

ARIAD

ASSET MANAGEMENT

ARIAD Patent Equity Strategy Profit from Intellectual Property



Background of the Strategy

- Intellectual property as an indicator p.2
- Intellectual property is highly relevant p.3
- Patents and their influence on company success p.4
- How patents can be analysed p.5

From Patents to the Patent Equity Strategy

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Results of the Strategy

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- Benchmark comparison countries p.13
- Performance of the „Europe“ region p.14
- Performance of the „Japan/Pacific“ region p.15
- Performance of the „USA“ region p.16

Potential applications of the Patent Strategy

- Applied on micro- & smallcap universe p.17
- Applied on equity index: MSCI Industrials Europe p.18

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Executive Summary

Intellectual Property

✓ Relevance

- Intangible assets account for the majority (>80%) of the market capitalisation of S&P500 companies
- Patent applications tripled in the last 3 decades
- Products becoming more complex, building upon many patents
- Licensing income from patents becoming more important

Scientifically Validated Connection to Company Success

- Patents protect innovations
- Patents increase: *company value*
revenue
overall profitability

Patent Data Processing

- Standardised, but complex patent information on various complex processes as a basis
- Is made usable from a database technical point of view (prepared, cleaned and correctly assigned)
- Calculation of scientifically based patent indicators
- The ARIAD company universe is made smaller by means of filter processes
- Universe basis:
company (mkt. cap. > €200 million) from "MSCI Developed Countries"

Outperformance from micro, small & mid cap „hidden champions“

- Clear outperformance in the Europe and Japan/Pacific regions
- Main sectors: industry, health/pharmaceuticals and technology
- Many candidates for inclusion "identified" at an early stage

Since the start of 2015, the ARIAD Patent Equity Strategy has also been very successfully implemented in a **mutual fund**.

Background & the Strategy

Put the future in your portfolio – today

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Intellectual Property as Indicator

What do these 37 companies have in **common**?



1. Takeover candidates



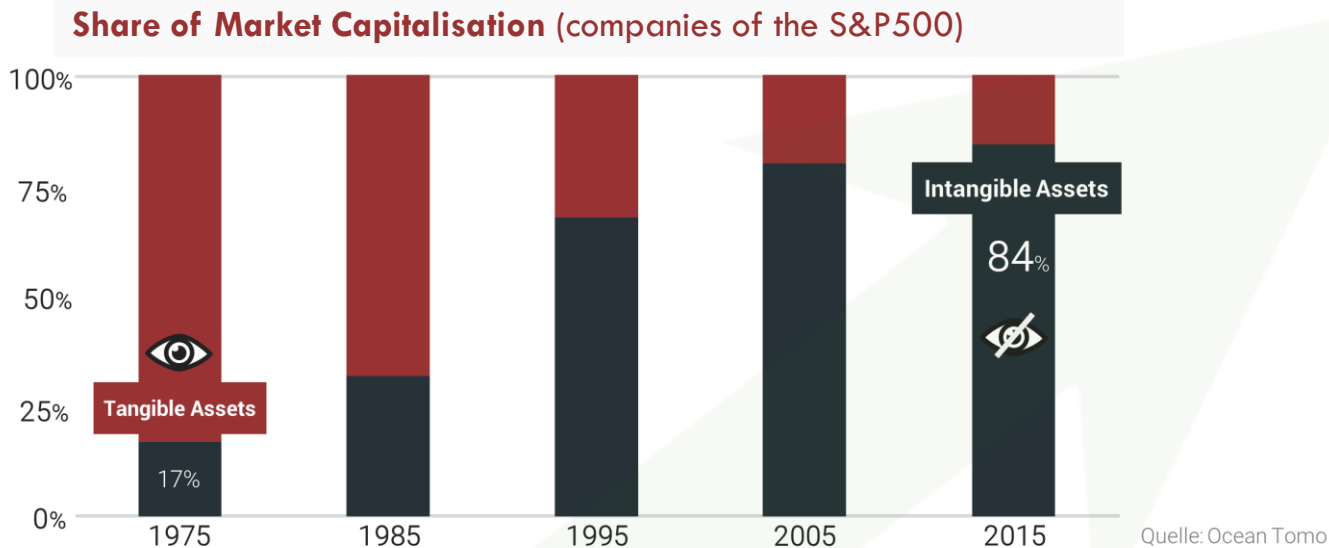
2. Technological sector leaders

Leadership protected by patents



3. In our portfolio before takeover

Intellectual Property is highly relevant



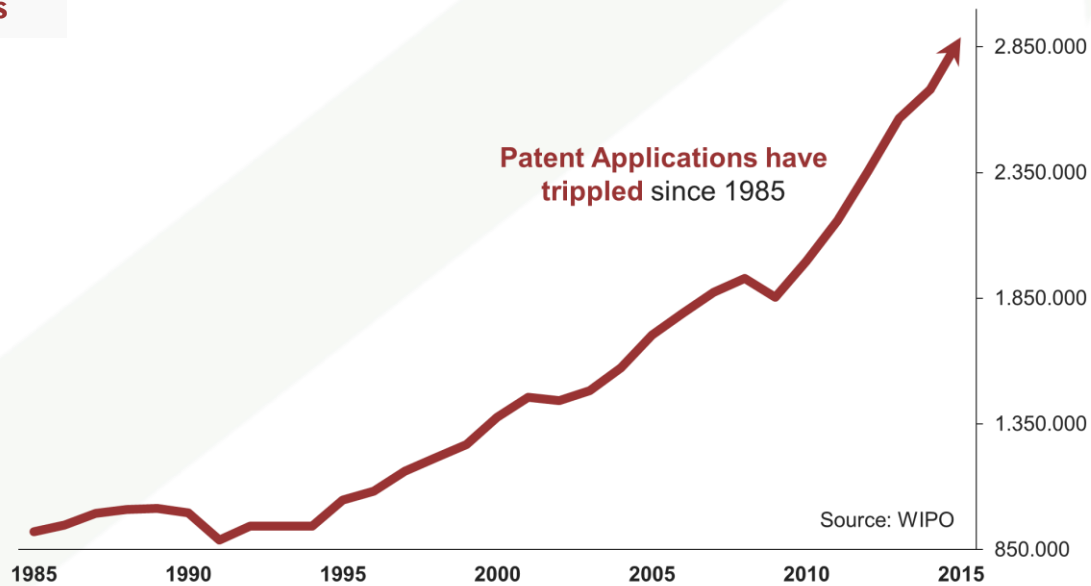
Reasons for the growing relevance

- 1. Complex products**
... based on many patents.
- 2. Emerging economies**
... in eastern Asia are seeking industrial property rights.
- 3. Patent infringement suits**
... in recent years ensure a more effective use of industrial property rights.
- 4. Licensing income**
... is becoming increasingly important.

Company IBM:

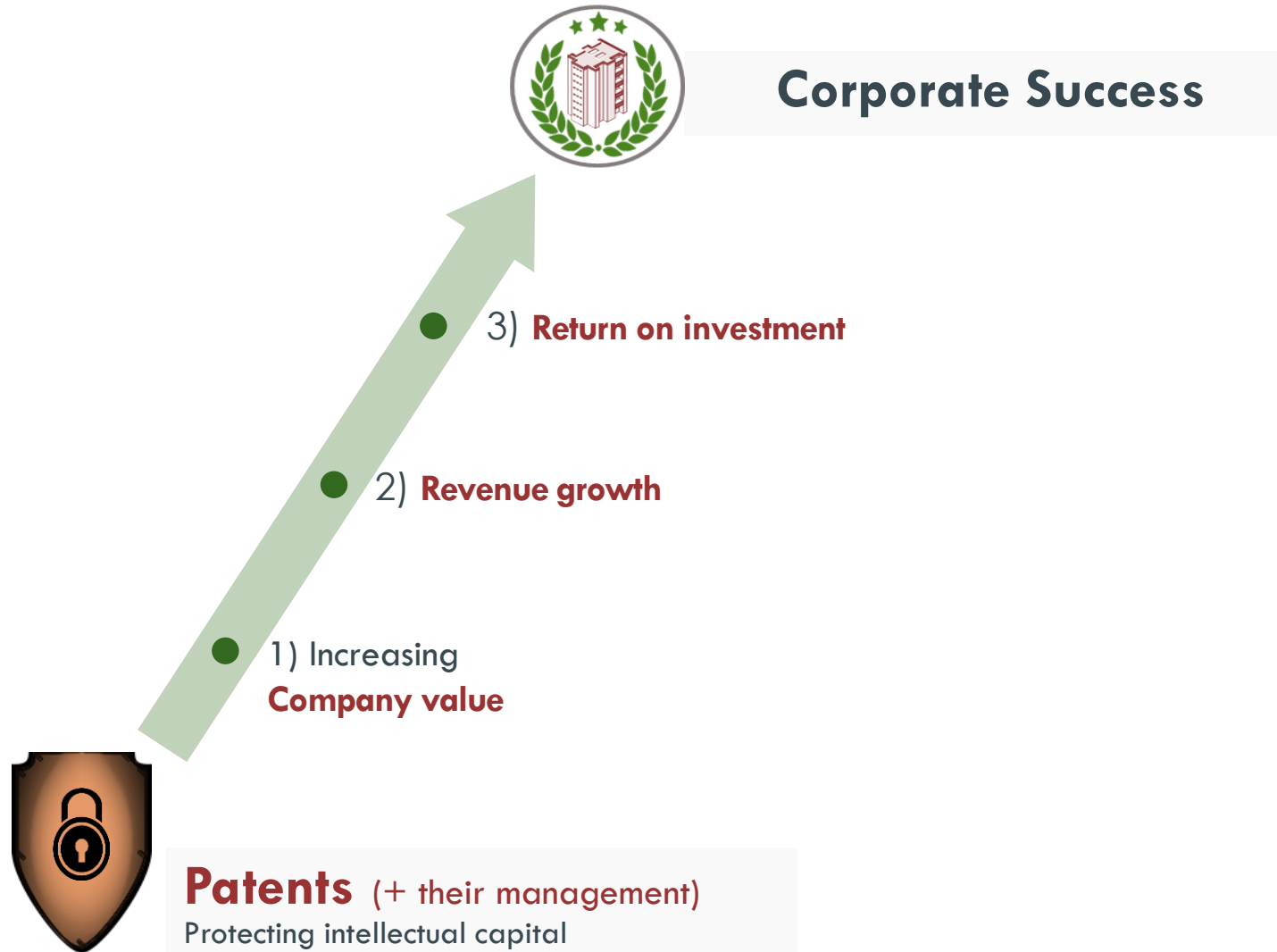
- 1990: USD 30 million
- 2017: USD **1,193** million

Top-Innovators



Patents protect Innovations

... and have a scientifically validated.
positive influence on a company's success.



Scientific confirmation

- 1) Tobin (1969); Wernerfelt u. Montgomery (1988); Lang und Stolz (1994); Bosworth u. Rogers (2001), Lee u. Grewal (2004); ...
- 2) Powell u. Dent-Micallef (1997); Spanos u. Lioukas (2001); Baum u. Wally (2003); Wiklund u. Shepherd (2003); Desarbo et al. (2005); ...
- 3) Penner-Han u. Shaver (1995); Baum u. Wally (2003); De Carolis (2003); Tanriverdi u. Venkatraman (2005) ; ...

... also of the ARIAD patent approach!



Prof. Dr. Houdou Basse Mama
ESCP Europe (Berlin Campus)

"Innovative efficiency and stock returns: Should we care about nonlinearity?" – Finance Research Letters (2017)



Close cooperation



ARIAD patent approach & data
... scientifically verified

How Patents can be analysed

Patent specifications
... offer **standardised, complete & up-to-date** information

(12) United States Patent
(16) Patent No.: US 8,971,661 B2
(13) Maloney
(45) Date of Patent: Mar. 5, 2015

(54) METHOD OF MAKING PAPER
(71) Applicant: MeadWestvaco, LLC, Mead, MS (US)
(72) Inventor: Stephen Michael Maloney, Mead, MS (US)
(73) Assignor: MeadWestvaco, LLC, Mead, MS (US)
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
(21) Appl. No.: 14/925,918
(22) Filed: Aug. 18, 2014
(65) Prior Publication Data: US 2014/0315999 A1 Nov. 27, 2014
(63) Continuation of application No. 13/137,835, filed on Sep. 15, 2011.
(60) Provisional application No. 61/905,424, filed on Sep. 16, 2010.

(51) Int. Cl.:
G06K 9/06 (2006.01)
G06K 9/00 (2006.01)
G06K 1/04 (2006.01)
G06K 2/00 (2006.01)
G06K 3/00 (2006.01)
G06K 4/00 (2006.01)
(52) U.S. Cl.:
2011/02 (2011.01); G06K 1/06 (2006.01); G06K 9/00 (2006.01); G06K 9/06 (2006.01); G06K 1/04 (2006.01); G06K 2/00 (2006.01); G06K 3/00 (2006.01); G06K 4/00 (2006.01)
(53) USPC:
382/276; 382/302; 450/302; 430/440

(56) Field of Classification Search:
None
See application file for complete search history.

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2014/0192766 A1 * 7/2015 Brakes 690/799

(58) * cited by examiner
Primary Examiner: Mandy Sells
(74) Attorney: Agent of Invt. - John B. Hibel, Total Patents, LLC

(57) ABSTRACT
Methods are disclosed relating to the production of composite images that include steps such as: receiving a set of objects that have a diversity of color from the environment; pricing the set of objects within a scene; capturing a set of images of the scene; adjusting color to the set of images; assembling a composite image; pricing the composite image; making color adjustments and applying the composite image.

1 Claim, 1 Drawing Sheet

- Name of invention
- Inventor
- Owner
- Registry number
- Registry date
- Registry information
- Information about involved patents
- International Patent Classification
- National Patent Classification

- Patent number & description
- Date of publication
- Research area
- Citations
- Patent attorney
- Summary

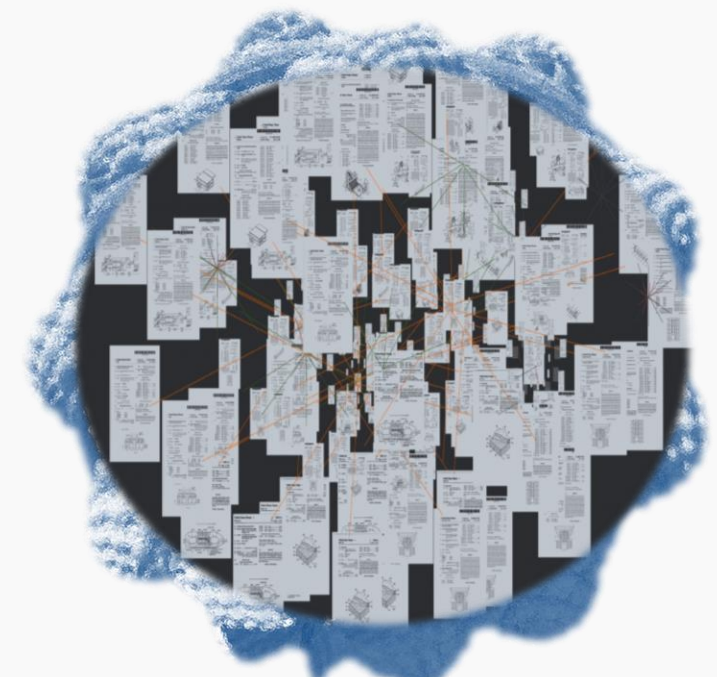
Countless Variables
Von (10) Patent designation [...] ...über (50) technical data[...] ... bis (98) [...] application-date for the extension of the duration [...]

Big-Data Chaos

Patents are practically never stand-alone. They form a **network** of forward and backward citations, contradictions and superior patent families.

In combination with the countless variables of a single patent specification, this results in a jumble of information: **Big Data Chaos.**

The challenge is to make this information usable.



From Patents to the Patent Equity Strategy

Leveraging Big Data to drive investment returns

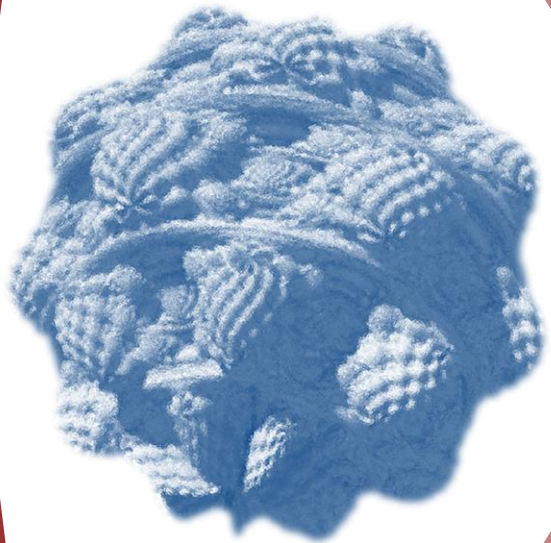
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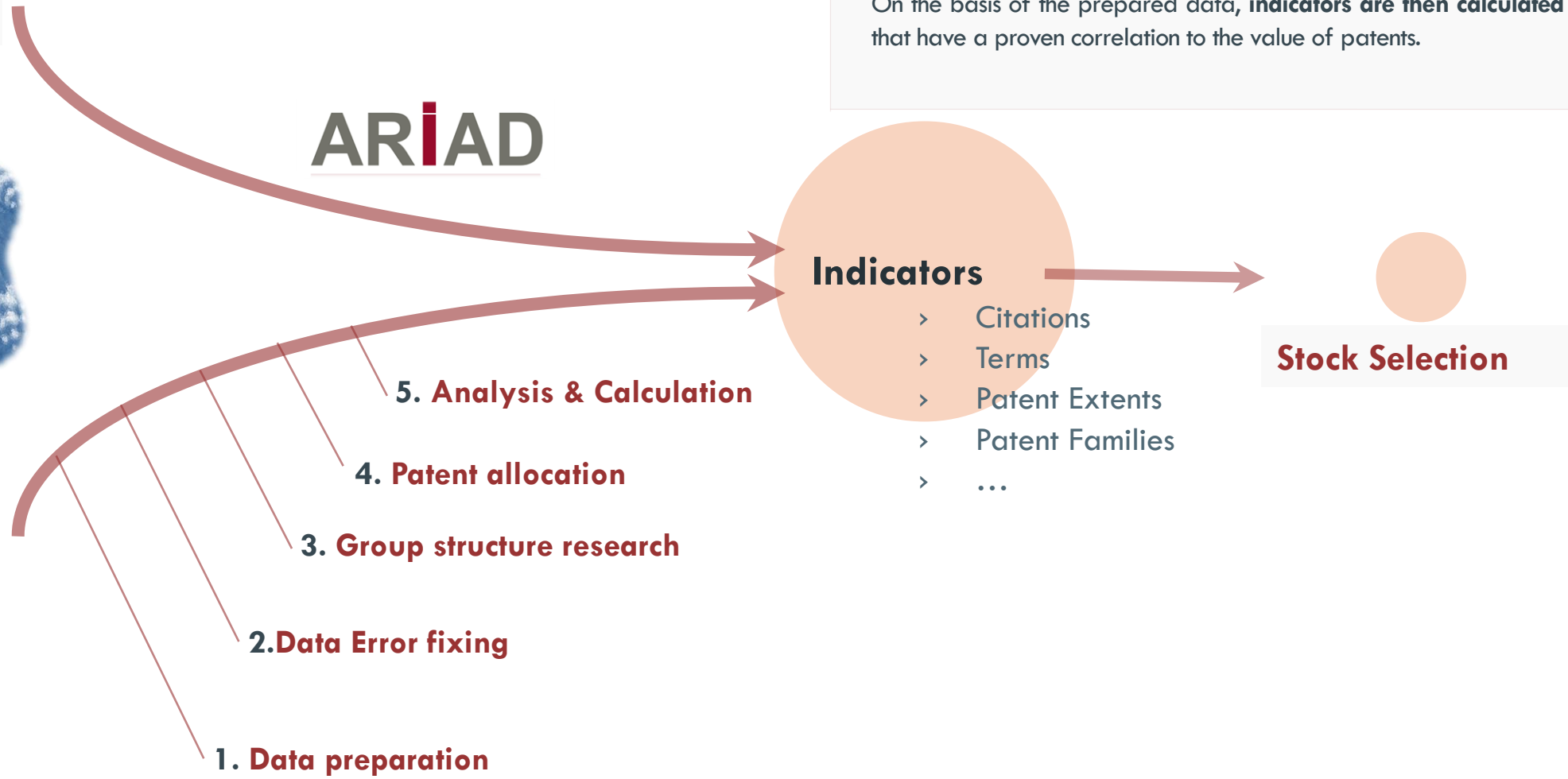
Making Patent Information usable

„Big Data“-Chaos

= Information-Overkill



ARIAD



From patent data to patent indicators

Using various complex **processes (1.-5.)** the patent information is made usable from a technical database point of view, prepared, cleaned and correctly assigned. Here, the **Group Structure Research** in particular is very time-consuming, since, for example, Siemens alone has more than 600 different subsidiaries with patents.

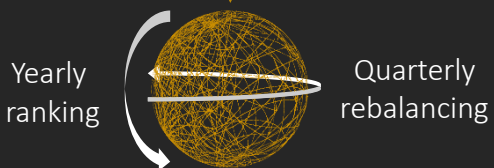
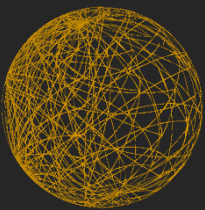
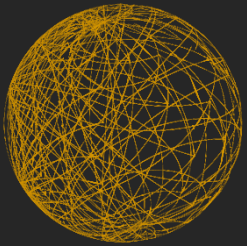
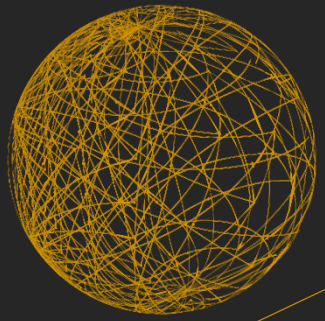
On the basis of the prepared data, **indicators are then calculated** that have a proven correlation to the value of patents.

Indicators

- > Citations
- > Terms
- > Patent Extents
- > Patent Families
- > ...

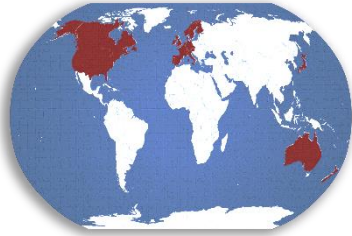
Stock Selection

The global ARIAD Patent-Universe



ARIAD Patent-Universe

#1: Industrialized Countries
+according to the definition of MSCI
+ additional filter (freefloat, marketcap)



#2: Sectors with high patent activity



Utilities



Logistics



Raw Materials

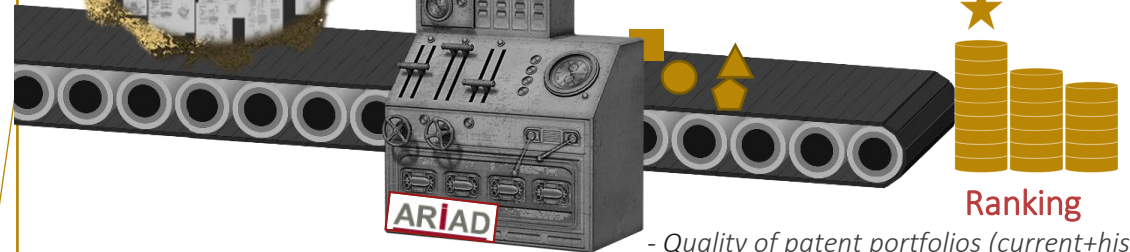
#3: Patent portfolio-ranking

- ✓ Most innovative companies
- ✓ Mainly micro-, small- und midcap
- ✓ Focus: USA, Japan, Europe



Patent indicators

- Citations
- Techn. breadth
- Patent families
- Durations
- ...



Ranking

- Quality of patent portfolios (current+historic)
- Adjusted for company size

ARIAD data processing

1. Researching subsidiaries
2. Patent allocation & data cleaning
3. Computation of patent indicators

#4: Selection process

- ✓ Investment in **about 100 companies** with highest ranking
- ✓ Consideration of **fundamental and technical data**
- ✓ **No orientation on any benchmark**



The Strategy at a Glance

- Companies with a **high-quality patent portfolio** receive investment. (mainly small/midcaps)
- Positive side effect: above-average number of **candidates for takeover** in the portfolio - before takeover offers are known on the market.
- Regionally, the investments concentrate on **USA** and **Japan/Pacific** alongside the main focus of **Europe**.
- The main focus of the selection process is the **systematic quality evaluation of the patent portfolio** using many scientifically validated indicators.
- The **selection of regions and sectors** is determined by the quality of the patent portfolio.
- **High degree of diversification.** (approx. 100 titles in the portfolio)
- **Items are held in the medium to long term.**
- Adaptation according to ranking
 - "Opportunistic" transactions possible during the year
 - No currency hedging

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the "Parties".



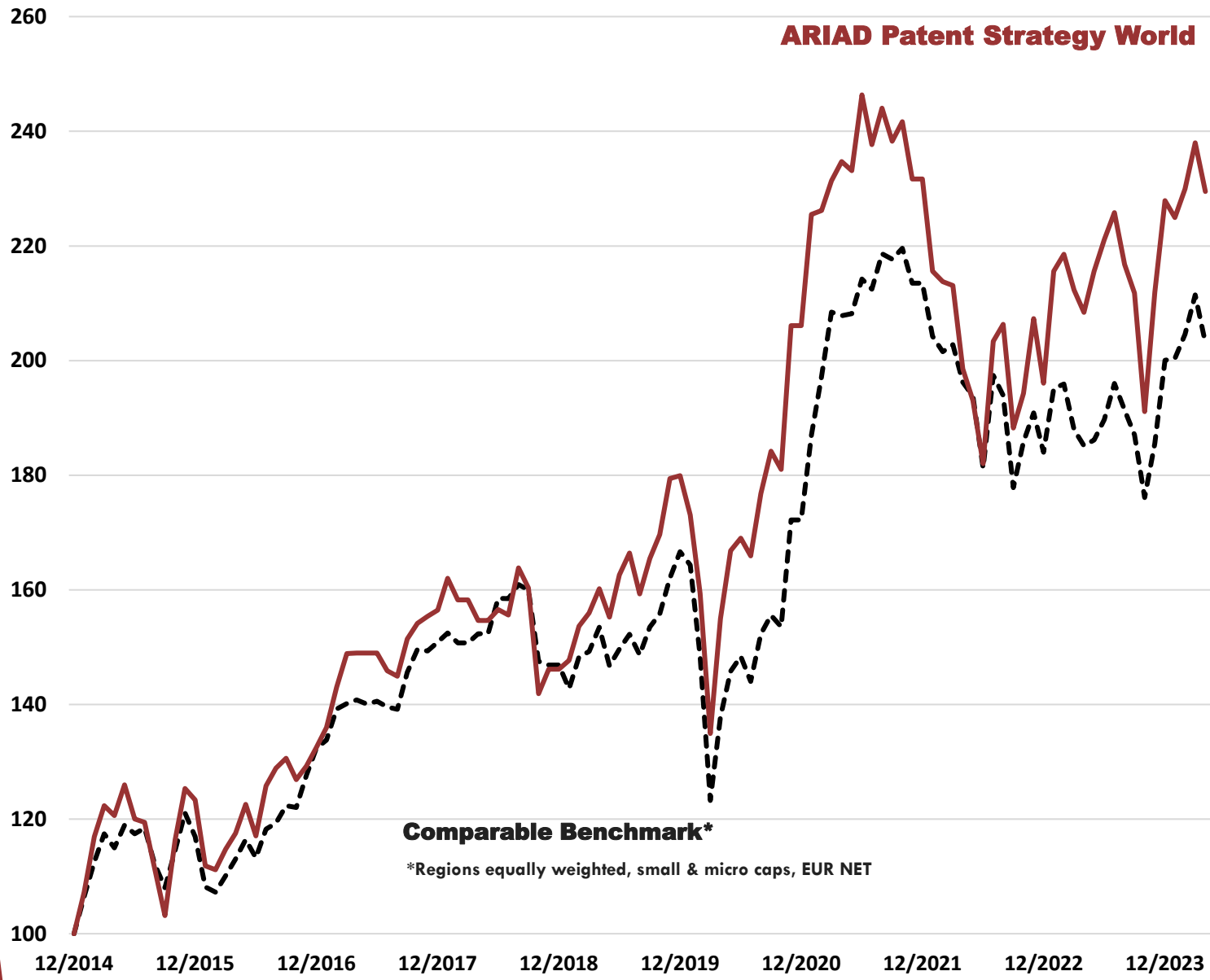
Results of the Strategy:

Outperformance, especially by small & mid cap stocks

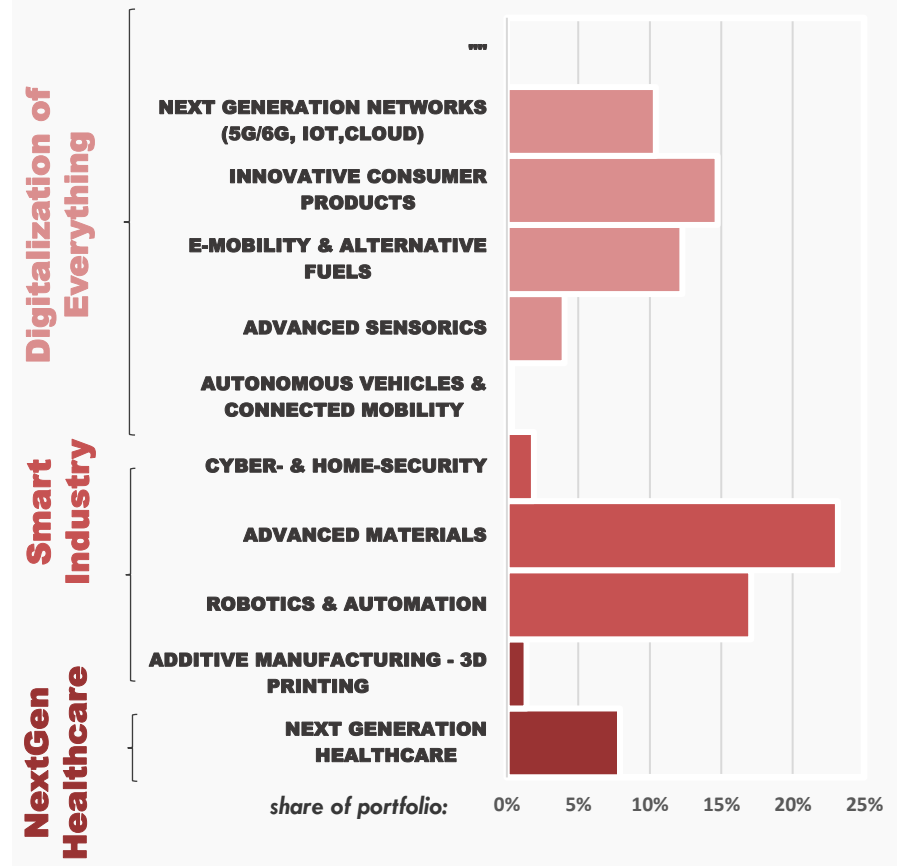
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Performance of the „World“ Patent Strategy: Multiple Track Records Prove the Added Value



TECHNOLOGY LEADERS IN MEGATRENDS IDENTIFIED BY PATENT DATA



Global Equities Small&Midcap
rank 1: 1-year performance
rank 2: 3-year performance
rank 2: 5-year performance

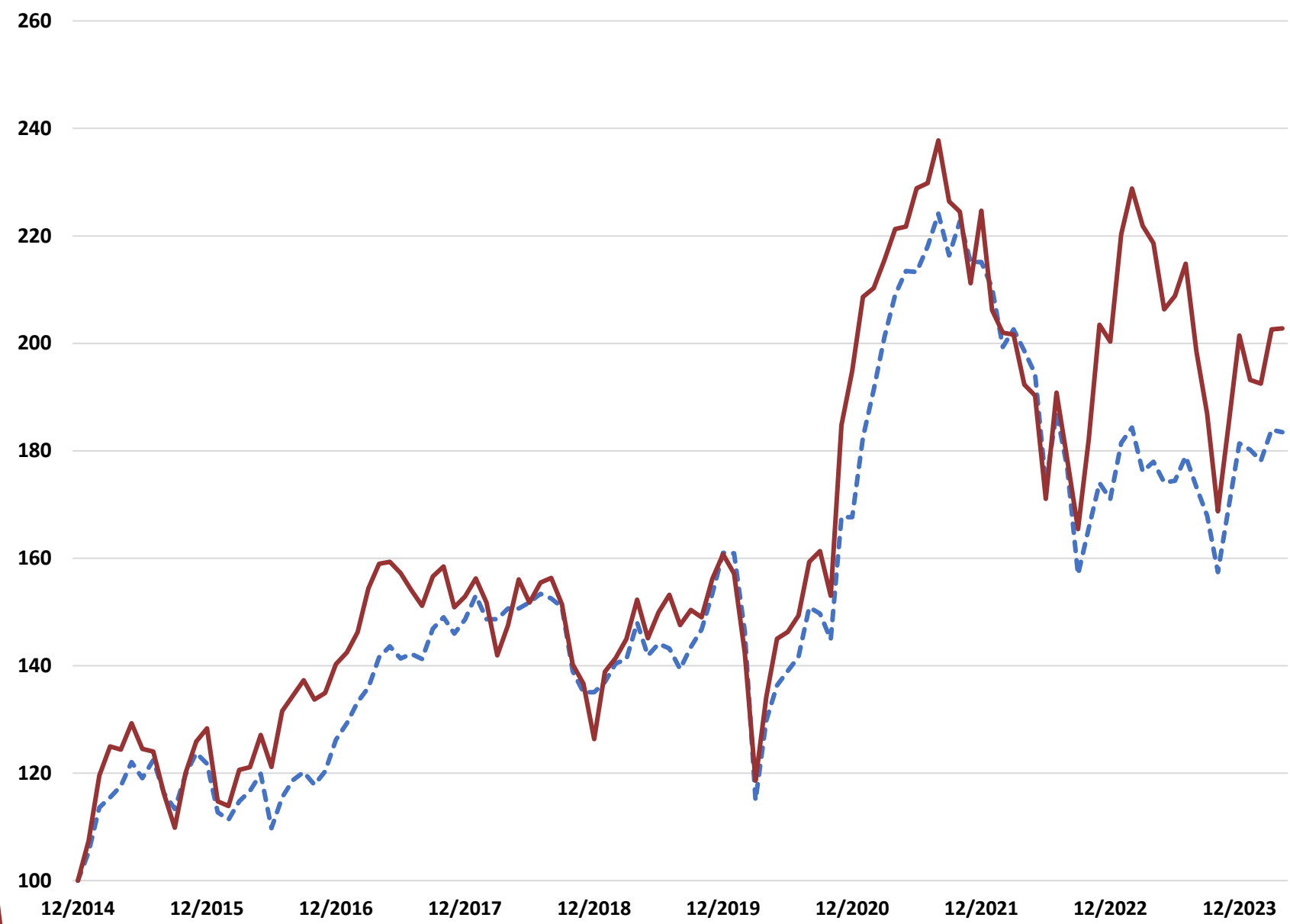
Awarded to the *Monega ARIAD Innovation R* that is based on ARIADs Patent Strategy

Quelle: ARIAD - Updated 04/30/2024

Region Europe



Main Sector - Industry



ARIAD Patent Strategy Europe
(Carve-Out)

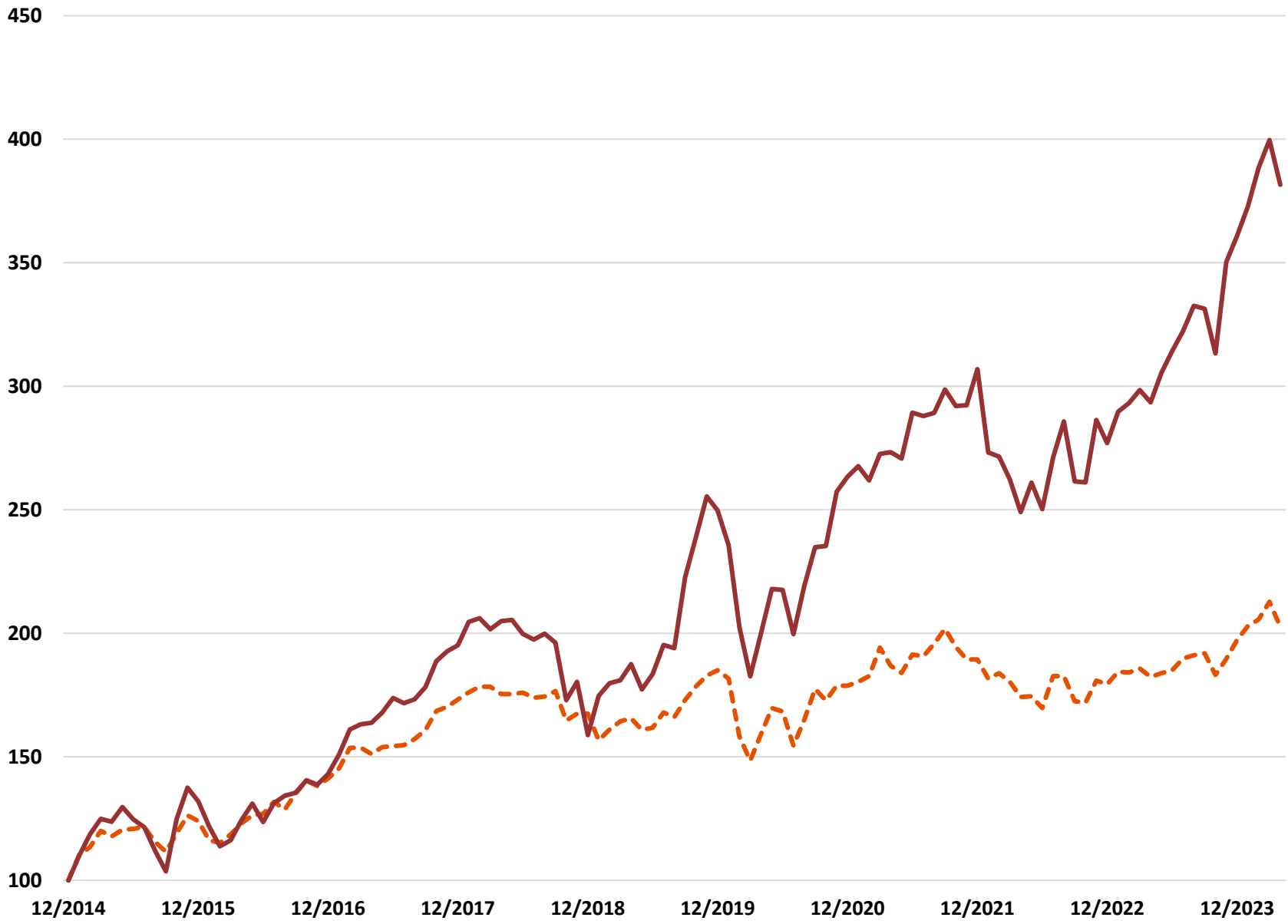
Comparable Benchmark*
*Europe, small & micro caps, EUR NET

Including transaction costs
Source: ARIAD - 04/30/2024



Main Sector - Industry

ARIAD Patent Strategy Japan (Carve-Out)

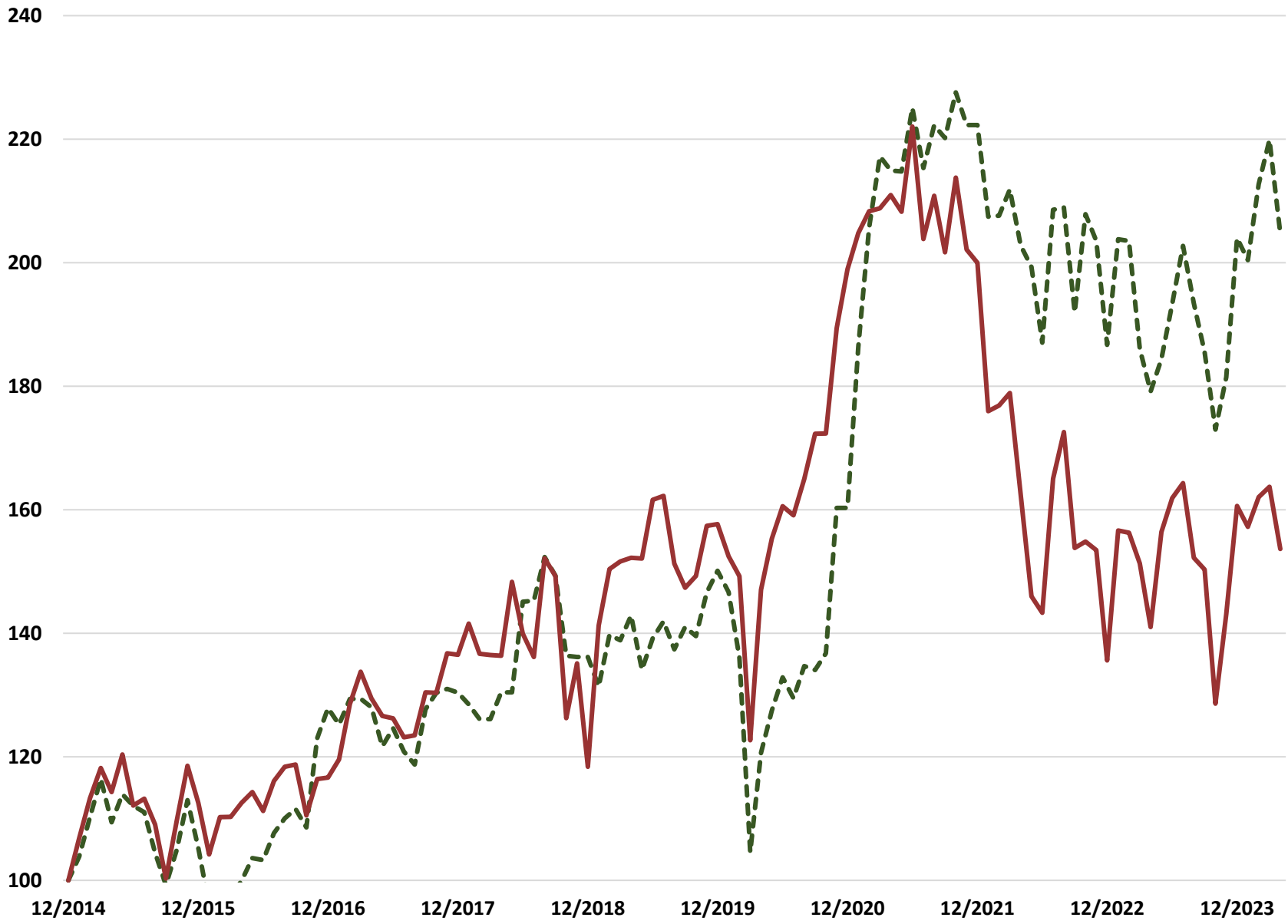


Comparable Benchmark*

*Japan, small & micro caps, EUR NET

Including transaction costs
Source: ARIAD - 04/30/2024

Region North America



Main Sector - Biotech & Tech



Comparable Benchmark*

*USA, small & micro caps, EUR NET

**ARIAD Patent Strategy North America
(Carve-Out)**

Including transaction costs
Source: ARIAD - 04/30/2024

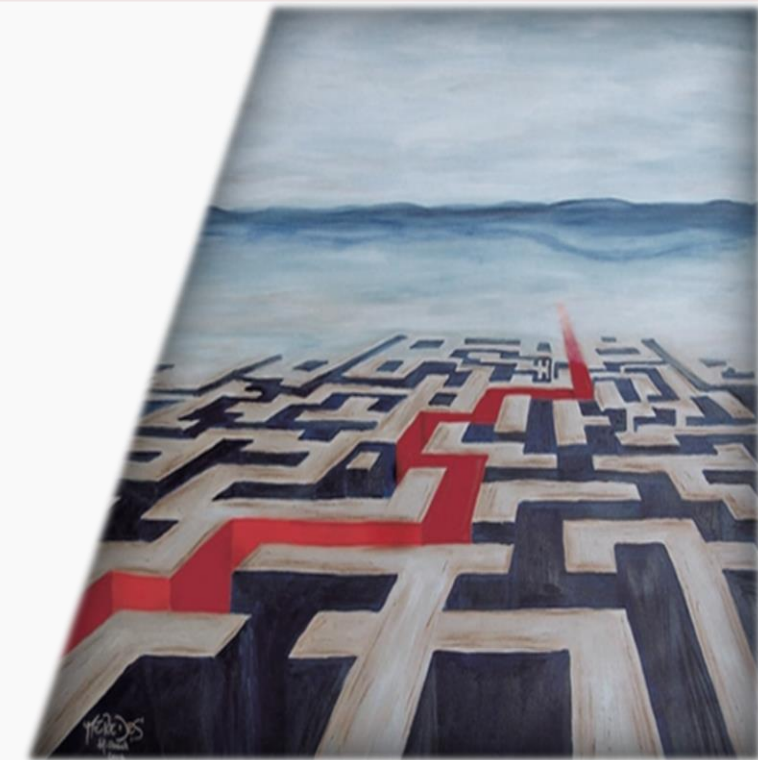
Further Information

The ARIAD Patent Equity Strategy :
has been fully implemented in a **mutual fund** since 2015:

Monega ARIAD Innovation (WKN 532102)

www.monega.de

As an institutional investor you can **register for a monthly update**
on the strategy at www.ariad.de .



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