



BCG's Biopharmaceutical Partnering Survey – 2012 Results

"Partnering in a rapidly changing market"

November 2012

THE BOSTON CONSULTING GROUP

Purpose of this document

This presentation is intended to give a "state of the world" overview to the worldwide biopharma licensing and business development environment, as perceived by those active in that area

This presentation reflects BCG's multi-year investment in studying the relationships between the demand and supply side in the market for biopharma licensing

- This 2012 survey edition, following-up on 2003, 2006, 2008 and 2010 editions, had three key objectives
 - Explore some key trends in biopharmaceutical partnering
 - Share issues on the minds of BD execs in sell-side companies
 - "Sell-side" means companies licensing out ("licensors") to other (typically larger) companies ("licensees")
 - "Buy-side" means companies licensing in ("licensees") from other (typically smaller) companies ("licensors")
 - Assess perceived performance of individual buy-side companies along key characteristics
- We sent the survey to ~750 CEOs and heads of BD at sell-side firms in July/August 2012, with 160 responses

Questions regarding these materials should be directed to Dirk Calcoen, BCG Partner, San Francisco - Email: calcoen.dirk@bcg.com; Phone: +1 415 732 8010

Executive summary

Against backdrop of continued challenging partnering environment ...

- While overall licensing transaction volumes and values are relatively steady, top pharma companies have engaged in fewer transactions over past few years and now represent a minority of transactions
- Despite a well-publicized need to fill late stage pipelines, most transactions continue to be in early (pre-Phase II) stage assets
- While capital situation improved versus 2010, we observe continued issues with access to capital for most smaller biopharma companies (impacting the buy/sell side dynamic)

... BCG survey indicates evolving expectations of "sell-side" companies looking to out-license

- "Sell-side" looking for a partner who can add value to their product, have partnering skills to close the deal, have dependable clinical development capabilities and who can deliver internationally
- "Sell-side" looking less for a partner who can bring certain capabilities (commercial, regulatory, access / reimbursement) that are seen as "table stakes"

Overall, sell-side is both less positive and more negative about the buy-side

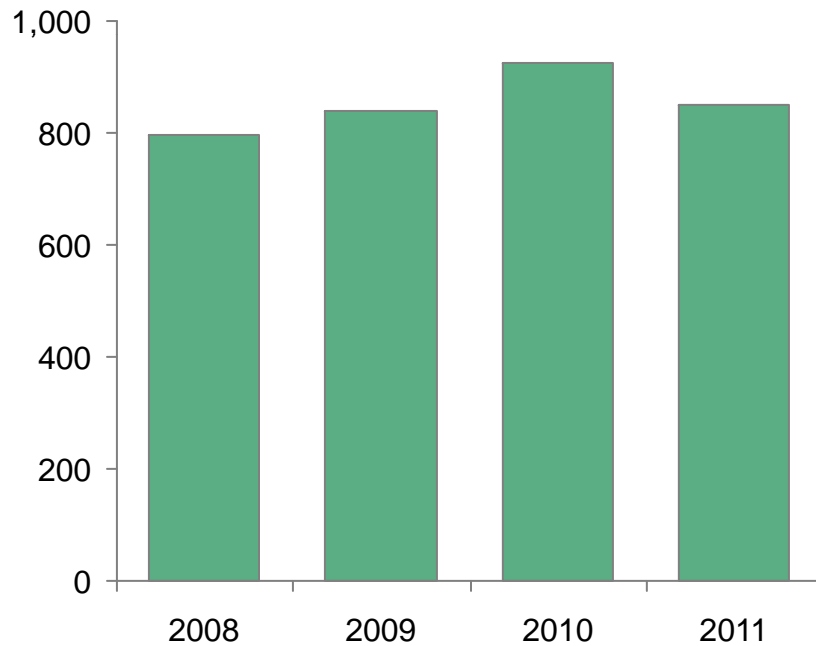
- On average, a decline of perceived performance relative to 2010
- In addition, we note a narrowed range between best and worst performers, - despite a clear set of highly regarded big pharma partners and evidence of some smaller "up and coming" companies
- Deteriorating perceptions of some companies especially among those respondents familiar with them

These results indicate that there are clear opportunities for improvement and that companies who want to be perceived as great partners cannot be complacent

While total number of licensing deals and values are holding steady ...

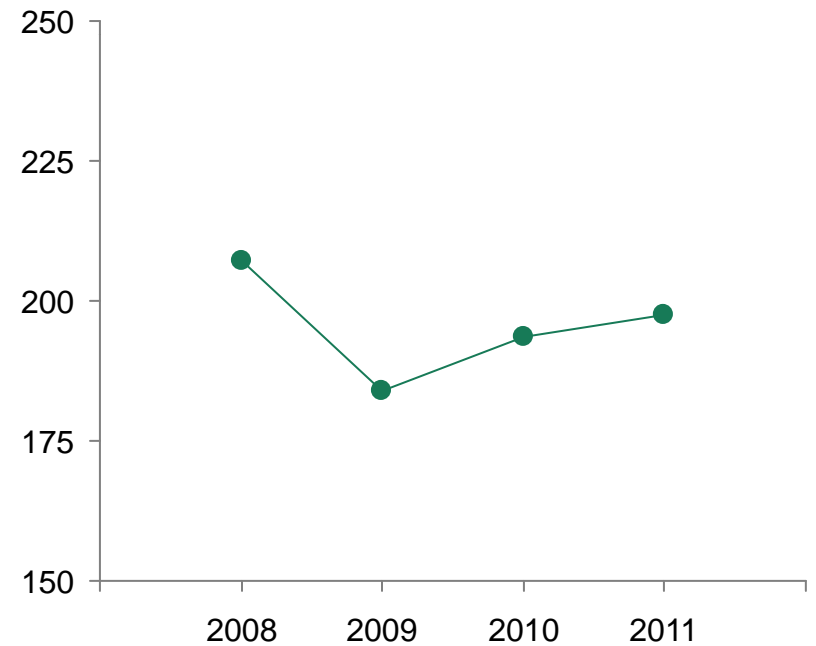
Number of total deals¹

Total bio-pharma licensing deals



Average deal value¹

Average deal values (\$ M)



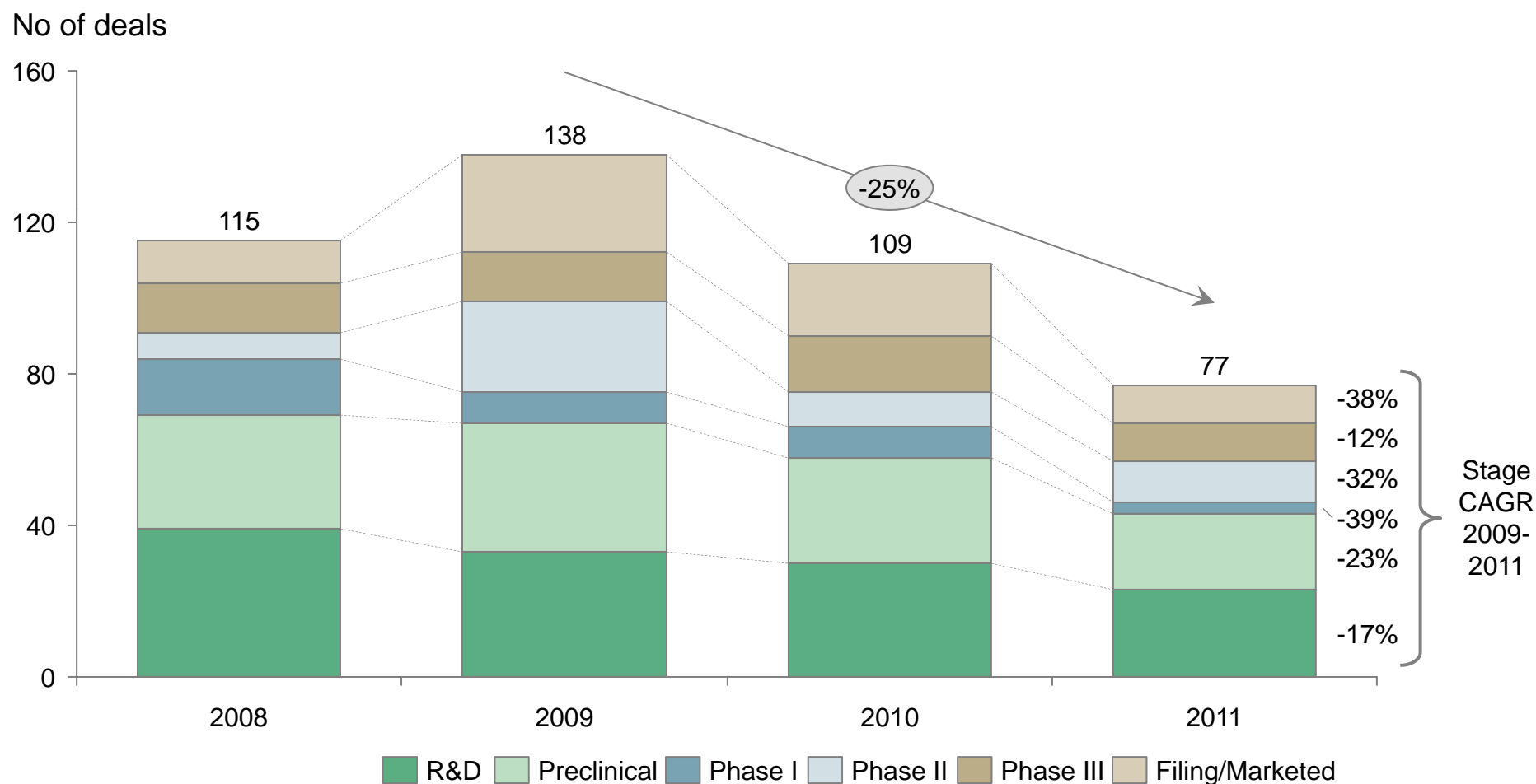
Note: Number of deals and average deal value is based off of total deals in the industry (**not** top 10 firms)

1. Average deal value and number of deals has been obtained from the EvaluatePharma deals database – defined as 'deal value' by EvaluatePharma

Source: EvaluatePharma Licensing deals pull from 2008 to 2012

... Top 10 firms¹ have recently engaged in fewer licensing deals with limited proportion in late stage

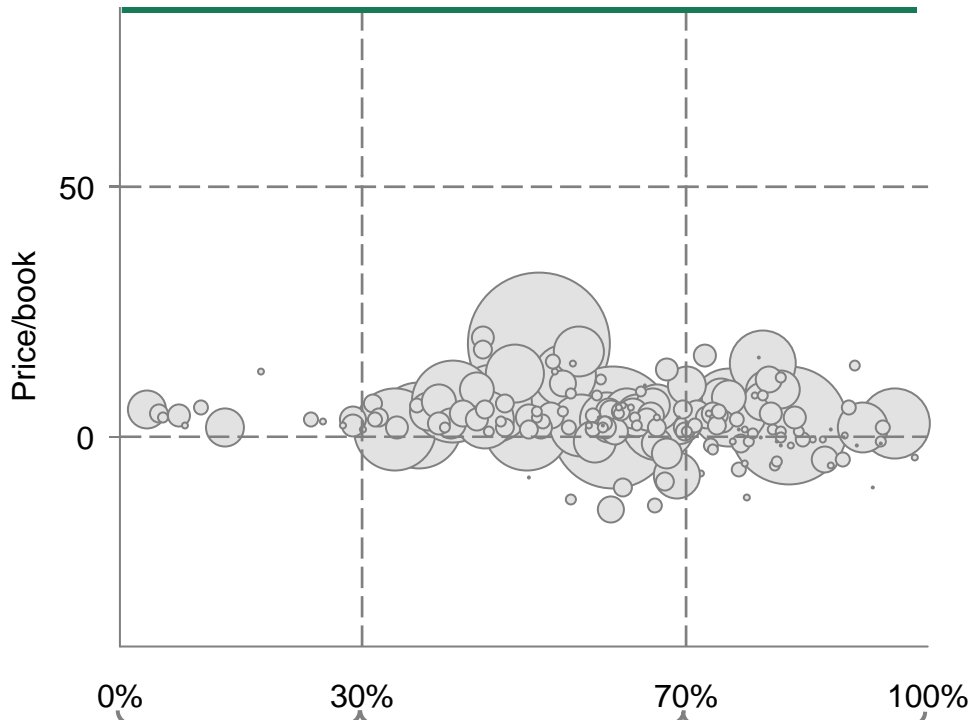
Sharp decline in number of licensing deals by top 10 pharma¹



1. Top 10 Pharma companies as defined by highest sales in 2011 include Abbott, AstraZeneca, Eli Lilly, GSK, J&J, Merck, Novartis, Pfizer, Roche, Sanofi
Source: EvaluatePharma Licensing deals pull from 2008 to 2012

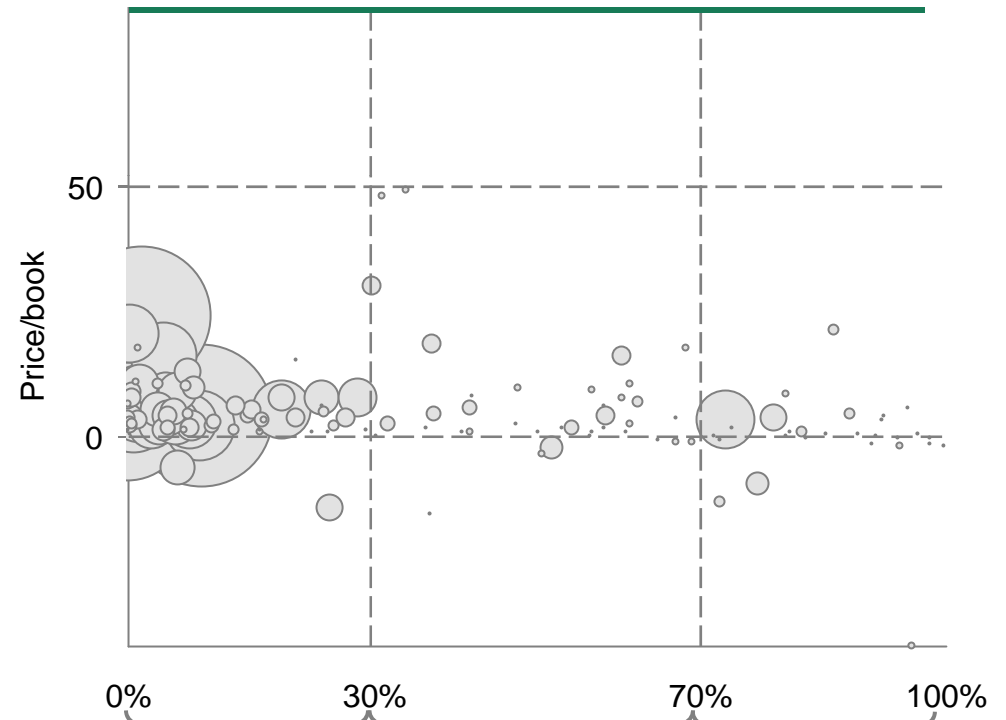
While financial health in biopharma has improved significantly, still significant risk of default, impacting licensing dynamics

5 year cumulative default risk (2010)



0%	30%	70%	100%	Companies
15	102	67		
\$6B	\$53B	\$19B		Capitalization

5 year cumulative default risk (2012)



0%	30%	70%	100%	Companies
72	36	29		
\$95B	\$4B	\$5B		Capitalization

1. 'Medium to high default risk' includes all companies with 30% or higher 5 yr cumulative default risk
 Note: Default risk based on CreditGrade™ Sample is all biotech and pharma companies with \$10M-\$10B Market Cap. CX creditgrade based off ADR
 Source: CreditGrades.com, Global Vantage, Reuters, BCG ValueScience Center.

Against this backdrop, we launched fifth edition of BCG licensing survey in the summer of 2012

Survey targeted representative sample of ~750 biopharma "sell side" companies yielding 65 responses in 2003, 51 responses in 2006, 88 in 2008, 95 in 2010, and 160 in 2012

- Data from multiple editions allows identification of trends

Respondents were geographically diverse

- North America: US, Canada
- Europe: Netherlands, Denmark, Finland, Belgium, France, Germany, Italy
- Asia: India, China, Japan

Respondents were senior level executives involved in licensing or business development

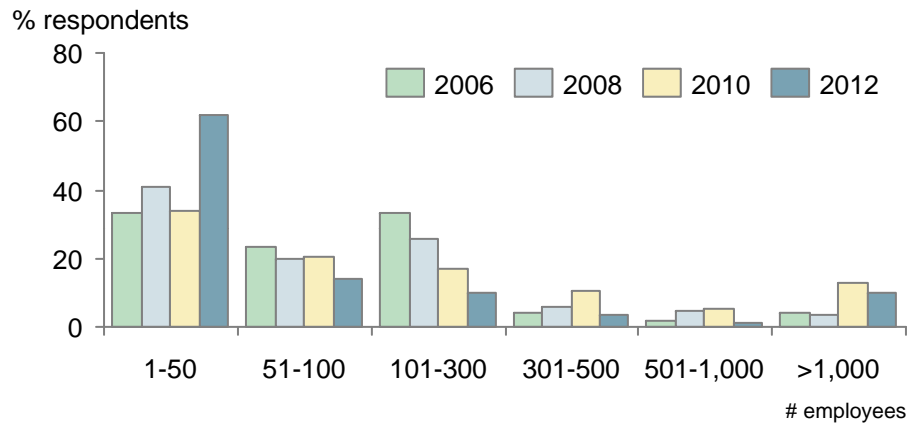
- President, CEO, VP / Director of Business Development

Key objectives of survey

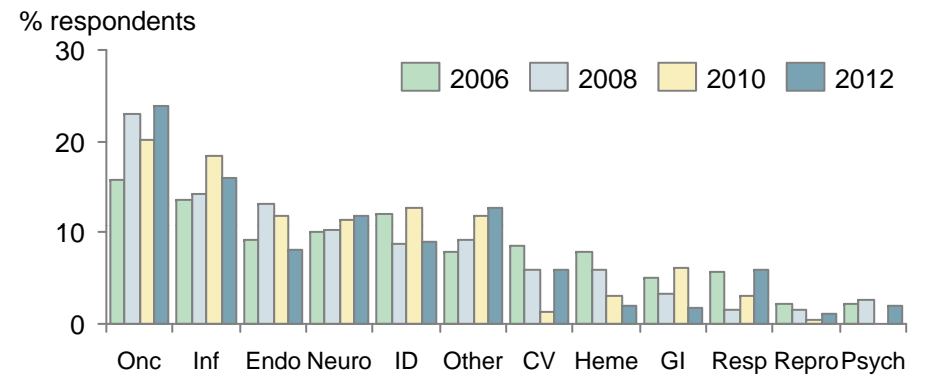
- Determine most important characteristics in selecting a licensing partner
- Determine perceived performance of specific buy-side companies

We surveyed a broad cross-section of biopharma ...

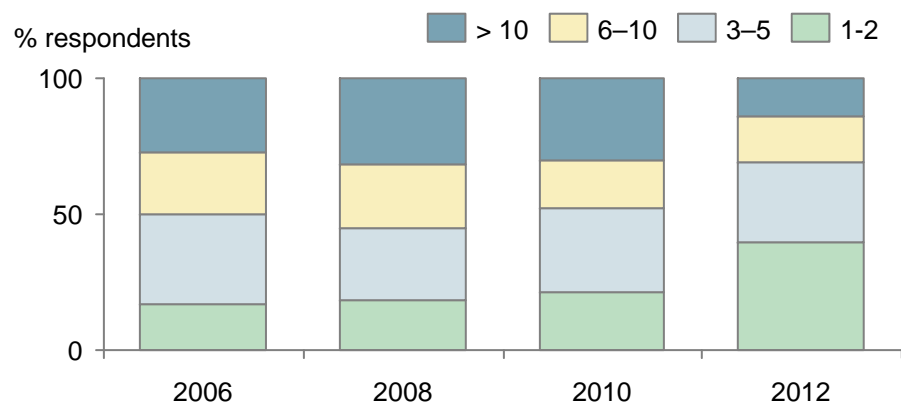
High proportion of small firms in 2012 survey



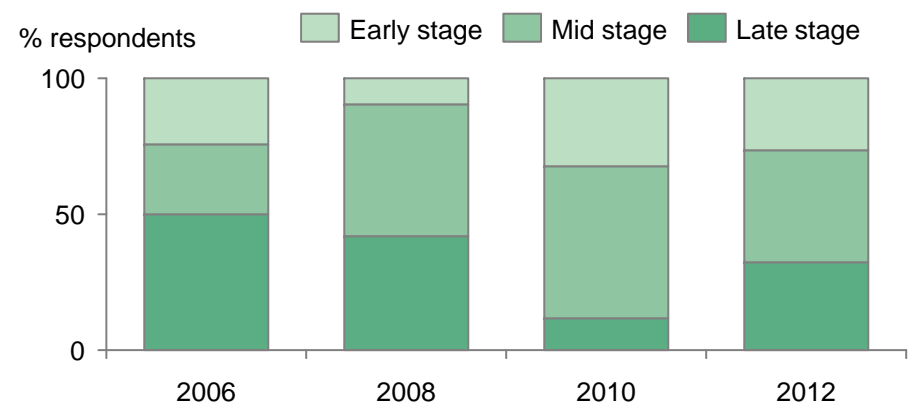
Products are across therapeutic areas¹



In 2012, respondents have fewer deals under their belt



Mix of early and late stage projects



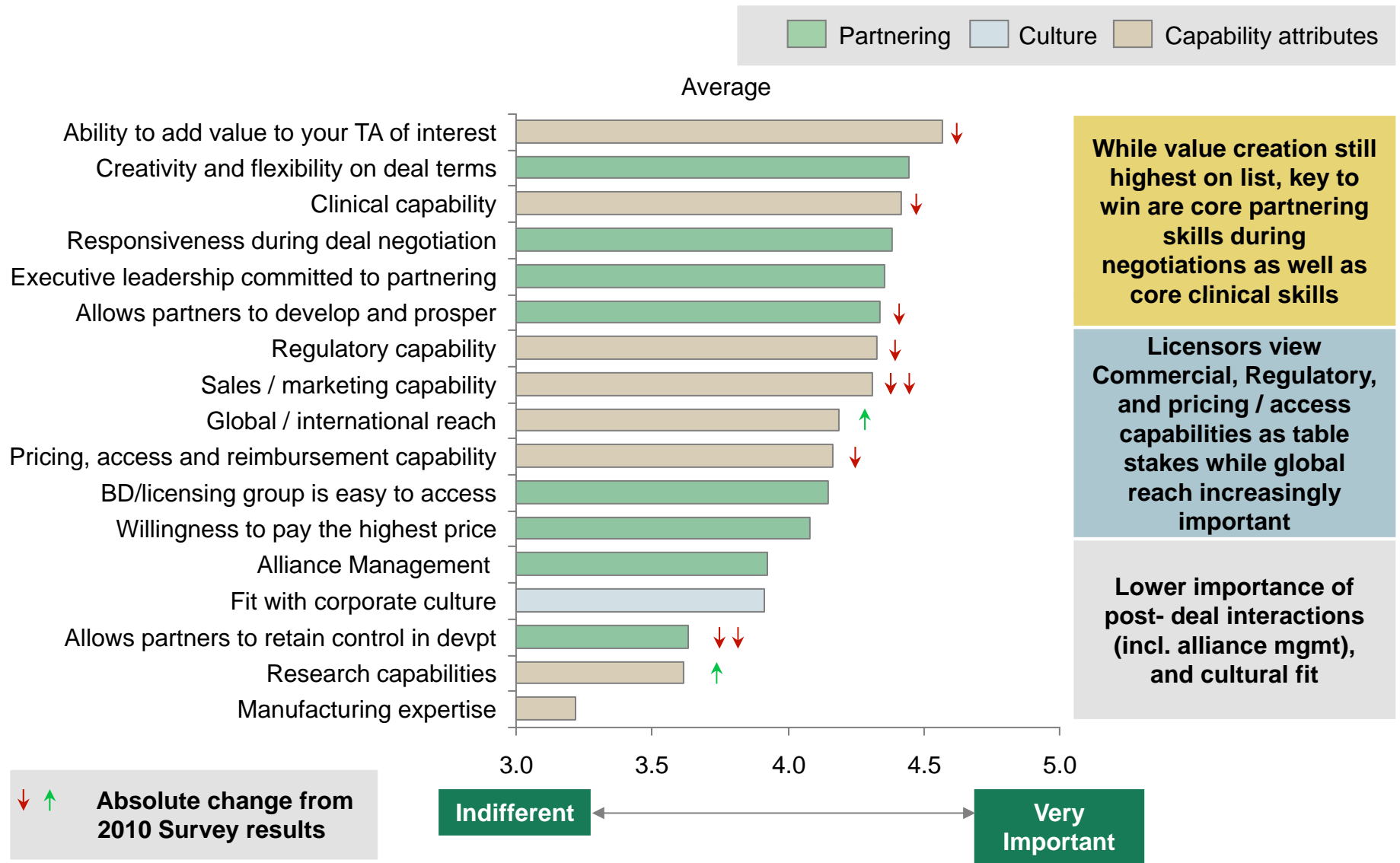
1. Onc = oncology, Inf = inflammation, ID = infectious disease, Neuro = neurology, CV = cardiovascular, Resp = Respiratory, GI = gastroenterology, Heme = hematology, Psych = Psychiatry, Nephr = Nephrology, Repro = Reproductive Health
 Source: BCG survey of Biotech CEOs and Licensing Executives, 2012

... and expanded the number of companies surveyed in 2008, 2010 and 2012 for comprehensive coverage

Core companies	Added in 2008/2010	Added in 2012	Analyses use core or full set of companies
<ul style="list-style-type: none"> • Abbott • Amgen • AstraZeneca • Bayer • BMS • Boehringer Ingelheim • GSK • J&J • Lilly • Merck • Novartis • Pfizer • Roche • Sanofi 	<ul style="list-style-type: none"> • Astellas • Biogen • Celgene • Daiichi-Sankyo • Eisai • Gilead • Merck Serono • Mitsubishi Tanabe • Novo Nordisk • Takeda • UCB 	<ul style="list-style-type: none"> • Shire • Teva 	<p>Analyses of trends across years use core companies</p> <ul style="list-style-type: none"> • E.g., comparison of average performance over 4 survey editions <p>Other analyses use full company sample</p> <ul style="list-style-type: none"> • E.g., importance of attributes, dispersion in perceived performance,... <p>Clearly indicated on each analysis whether only core set vs. full set of companies used</p>

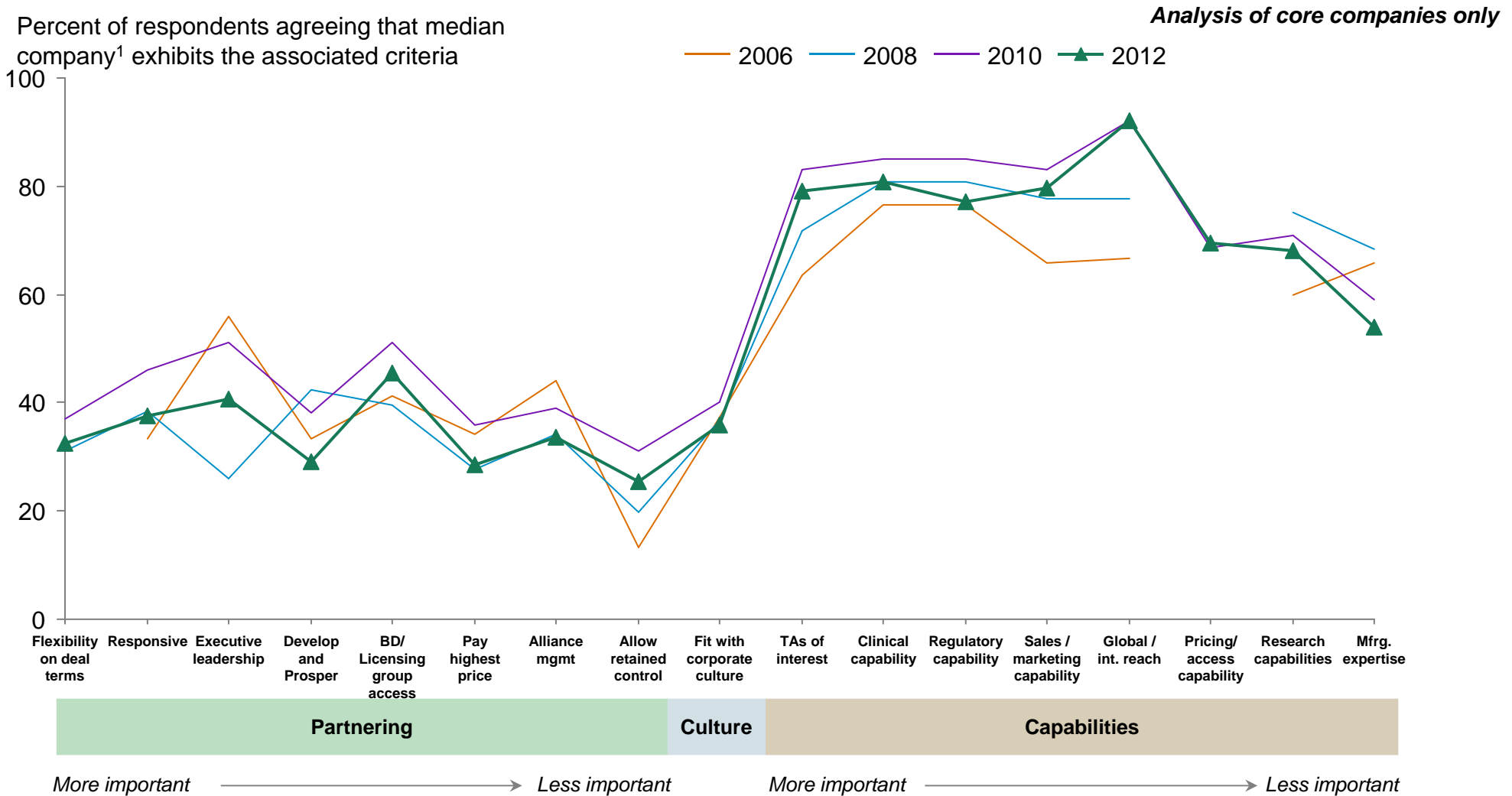
While survey sample size is relatively small, we feel the results reflect perceived reality

What a "sell-side" partner is looking for – value creation expertise but also core partnering skills to close a deal



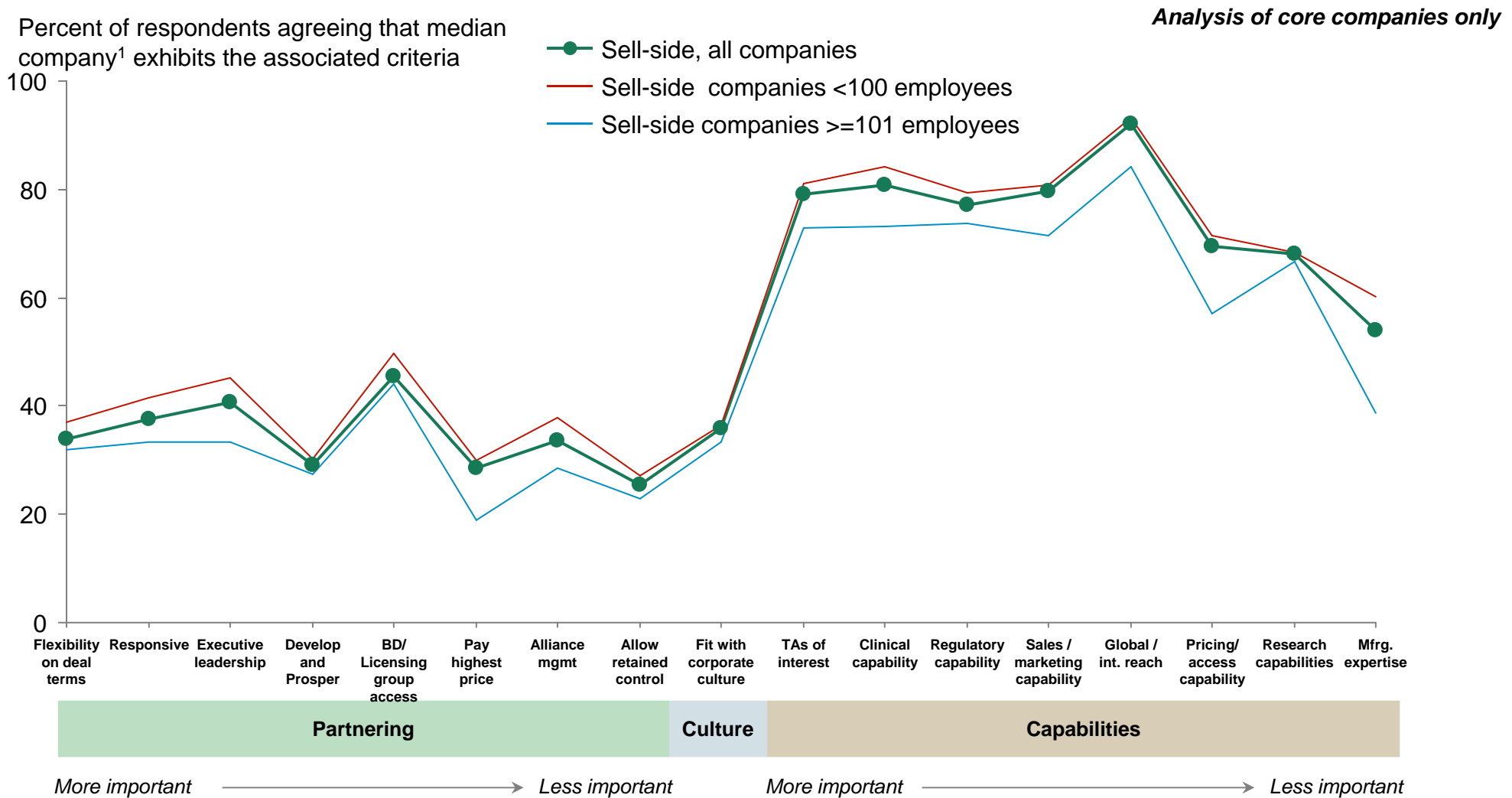
Source: BCG survey of Biotech CEOs and Licensing Executives, 2012; BCG analysis; see appendix 1 for format of survey questionnaire

Perceived industry performance has slipped slightly from 2010 levels ...



1. Values are calculated as median of "Agree and Strongly agree responses" only for core companies – see slide 13 for list of core companies
 Note: The chart has been updated to reflect 2012's importance scales and individual attributes – the trend line is broken where attributes didn't exist in previous editions,
 Source: BCG survey of Biotech CEOs and Licensing Executives, 2012

...with respondents from larger sell-side companies more critical of performance across all dimensions



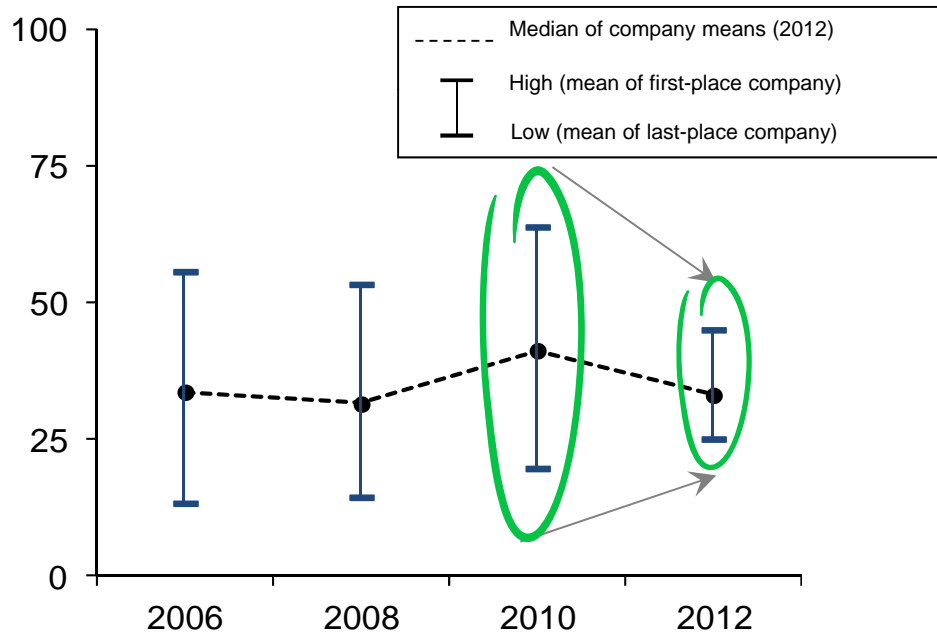
1. Values are calculated as median of "Agree and Strongly agree responses" only for core companies – see slide 13 for list of core companies
 Note: The chart has been updated to reflect 2012's importance scales and individual attributes – the trend line is broken where attributes didn't exist in previous editions
 Source: BCG survey of Biotech CEOs and Licensing Executives, 2012

While performance across top companies has slipped from 2010, the range within the core group has tightened

Analysis of core companies only

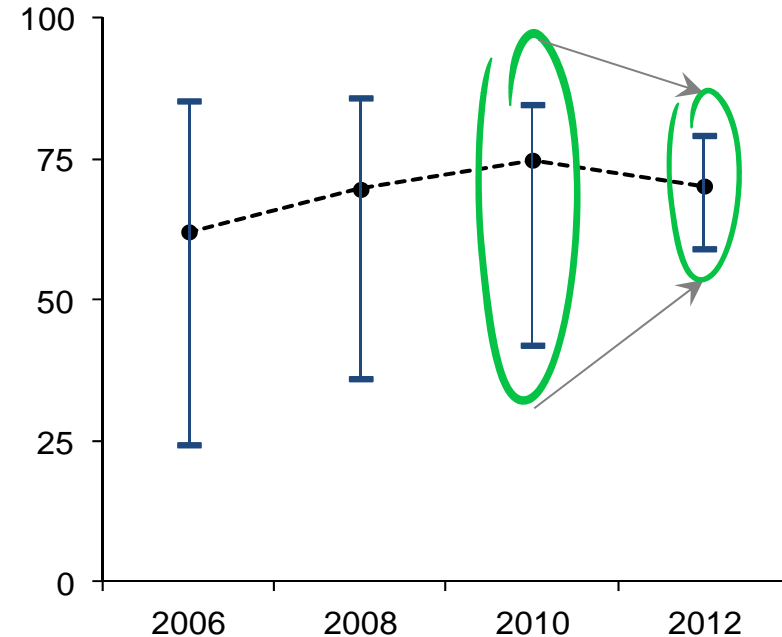
Partnering

Respondents agreeing that company exhibits partnering characteristics (%)¹



Culture / Capabilities

Respondents agreeing that company exhibits culture/capabilities characteristic (%)¹



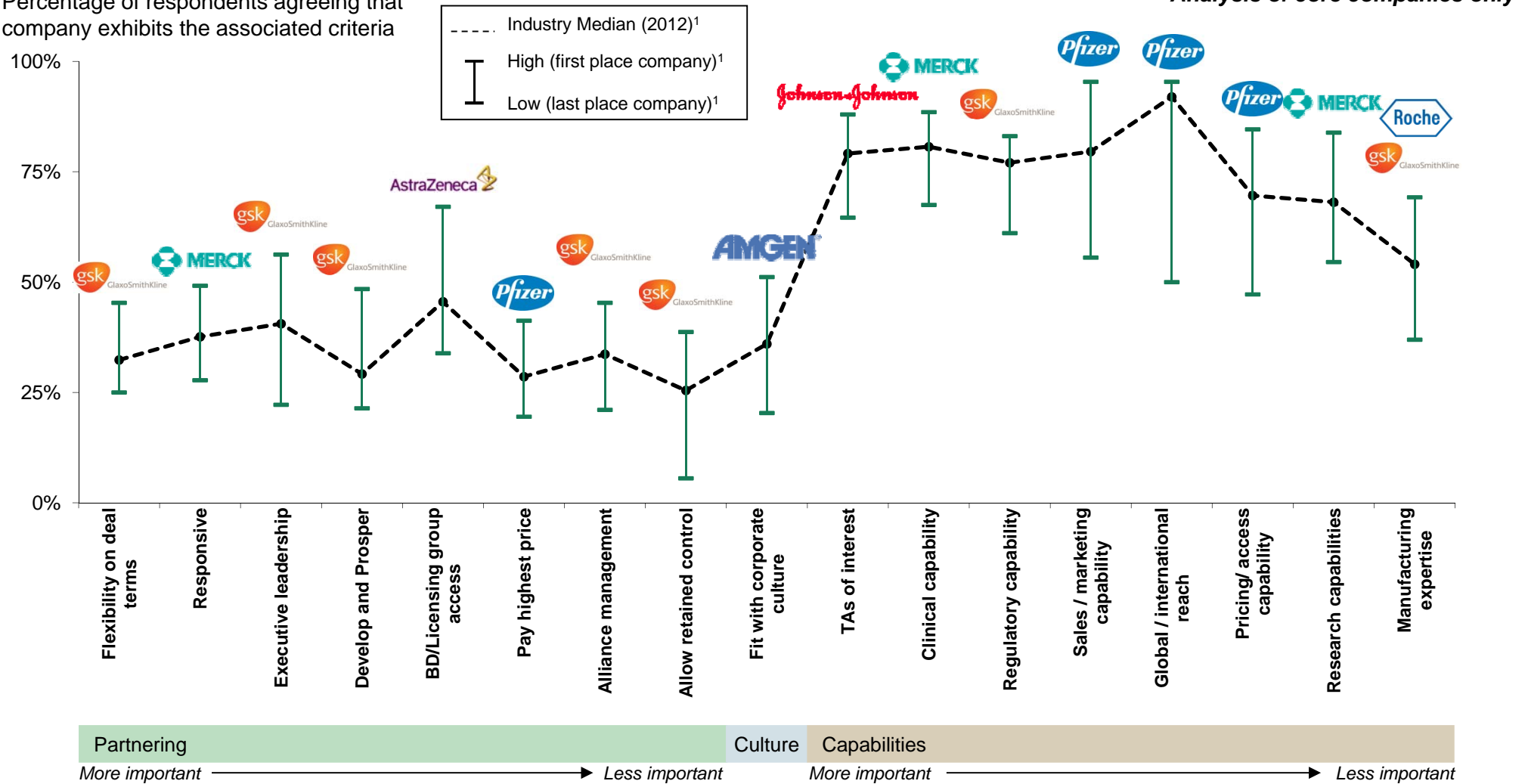
1. Calculated as high, median and low of averaged scores on partnering characteristics. High and low indicates an individual company's average partnering score across eight partnering parameters. Similar calculation for culture/capabilities.

Note: Analysis conducted using core companies

Source: BCG survey of Biotech CEOs and Licensing Executives, 2012, BCG Analysis

In 2012, GSK getting many of the highest marks in partnering attributes among core companies

Percentage of respondents agreeing that company exhibits the associated criteria



Note: scores calculated as percent of respondents who agree with statements associated with each company;

1. Median, high and low scores calculated across core set of companies only

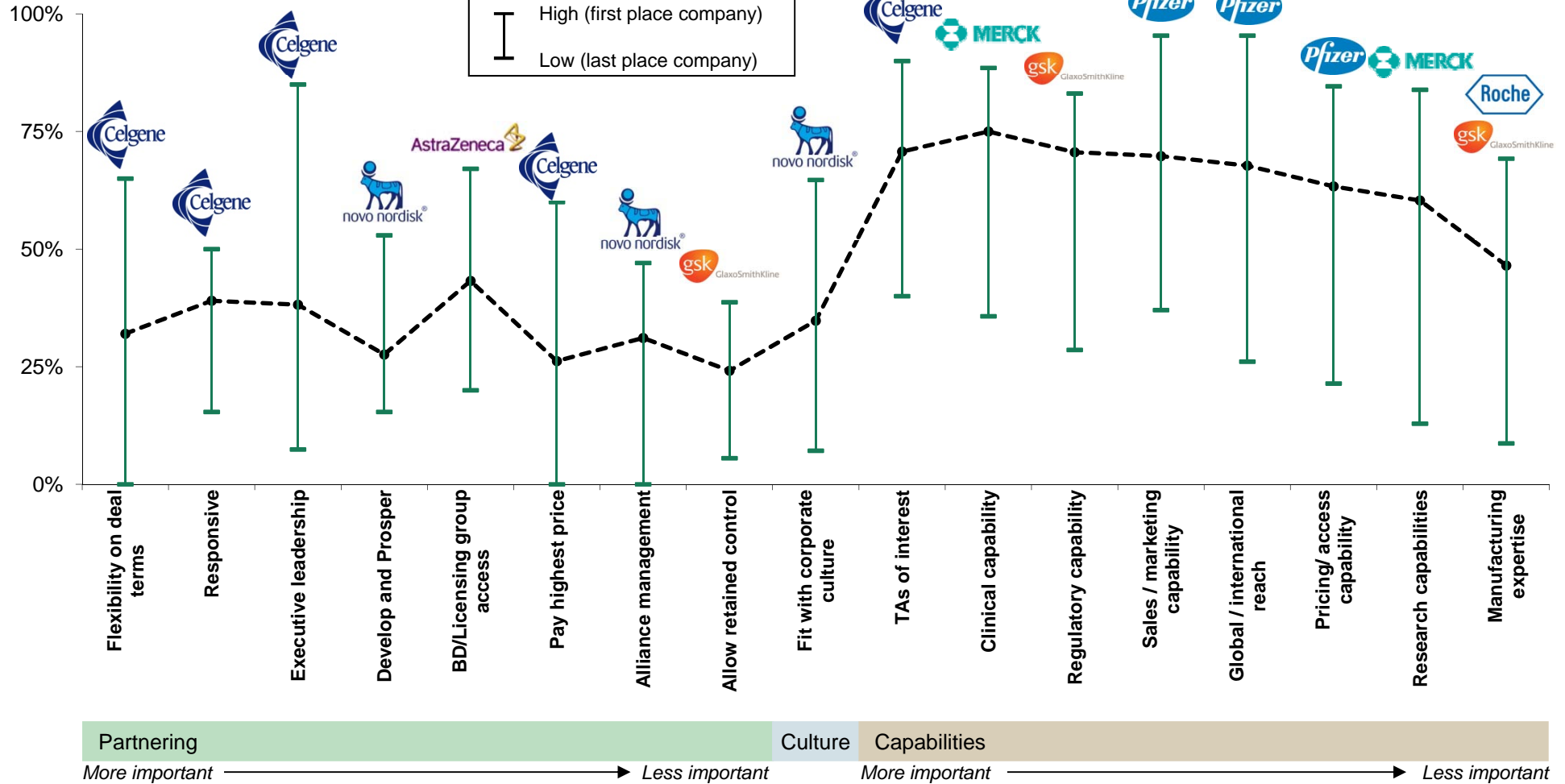
Source: BCG survey of Biotech CEOs and Licensing Executives, 2012; see appendix 2 for format of survey questionnaire

When including all companies, smaller ones like Celgene and Novo Nordisk are outperforming bigger ones on partnering ...

Percentage of respondents agreeing that company exhibits the associated criteria

--- Industry Median (2012)
 I High (first place company)
 I Low (last place company)

Analysis of all companies



Note: scores calculated as percent of respondents who agree with statements associated with each company;
 Source: BCG survey of Biotech CEOs and Licensing Executives, 2012; see appendix 2 for format of survey questionnaire

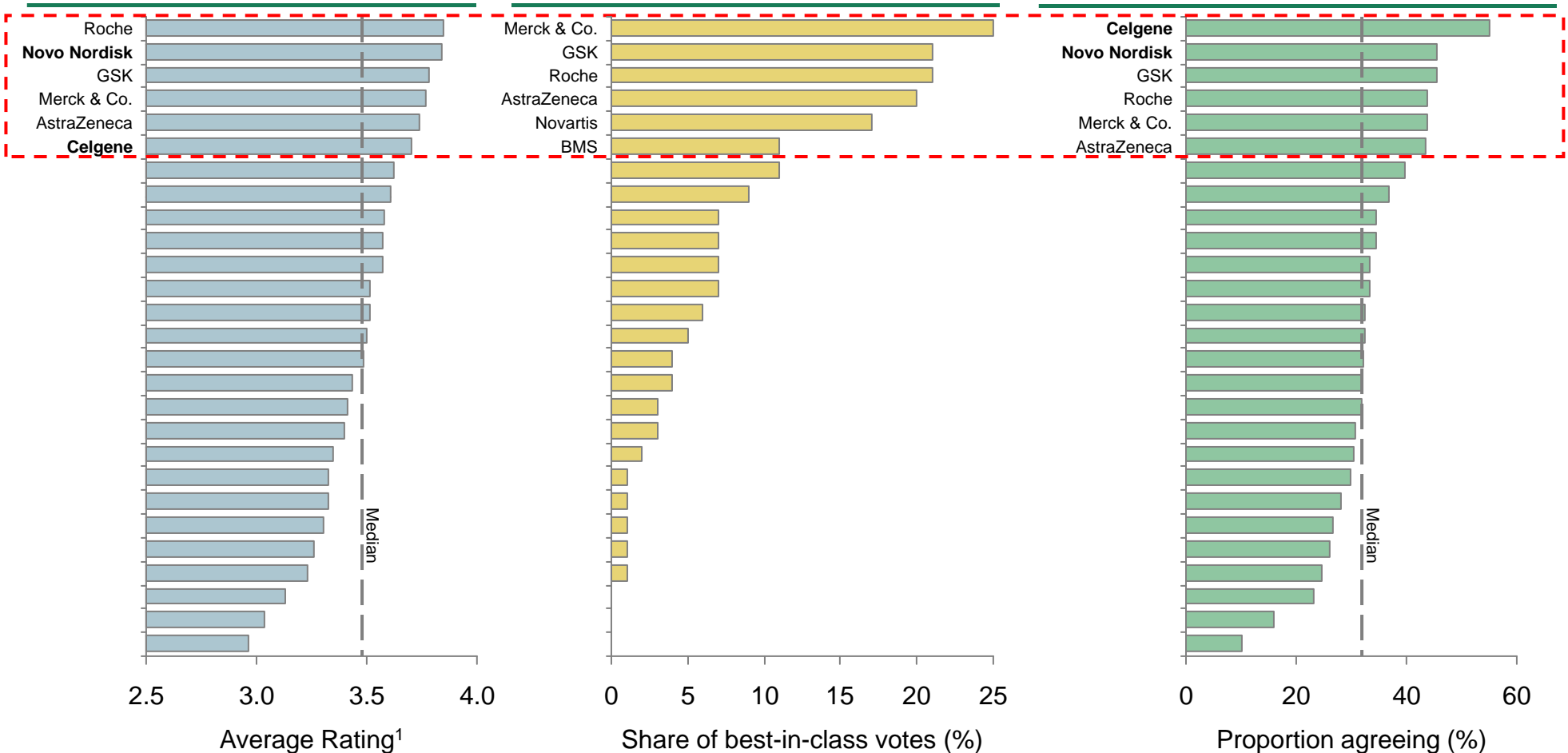
... reflected in the overall rankings for 2012: Novo Nordisk and Celgene included among top tier in 2 of 3 rankings ...

Analysis of all companies

Highest average score across all attributes¹

Most nominations as a "top partner"²

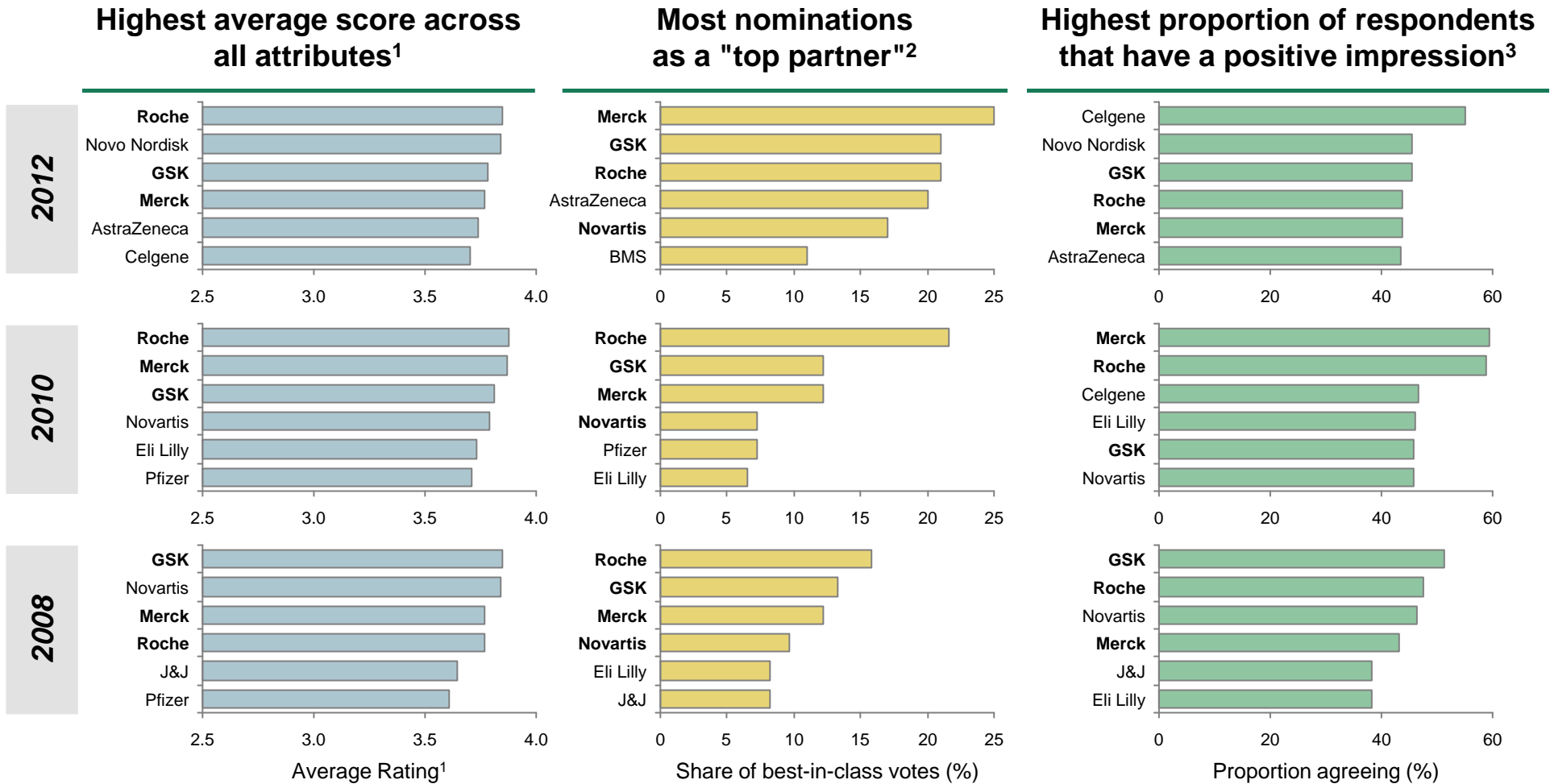
Highest proportion of respondents that have a positive impression³



1. Mean score across all partnering attributes and capability scores 2. Share of times mentioned as one of best two companies to partner with 3. Proportion of respondents agreeing that company demonstrates positive partnering attributes. Weighs each response equally.

Source: BCG survey of Biotech CEOs and Licensing Executives, 2012

... leading to reshuffle of top six firms with only GSK, Merck and Roche being constants across three most recent editions



1. Mean score across all partnering attributes and capability scores 2. Share of times mentioned as one of best two companies to partner with 3. Proportion of respondents agreeing that company demonstrates positive partnering attributes. Weighs each response equally. Note: Companies that have remained at the top over three editions have been labeled in bold

Source: BCG survey of Biotech CEOs and Licensing Executives, 2012, 2010 and 2008 editions

Implications for licensing stakeholders

Continued focus on improving partnering skills is required to remain being seen as an attractive partner

- E.g., shuffle in top tier illustrates possibility of declining perceived performance

Perceptions of partnering skills can be impacted (positively or negatively) even in the short term (i.e. over a time span of a few years)

- E.g., several examples of companies that have been able to up their game

Complacency is not an option as other companies are making moves to improve their image, as illustrated by strong increases in ranking of smaller buy-side companies

- E.g., Celgene and Novo Nordisk clear examples of best in class partnering characteristics

Managing negative perceptions is also key, especially among those companies that you actually engage with in a meaningful way (during deal negotiations and consummation)

Appendix 1: 2012 partnering survey questionnaire: importance of attributes

What attributes do you look for in a partner? Please rate each attribute from "extremely important" to "extremely unimportant"

	Extremely important	Somewhat important	Indifferent	Somewhat unimportant	Extremely unimportant
Ability to add value to your compound/TA of interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulatory capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales/marketing capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pricing, access and reimbursement capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Global/international reach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fit with corporate culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Responsiveness during the deal negotiation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willingness to pay the highest price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creativity and flexibility on deal terms and structures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alliance management capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Executive leadership committed to partnering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business development/licensing group is easy to access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows partners to develop and prosper / commitment to partners' long term success	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows partners to retain control in development and/or commercialization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 2: 2012 partnering survey questionnaire: assessment of individual company by attribute

Please indicate the degree to which you agree or disagree that [company] possesses the following attributes

	Strongly agree	Somewhat agree	Neutral	Somewhat disagree	Strongly disagree
Ability to add value to your compound/TA of interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clinical capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulatory capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales/marketing capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pricing, access and reimbursement capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Global/international reach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manufacturing capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fit with corporate culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Responsiveness during the deal negotiation process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willingness to pay the highest price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creativity and flexibility on deal terms and structures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alliance management capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Executive leadership committed to partnering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business development/licensing group is easy to access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows partners to develop and prosper (e.g. bears in mind long-term success of partner)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allows partners to retain control in development and/or commercialization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>