrup
Evotec



David Dorman
Dell Technologies



David Meek
Ipsen



Dennis Ausiello
Pfizer



Dimitri Azar
Novartis



Dinesh C Paliwal
Bristol-Myers Squibb



DongJin Koh
Samsung Electronics



Dr Hal Barron
GSK

“AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations



Emma Walmsley
GSK



Francis deSouza
Illumina



Frank Calderoni
Adobe



Geneviève Berger
AstraZeneca



Ginni Rometty
IBM



Giovanni Caforio
Bristol-Myers Squibb



Gunnar Zukunft
Siemens



Hiroo Sasaki
Astellas Pharma



Hiroshi Nomura
Sumitomo Dainippon Pharma



Hubert Birner
Evotec



Iain Ferguson
Tencent



Ian Read
Pfizer



Irving Tan
Cisco



Jay Flatley
Illumina



Jeffrey Bezos
Amazon



Jen-Hsun Huang
Nvidia



Jennifer Taubert
Johnson & Johnson



Joachim Hasenmaier
Boehringer Ingelheim



Juergen Mueller
SAP



Kare Schultz
Teva Pharmaceutical



Kemal Malik
Bayer



Kenneth C. Frazier
Merck



Laurent Attal
Sanofi



Lawrence J. Ellison
Oracle

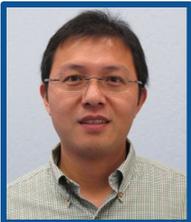


Leslie A. Brun
Merck

“AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations



Liang Hua
Huawei



Lin Yuanqing
Baidu



Mads Krogsgaard Thomsen
Novo Nordisk



Lawrence Culp
General Electric



Marc de Garidel
Ipsen



Mark Hurd
Oracle



Mark Perry
Nvidia



Martha Pollack
IBM



Masami Yamamoto
Fujitsu



Masayuki Mitsuka
Mitsubishi Tanabe Pharma



Melanie Lee
Sanofi



Michael (John) Evans
Alibaba



Michael S. Dell
Dell Technologies



Naveed Shams
Santen



Nir Kaldero
Google



Olivier Brandicourt
Sanofi



Omar Ishrak
Intel



Catherine Lesjak
General Electric



Paul Fonteyne
Boehringer Ingelheim



Paul Stoffels
Johnson & Johnson



Peter Altabef
Unisys



Reid Hoffman
Microsoft



Richard W. Barker
Celgene



Risa Lavizzo-Mourey
Intel



Robert A. Bradway
Amgen

“AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations



Robert H. Swan
Intel



Robin Li
Baidu



Robynne Sisco
Workday



Roland Busch
Siemens



Roxanne S. Austin
AbbVie



Safra A. Catz
Oracle



Satya Nadella
Microsoft



Sergey Brin
Google



Seung-Ho Jeon
*Daewoong
Pharmaceutical*



Severin Schwan
Roche



Shantanu Narayen
Adobe



Sundar Pichai
Google



Tatsuya Tanaka
Fujitsu



Terry Gou
*Foxconn
Technology*



Tim Cook
Apple



Toshiaki Higashihara
Hitachi



Toshio Takiguchi
Canon



Tracy Frey
Google



Vasant Narasimhan
Novartis



Vicki Sato
*Bristol-Myers
Squibb*



Vishal Gupta
Unisys



Werner Lanthaler
Evotec



Wolfgang Plischke
Bayer

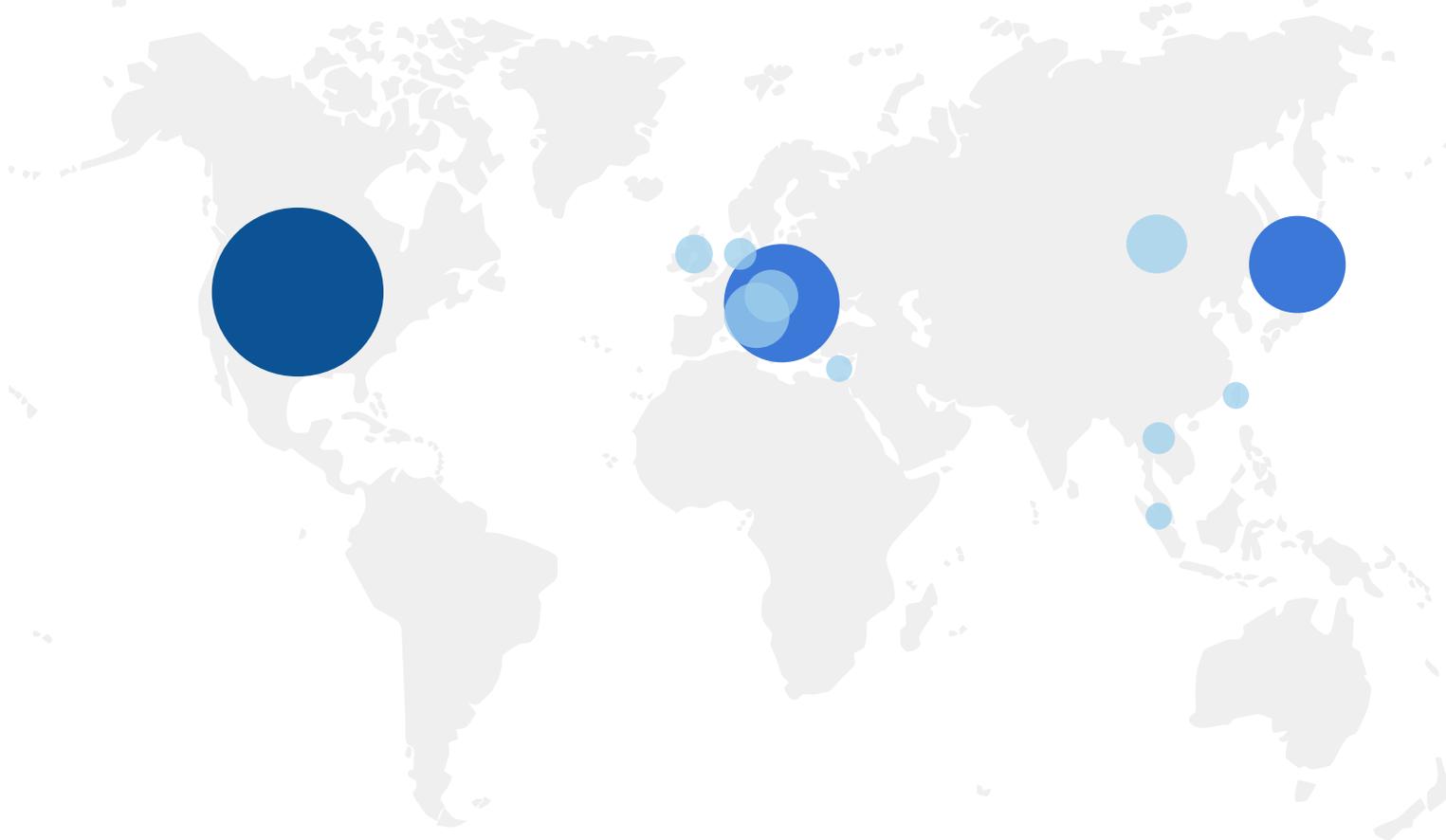


Xian-Sheng Hua
Alibaba



Yoshihiko Hatanaka
*Astellas
Pharma*

100 AI-Friendly CEOs and Board Members Geographic Distribution

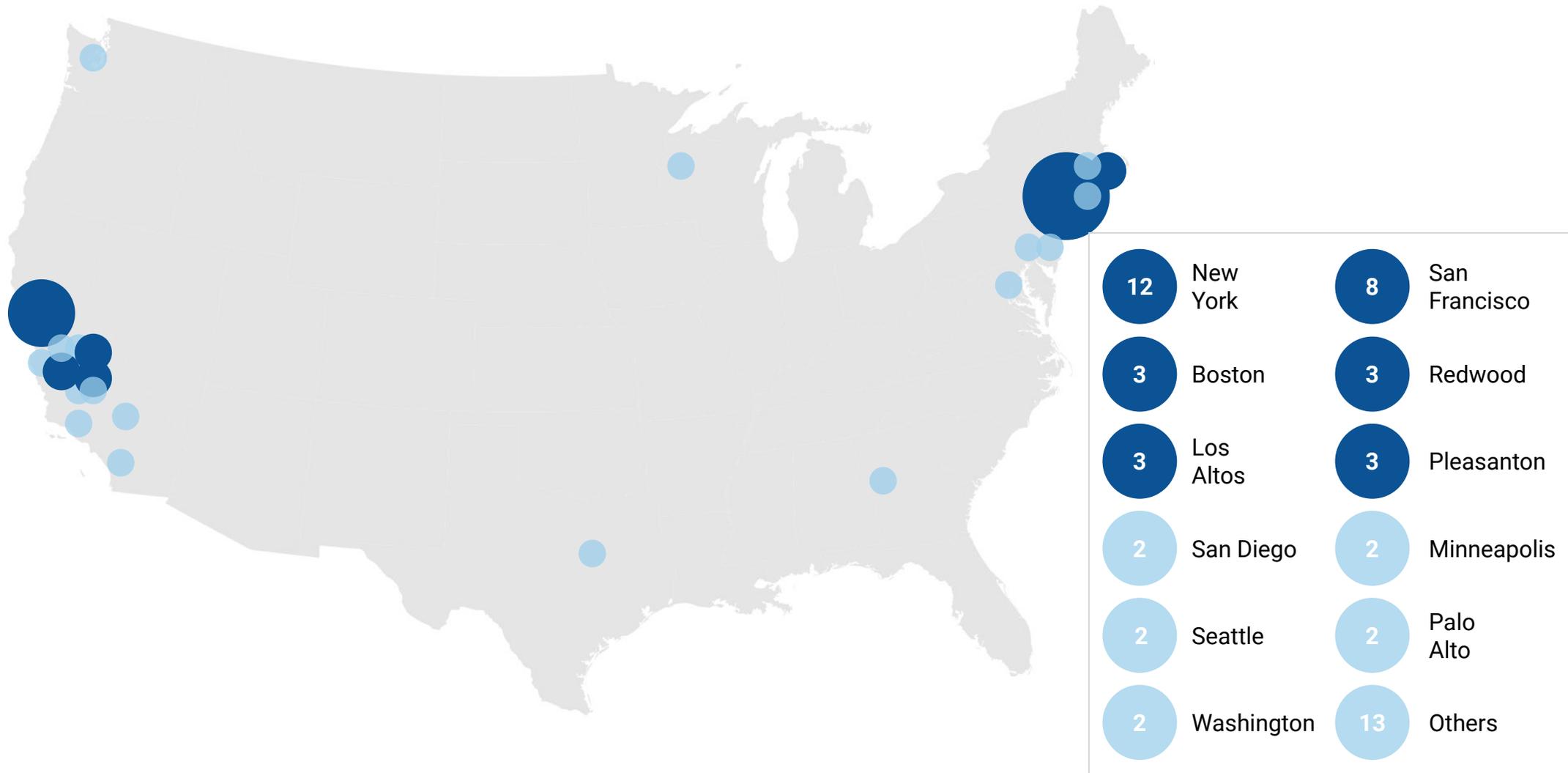


This map shows the geographic distribution of the AI-friendly CEOs and Board Members in Pharma and Tech Industries.

The majority - more than half - reside in the US. Germany and Japan are also particularly attractive countries for these experts.



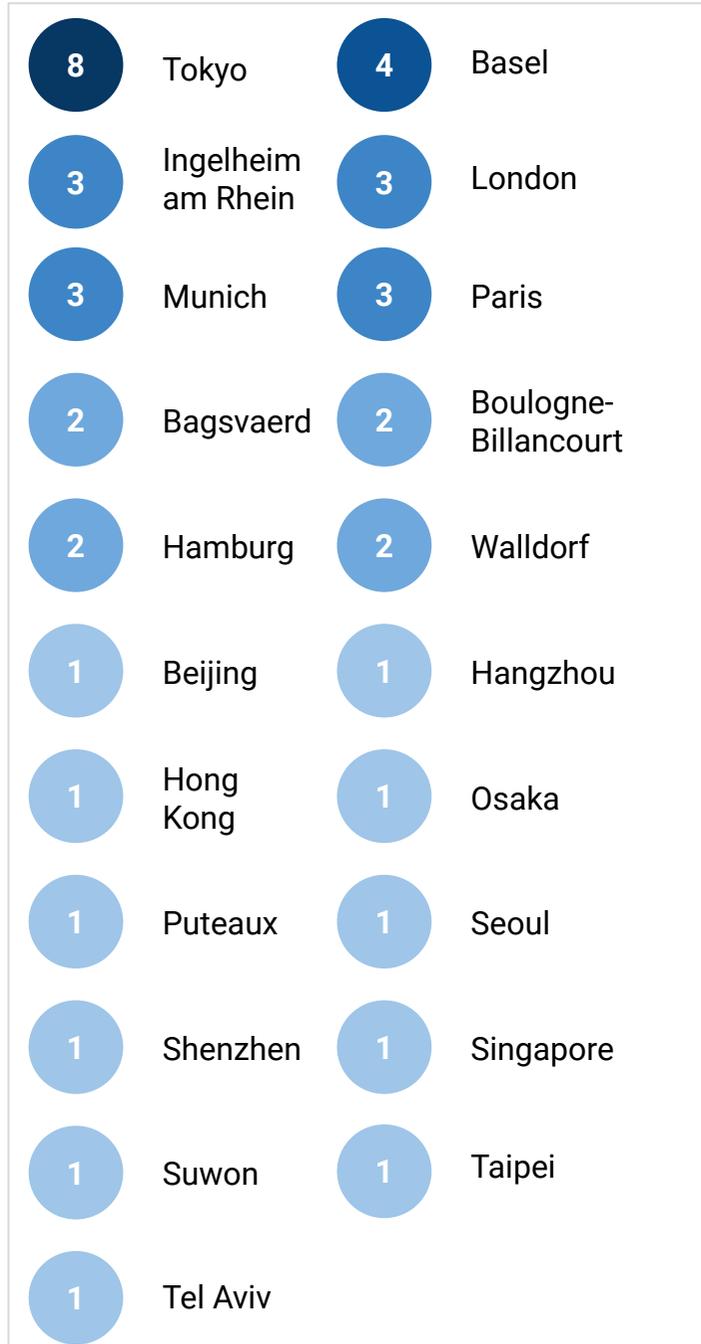
US AI-Friendly CEOs and Board Members Dislocation in US



This map shows the geographic distribution of the AI-friendly CEOs and board members in pharma and healthcare within the United States. New York, San Francisco, Boston, Redwood, Los Altos and Pleasanton stand out as favored locations for these individuals.

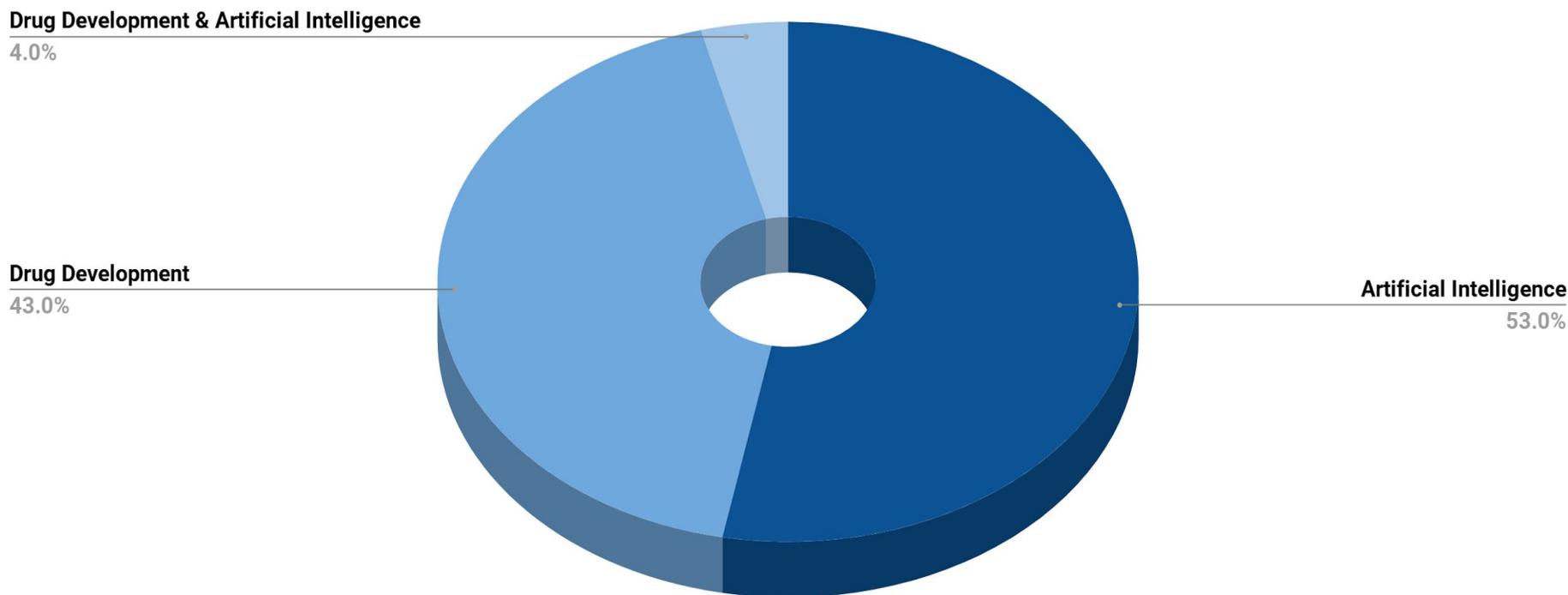
100 AI-Friendly CEOs and Board Members outside America

Distribution by City



This map shows that most of the top AI-Friendly leaders in pharma and tech reside in outside of America. With Tokyo being the most attractive city for this kind of experts.

Specialization of 100 AI-Friendly CEOs and Board Members of Pharma and Tech Corporations



The diagram above shows that AI-friendly CEOs and Board Members are predominantly specialized in either Drug Development or Artificial Intelligence, whereas CEOs and Board Members working at the intersection of the two disciplines represent a small fraction of the total. AI for Drug Discovery companies need much higher levels of expertise in traditional biopharmaceutical science (biochemistry, biology, biomedicine, etc.) and in core AI techniques. Therefore, CEOs and Board Members which belong to this group are well-qualified and have rich experience through practice and education in both fields.

Notable CEOs and Board Members



Amazon

"I think healthcare is going to be one of those industries that is elevated and made better by machine learning and artificial intelligence. And I actually think Echo and Alexa do have a role to play in that."

-Jeff Bezos, CEO of Amazon

[Source](#)



Pfizer

Pfizer has been investing in artificial intelligence with the goal of democratizing its value across stakeholders. Specifically, they engaged in a crowdsourcing event to identify improved drug combinations and patient selection strategies. As with the rest of the industry, Pfizer is keen to shorten the drug development lifecycle through AI technologies. Bourla could be a multiplier for advanced technologies to support drug research and there's potential for an increase in scale of Pfizer's AI capabilities, ultimately resulting in new drug approvals.

*-Said about **Albert Bourla**, CEO of Pfizer*

[Source](#)



GSK

"With this acceleration of science and technology, we should all expect some material shifts in the way our industry operates, in who our competitors and partners are as we use digital, data and analytics fundamentally to transform the way we discover and develop medicines; the way we interact with patients and consumers and healthcare professionals,"

-Emma Walmsley, CEO of GSK

[Source](#)

Next Editions Overview

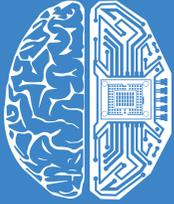
Next edition of the report will concern profound research on “AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations. The list of CEOs and Board Members will be expanded to 150 executives from a broadened number of companies in the pharmaceutical and technology industries.

The main focus will be made on the contribution of market makers in development of AI technologies for Drug Discovery and implementation of powered deep learning techniques into research and development of new medical treatments. CEOs and Board Members will be ranked by the impact of their work in deep learning, whether this is the work that can accelerate the discovery and development of new drugs.

In the next edition of TOP 150 “AI-Friendly” CEOs and Board Members of Pharma and Tech Corporations will be announced what companies are the key players in the development and implementation of the AI for Drug Discovery. Also, the readers will find out what is the ranking of “AI-Friendly” executives among industries and how can the contribution of powered deep learning techniques for Drug Discovery be measured and evaluated. The answers on the questions will be structured and visualized with interactive mindmaps, graphs and easy-to-follow spreadsheets with useful information.

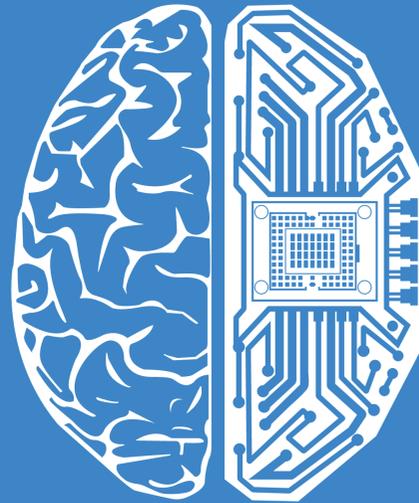
The report will deliver:

- A thorough analysis of the performance of pharma and tech AI corporations considering their relation to AI for Drug Discovery industry;
- CEOs and Board Members of Pharma and Tech Corporations ranking by various dimensions and measures;
- Analysis of key market players in the AI for Drug Discovery and Biomarker Development landscape.



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Link to the Report: <https://www.ai-pharma.dka.global/ai-friendly-ceos-board-members>

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