



# Automotive News

## 2009 OEM Supplier Innovation Study

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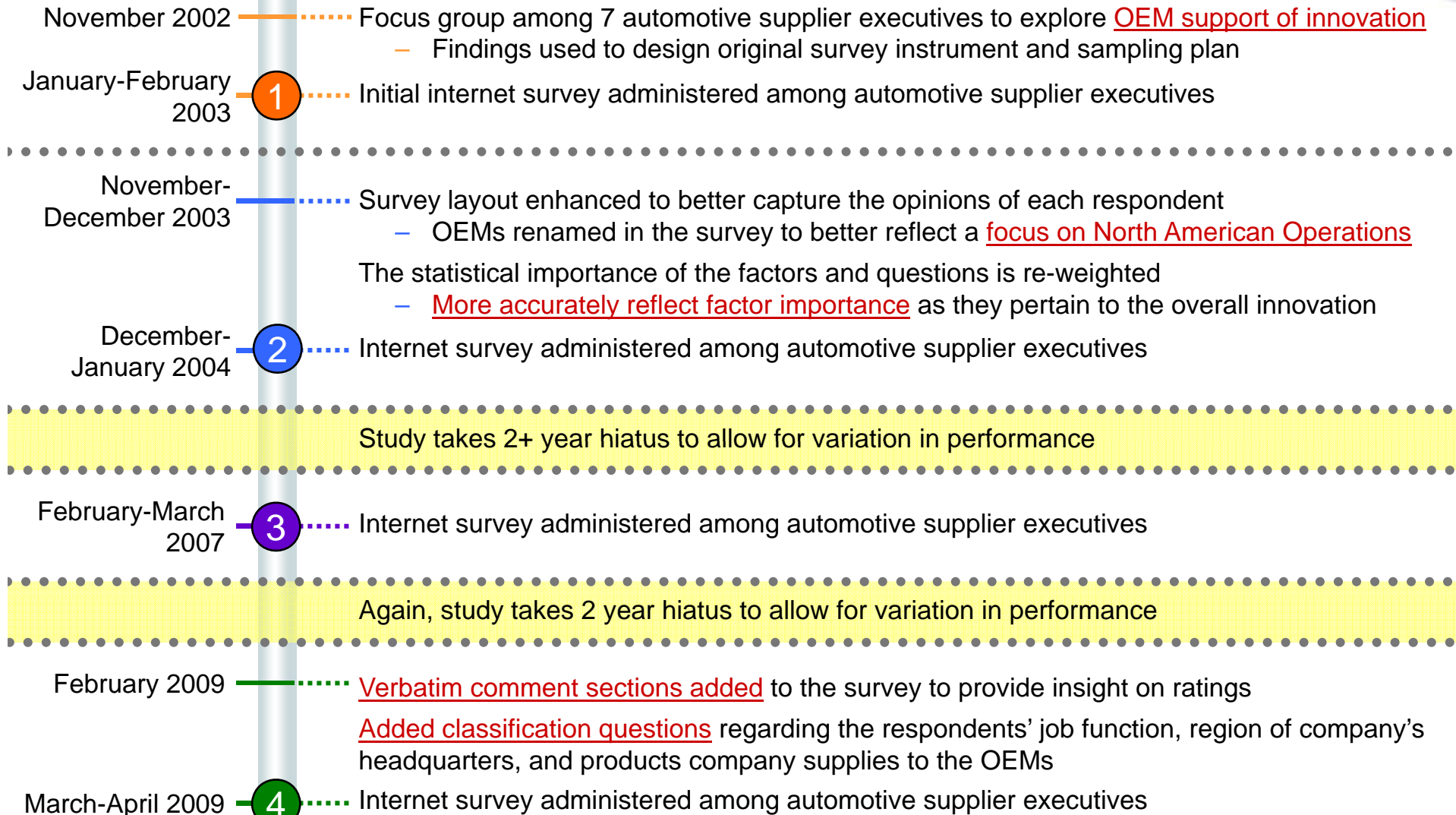
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# Agenda

- Approach
  - Background and History
  - Supplier Job Functions
  - Products Supplied
  - OEMs Surveyed
- Scoring
- Supporting Supplier Innovation
- Summary of Results
  - Industry
  - OEM Detail

# Background and History

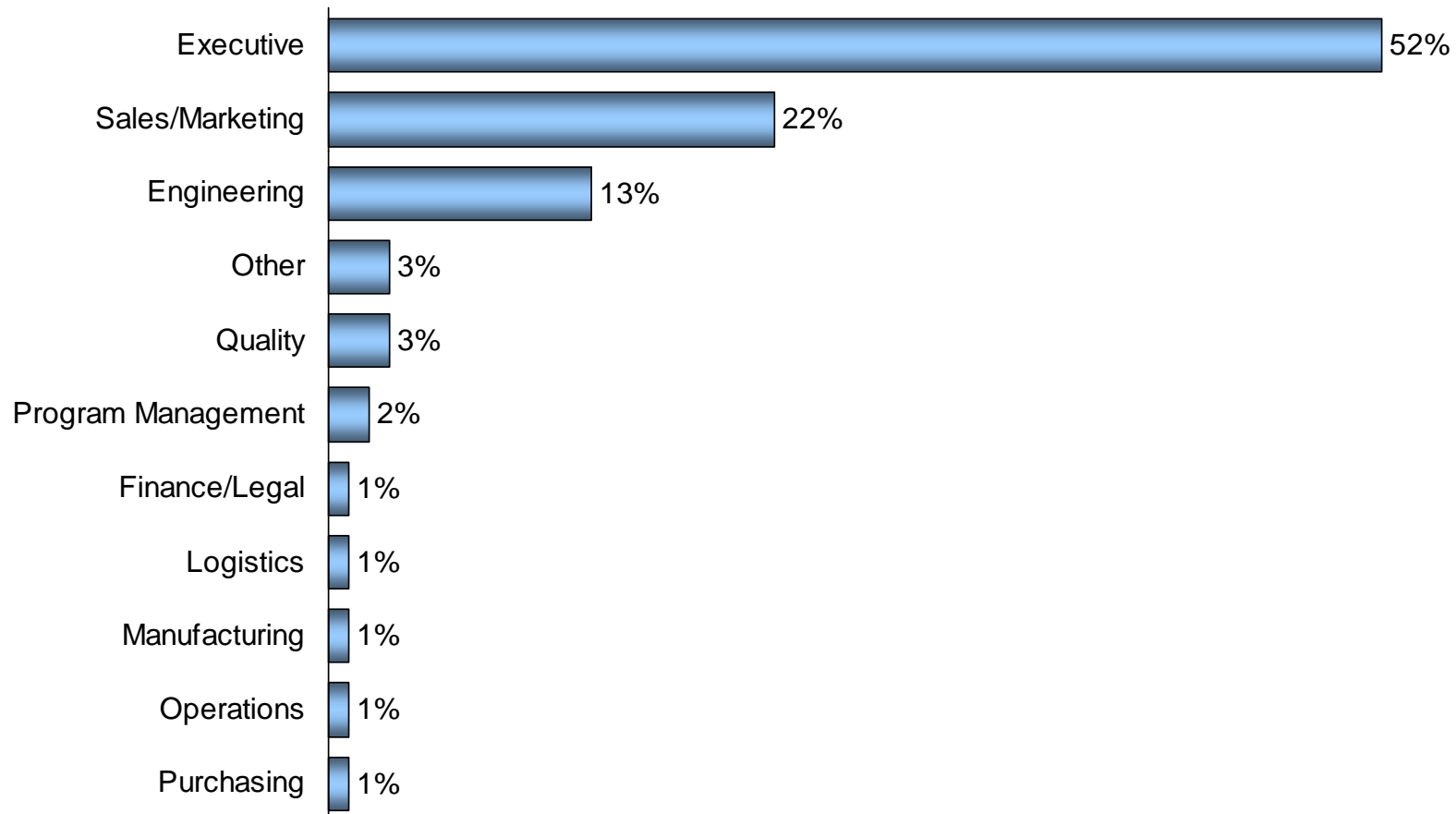
## Study Timeline



## Approach: Supplier Job Functions

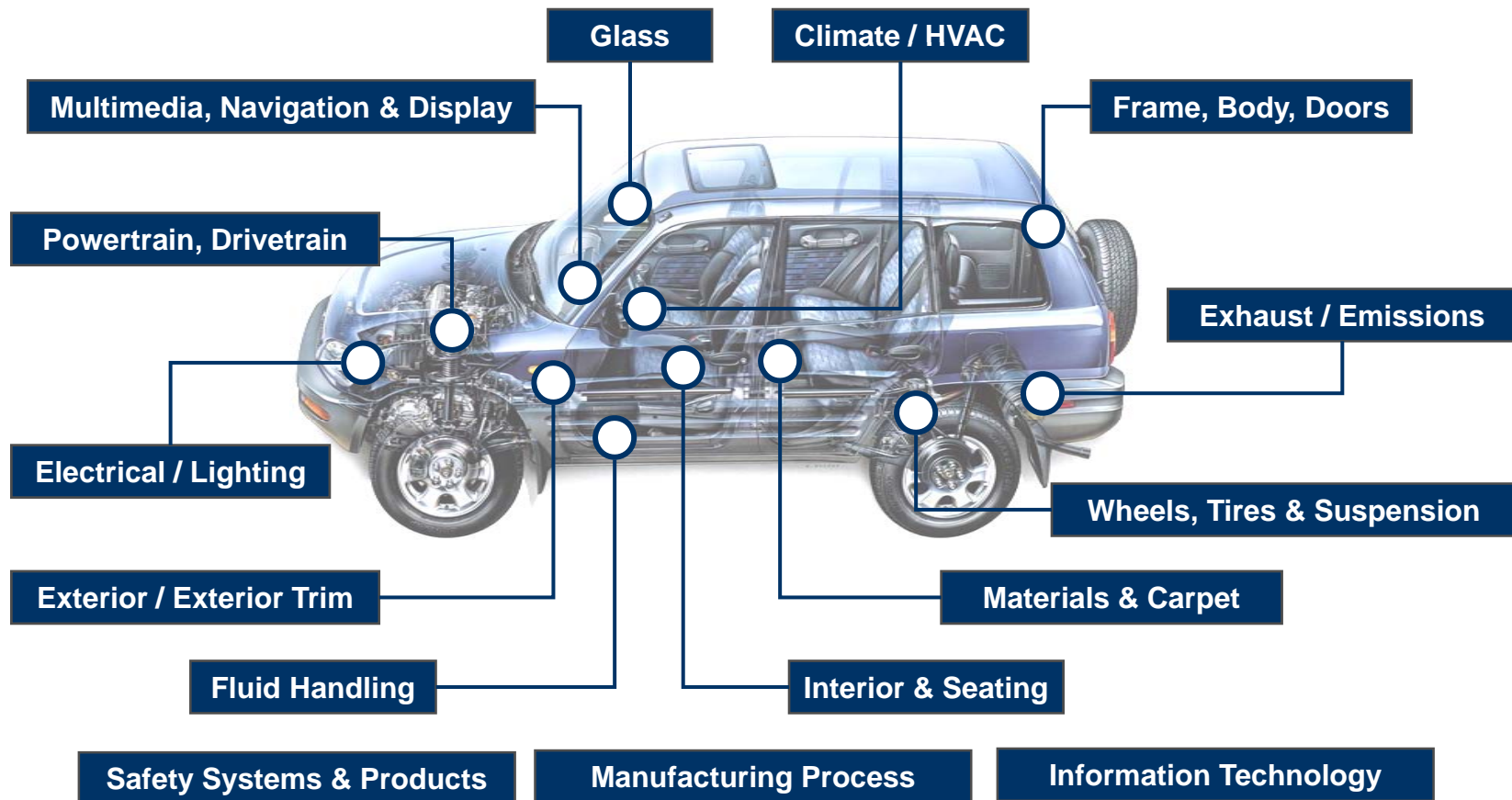
Responses to the web-based survey were received in March and April 2009 from executives at tier-one automotive suppliers

- 152 Supplier responses were gathered representing functional areas such as:



# Approach: Products Supplied

Suppliers representing a broad spectrum of products are represented in the data



## Approach: OEMs Surveyed

Only manufacturers that produce vehicles in North America were included in the survey



American Honda



BMW



Chrysler Group



Ford Motor Company,  
North America



General Motors  
North America



Hyundai



Kia



Mazda



Mercedes-Benz



Mitsubishi Motor  
Manufacturing  
North America



Nissan  
North America



Toyota Motor  
Manufacturing,  
North America

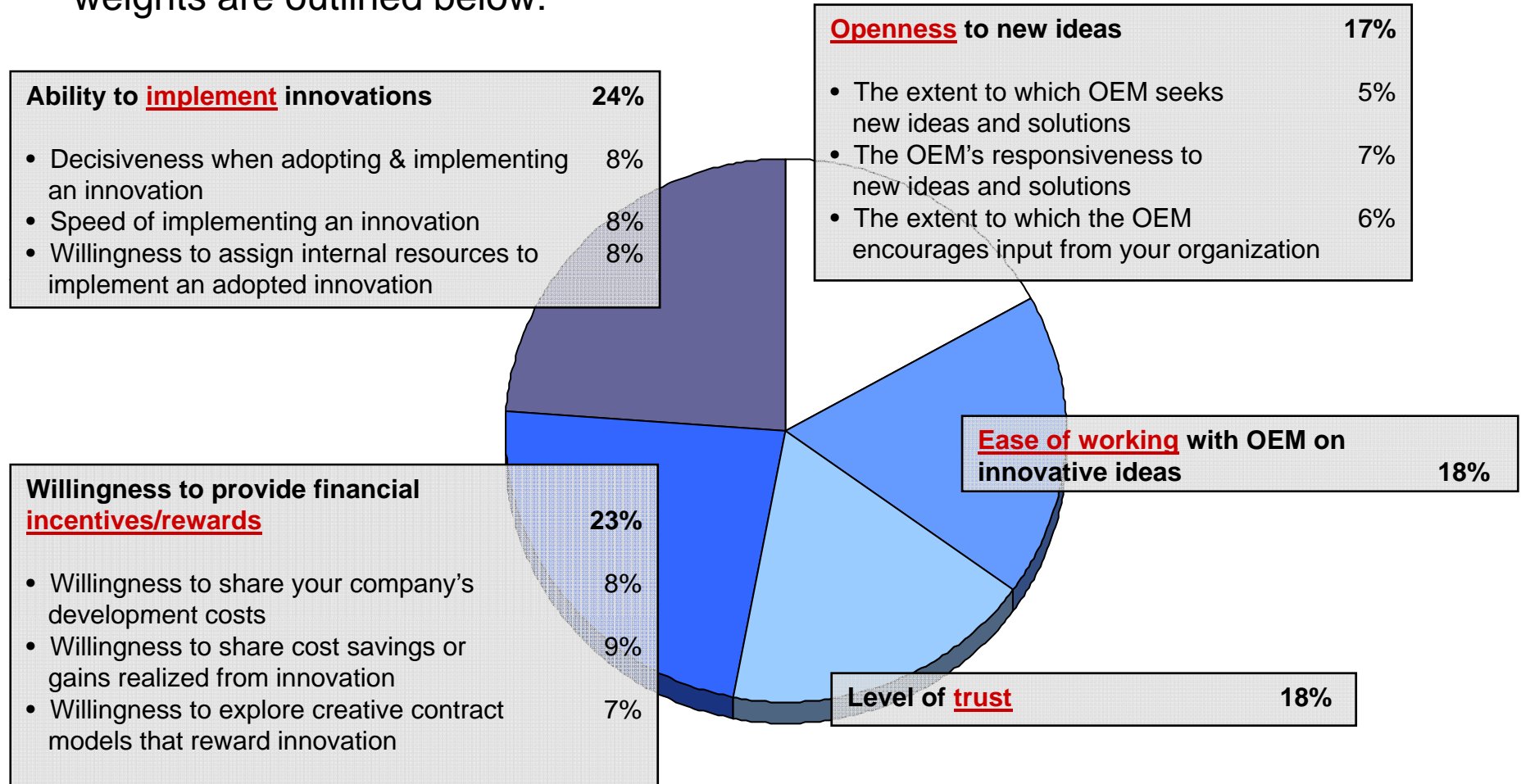


Volkswagen of  
America

- 10 manufacturers received enough responses from suppliers to qualify for analysis
- Data from all manufacturers used to establish industry norms

# Scoring

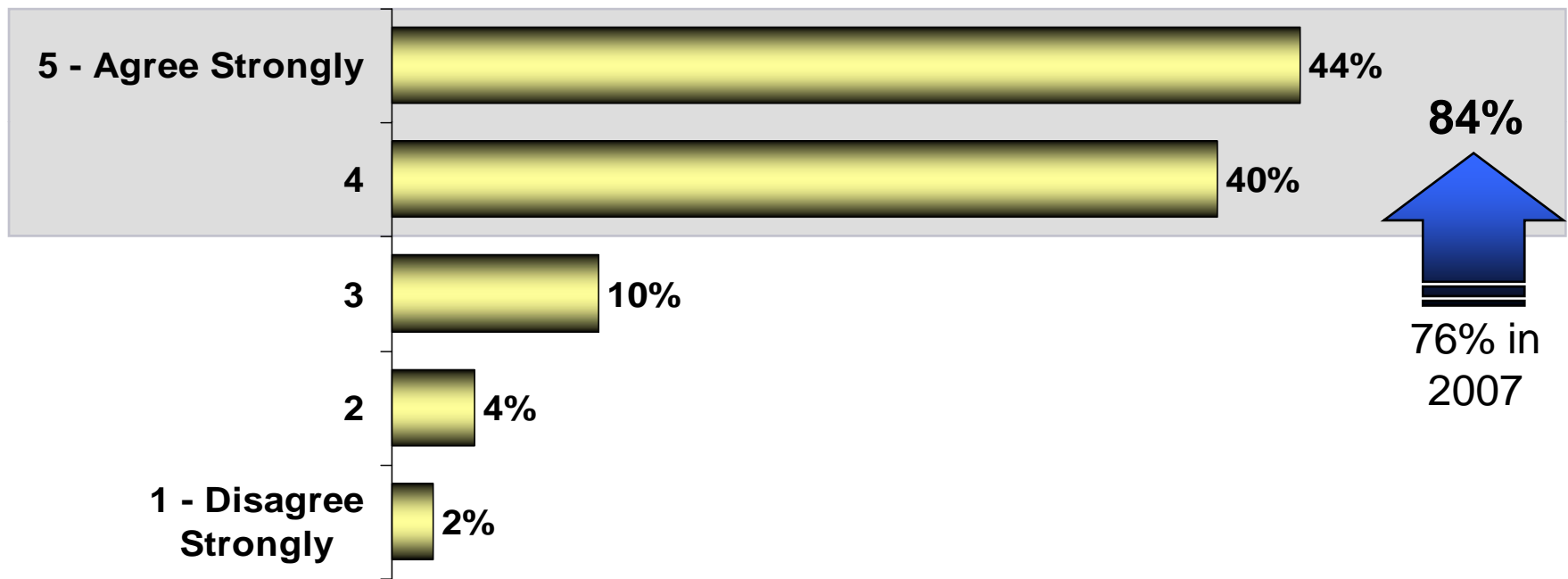
- The five factors along with their associated weights, attributes and attribute weights are outlined below:



Note: Sums may not equal total factor percentage due to rounding

# Supporting Supplier Innovation

The level of support of supplier innovation by an OEM has a significant impact on whether my company offers or shares innovations with that particular OEM



- It's clear that the level of OEM support of innovation directly affects supplier decisions to share innovation with an OEM

## Support Supplier Innovations (continued)

### Verbatim Responses

- “We want to spend resources where we have the best partnerships, collaboration, and ability to win future business at acceptable margins.”
- “Innovations are supposed to benefit both parties. They will be offered to OEMs that are willing to share the benefits.”
- “It takes an investment in time and energy to develop any innovation. Resistance from the OEM when it comes to implementation or application adds to that cost and reduces the incentive to bring the innovation to market.”
- “OEs that value innovation, reward suppliers, and allow fair ROI get the latest/best innovation. Those who are distrustful and do not execute innovation are forgotten.”
- “There is no sense making an uphill climb with innovation when you have other customers willing and ready to partner.”
- “We need to protect our competitive advantage. We share more information with OEMs where there is a strong trust relationship, less where this is weak.”



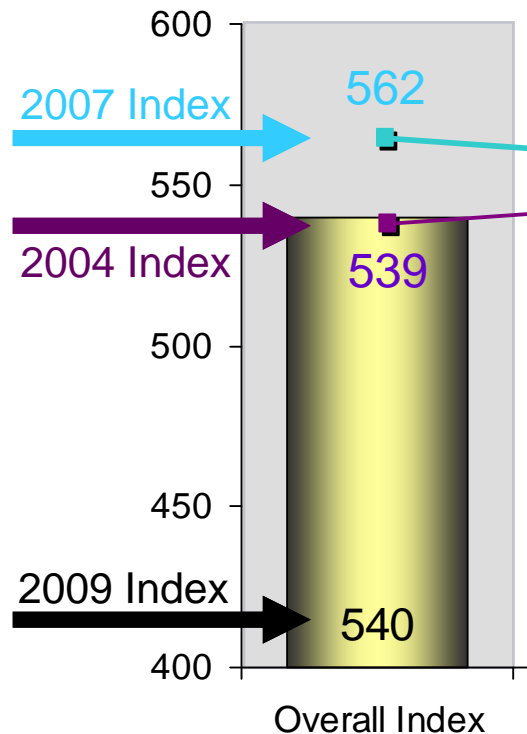
# 2009 OEM Supplier Innovation Study Industry and OEM Summary

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## North American Industry Summary

- Overall, OEMs that manufacture in North America score 540 (out of 1000); room for improvement
- Openness and Trust score highest among factors contributing to the overall index; Incentives and Implementation score lowest
- Declines overall and across all factors since 2007
- 2009 scores comparable to 2004 levels except for Trust which remains higher



# OEM Overall Index Scores

- Top 3 OEMs same as 2007 and 2004
  - BMW reclaims top ranking with 29 point improvement
  - Toyota stays relatively consistent, places 2<sup>nd</sup>
  - Honda shows moderate gain, holds onto 3<sup>rd</sup> spot

- Ford shows the most improvement over 2007; scores above the average

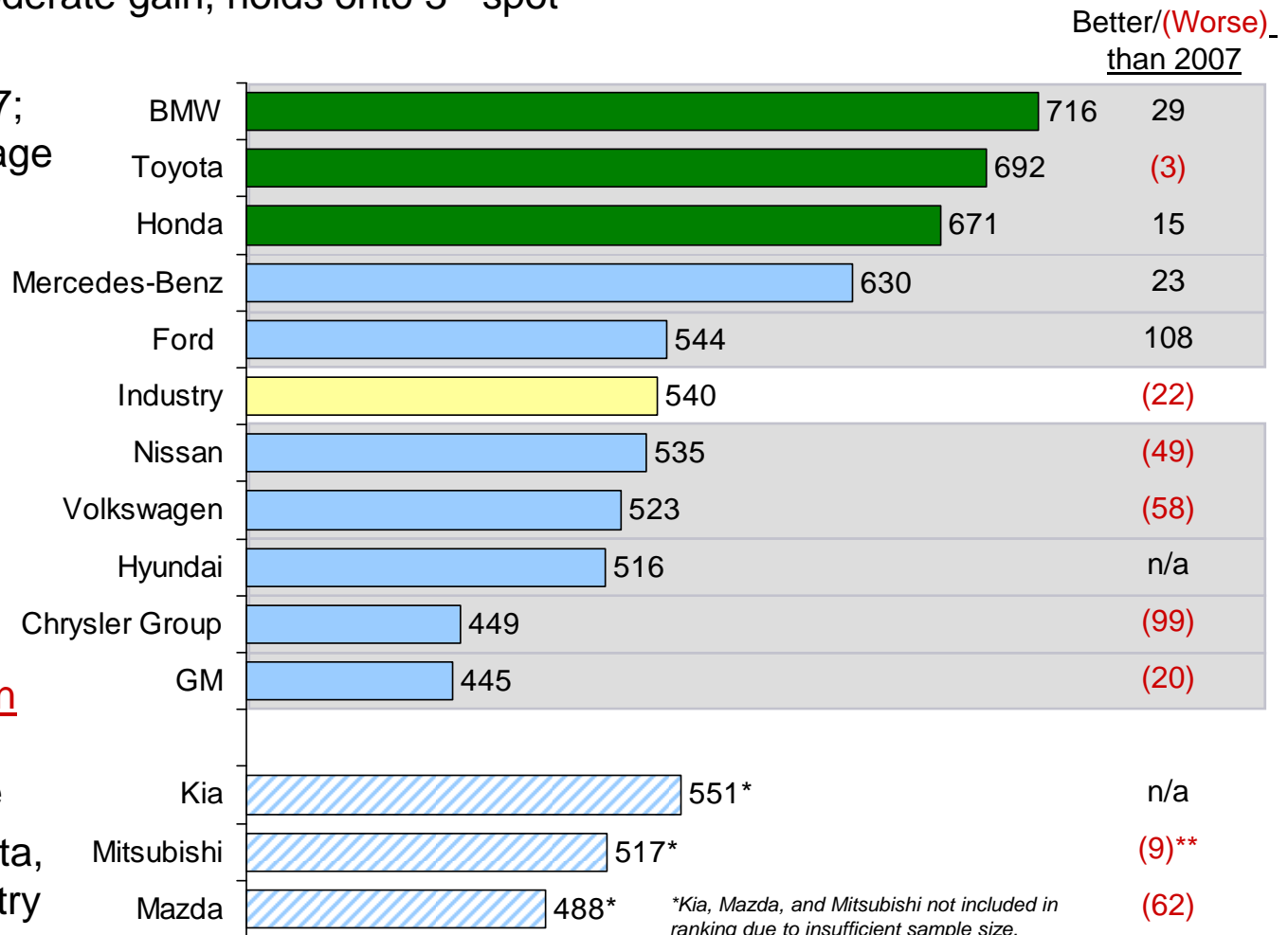
- Chrysler Group suffers 99 point decline, loses gains seen in 2007

- Mercedes-Benz consistent with 2007; places 4th

- GM places last, slightly behind Chrysler Group

- Nissan and Volkswagen show decline in score, now below the average

- Hyundai first time in data, places below the industry average



\*Kia, Mazda, and Mitsubishi not included in ranking due to insufficient sample size.  
 \*\*Small sample size in 2007.

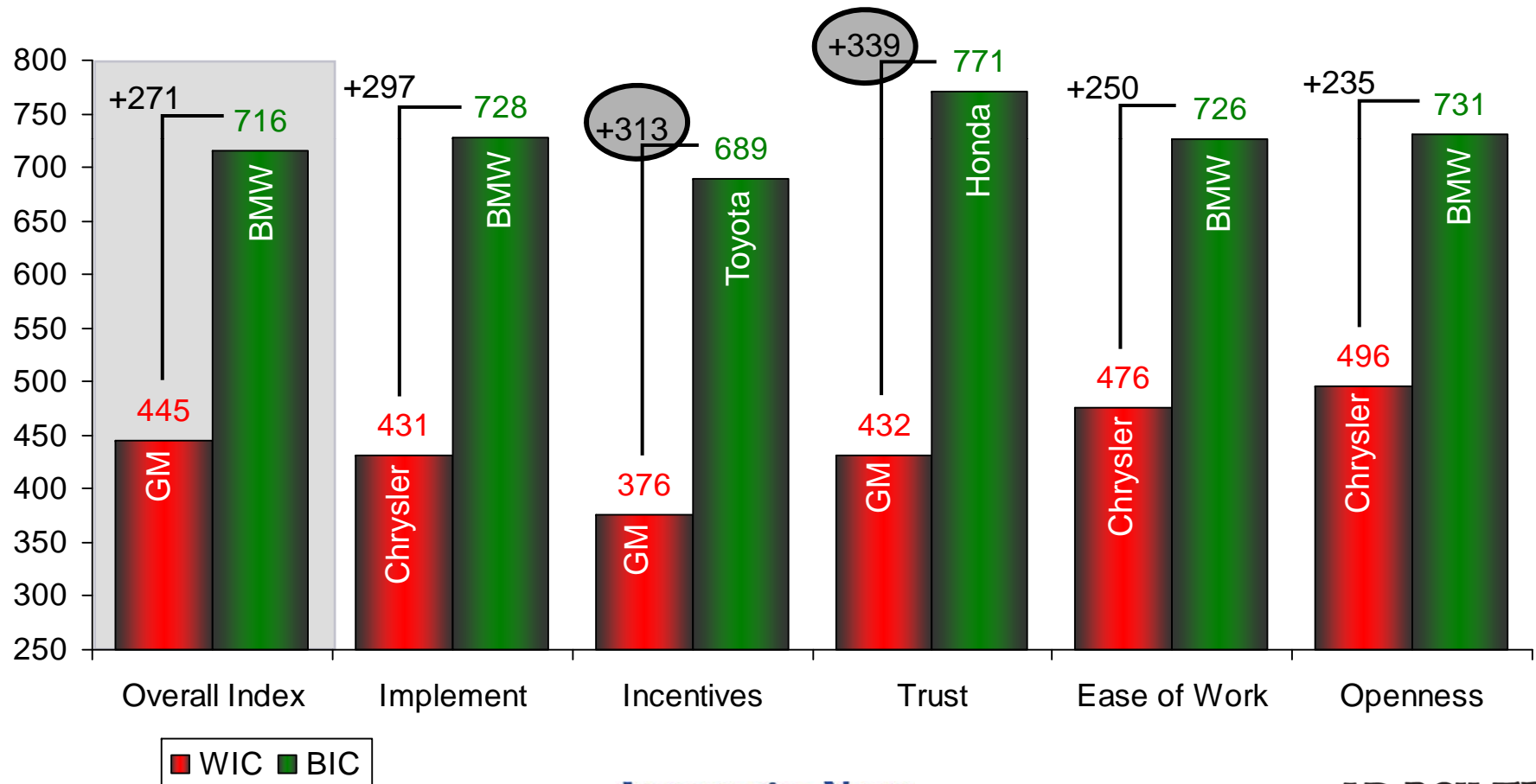


# 2009 OEM Supplier Innovation Study

## OEM Detail

## BIC and WIC

- BMW, Toyota and Honda are the top performing OEMs for overall support of innovation and for each of the individual factors while GM and Chrysler share the distinction of being the worst performing
- The greatest separation between first and worst is for Trust at 339 points, Incentives also has a large level of separation at 313 points





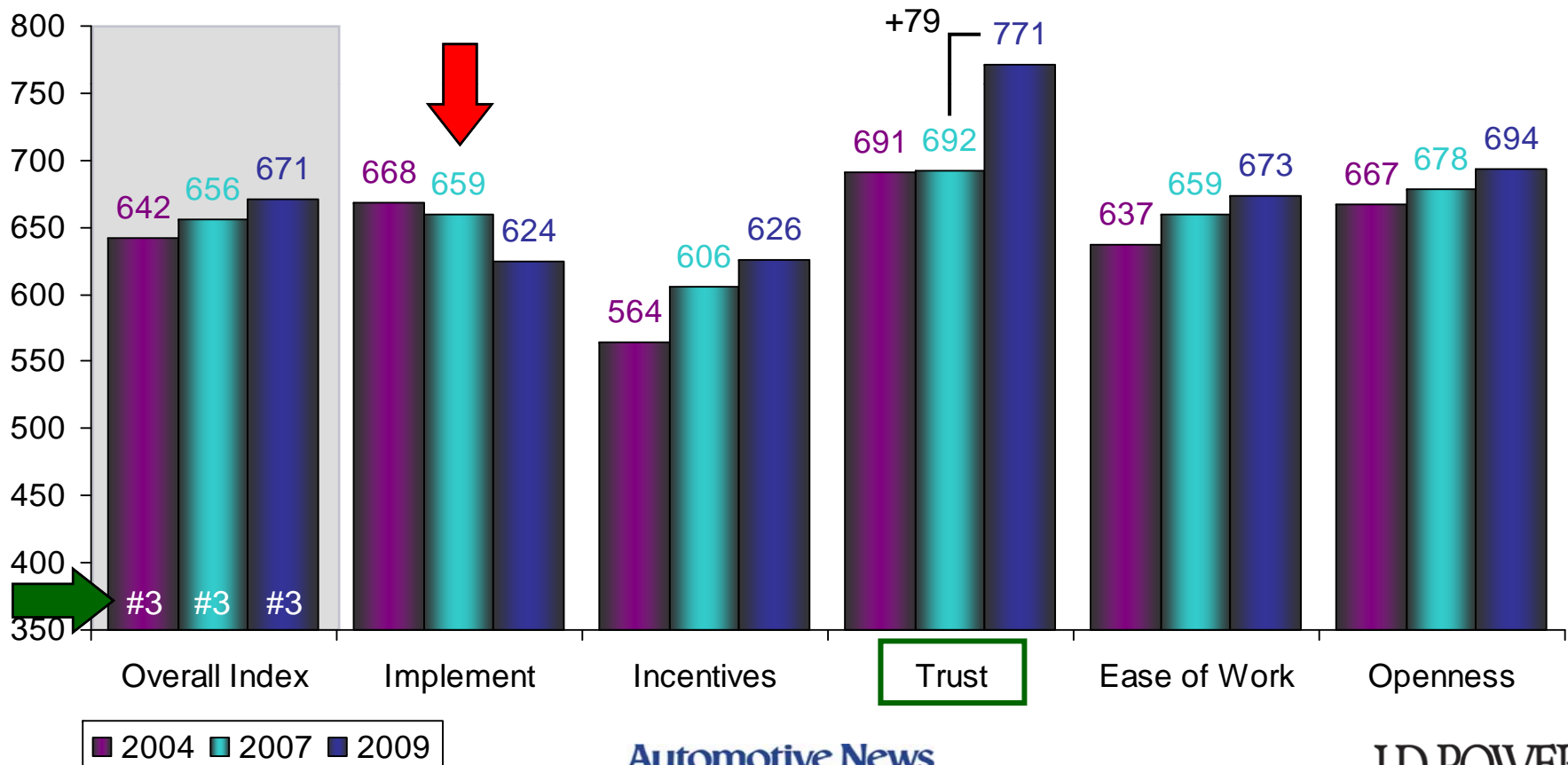
# 2009 OEM Supplier Innovation Study



## American Honda Summary

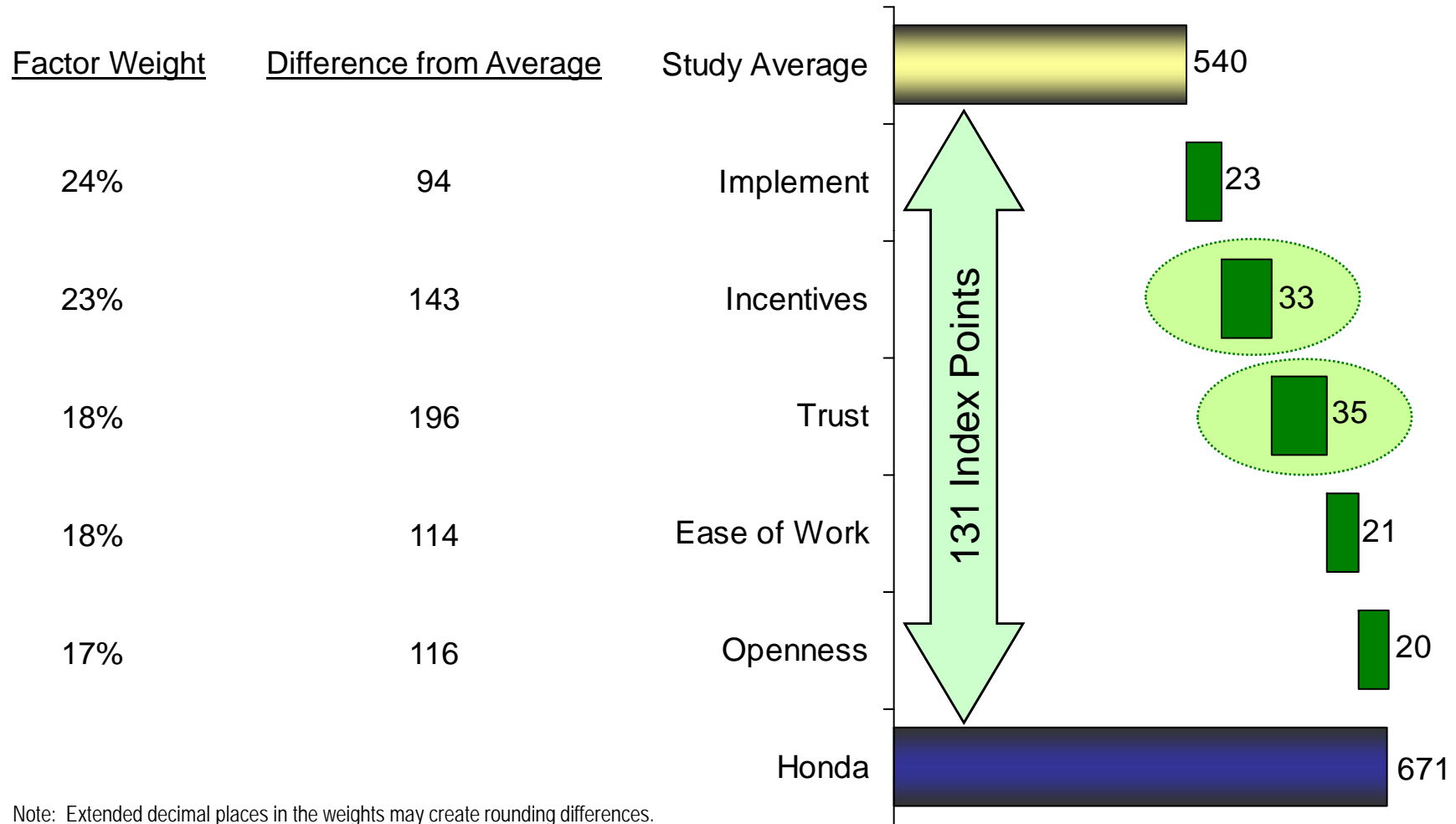
## Honda Index and Factor Trend

- Honda shows consistent improvement overall and remains in 3<sup>rd</sup> place
- 2009 sees Honda with a 79 point improvement for Trust and it is now the highest rated OEM for this factor
- Nearly all factors show improvement year-to-year except Implement which has declined steadily since 2004 and is now Honda's lowest scoring factor



# Honda Factor Walk

- Trust followed closely by Incentives are the top contributing factors for Honda



## Comments on Honda Support of Innovation

- **Openness**: “It is expected that if a supplier has a new idea for cost savings, safety or any other worthy idea, that it should be shared.”
- **Ease of Work**: “Once you learn how the Honda team works it is very straight forward.”
- **Ease of Work**: “Their system is very structured, but once you are accepted into their engineering world they bring you in as part of the team.”
- **Trust**: “Honda is very good at not discussing new creative solutions with other Tier 1 suppliers or OEMS until the vehicle is displayed to the public.”
- **Incentives**: “Honda will try to ensure that both OEM and supplier benefit from the rewards equally. Fair and reasonable.”
- **Incentives**: “Understand that new technology is not free and is willing to share the costs and benefits.”
- **Implement**: “There are a lot of steps and approvals to have new ideas pass and accepted.”
- **Implement**: “While there are stringent testing requirements, once met they implement the ideas...”
- **Overall**: “Honda does not like status quo. New items now will quickly be old news tomorrow. They will reward business for consistent innovative product development.”



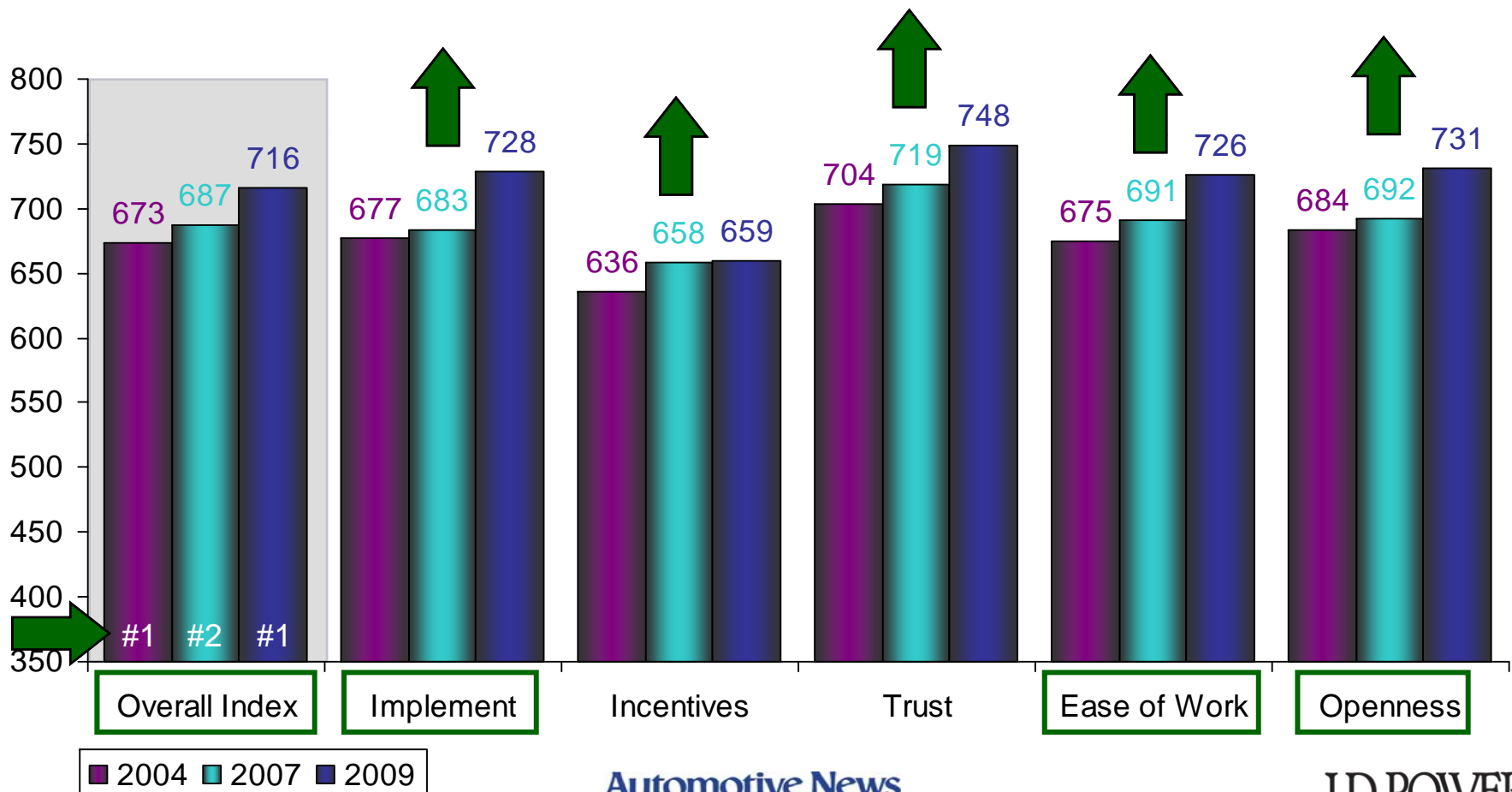
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## BMW Summary

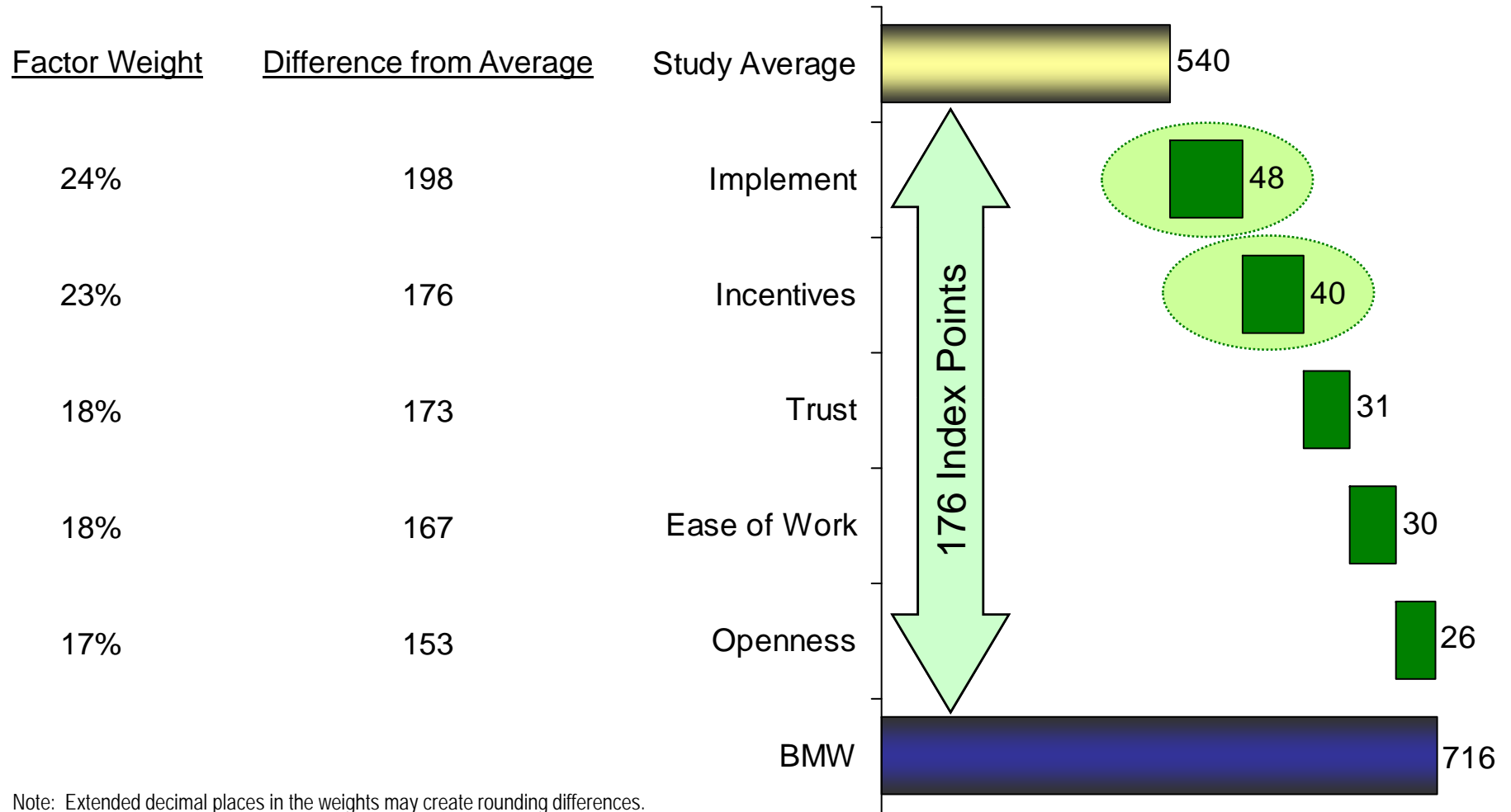
## BMW Index and Factor Trend

- In 2009 BMW regained the top ranking overall
- Since 2004, BMW has shown improved performance overall and for all factors
- BMW is the highest scoring OEM for Implement, Ease of Work, and Openness
- BMW scored highest for Trust while its lowest score is for Incentives



# BMW Factor Walk

- Incentives and Implement are the two areas that contribute most to BMW's strong performance



Note: Extended decimal places in the weights may create rounding differences.

## Comments on BMW Support of Innovation

- Openness: “Extremely proactive in leading technological innovations.”
- Openness: “Front runner to work on new technologies with suppliers.”
- Ease of Work: “Have systems in place to manage innovative ideas from suppliers.”
- Trust: “They meet their commitments and do what they say they are going to do. High integrity.”
- Trust: “This particular OEM, has proven that whatever the contract agreement is, they meet their obligations to the suppliers as timely as the supplier to the OEM.”
- Incentives: “The OEM ensures that both customer and supplier benefit.”
- Incentives: “Team player, strives to be the best, pays more \$'s for more value/technology.”
- Implement: “Willing to work on ideas together.”
- Implement: “They jointly agree to implement a solution and dedicate the resources to manage the risks and product launch.”
- Overall: “They are probably the best company at pushing us to be innovative. Truly they are technology leaders.”
- Overall: “Overall BMW is very interested in technological improvements that will enhance their vehicles. Engineering has more influence in the procurement process...giving them the first shot at newer innovations.”



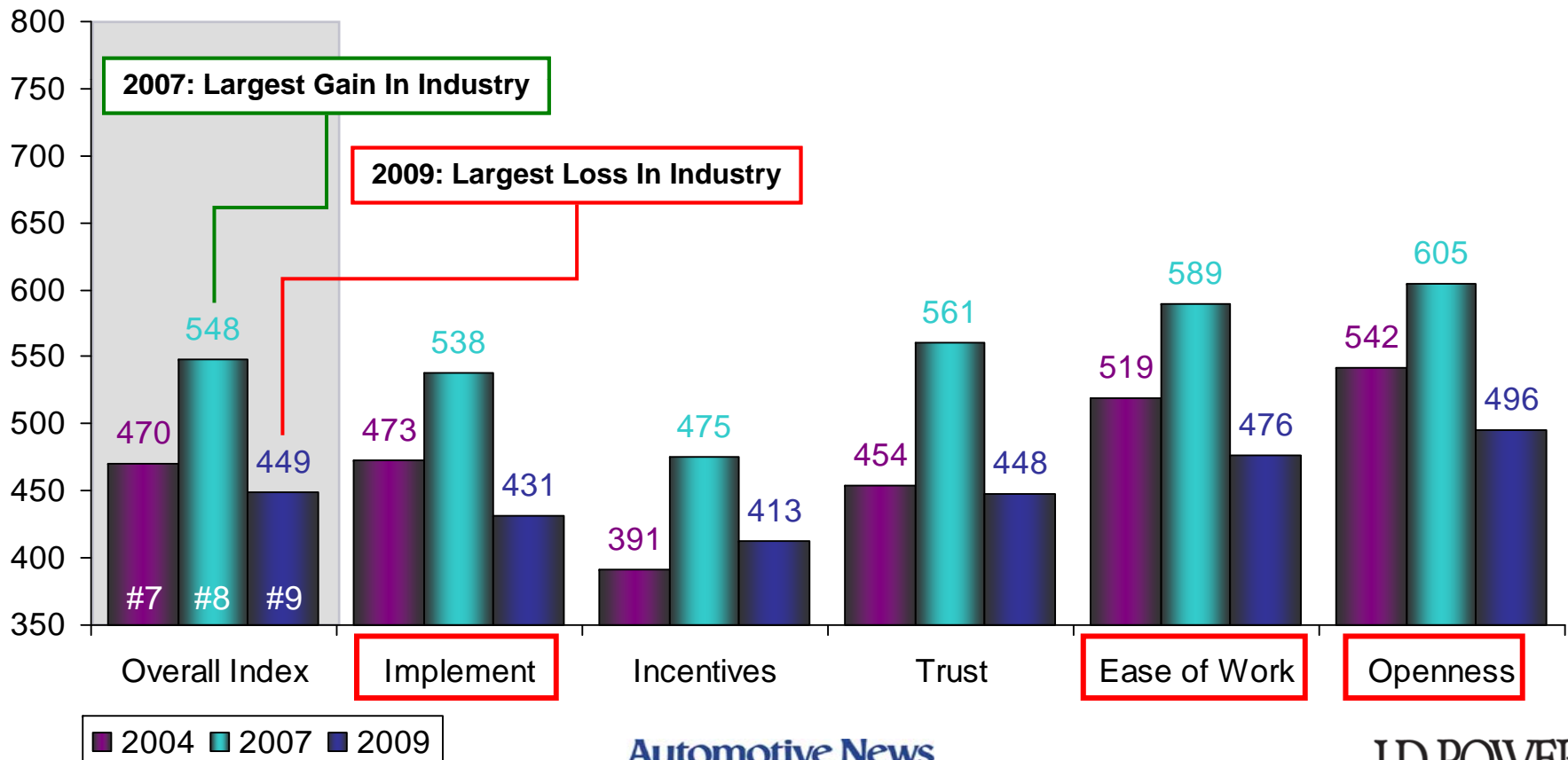
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## Chrysler Group Summary

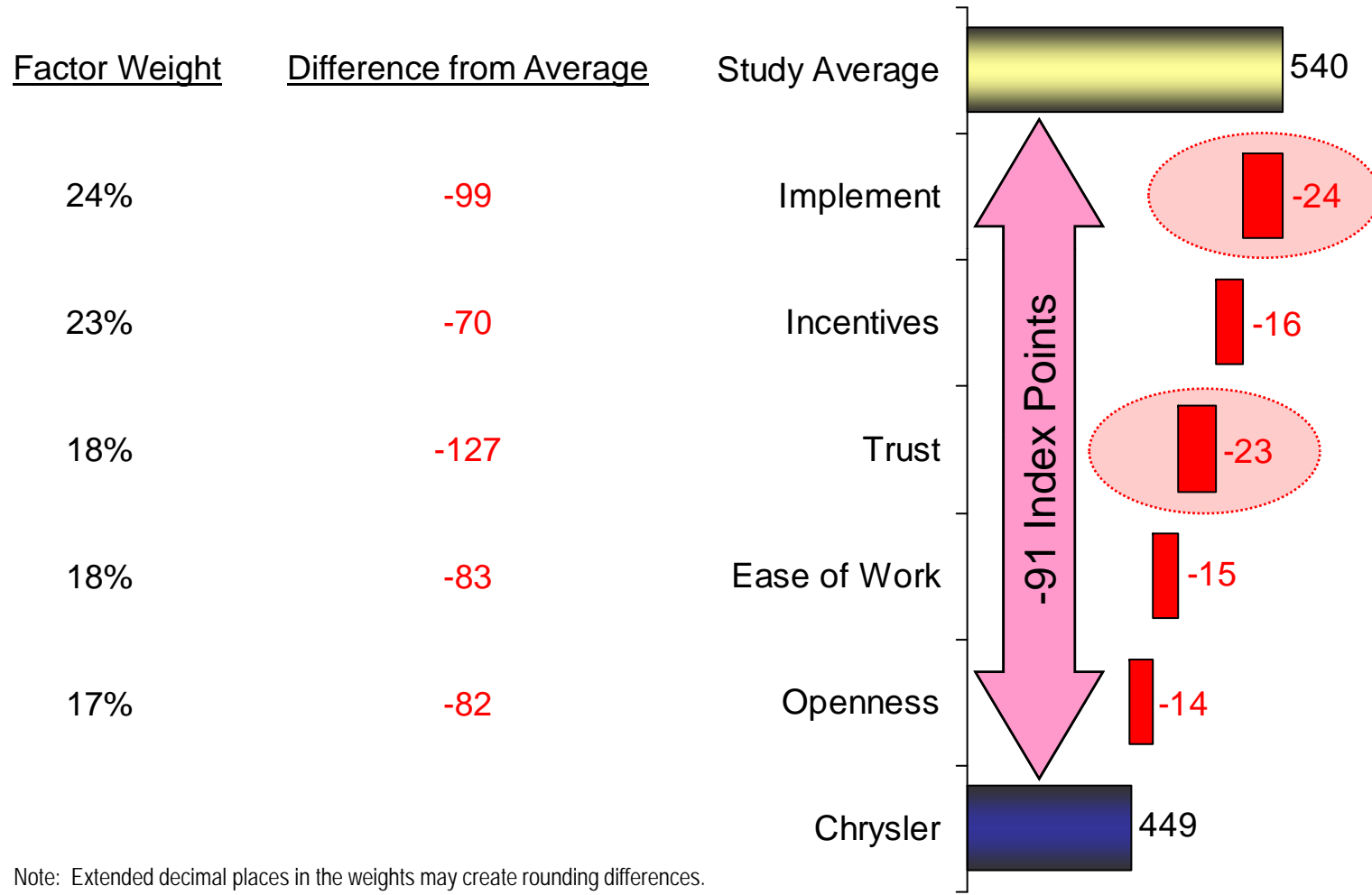
## Chrysler Index and Factor Trend

- Chrysler showed large declines in the index values for overall and all factors, loses all gains seen in the 2007 study
- Chrysler's 2009 scores are lower for most measures than in any other year of the study; only Incentives remains higher than in 2004
- Chrysler is the poorest rated OEM for Implement, Ease of Working and Openness



# Chrysler Factor Walk

- Chrysler scores well below average for all factors with Implement and Trust having the greatest negative impact



Note: Extended decimal places in the weights may create rounding differences.

## Comments on Chrysler Support of Innovation

- **Openness**: “Chrysler had historically been the OE that we brought the latest and best ideas to... In the past 6 years they have significantly slowed.”
- **Openness**: “Open but nearsighted.”
- **Ease of Work**: “Engineering and purchasing are disconnected.”
- **Ease of Work**: “Slow due to lack of development spending and new programs.”
- **Trust**: “They take your quotes, product innovation and shop around.”
- **Trust**: “A very low level of trust. Agreements are often changed or broken.”
- **Incentives**: “They do not have money and will not invest in innovation.”
- **Incentives**: “Chrysler uses the stick, not the carrot.”
- **Implement**: “Generally does not have a plan or funds to make something happen in a timely fashion, so they end up following the market.”
- **Implement**: “Resources not assigned long enough to implement... short term thinking.”
- **Overall**: “By far, the worst performer with innovation.”
- **Overall**: “They are a cost driven organization, not a value driven one.”
- **Overall**: “Chrysler was one of the best in the area of working on innovations and implementing them. In the last 18 months Chrysler moved to the worst position.”



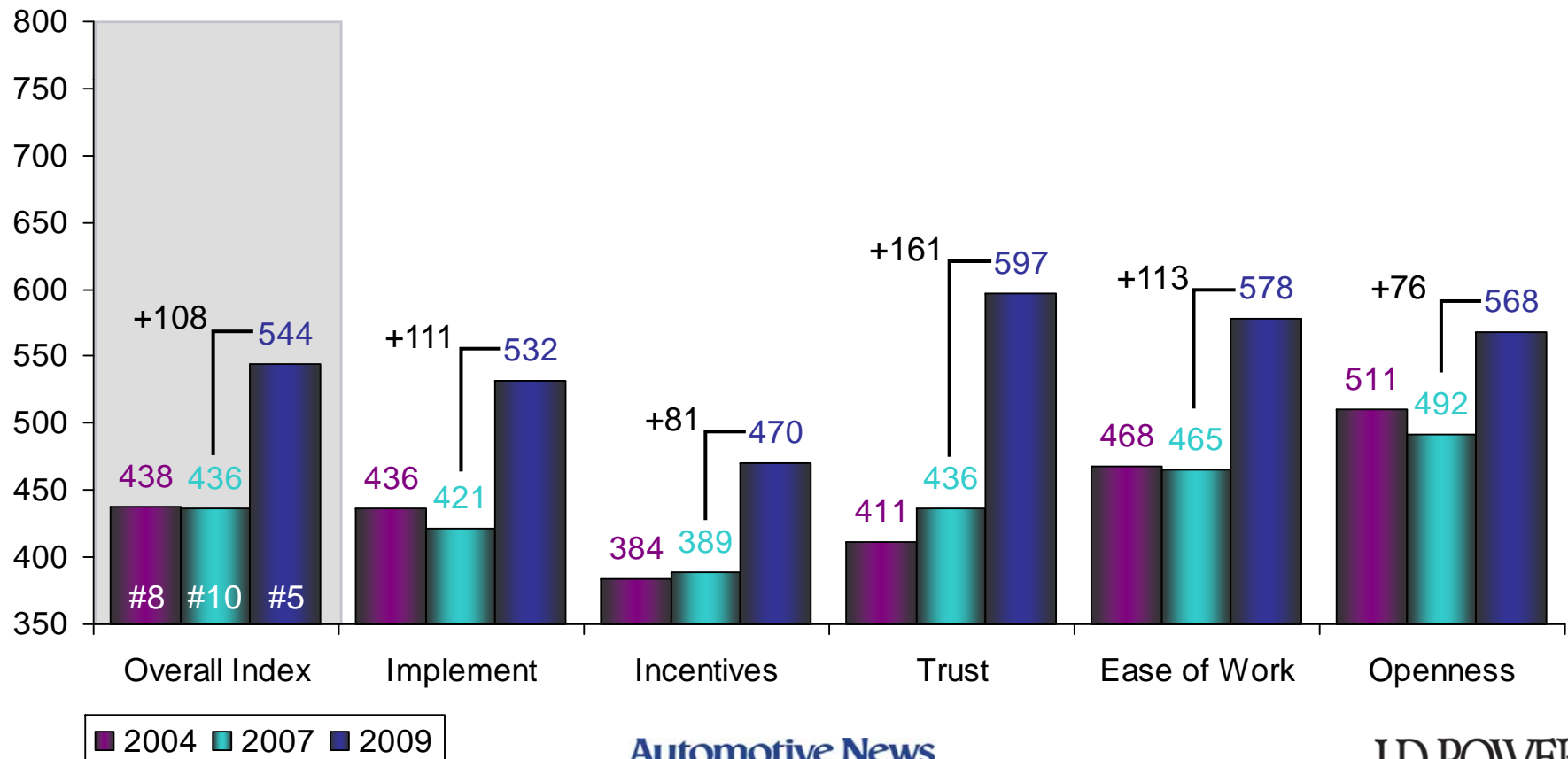
## 2009 OEM Supplier Innovation Study



### Ford Motor Company, North America Summary

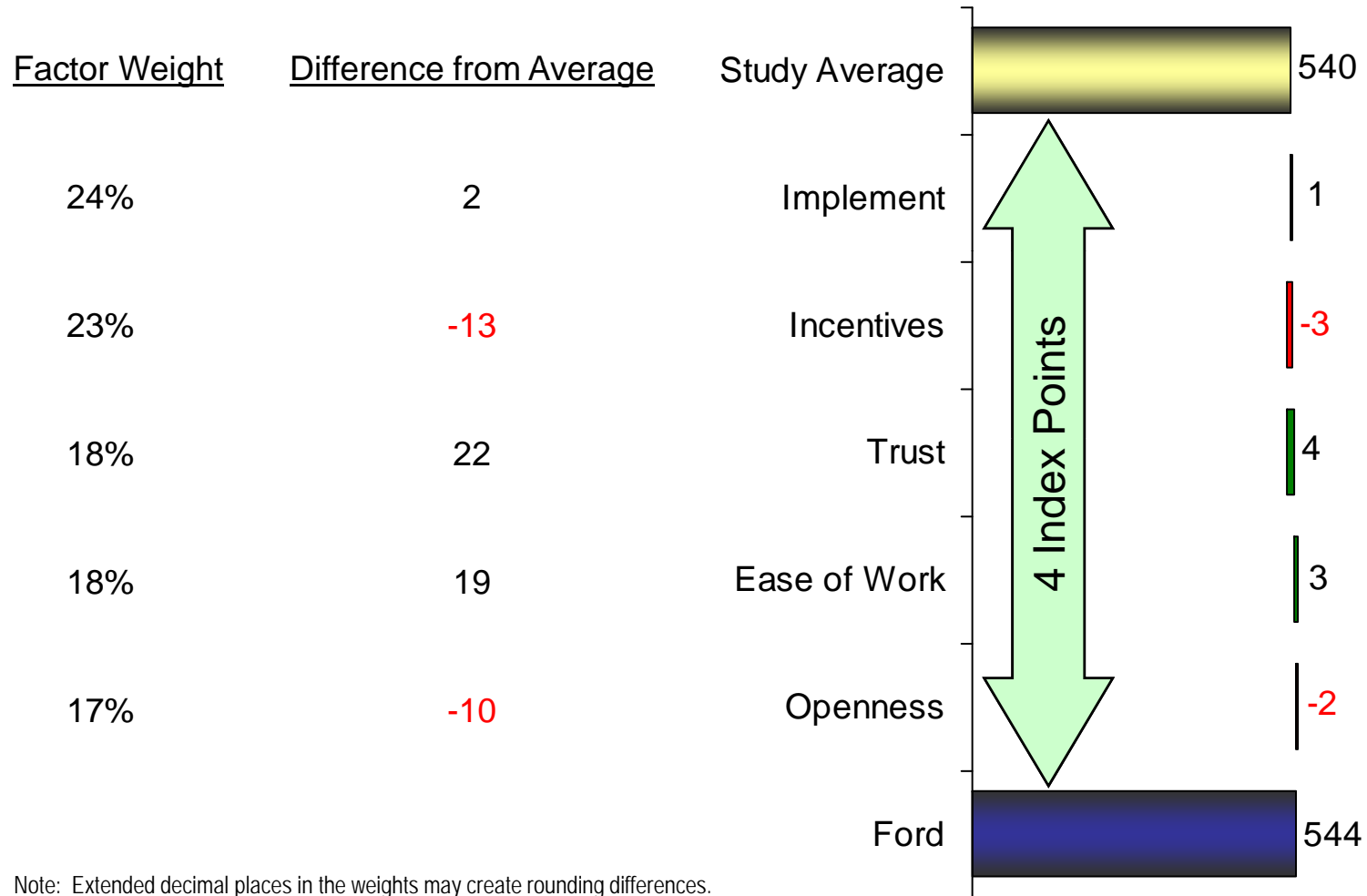
## Ford Index and Factor Trend

- Ford rated as uncompetitive for all factors in both 2004 and 2007
- However in 2009, Ford raised their overall index by a remarkable 108 points moving from the bottom of the ranks to just above the average
- Ford showed the greatest improvement overall and for all factors
- Ford's strongest factor is now Trust while its weakest factor remains Incentives



# Ford Factor Walk

- Ford scores near the industry average for all factors



Note: Extended decimal places in the weights may create rounding differences.

## Comments on Ford Support of Innovation

- **Openness**: “Very interested in advanced technological solutions.”
- **Openness**: “In general, Ford is open to new ideas but they do have internal issues with groups more open than others. They do not seem to have one set company philosophy on this. They are rarely proactive...”
- **Ease of Work**: “Their ability to follow through is spotty. You need an internal champion at Ford to drive through the politics and bureaucracy.”
- **Trust**: “Trust with engineering is great; with purchasing very, very low...”
- **Trust**: “Ford sometimes shares IP with other suppliers to market test.”
- **Incentives**: “Unwilling to share innovation savings, tries to lock profits for Ford rather than share even though the supplier brings the innovation.”
- **Implement**: “Their lack of manpower and approach to risk make it hard to implement some good ideas.”
- **Implement**: “They are passively aggressive. They would like to have unique solutions without helping with the heavy lifting.”
- **Overall**: “Ford recognizes that new ideas are necessary to compete in the new economic environment and with the increasing pace of technology. There is still an arrogance about their own ideas...”
- **Overall**: “Improving but still not there.”



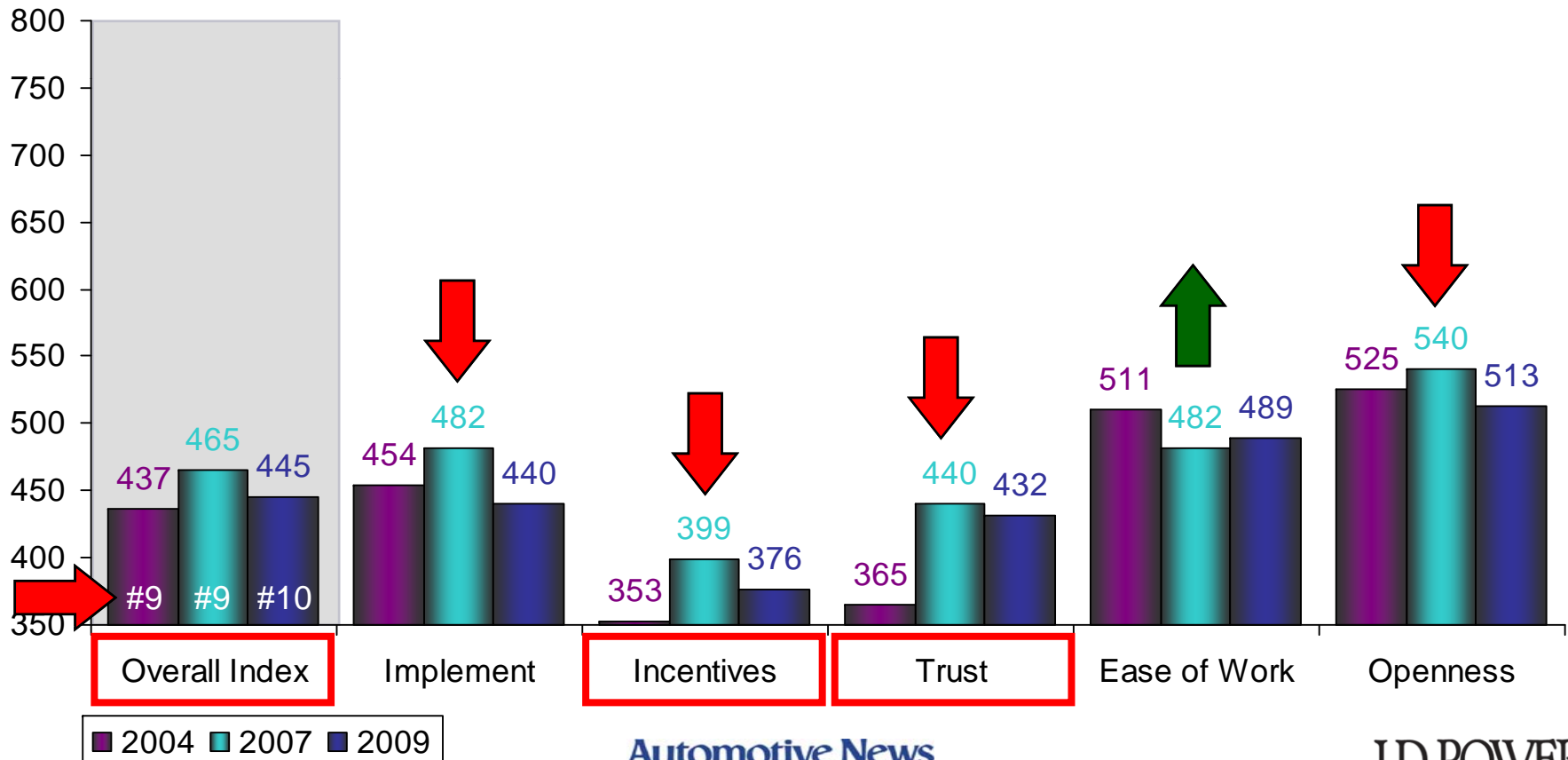
# 2009 OEM Supplier Innovation Study



## General Motors North America Summary

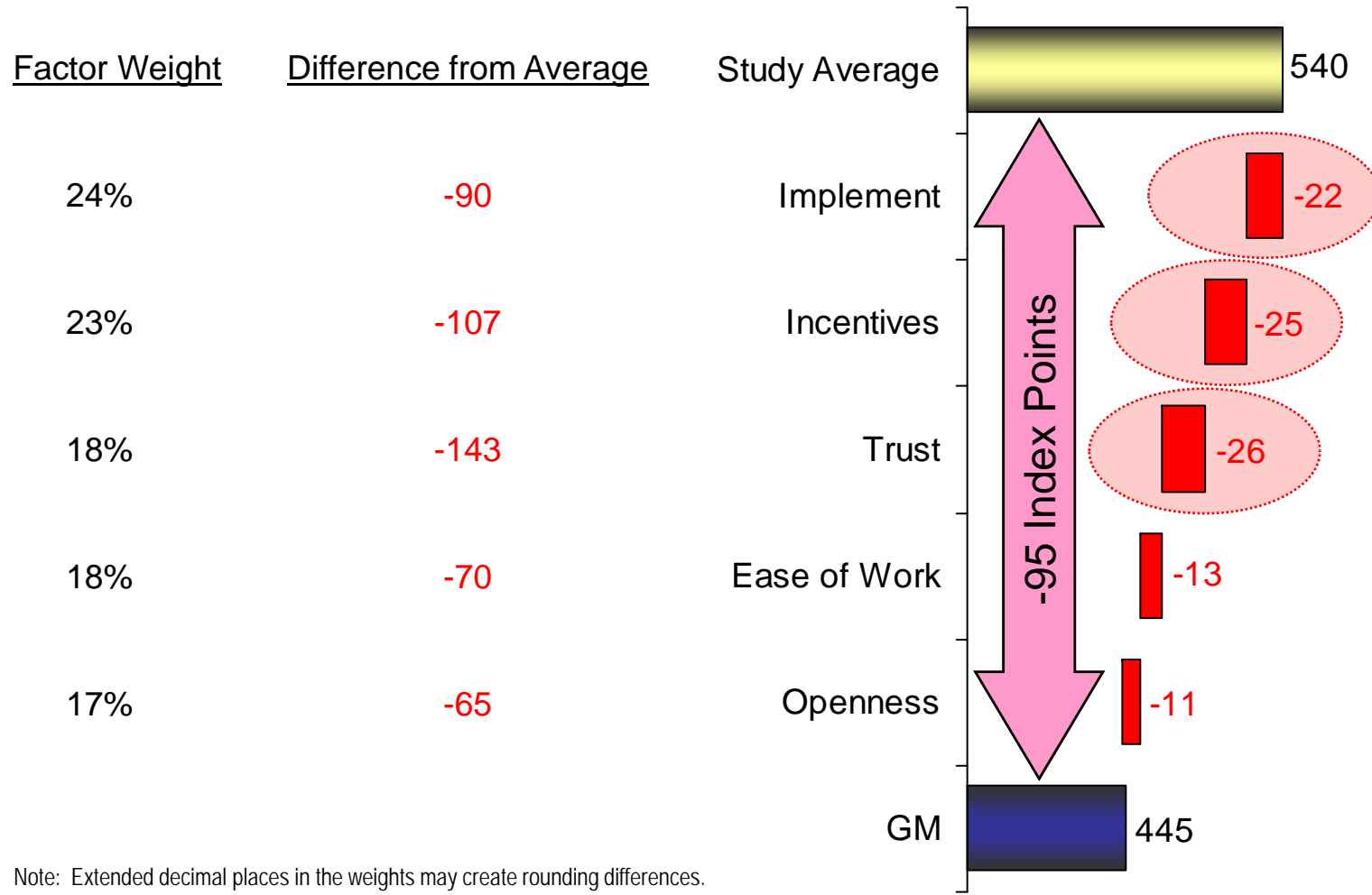
## GM Index and Factor Trend

- GM continues to struggle with Support of Supplier Innovation ranking at or near the bottom each year of the study
- GM saw declining scores for all factors except Ease of Work
- GM is the poorest rated OEM for the overall index as well as for Incentives and Trust



# GM Factor Walk

- GM overall poor showing is due to well below average scores for all factors, particularly for Trust, Incentives, and Implement



Note: Extended decimal places in the weights may create rounding differences.

## Comments on GM Support of Innovation

- Openness: “GM hold events to seek innovative ideas and offers program areas of research; however, current times have stifled these activities.”
- Openness: “GM seems to only emphasize cost reductions. Other innovation ideas do not get much attention.”
- Ease of Work: “Strong top down approach, little partnership.”
- Ease of Work: “They are not easy to work with at all. I suspect even their own engineering gets very frustrated with their own system.”
- Trust: “Respect for supplier IP is often weak (or totally lacking).”
- Trust: “If you give GM any innovations based on trust rather than a written purchase order, you do so at your own peril.”
- Incentives: “They want to be first with innovations to the market... but pay the least.”
- Incentives: “Its always about what’s in it for me with GM... wanting the suppliers to bear the risks of upfront costs.”
- Implement: “Nothing is fast in the current environment at GM.”
- Implement: “They are hesitant if not unresponsive to assign any resources to supplier projects.”
- Overall: “They don't care!”
- Overall: “Cost is king!”



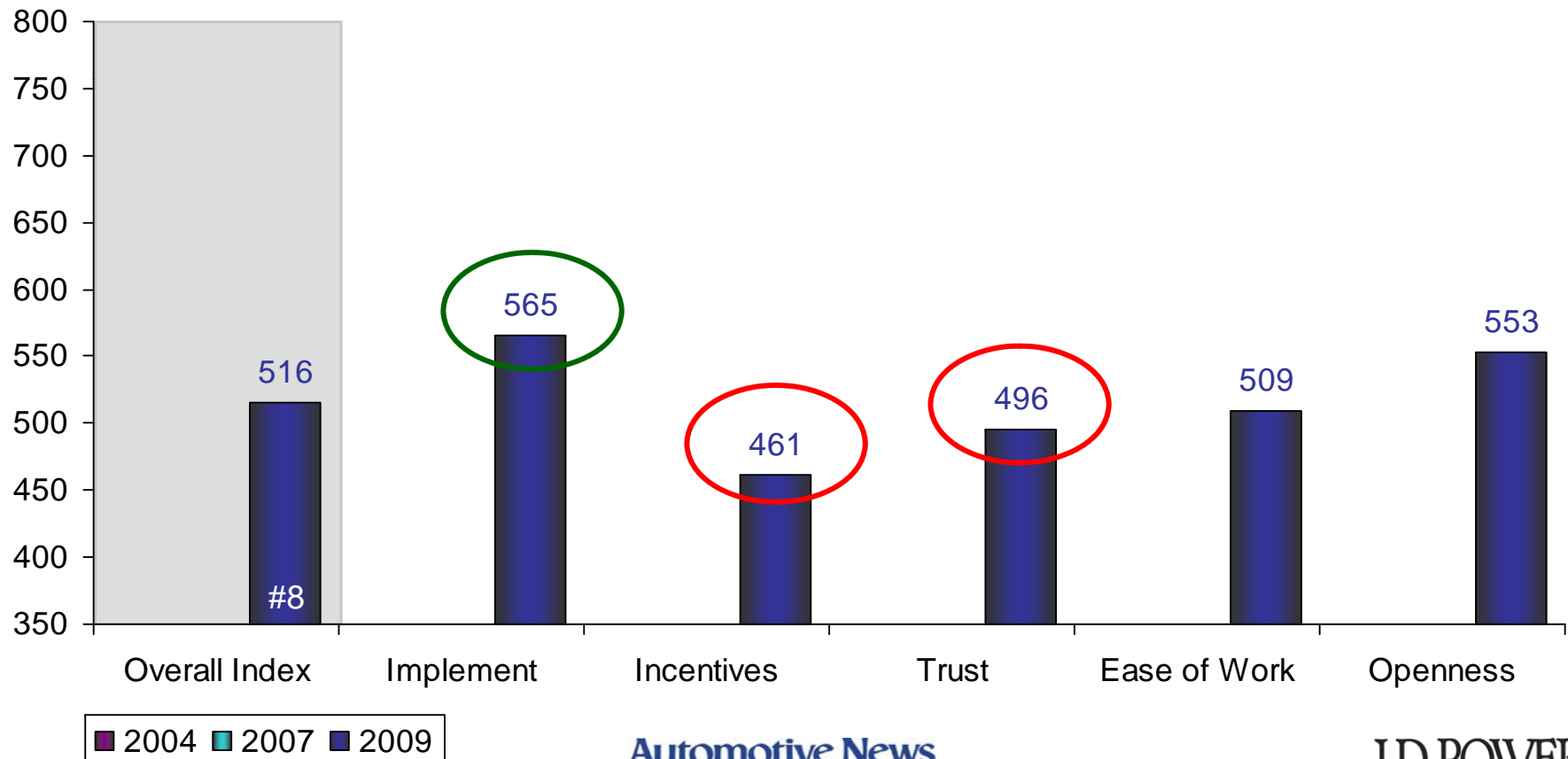
# 2009 OEM Supplier Innovation Study



## Hyundai Summary

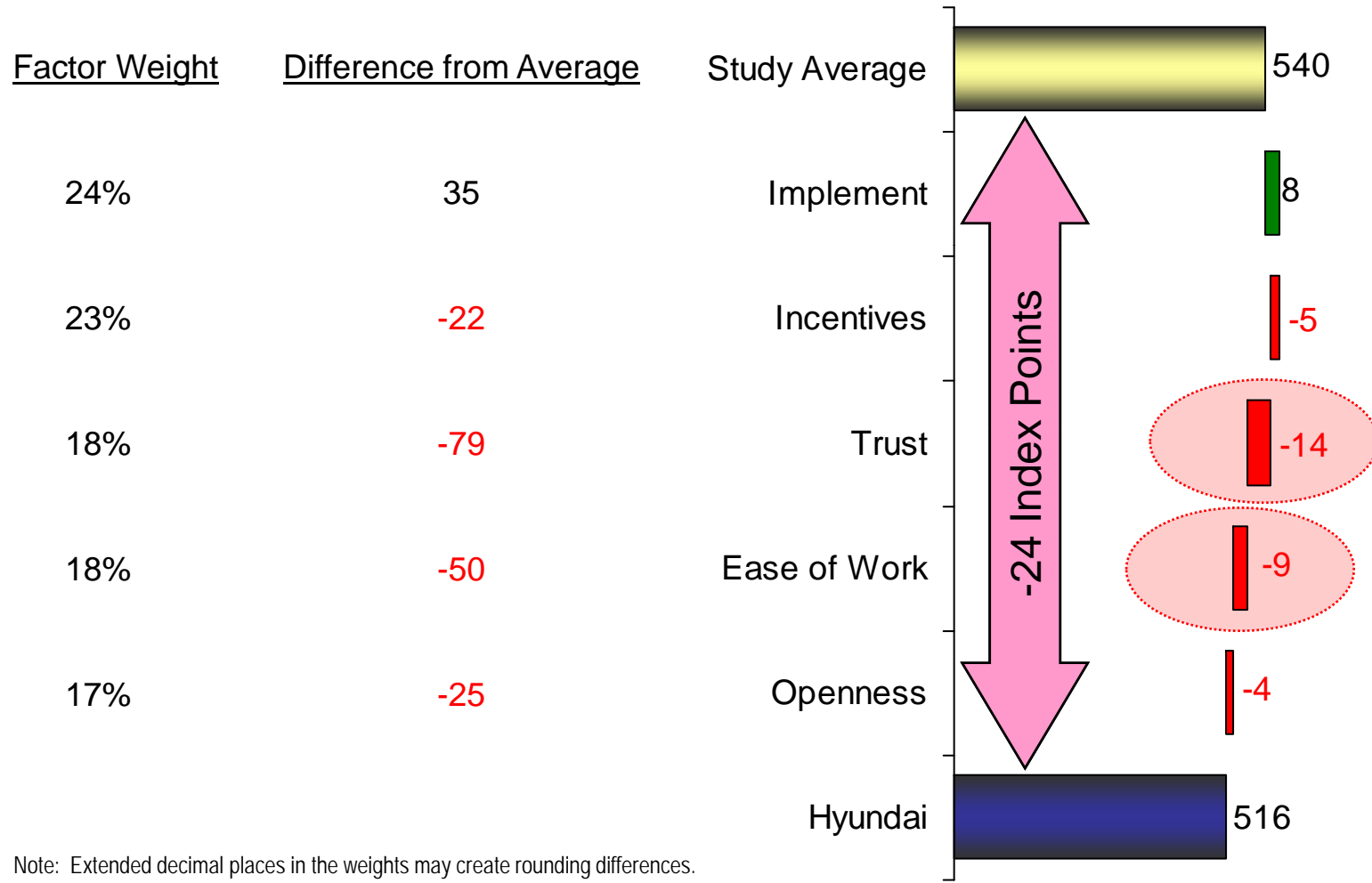
## Hyundai Index and Factor Trend

- This year's study included Hyundai for the first time with Hyundai debuting below the industry average and 8<sup>th</sup> among the OEMs ranked
- Hyundai finishes below the average for each of the factors except Implement which is its strongest factor
- Hyundai's weakest factors are Incentives and Trust



# Hyundai Factor Walk

- Hyundai scores below average for nearly all factor – notably Trust and Ease of Work – but does score above average for Implement



## Comments on Hyundai Support of Innovation

- Openness: “Hyundai organizes seminars and wants to challenge Toyota for innovation.”
- Openness: “Hyundai seems eager to embrace opportunities in the NA market and has been open to looking at new technologies and processes...”
- Ease of Work: “Very demanding on timing and resources versus volume commitment.”
- Ease of Work: “Must get Korea approval on innovation.”
- Trust: “No trust = little cooperation.”
- Trust: “They will easily give your information to your competitor.”
- Incentives: “Do not want to pay for them and is prone to copy or "borrow" ideas.”
- Incentives: “Very greedy.”
- Implement: “Overall aggressive with new technologies but must gain approval in Korea before implementing.”
- Implement: “Confusing company structure means ideas difficult to get across different models.”
- Overall: “Places little trust in non-Korean suppliers.”
- Overall: “Trust is a big barrier.”



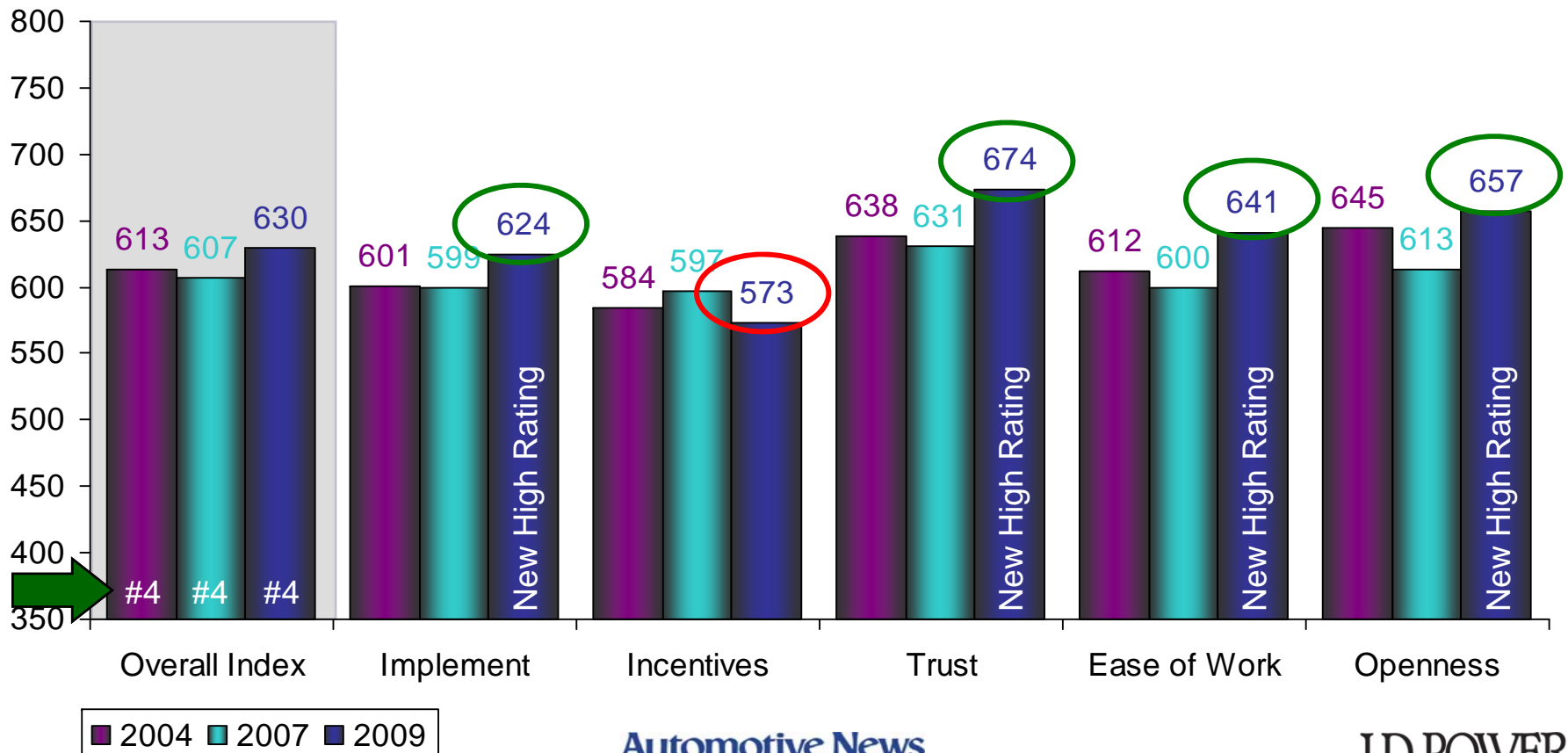
# 2009 OEM Supplier Innovation Study



## Mercedes-Benz Summary

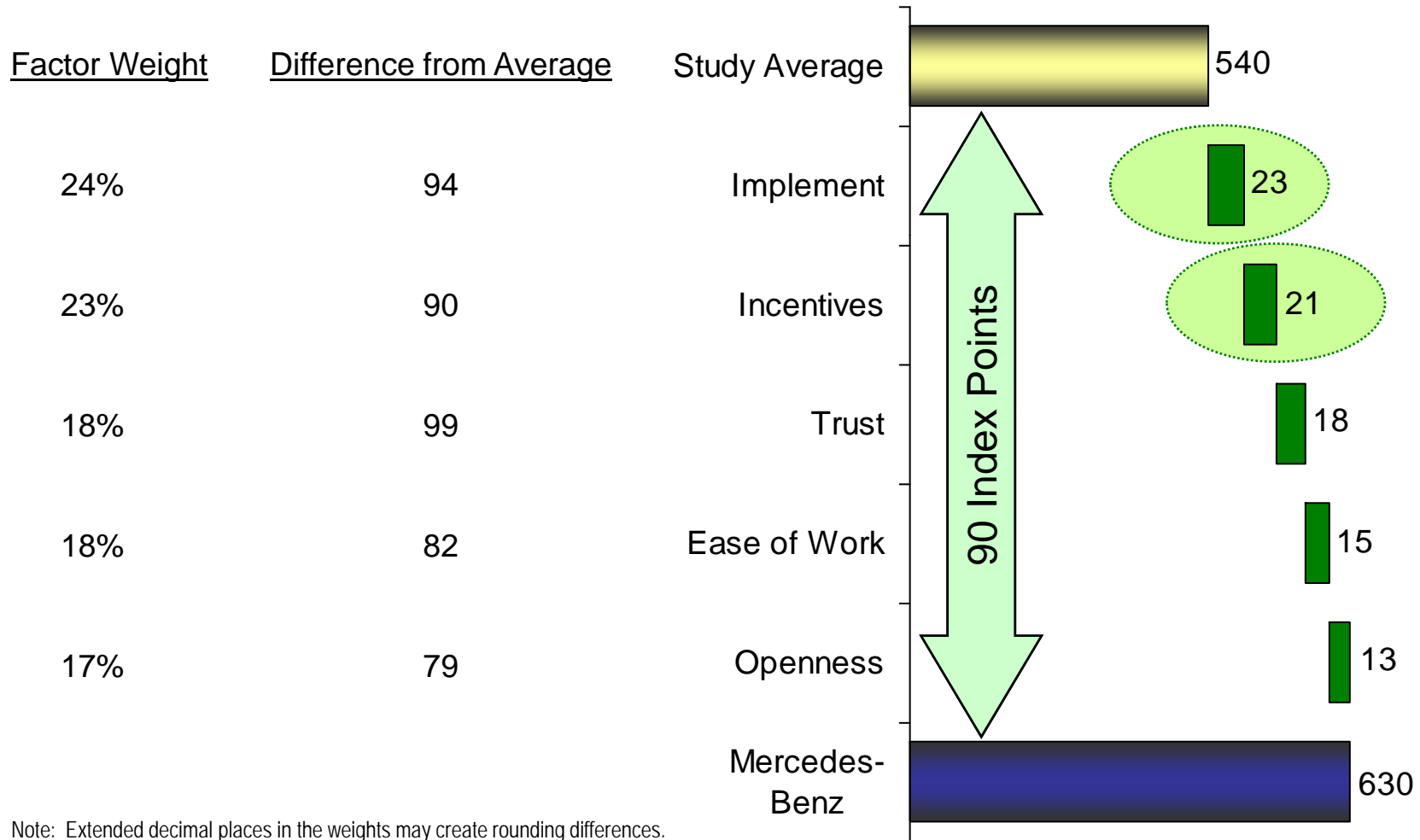
## Mercedes-Benz Index and Factor Trend

- Mercedes showed declining performance from 2004 to 2007 but rebounded in the 2009 study
- Mercedes continues to place 4<sup>th</sup> in the industry
- Mercedes posted new high ratings for Implement, Trust, Ease of Work and Openness
- Incentives, the only factor to show a decline, remains Mercedes' lowest rated factor



# Mercedes-Benz Factor Walk

- Similar to the effect for BMW, Implement and Incentives are the top contributing factors for Mercedes-Benz, albeit at around half the rate of contribution



## Comments on Mercedes-Benz Support of Innovation

- **Openness**: “While not as proactive as BMW in seeking innovation, MB nevertheless embraces good technology.”
- **Openness**: “Innovation is important to company's success. Clear acceptance of innovation from supplier.”
- **Ease of Work**: “Mercedes has a strong willingness to partner with suppliers they find synergies with.”
- **Ease of Work**: “Bad in North America, good in Europe.”
- **Trust**: “They are highly ethical in their dealings and always fulfill their commitments.”
- **Trust**: “As with any OEM trust is earned through doing what you say and delivering with high quality. Mercedes has tough, but fair requirements.”
- **Incentives**: “MB does issue development orders which provide funding during development.”
- **Incentives**: “They do not have much there in the way of financial encouragement.”
- **Implement**: “Very slow and bureaucratic decision process.”
- **Implement**: “Decisions to proceed are typically made by individuals detached from the technology discussions.”
- **Overall**: “Company is structured around supporting suppliers who push innovation.”



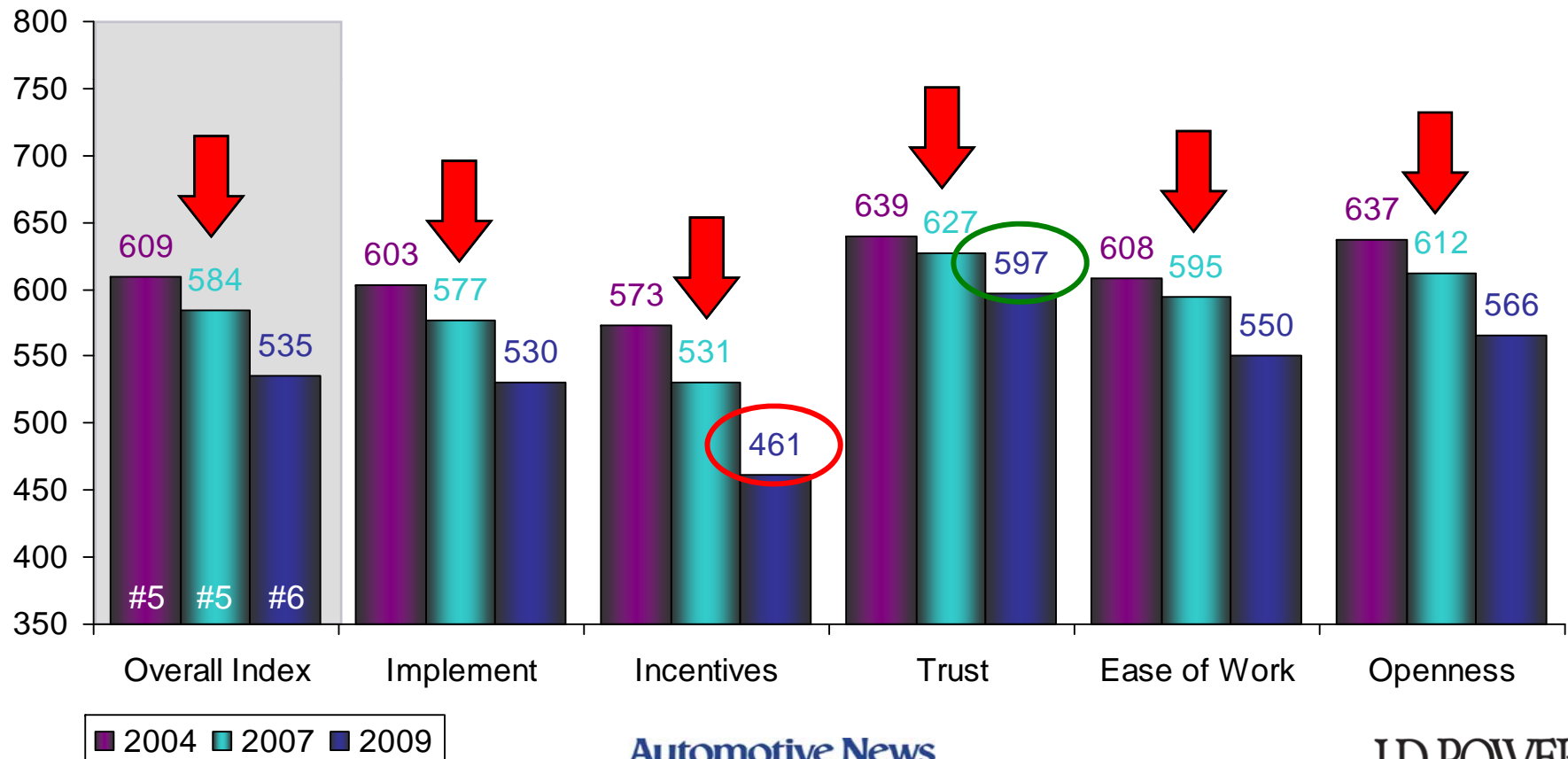
# 2009 OEM Supplier Innovation Study



## Nissan North America Summary

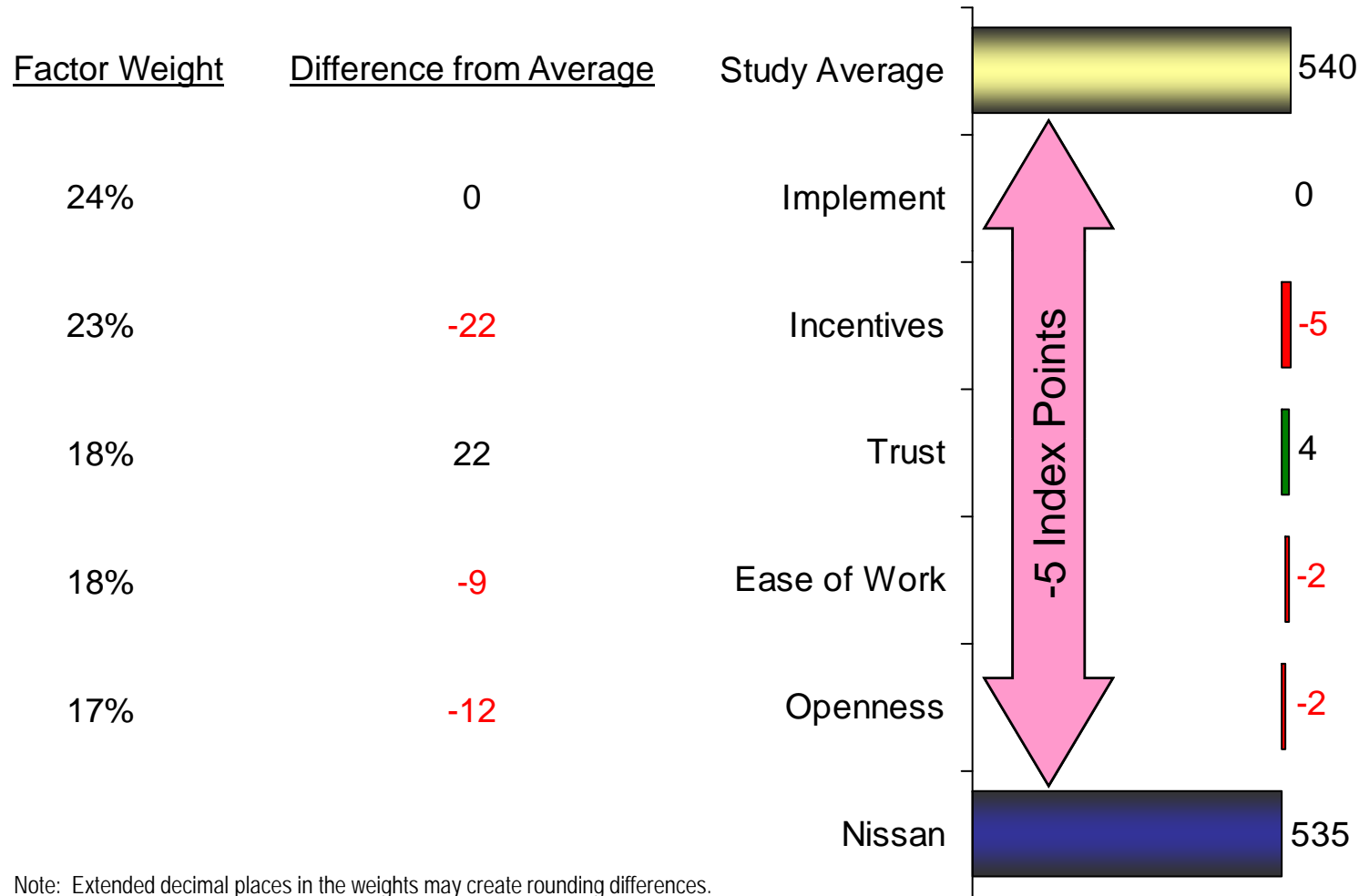
## Nissan Index and Factor Trend

- Nissan continues to show declines overall and for all factors and now falls below the industry average (6<sup>th</sup> place)
- Nissan's strongest factor remains Trust – albeit a diminishing strength year-to-year
- Nissan's weakest factor continues to be Incentives



# Nissan Factor Walk

- Nissan scores slightly below the industry average for all factors except Trust which scores just above the average



Note: Extended decimal places in the weights may create rounding differences.

## Comments on Nissan Support of Innovation

- Openness: “Nissan develops teams to go out and look for new ideas. They share the positives and negatives to ideas...”
- Openness: “If ideas are not seen as coming from within their own ranks, they are downplayed.”
- Ease of Work: “Much decision making is still in Japan vs. North America. This makes it more difficult to get creative ideas in up front.”
- Ease of Work: “Tries to force timing on innovations that could be premature.”
- Trust: “For a new technology, they either want what you have to offer at your price or they don't. They do not ask you to share your technology with competitors to achieve competitive bids.”
- Trust: “Open, collaborative, transparent relationship...”
- Incentives: “Very little financial incentive is used, it is normally a promise of additional work.”
- Incentives: “The supplier knows to keep ideas of cost away from Nissan until negotiations are developed.”
- Implement: “Nissan is risk-averse... execution is slow and lacking.”
- Overall: “They are not truly a North America decision maker.”
- Overall: “More about costs versus innovation.”



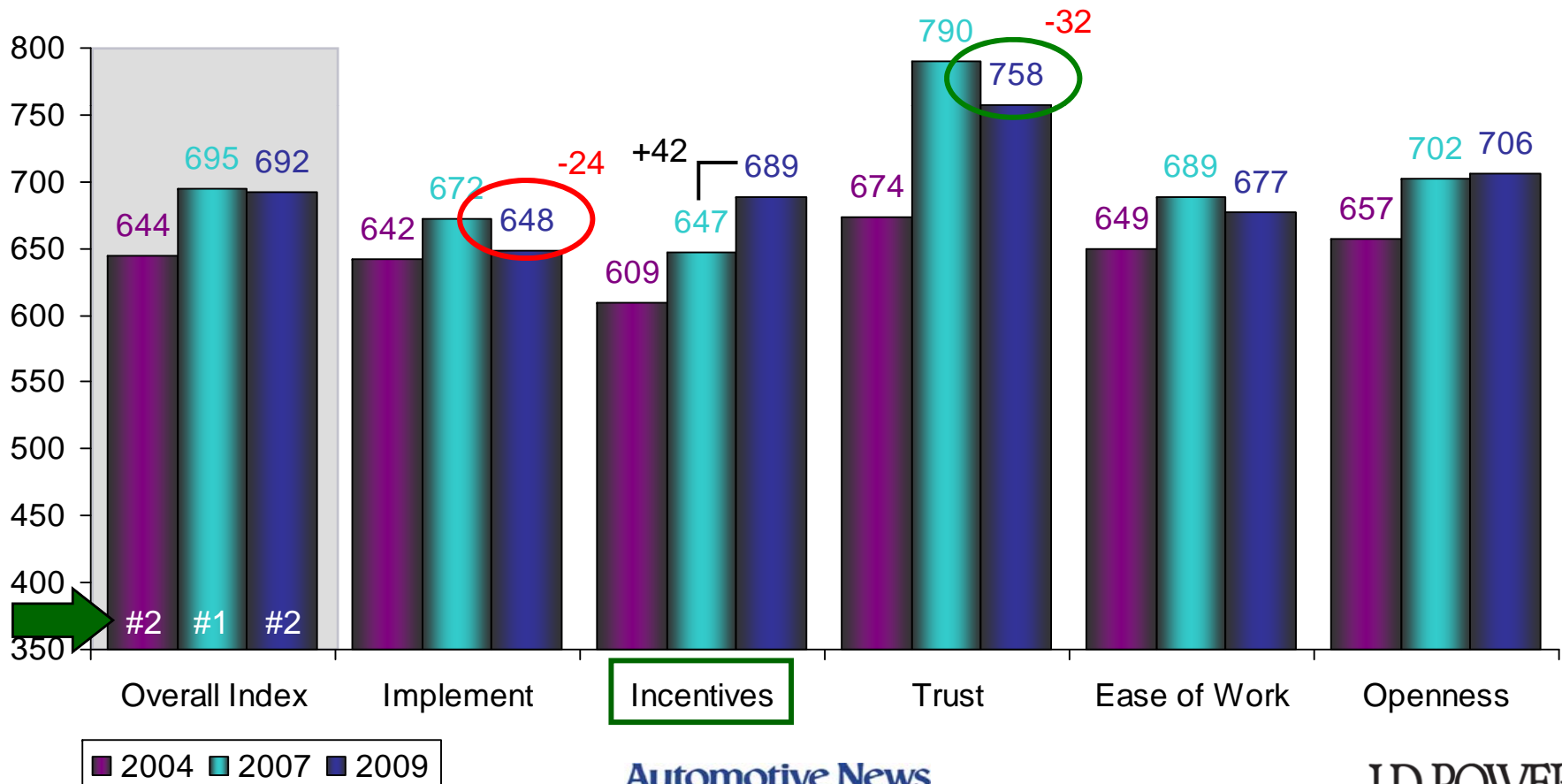
## 2009 OEM Supplier Innovation Study



### Toyota Motor Manufacturing, North America Summary

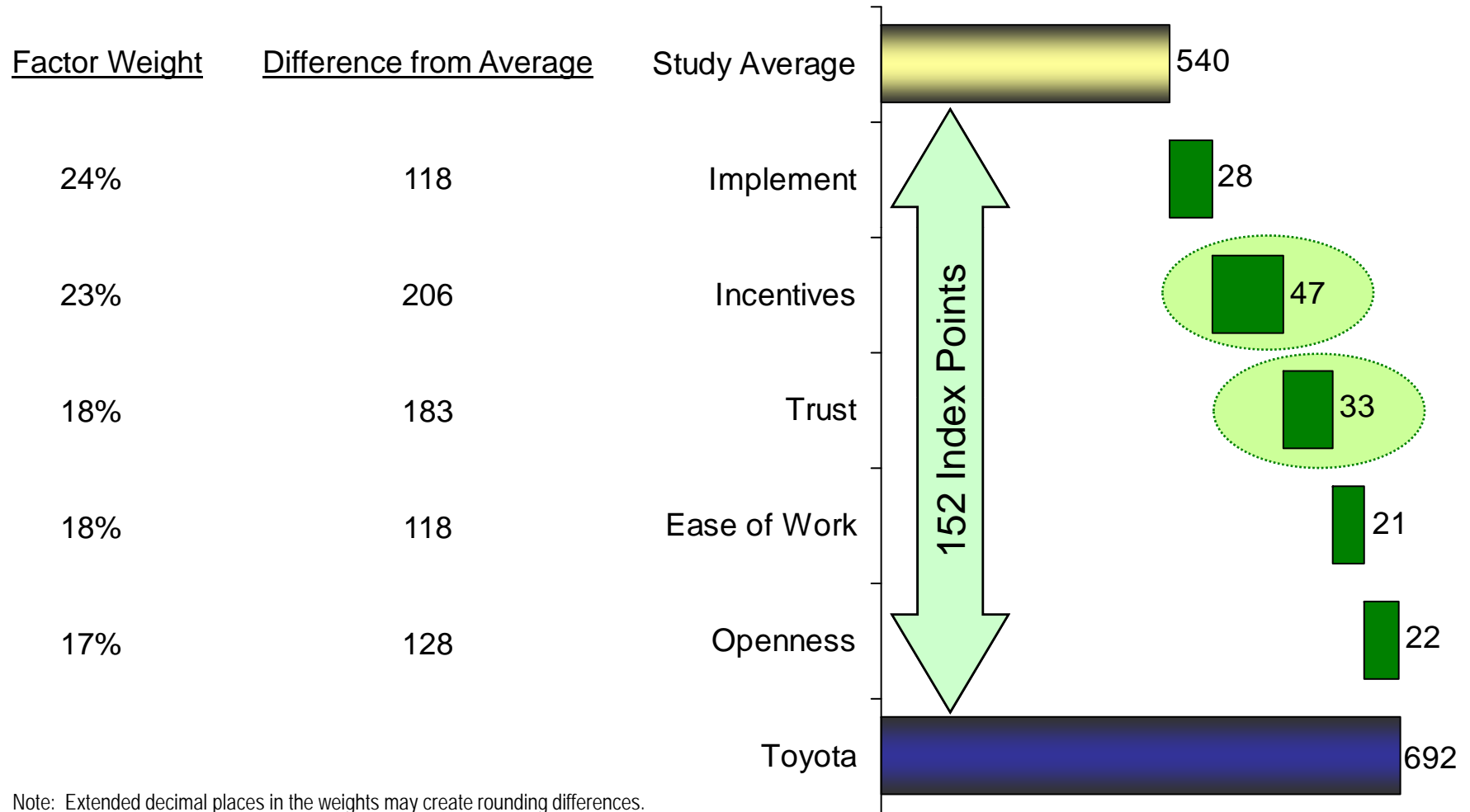
## Toyota Index and Factor Trend

- Toyota shows a slight decline from 2007 and drops to 2<sup>nd</sup> overall
- Toyota's largest improvement is for Incentives at 42 points and for which Toyota is now the highest rated OEM
- Toyota's highest scoring factor remains Trust despite a 32 point drop
- Implement drops 24 points and is Toyota's lowest scoring factor



# Toyota Factor Walk

➤ Incentives and Trust are the top contributing factors for Toyota



## Comments on Toyota Support of Innovation

- **Openness**: “Purchasing as well as manufacturing middle management are empowered to respond to innovative ideas and do so without prompting.”
- **Openness**: “They are one of the few who actively solicit input.”
- **Ease of Work**: “Toyota has a strong development process in place internally and they work collectively with their supply base to support this activity. Data driven ideas and results are respected.”
- **Ease of Work**: “Toyota can be a difficult company to work with due to pushing limits. They always ask for the impossible, but are willing to settle for the feasible.”
- **Trust**: “Will keep innovation ideas supplied by suppliers confidential. Will allow incumbent supplier first right of refusal for next generation vehicle.”
- **Trust**: “No one is more honorable than Toyota. Their executives are top drawer!”
- **Incentives**: “They help you find the savings and you keep it...will work with you on innovative contracts for future programs.”
- **Implement**: “We are a part of the team from day one and stay part of the team throughout the process.”
- **Implement**: “Wants new ideas but a little slow to implement...cautious.”
- **Overall**: “Toyota walks the talk...they believe that their suppliers are partners in their fate.”
- **Overall**: “Toyota is the industry benchmark.”



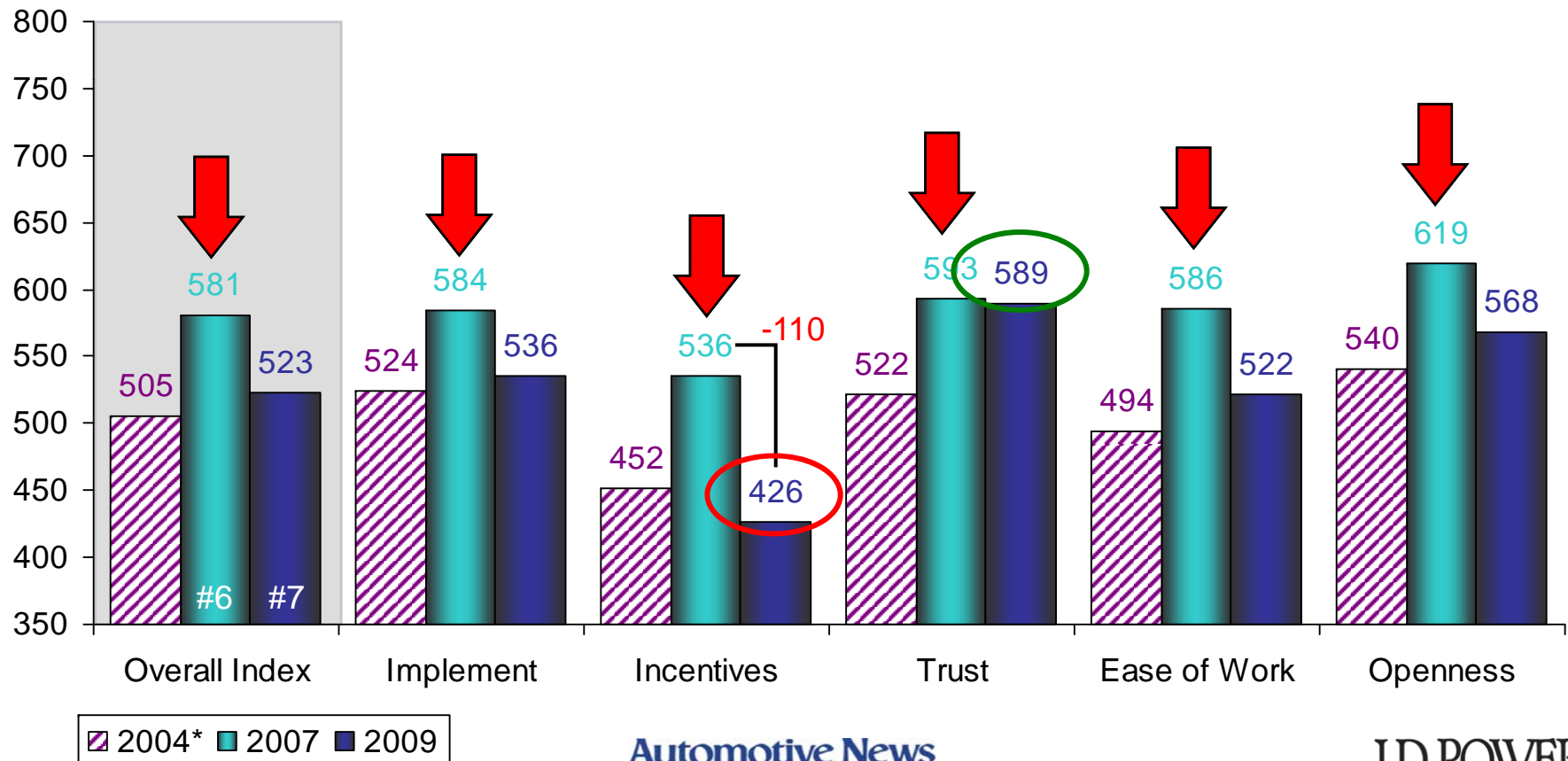
## 2009 OEM Supplier Innovation Study



### Volkswagen of America Summary

## Volkswagen Index and Factor Trend

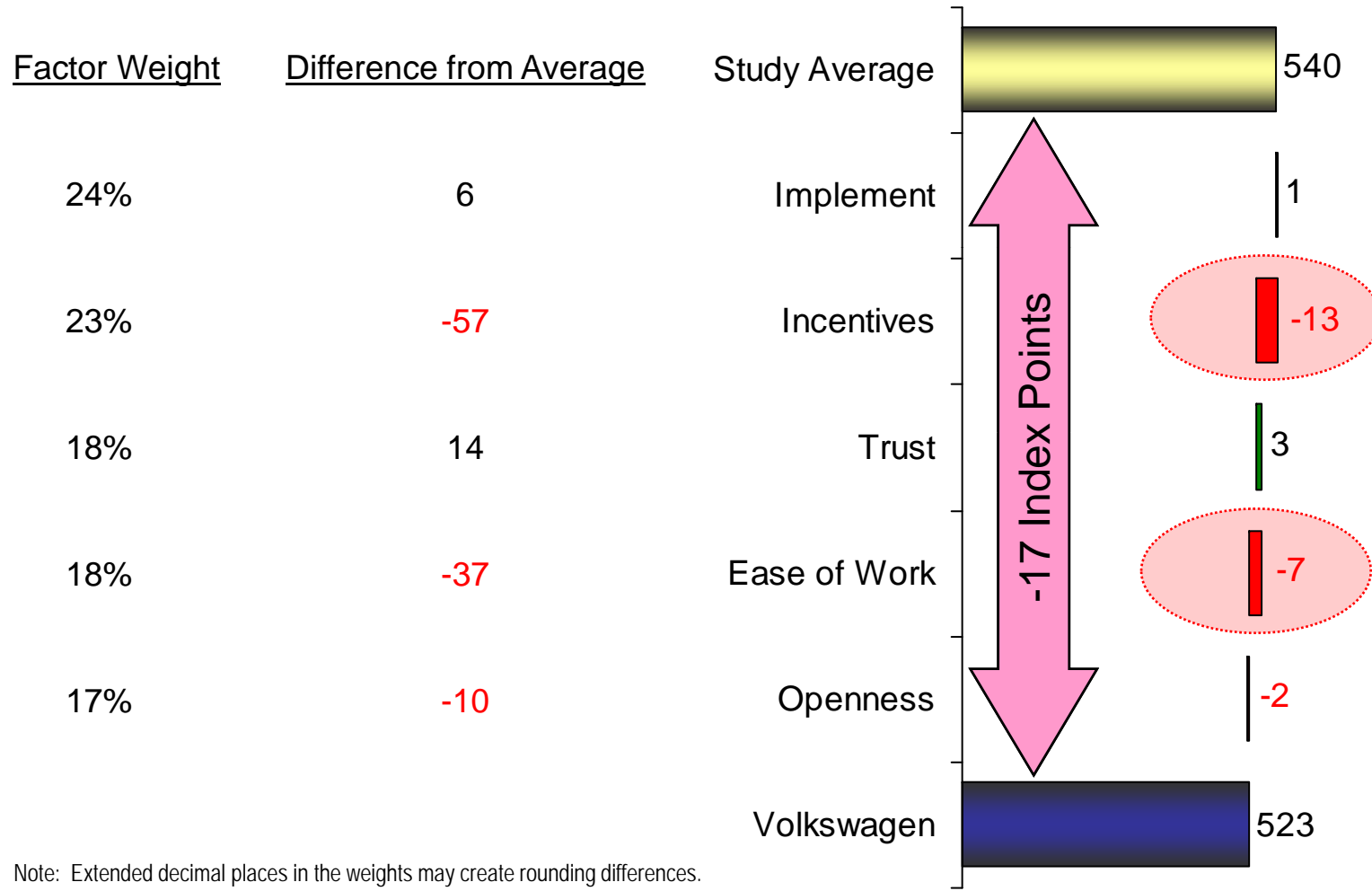
- After placing above the average in 2007, Volkswagen showed declining ratings across all factors and now rates below the industry average (7<sup>th</sup>)
- Among all OEMs, Volkswagen showed the largest decline for Incentives, which is by far Volkswagen's weakest factor
- Volkswagen's strongest factor is Trust



\*Small sample size in 2004

# Volkswagen Factor Walk

- Volkswagen's overall performance is hindered by below average scores for Incentives and Ease of Work



Note: Extended decimal places in the weights may create rounding differences.

## Comments on Volkswagen Support of Innovation

- **Openness**: “VW could be more proactive in seeking technological ideas from its suppliers early on in the development process.”
- **Openness**: “They depend 100% on Germany, no ideas are channeled through VWoA.”
- **Ease of Work**: “We remain in close communication for weeks, then for no apparent reason, silence and then it picks up again.”
- **Trust**: “VW is willing to look at everyone's ideas in the early stages of a program, however, they then take these ideas and source one primary supplier for the platform to perfect all these ideas... be careful suppliers!”
- **Trust**: “VW Engineering is very trustworthy. VW Purchasing is ruthless and lie, cheap, anything they can to get their targets.”
- **Incentives**: “This particular customer expects to receive the entire benefit... not only would there be an annual LTA reduction of piece price, there was a verbal request the supplier submit a one time payment upfront. Pay to play if you will.”
- **Incentives**: “Its all about price.”
- **Implement**: “A complex decision making organization.”
- **Implement**: “Nothing is slower than getting a final technical approval from VW.”
- **Overall**: “Very rigid and set in their ways.”

# Moving Forward...

## Study Timeline

4<sup>th</sup> Quarter 2010 — Developing 2011 Automotive News Supplier Innovation Survey  
- Ease of completion  
- Simplify responding for multiple clients

1<sup>st</sup> Quarter 2011 — Fielding of 2011 Study  
- Request OESA membership participation

May-June 2011 — **5** — Roll out of the 5<sup>th</sup> edition of the Supplier Innovation Survey at the 2011 Automotive New Manufacturing Conference  
  
Follow up presentation to individual OEMs and to OESA membership  
- Continuous improvement



## 2009 OEM Supplier Innovation Study

“10 ways to get the most  
innovation out of your suppliers”

- Peter Brown -

**Peter Brown**

**“10 ways to get the most innovation out of your suppliers”**

1. Have a clear process
2. Appoint a champion
3. Assess the value – – and pay for it
4. Check your bookkeeping
5. Let engineering engineer the car
6. Use the innovation in more than one model
7. Treat suppliers with respect
8. Communicate your goals
9. Work collaboratively & clearly
10. Earn trust



# Automotive News

## 2009 OEM Supplier Innovation Study

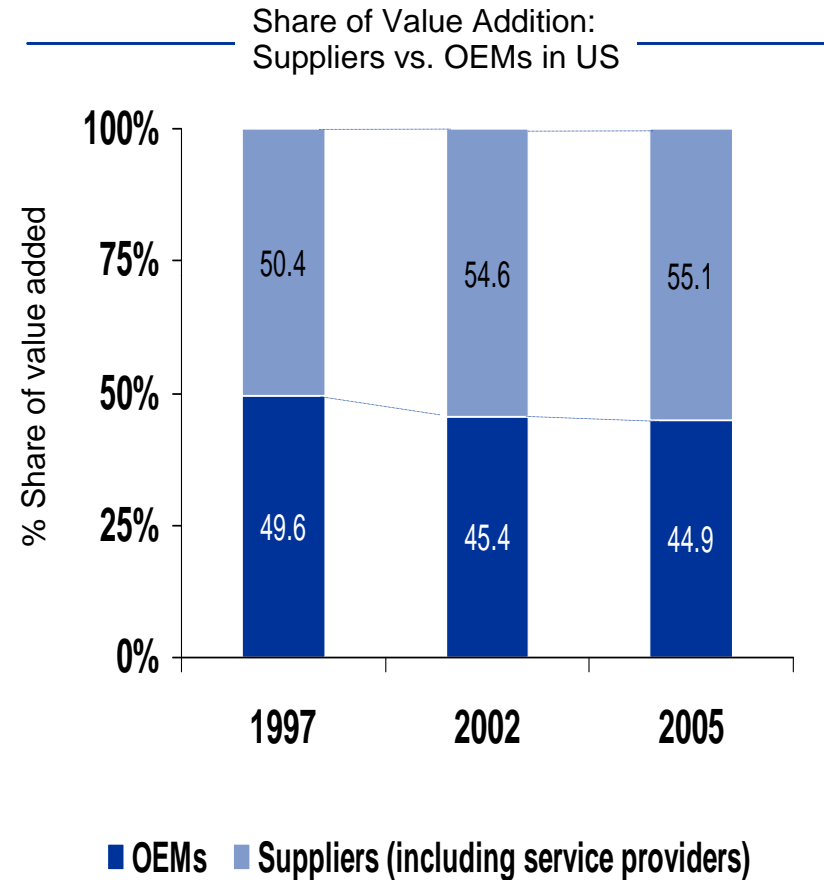
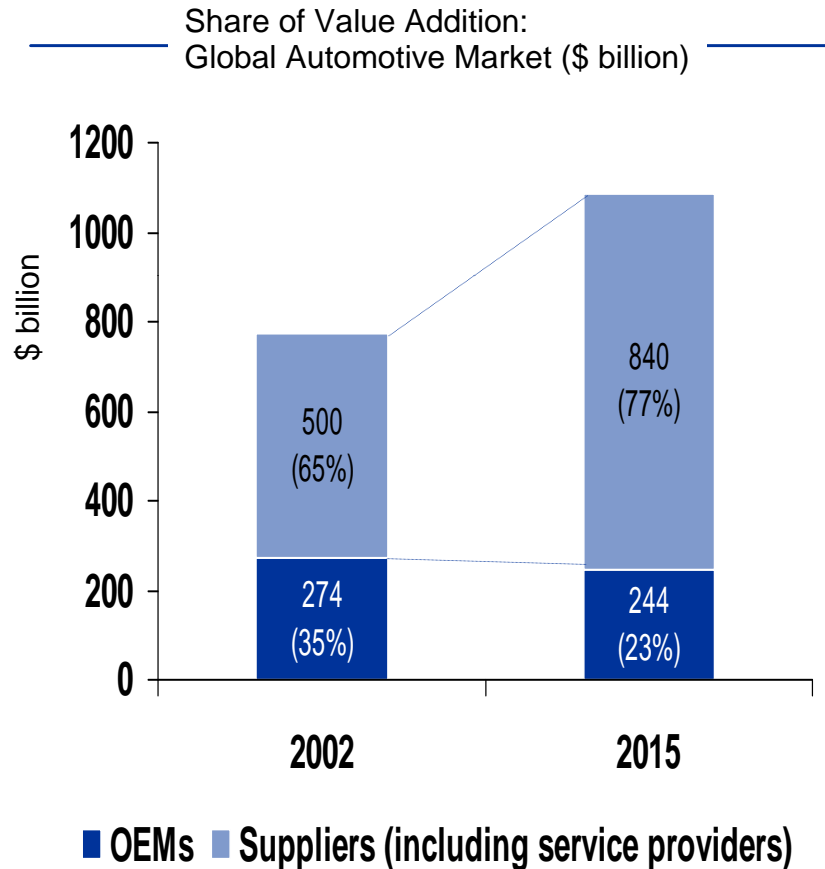
Thank You



# Accelerating Innovation Best Practices

Brian Murphy  
Deloitte Services LLP

# Suppliers are expected to increase their contribution to value creation from \$500b in 2002 to \$840b by 2015



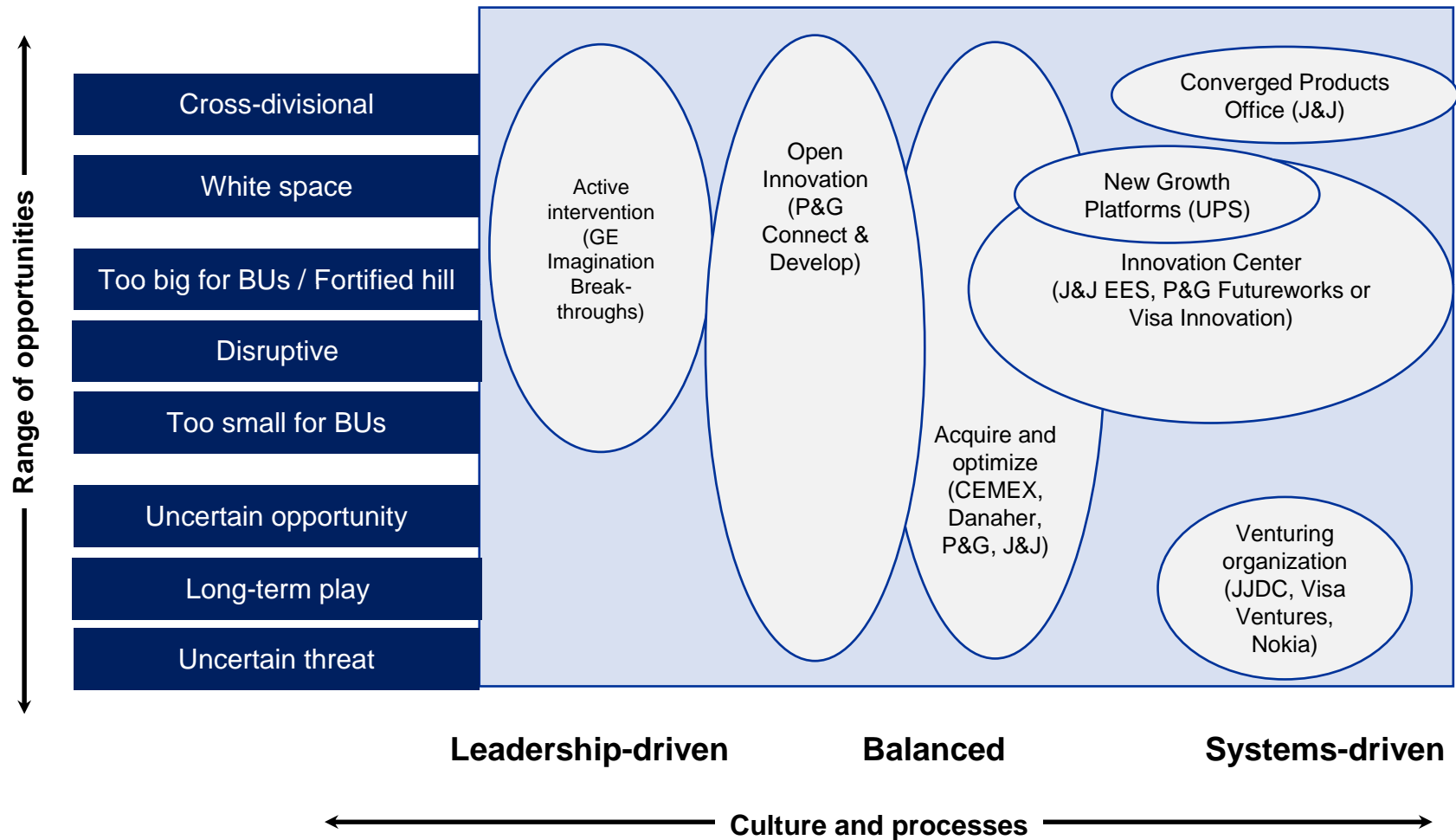
# Value Chain capabilities that an OEM could leverage and grow, be bought, or remain exclusive

Capability Line-up

Illustrative



# Companies successfully use different structures to address different opportunities



# Incentives matter when two organizations work together to innovate

## Leading Practices for Incentivizing Innovation

- Both parties share in the risk and the reward (no one-way streets)
- Teams on both sides (customer and supplier) share the same goals and individual incentives are aligned
- Success and value are clearly measurable and the basis for rewards
- There are different formulae which are appropriate for different situations
- Personal and professional relationships and trust are necessary to ensure effective communication and cooperation



# Automotive News

## 2009 OEM Supplier Innovation Study

### Appendix

# History of Questionnaire Modifications

- Survey redesign after initial 2003 study:
  - Reduced total number of questions to improve response rate
  - Improved survey layout to allow respondents to focus on one OEM evaluation at a time
- Differences in sample composition:
  - Targeted more top executives and larger suppliers
- Revised OEM descriptions to better reflect a focus on North American operations
- Verbatim comment sections added to the survey to provide insight on ratings
- Added classification questions regarding the respondents' job function, region of company's headquarters, and products company supplies to the OEMs

# Technical Description of the Index

- Statistical Analysis Rationale
  - The J.D. Power and Associates Index methodology provides a means of identifying those elements that drive competitive differences in customer ratings. The Index is a yardstick designed to summarize ratings on many facets into one combined measure that provides actionable information. Obtaining the knowledge that a weakness exists in a particular area is the first step toward taking direct action to strengthen a competitive position. Knowledge of the degree to which an area of weakness influences customer ratings aids in establishing priorities.
  
- Index History
  - The Index methodology was developed in the early 1980s to provide an objective means of assigning "importance" weights to various aspects of product or service experience. The emphasis in this early formulation was to provide a single weighted number, the Index, which maximally correlated with overall satisfaction. This number was then utilized to rank order products or services by Index magnitude. The Index provides a means of identifying the weighting characteristics of a product's various elements in terms of their impact on the overall rating. Because the Index is based on a larger, multi-attribute sample of ratings, greater precision is attained for discriminating levels between OEMs.

## Technical Description of the Index (continued)

### ➤ Specific Methodology

- All J.D. Power and Associates Index models are mathematically derived formulations that predict an overall rating with a set of independent attributes describing a supplier's experiences with a OEM. The Index formulations use factor analysis and multiple regression to develop the weighting process defining the Index. Once this Index scoring procedure is developed, Index scores are computed from individual survey responses.
- The Index scoring algorithm is developed using a multi-step statistical process, involving factor analysis and multiple regression. The regression procedure prioritizes and weights statistically transformed representations of the individual facets of satisfaction, based on their predictive contribution to overall satisfaction. The factor analysis transforms the original questionnaire attribute ratings into a series of measures that are uncorrelated with each other. Raw, untransformed attribute ratings are often highly correlated, and their use in a regression procedure can result in a set of unstable weights for combining attributes to estimate the overall rating of an OEM.

## Technical Description of the Index (continued)

- Specific Methodology (continued)
  - This problem is circumvented by the use of factor analysis. This procedure transforms all of the measured individual differences for all attribute ratings into distinct, non-overlapping “components of variance,” or factors. These factors preserve all the information contained in the original item responses, but have the desirable property of being uncorrelated among themselves. These transformed factors are then used in a regression equation to predict levels of overall satisfaction. The result is a regression equation that does not change materially when cross-validated on an independent sample of survey respondents.
  - In addition to the desirable data transformation properties of factor analysis, the resulting factors are often useful aids in exploring and understanding satisfaction from the consumer’s point of view. Individual factors are weighted combinations of raw satisfaction measures. The patterns in which survey satisfaction items group together to form factors tells us which items “go together” in the experience of the consumer.

## Technical Description of the Index (continued)

- Overall Index Model
  - The index model is composed of all attributes from question number 4 of the survey. Five factors emerged from the model:
    - Openness to new ideas
    - Ease of working with OEM on innovative ideas
    - Level of trust
    - Willingness to provide financial incentives/rewards for supplier innovation
    - Ability to implement innovations
  
  - The R-Squared score on this model is 0.88, which indicates that the model accounts for 88% of all variance within the Overall Index.

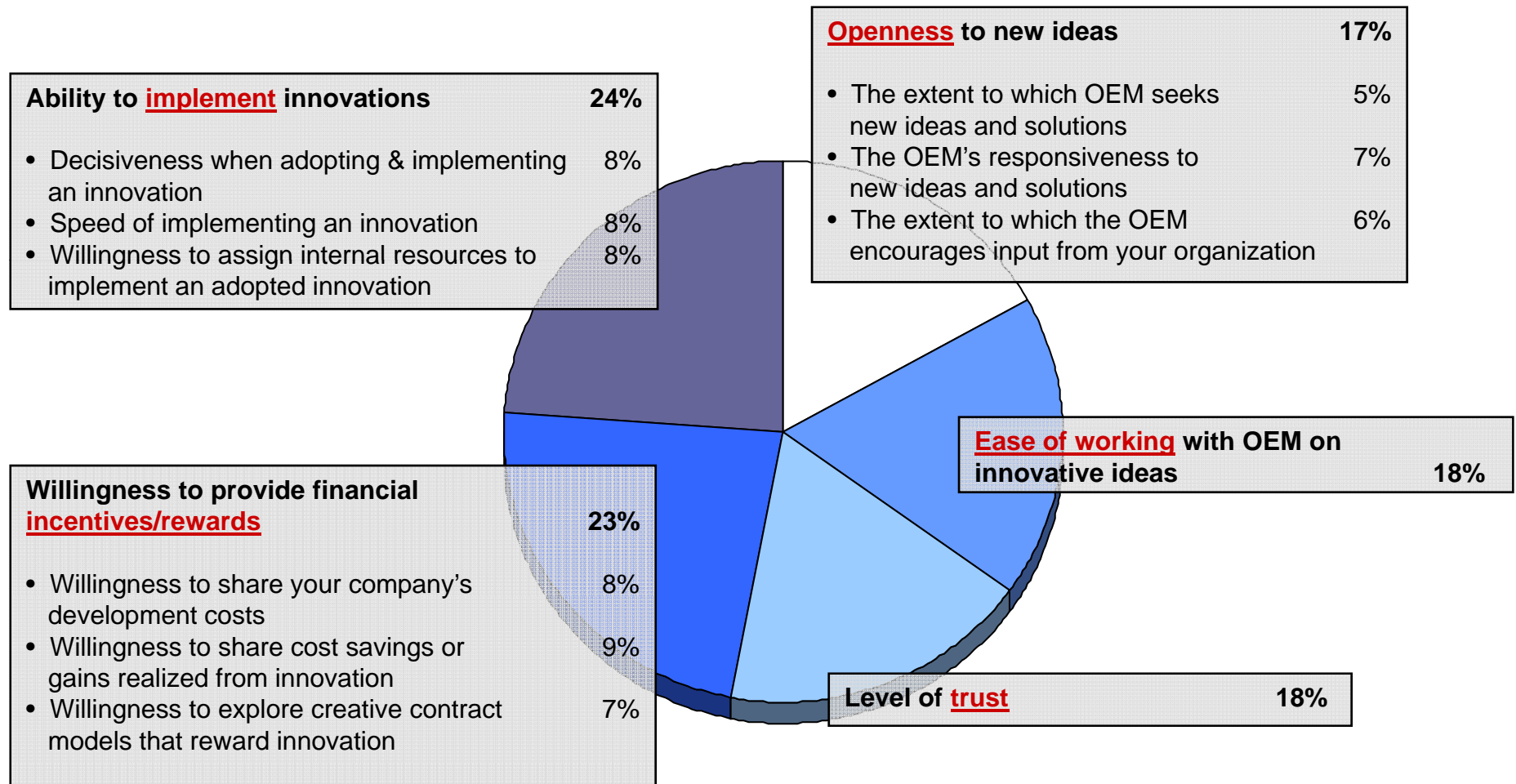
# Scoring

- OEM performance is measured among five key dimensions or factors:
  - Openness to new ideas
  - Ease of working with OEM on innovative ideas
  - Level of trust
  - Willingness to provide financial incentives or rewards for supplier innovation
  - Ability to implement innovations
- These five factors each carry a “weight” that quantifies their contribution to the overall index score
  - When each factor is combined (weighted average) it comprises the total score for an OEM
- In addition, every attribute (or question) within each factor carries a similar weight that quantifies its contribution to its factor score

# Technical Description of the Index (continued)

## Overall Index Model (continued)

The factor structure and weights are illustrated in the following chart



Note: Sums may not equal total factor percentage due to rounding

## Scoring (continued)

- Data presented in this presentation are illustrated in three formats:
  - Mean score: represents the average score associated with the 10-point rating scale
  - Index score: based on 1,000 points, where 1,000 is the maximum score; this scoring method is used for the overall index score as well as for the factor scores
  - Percentage score: shows the percentage of respondents who chose a specific rating

# Attribute Mean Ratings

	OEM support and encouragement of innovative activities and innovations	Overall rating	5.49	
24%	Willingness to assign internal resources to innovation	Implement	5.50	
	Decisive adoption and implementation of innovation	Implement	5.32	▼
	Speed of implementation	Implement	5.06	▼
23%	Sharing cost savings or gains from innovation	Incentives/Rewards	5.06	
	Sharing development costs	Incentives/Rewards	4.69	▼
	Willingness to explore models that reward innovation	Incentives/Rewards	4.68	▼
18%	Level of trust	Trust	5.75	
18%	Ease of working on innovative ideas	Ease of Working	5.59	
17%	Encourages input	Openness	5.98	
	Responsiveness to new ideas	Openness	5.70	
	Proactively seeks out new ideas	Openness	5.67	▼



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## 2009 OEM Supplier Innovation Study

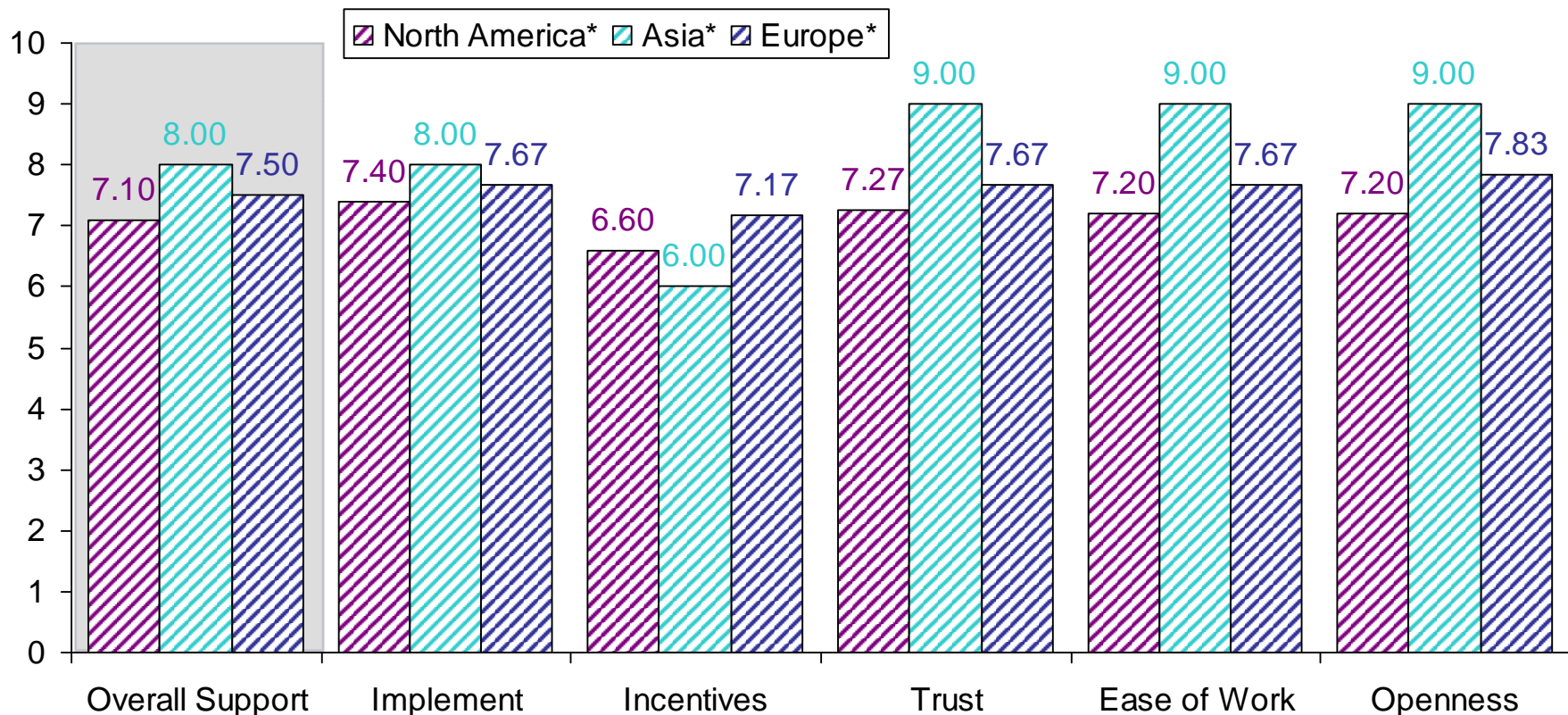
Backup Slides

# Index and Rankings by OEM

	Overall		Implement		Incentive		Trust		Ease of Work		Openness	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
<b>BMW</b>	716	1	728	1	659	2	748	3	726	1	731	1
<b>Toyota</b>	692	2	648	2	689	1	758	2	677	2	706	2
<b>Honda</b>	671	3	624	3	626	3	771	1	673	3	694	3
<b>MB</b>	630	4	624	3	573	4	674	4	641	4	657	4
<b>Ford</b>	544	5	532	7	470	5	597	5	578	5	568	5
<b>Nissan</b>	535	6	530	8	461	6	597	5	550	6	566	7
<b>VW</b>	523	7	536	6	426	8	589	7	522	7	568	5
<b>Hyundai</b>	516	8	565	5	461	6	496	8	509	8	553	8
<b>Chrysler</b>	449	9	431	10	413	9	448	9	476	10	496	10
<b>GM</b>	445	10	440	9	376	10	432	10	489	9	513	9

## BMW Support by Base of Supplier HQ

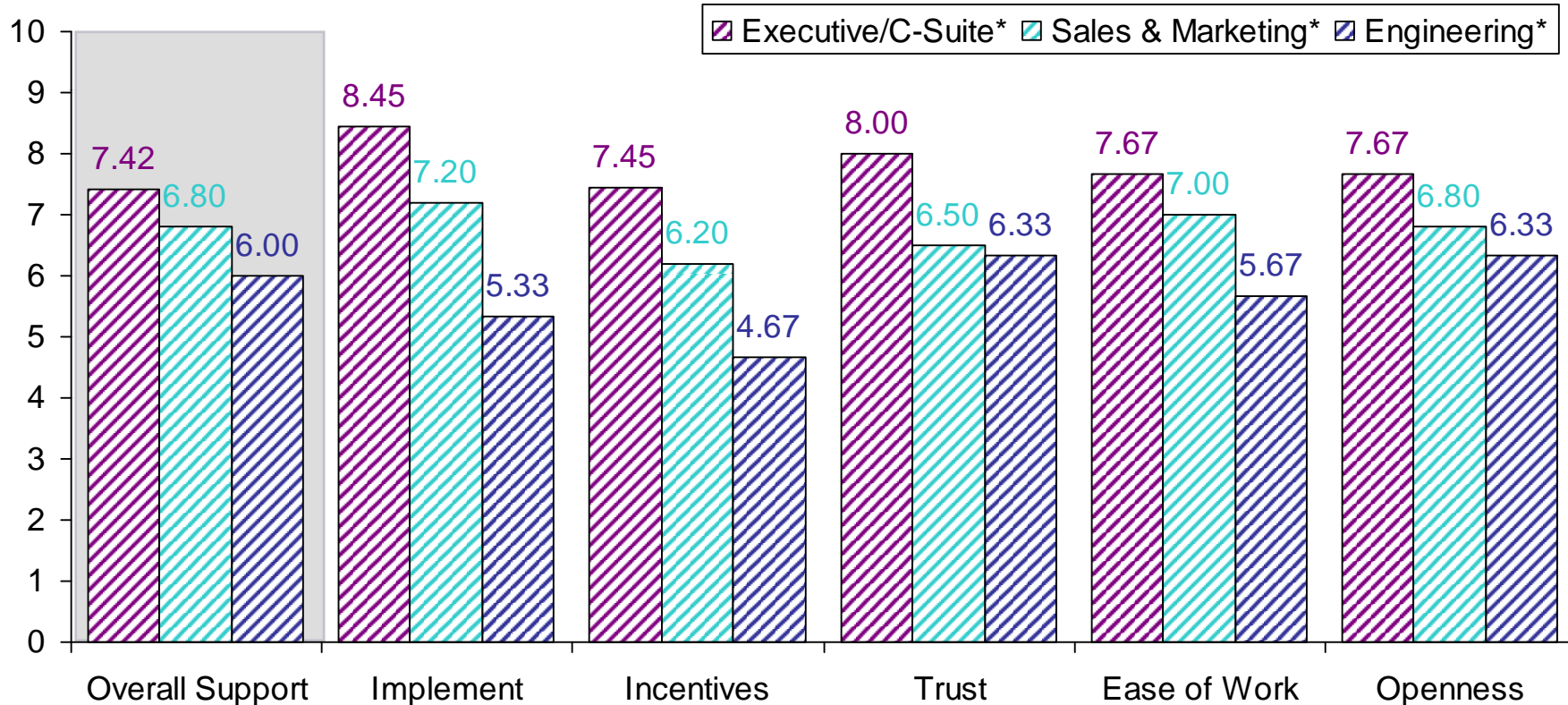
- BMW received higher marks from their Asian based suppliers for overall support and nearly all factors, particularly Trust, Ease of Work and Openness
- In general, lowest ratings are received from BMW's North American suppliers
- European suppliers gave BMW the overall poorest mark for Incentives



\*Small sample size

## BMW Support by Supplier Respondent Role

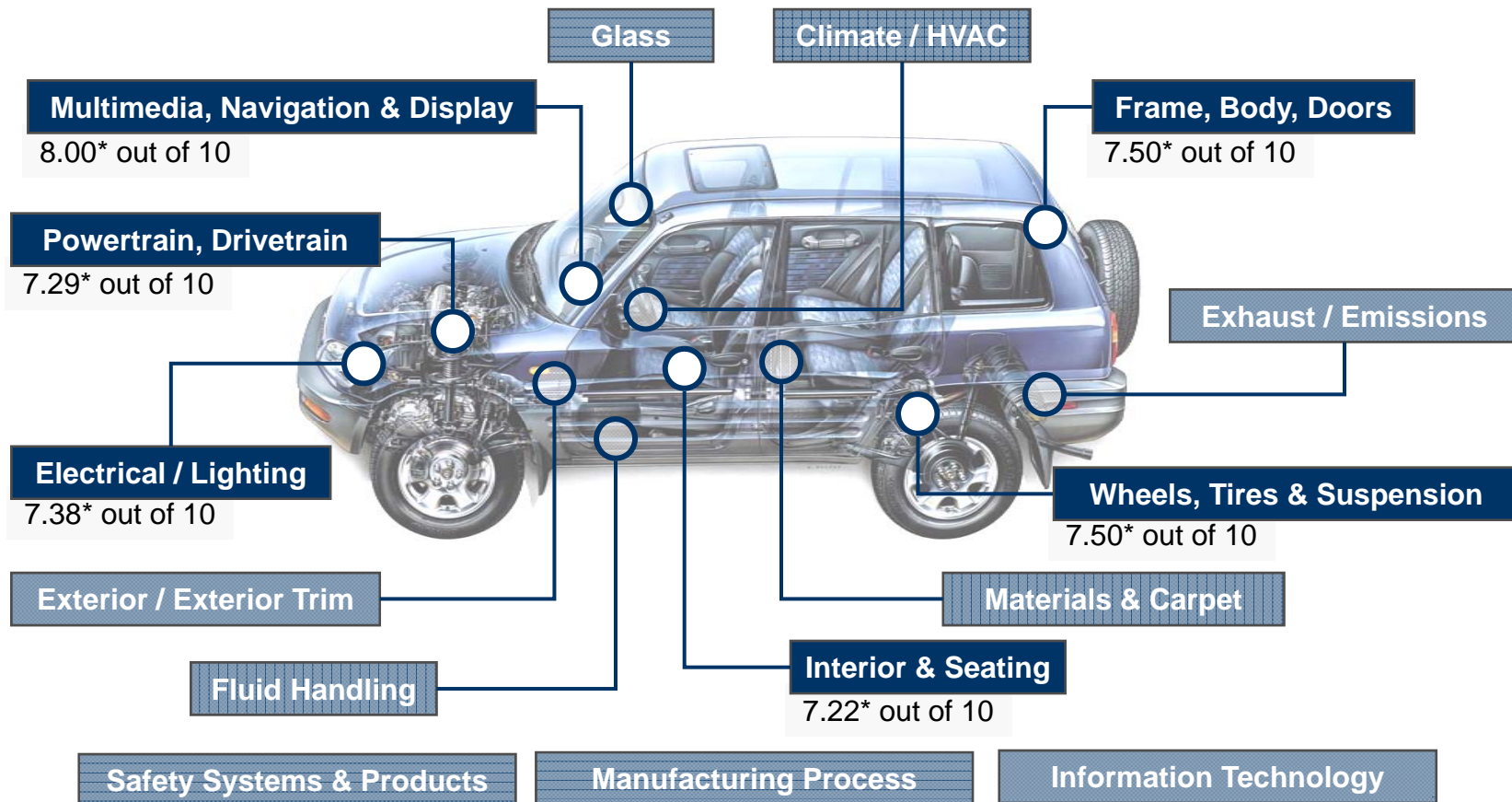
- BMW received consistently higher marks from supplier Executives while lowest and relatively poor ratings are seen from Engineering
- Similar to ratings from Engineering, BMW receives an equally poor rating from Sales and Marketing for Trust



\*Small sample size

## BMW Support by Product/Component Type

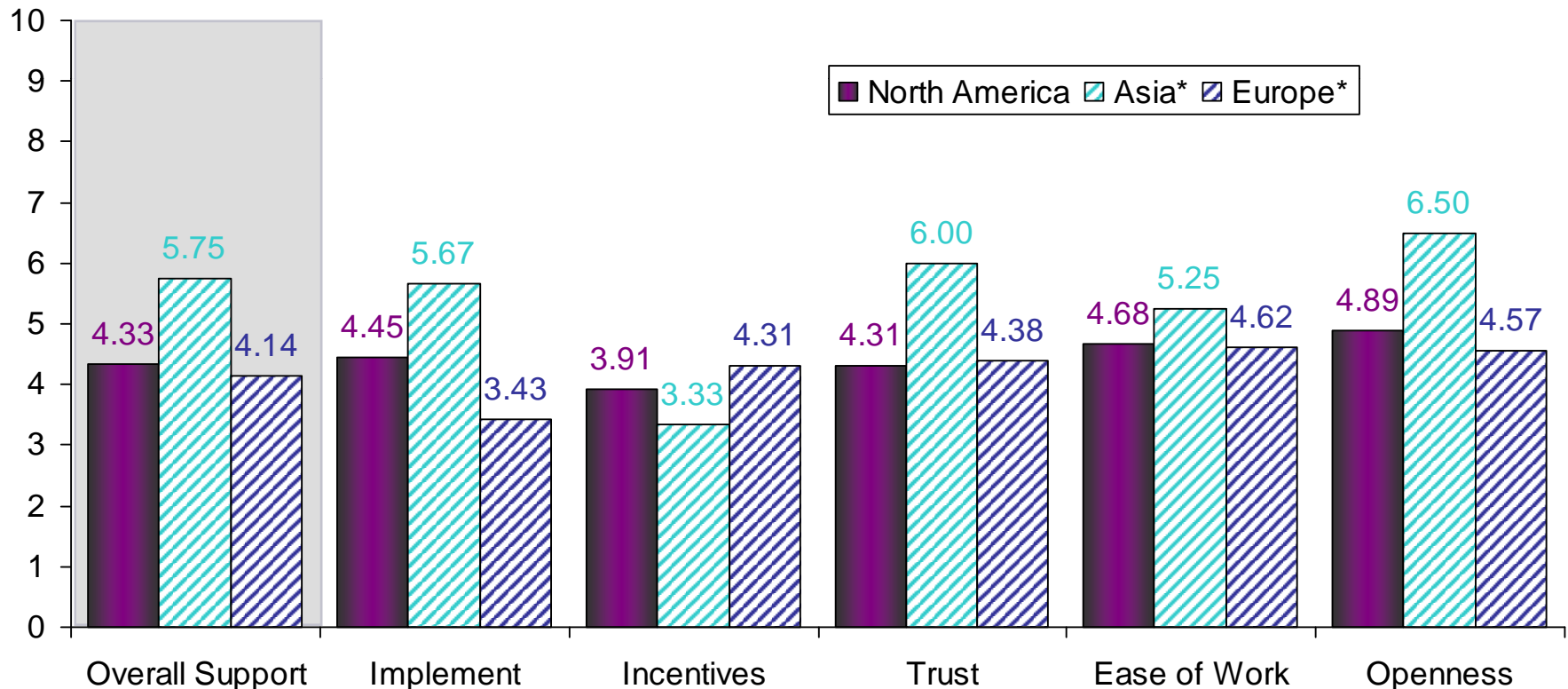
- ▶ Audio suppliers give BMW higher marks for support of innovation while lowest ratings are from Interior and Powertrain suppliers



\*Small sample size

## Chrysler Support by Base of Supplier HQ

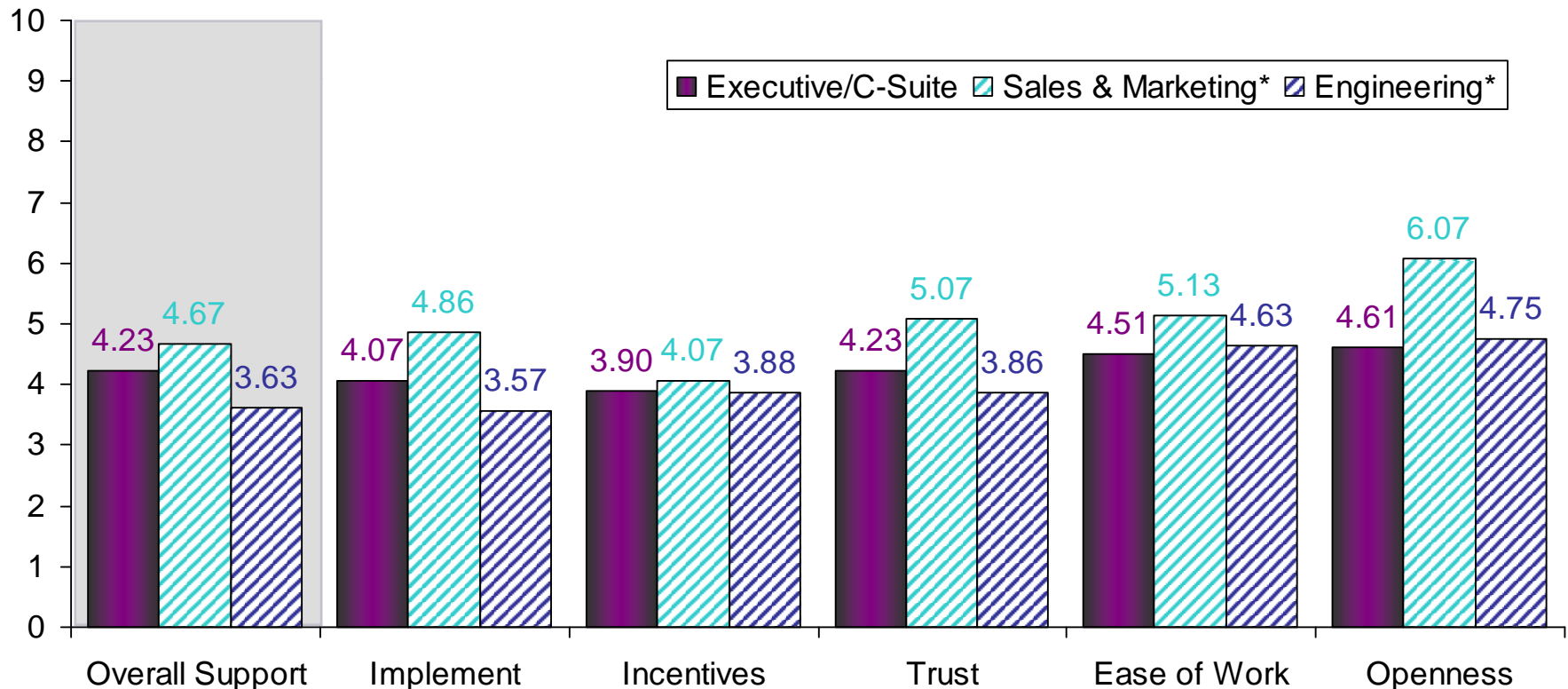
- Chrysler received higher marks from their Asian based suppliers for all factors except Incentives; highest marks from Asian suppliers are for Implement, Trust and Openness
- North American and European based suppliers rate Chrysler fairly similar with the exception of Implement which shows a much lower evaluation from European suppliers



\*Small sample size

## Chrysler Support by Supplier Respondent Role

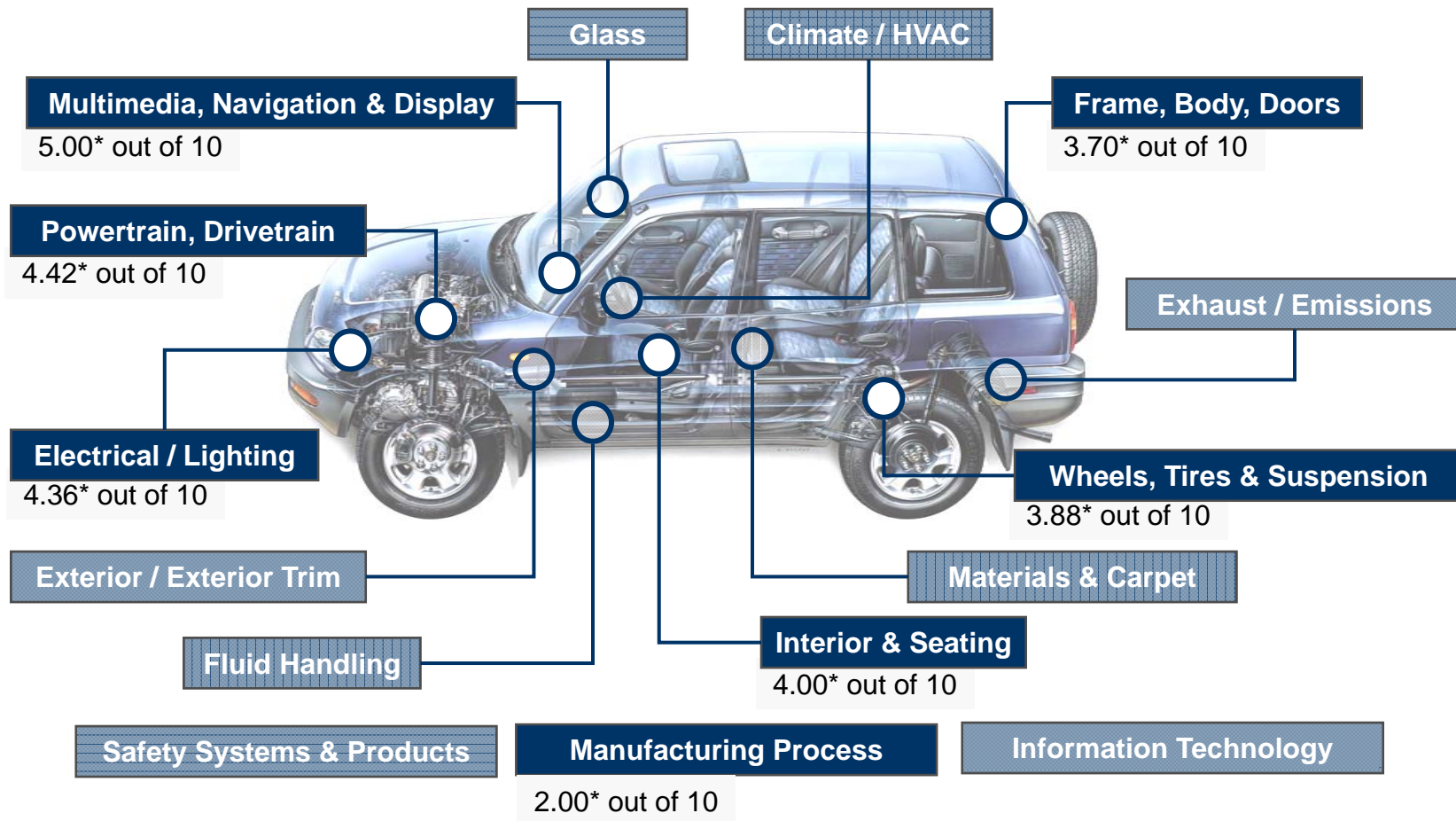
- In general, Chrysler received higher marks from supplier Sales & Marketing
- Supplier Executives and Engineering rated Chrysler similarly with a few notable exceptions:
  - Engineering gave Chrysler comparatively lower marks for Implement and Trust



\*Small sample size

## Chrysler Support by Product/Component Type

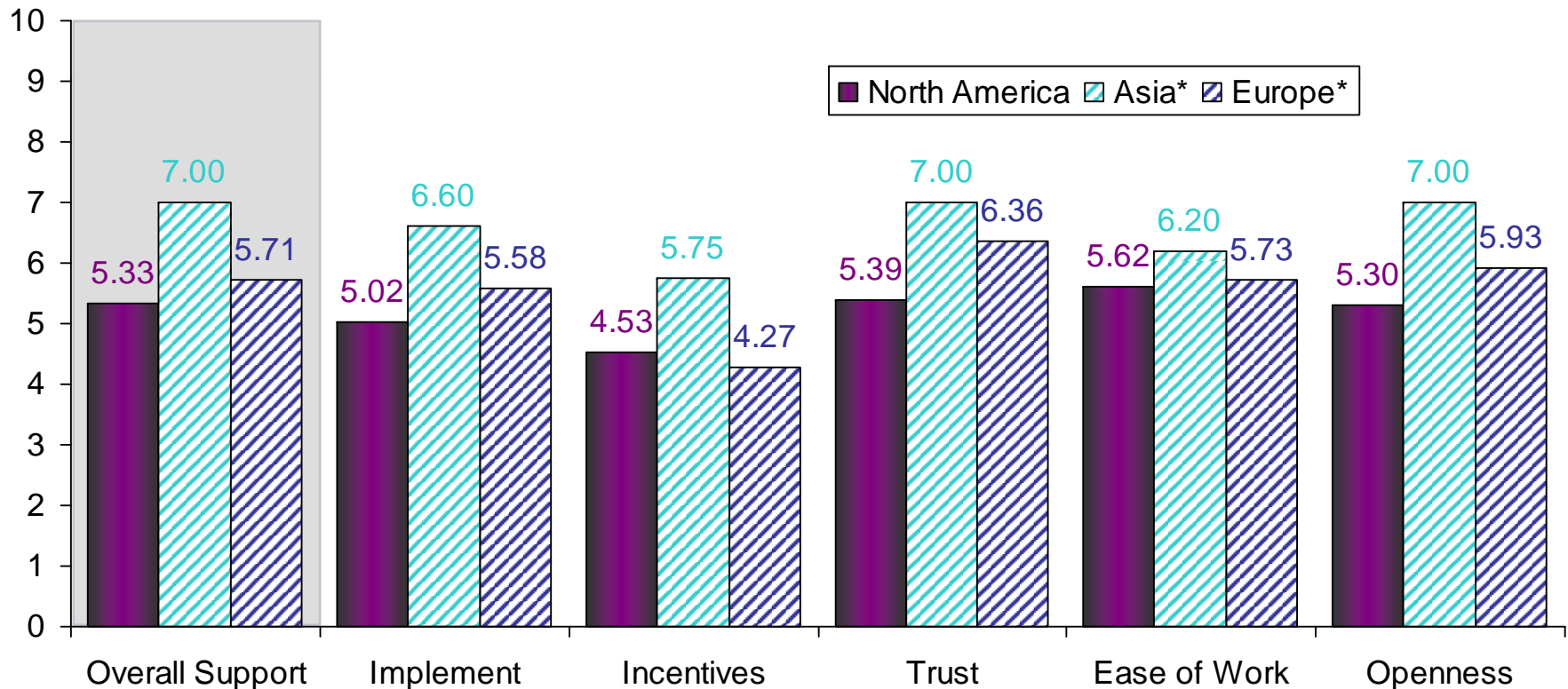
- Powertrain and Audio suppliers give Chrysler its highest scores for support of innovation while lowest ratings are from Wheel/Tire, and Frame suppliers. In addition, manufacturing process providers give Chrysler very low marks.



\*Small sample size

## Ford Support by Base of Supplier HQ

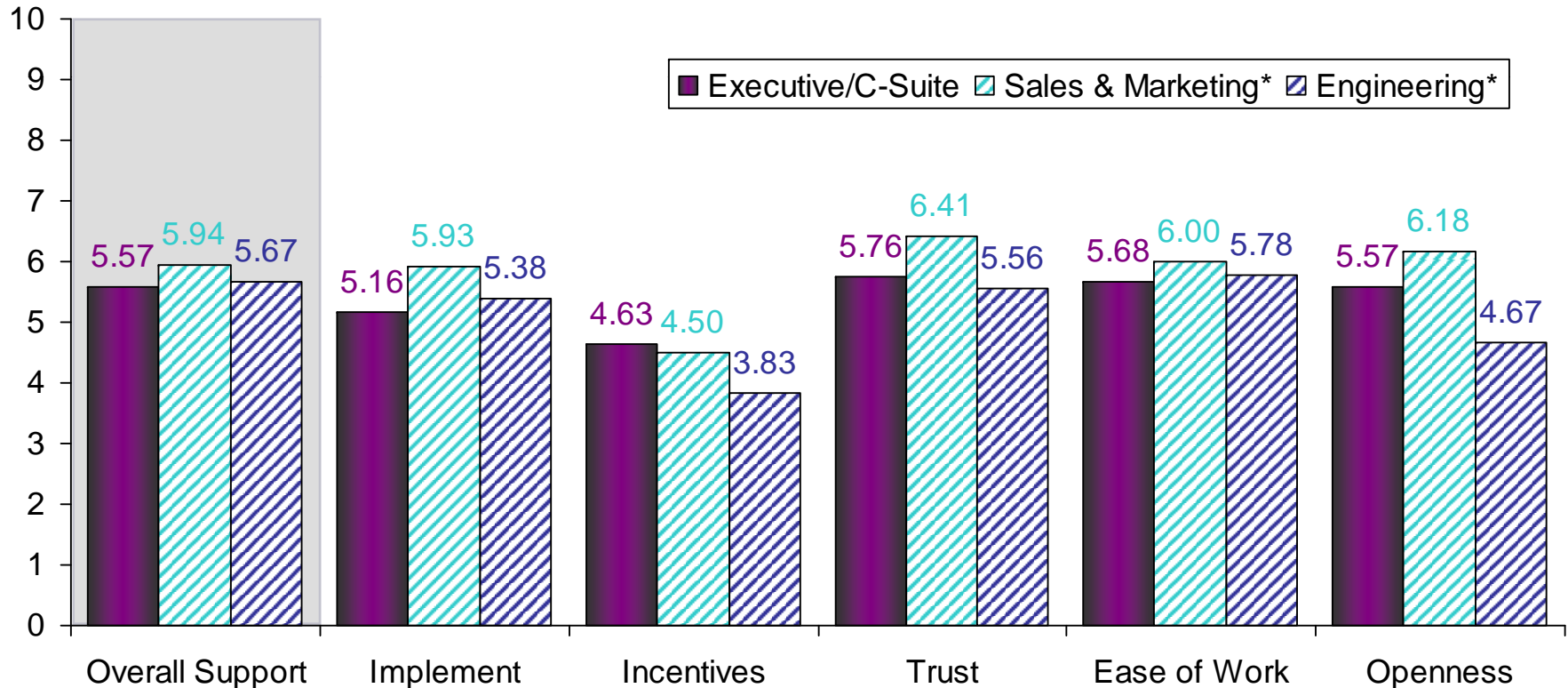
- Ford received higher marks from their Asian based suppliers
- Lowest ratings for overall support and nearly all factors were received from Ford's North American suppliers
- Asian and European suppliers expressed a higher degree of Trust of Ford than the North American suppliers
- European suppliers gave Ford the overall poorest mark for Incentives



\*Small sample size

## Ford Support by Supplier Respondent Role

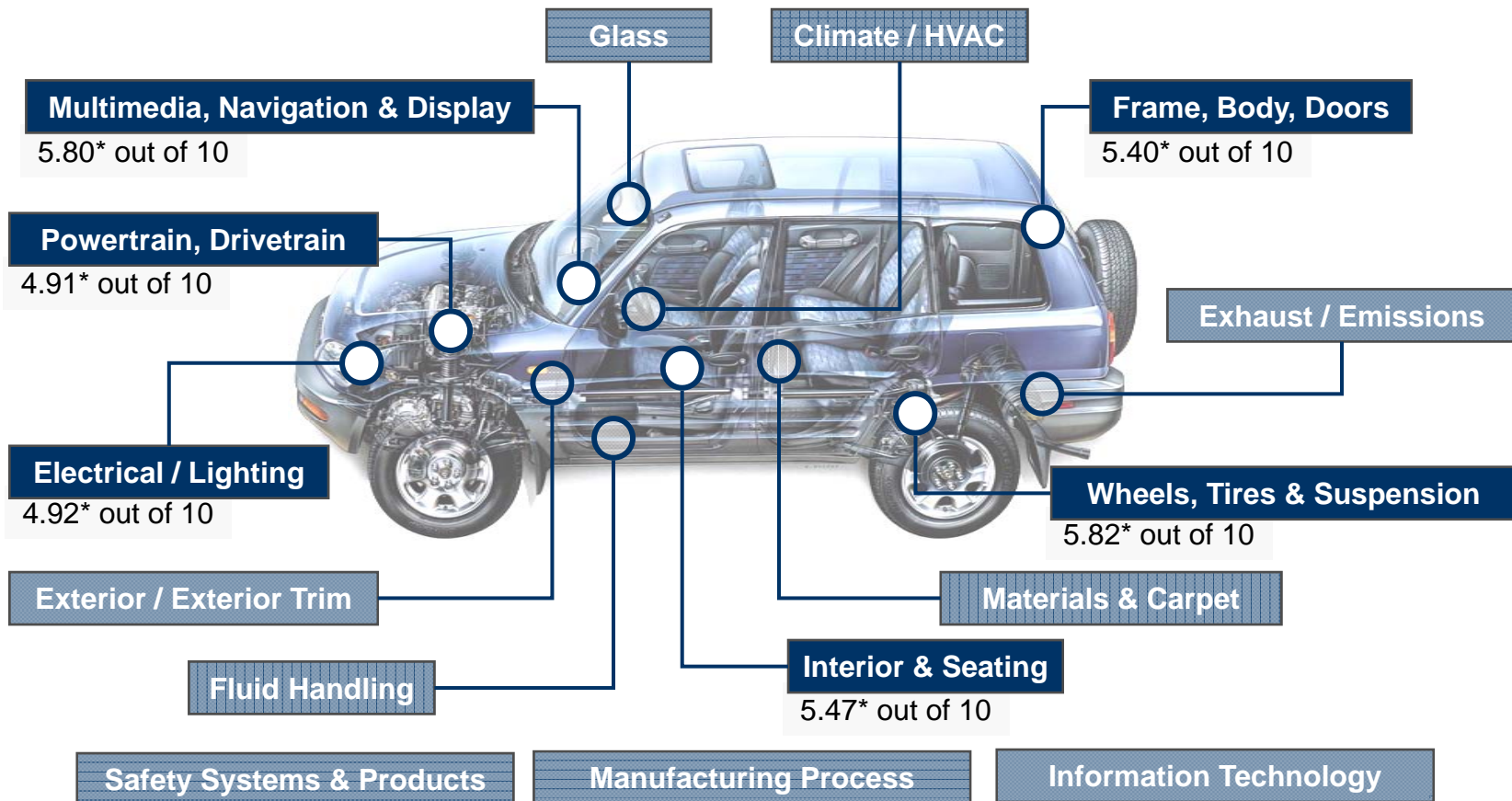
- In general, Ford received higher marks from supplier Sales & Marketing
- Supplier Executives and Engineering rated Ford similarly with a few notable exceptions:
  - Engineering gave Ford very low marks for Incentives and Openness
  - Executives rated Ford higher for Incentives than did Engineering and Sales & Marketing



\*Small sample size

## Ford Support by Product/Component Type

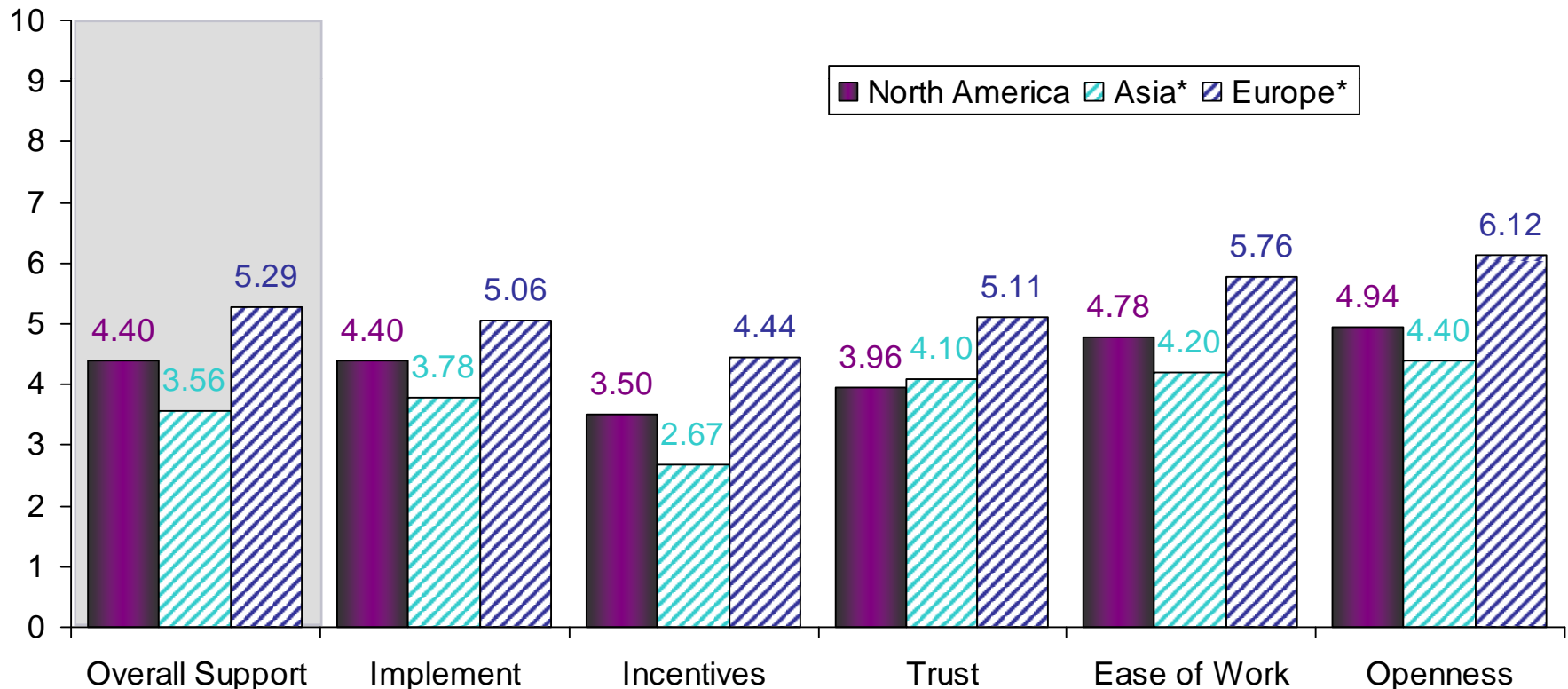
- Wheel/Tire and Audio suppliers give Ford its highest scores for support of innovation while lowest ratings are from Powertrain and Electrical suppliers



\*Small sample size

## GM Support by Base of Supplier HQ

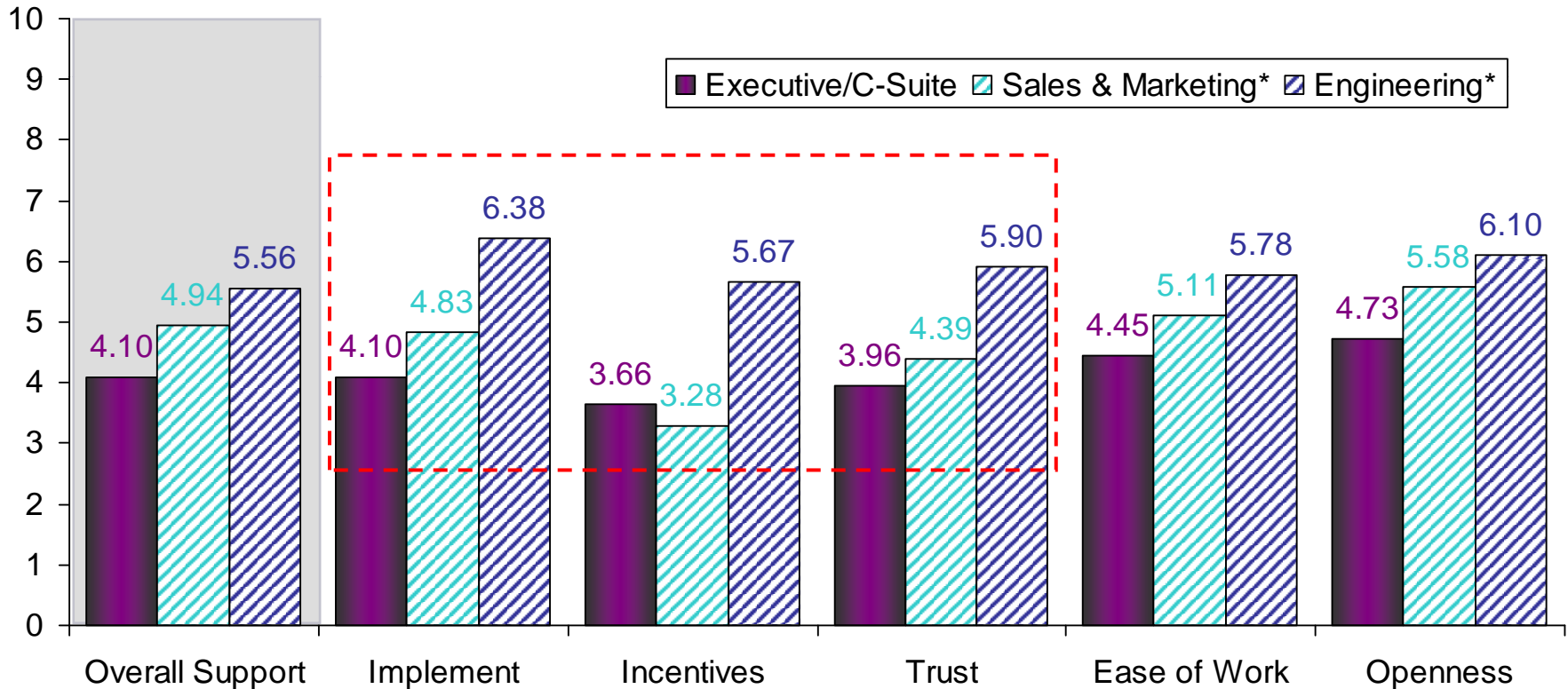
- GM received higher marks from their European based suppliers
- Lowest ratings for overall support and nearly all factors were received from GM's Asian suppliers
- Asian suppliers rate GM very low for Incentives
- North American suppliers score GM lower for Trust than Asian or European suppliers



\*Small sample size

## GM Support by Supplier Respondent Role

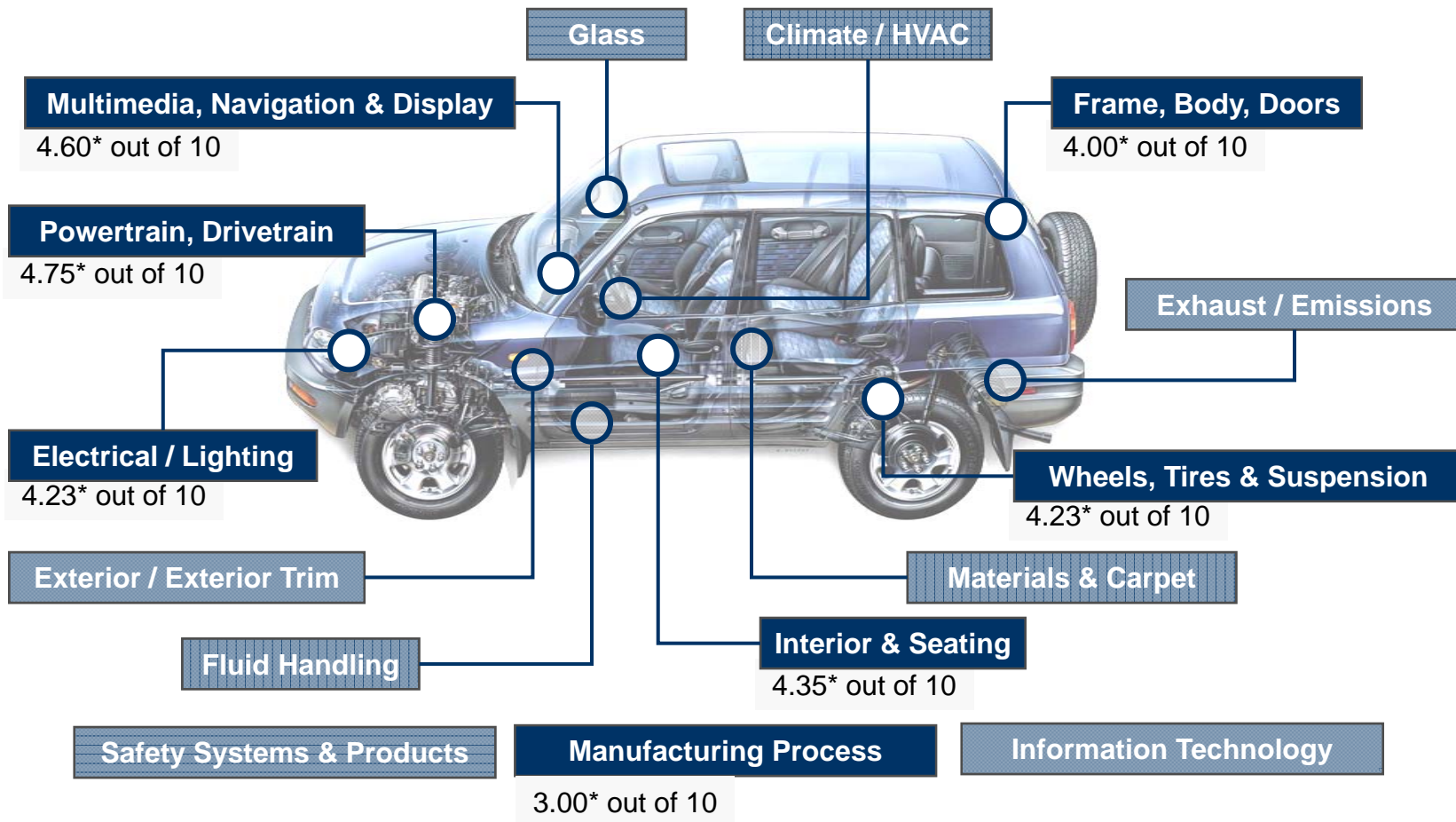
- In general, GM receives consistently higher marks from supplier Engineering personnel
  - Engineering rates GM comparatively stronger for Implement, Incentives and Trust
- Supplier Executives score GM poorest for overall support and most factors



\*Small sample size

## GM Support by Product/Component Type

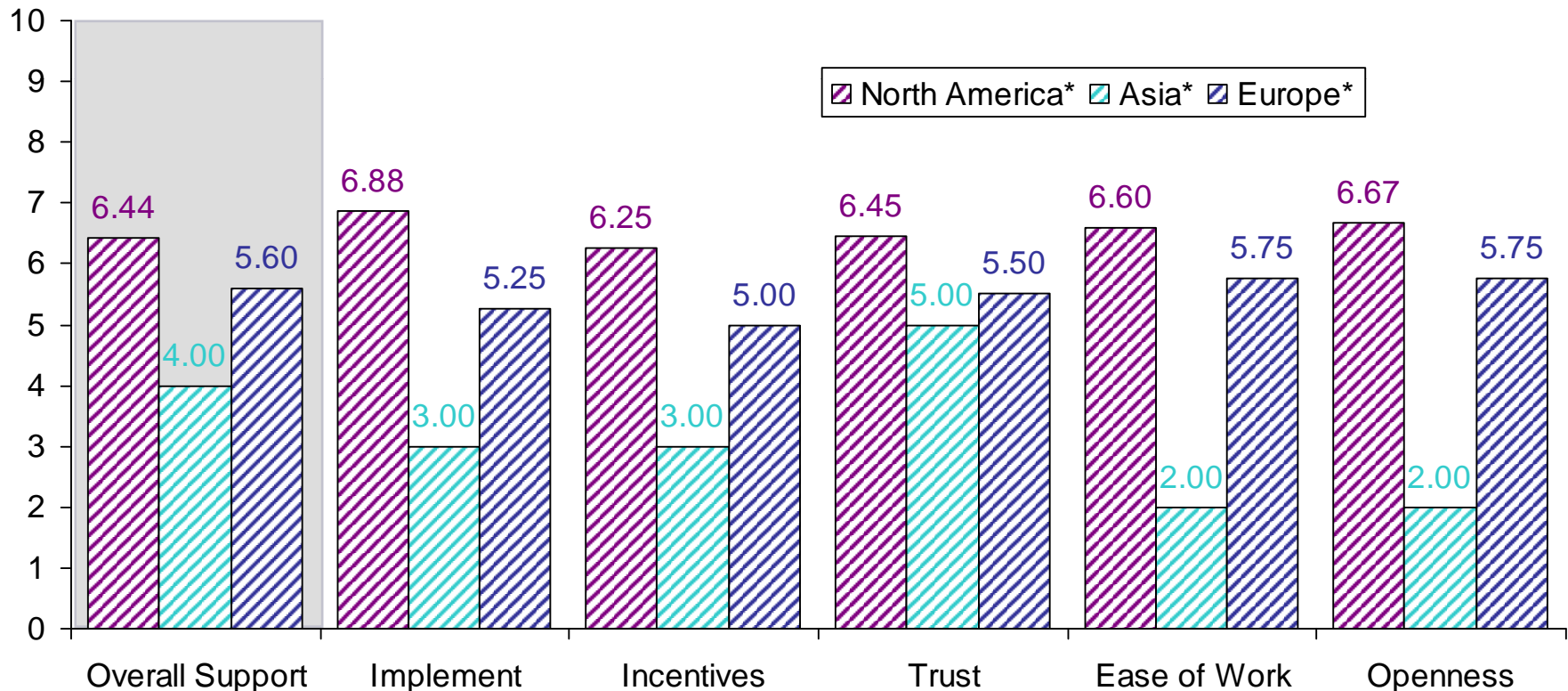
- Powertrain and Audio suppliers give GM its highest scores for support of innovation while lowest ratings are from Manufacturing Process, Frame/Body, Wheel/Tire and Electrical suppliers.



\*Small sample size

## Mercedes-Benz Support by Base of Supplier HQ

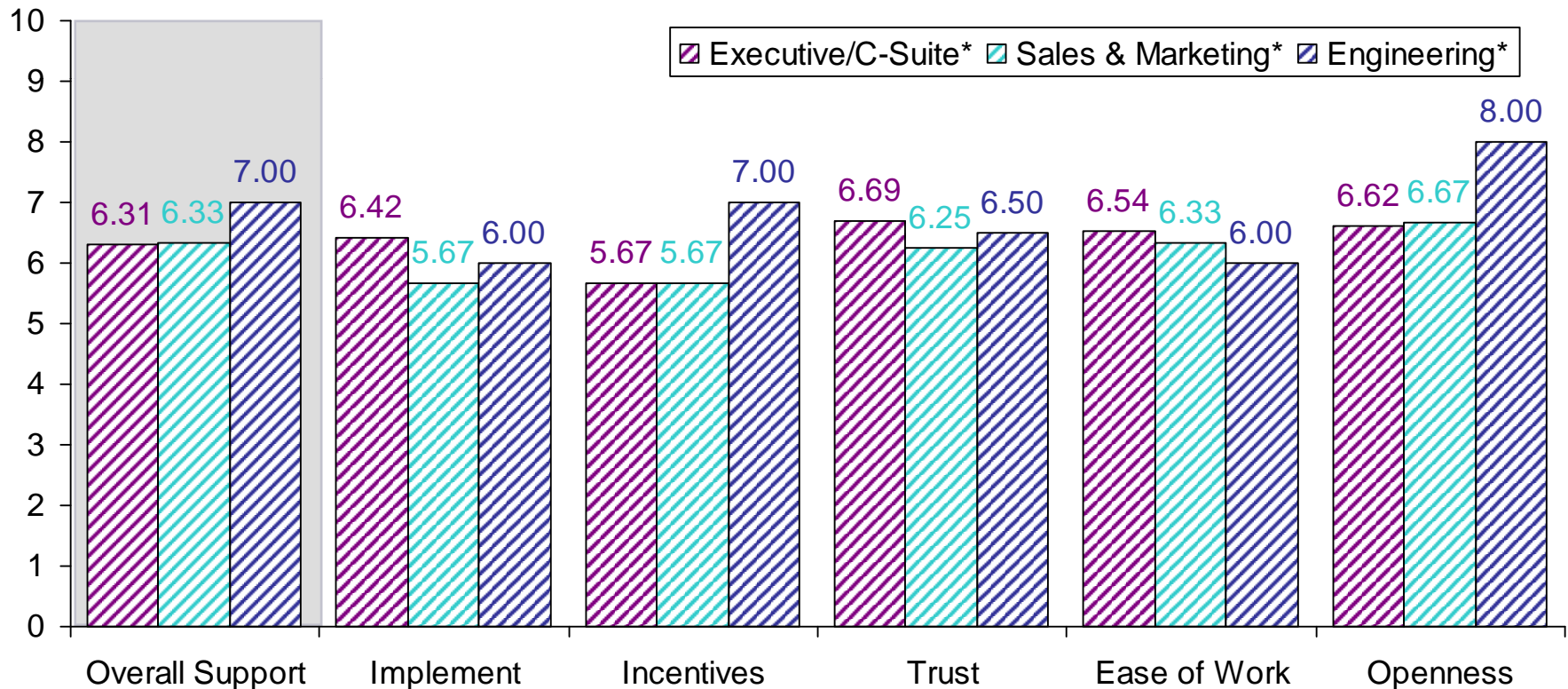
- Mercedes received higher marks from their North American based suppliers
- Lowest ratings for overall support and all factors were received from Mercedes' Asian based suppliers
- European suppliers rate Mercedes similar – but slight lightly lower than – to how North American supplier view their innovation relationship with Mercedes



\*Small sample size

## Mercedes-Benz Support by Supplier Respondent Role

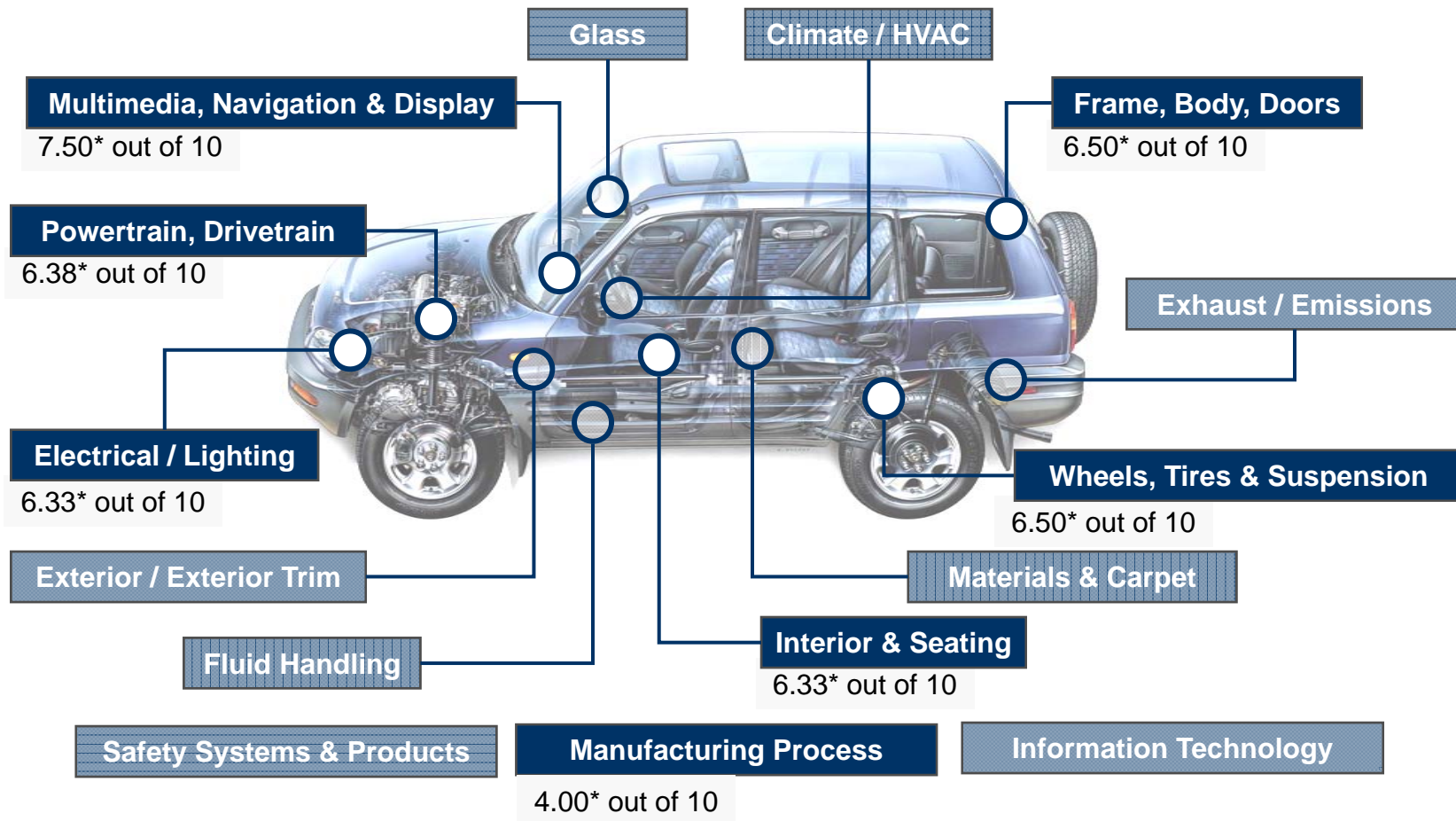
- In general, Mercedes received higher marks from supplier Engineering personnel with comparatively strong rating for overall support, Incentives and Openness
- Supplier Executives give Mercedes higher marks for Implement and Ease of Work



\*Small sample size

## Mercedes-Benz Support by Product/Component Type

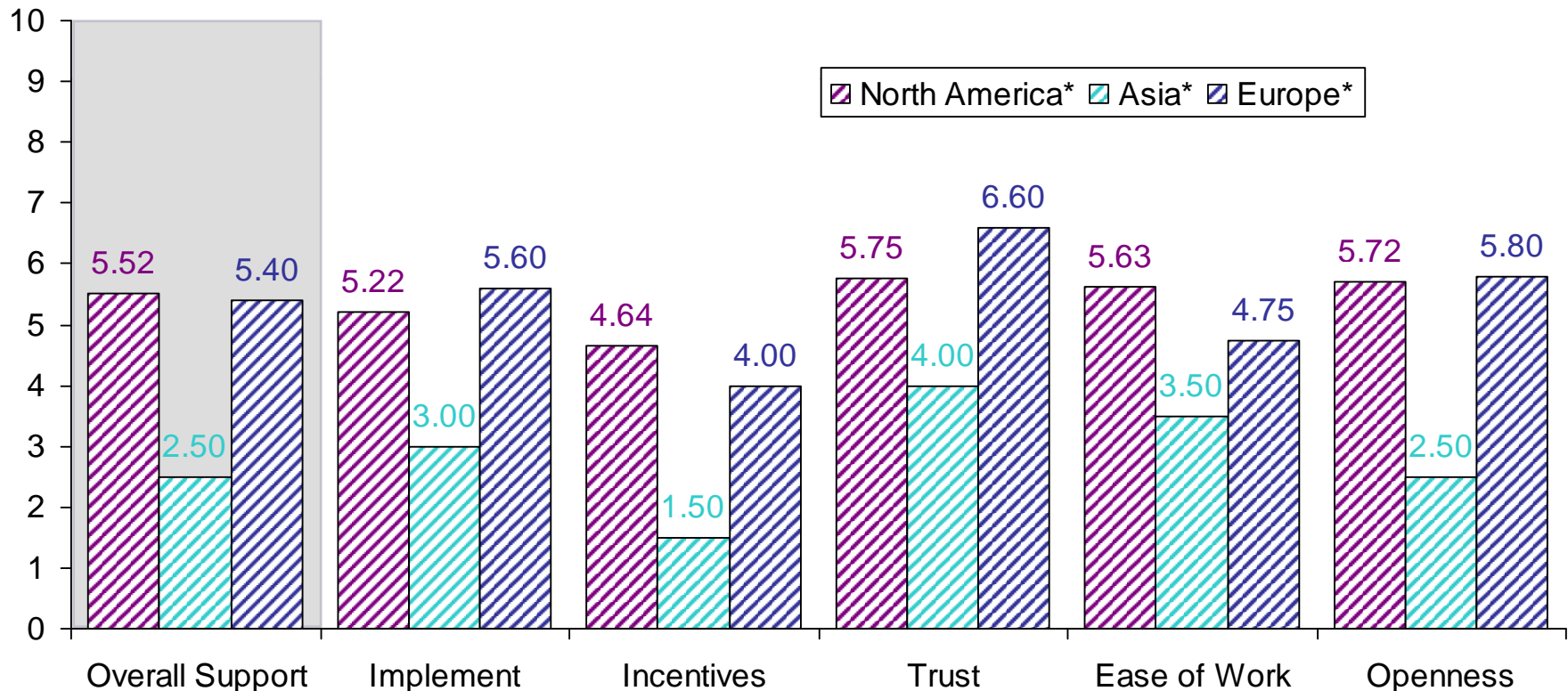
- Audio suppliers give Mercedes its highest scores for support of innovation while lowest ratings are from Powertrain, Interior and Electrical suppliers



\*Small sample size

## Nissan Support by Base of Supplier HQ

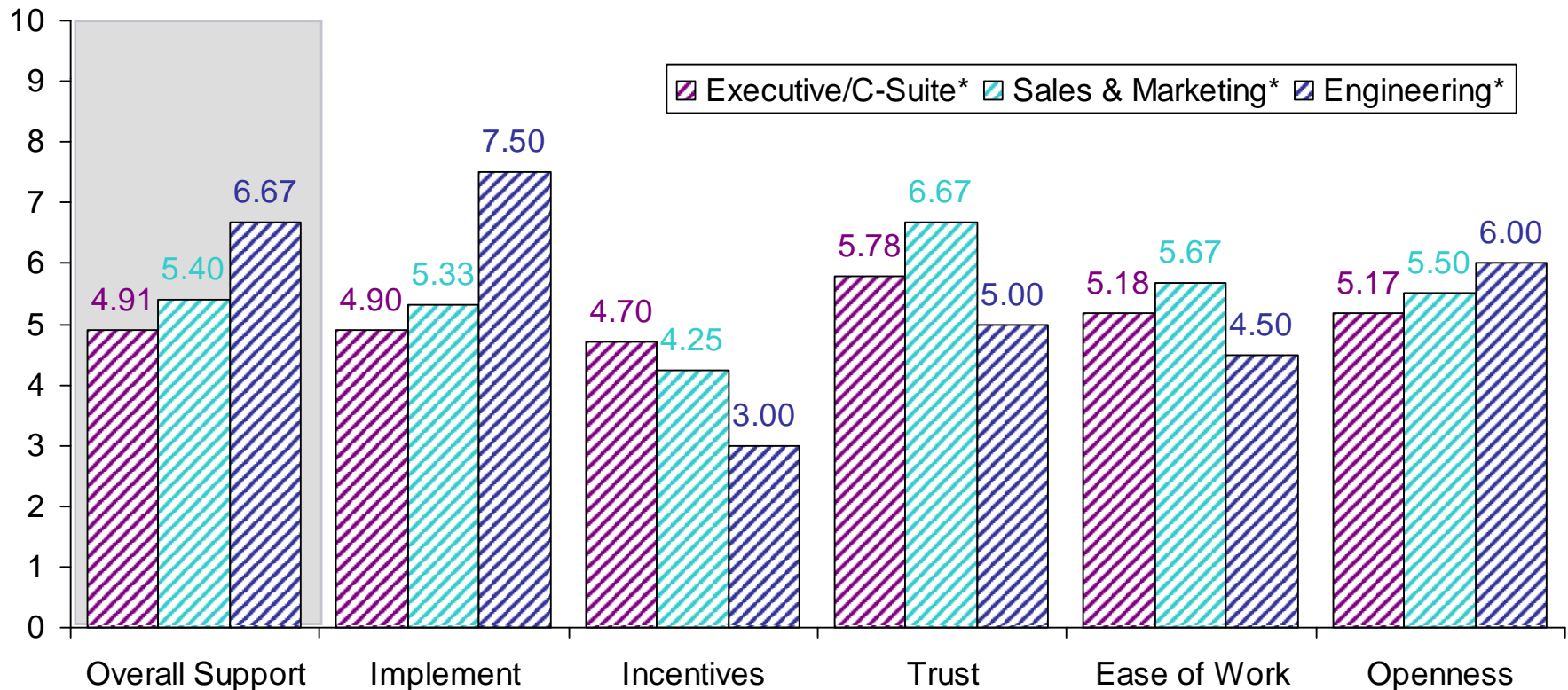
- Nissan received very low marks from their Asian based suppliers for overall support and all factors
- European suppliers give Nissan higher marks for Trust and Implement while North American supplier score Nissan better for Ease of Work and Incentives



\*Small sample size

## Nissan Support by Supplier Respondent Role

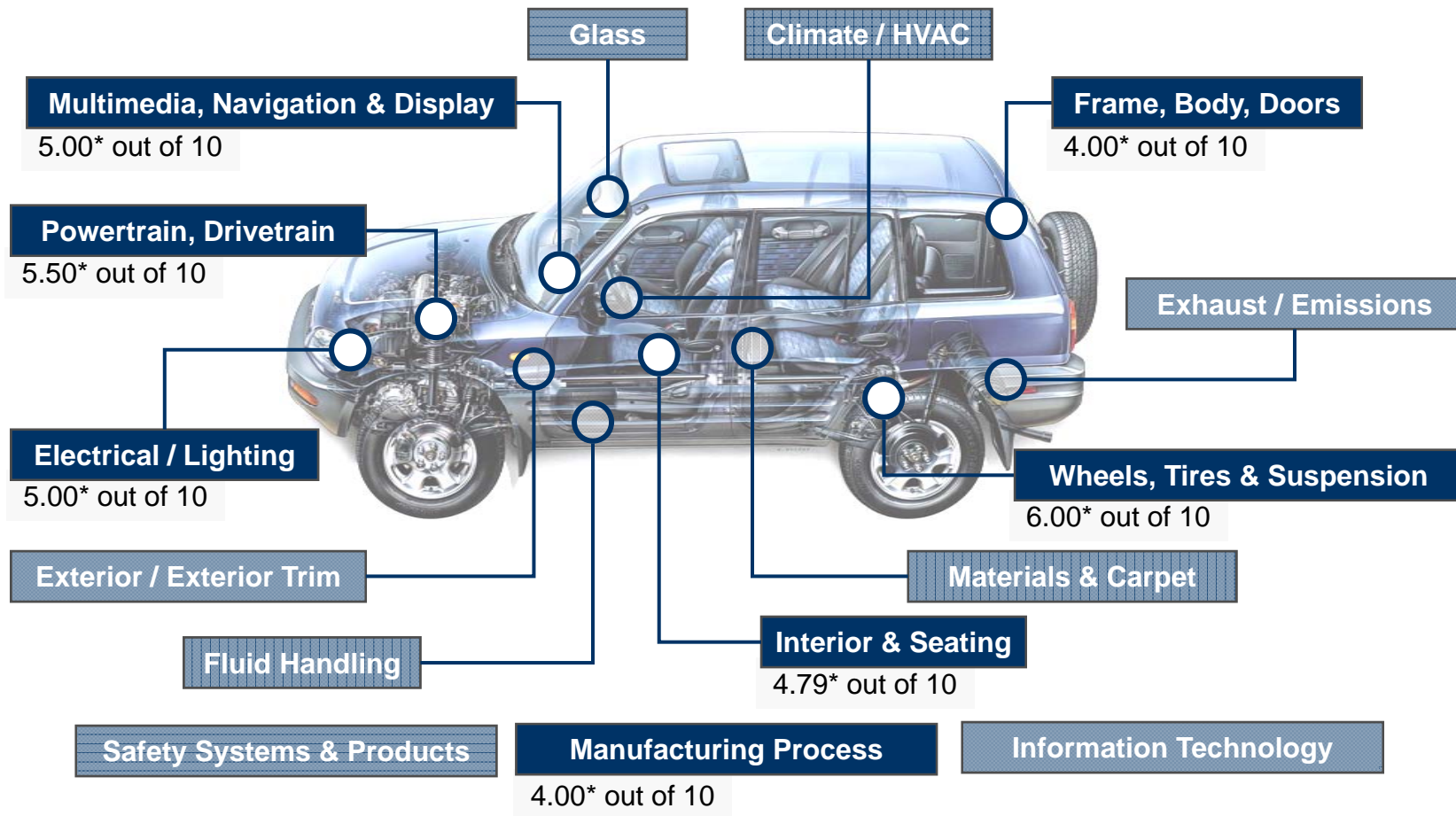
- Nissan scores highest with Engineering for overall support of innovation as well as **Implement** and **Openness** but scores particularly low for **Incentives**
- Sales & Marketing gives Nissan its highest mark for **Trust** while Executives rate Nissan better than the other groups for **Incentives** – albeit still a low score



\*Small sample size

## Nissan Support by Product/Component Type

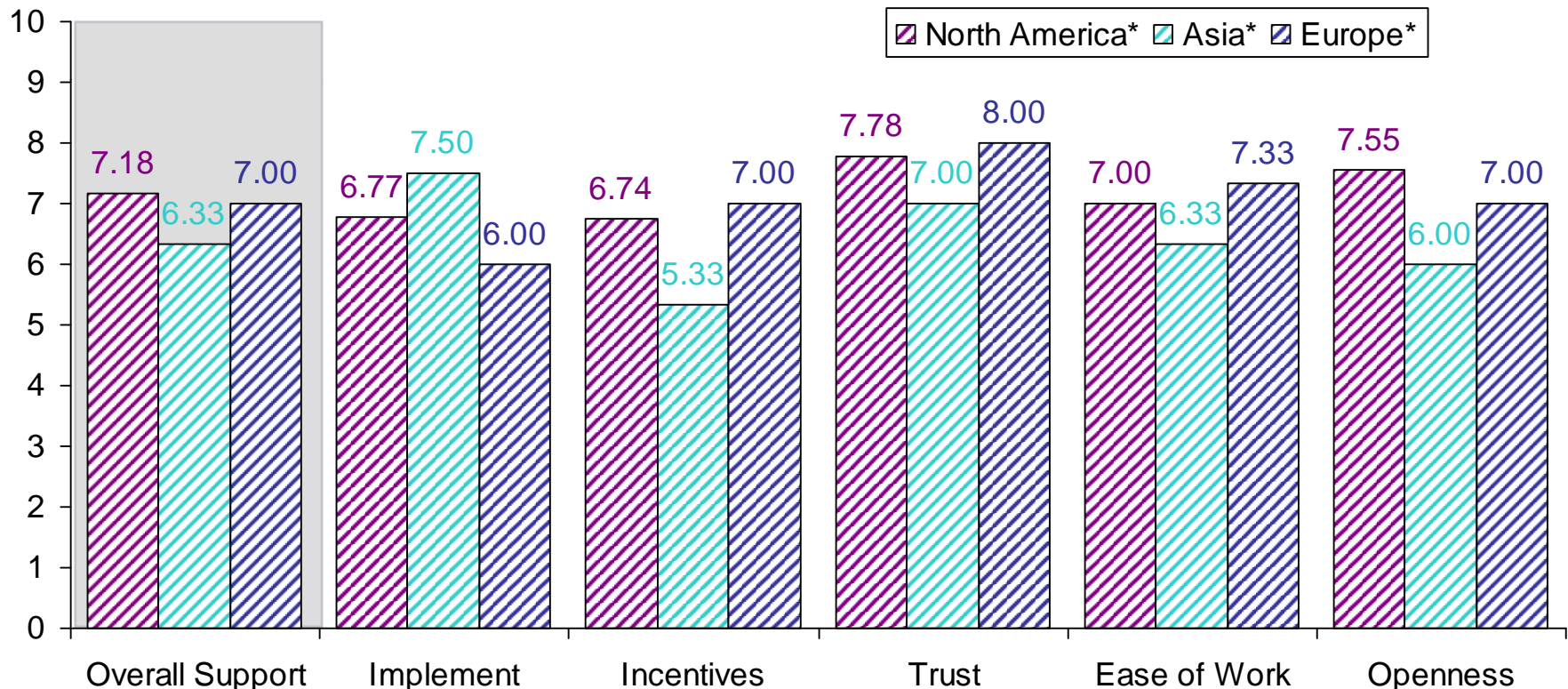
- Wheel/Tire and Powertrain suppliers give Nissan higher marks than those received from suppliers of Audio, Electrical, Interior/Seating and Frame/Body
- Manufacturing Process suppliers also rate Nissan poor for support of innovation



\*Small sample size

## Toyota Support by Base of Supplier HQ

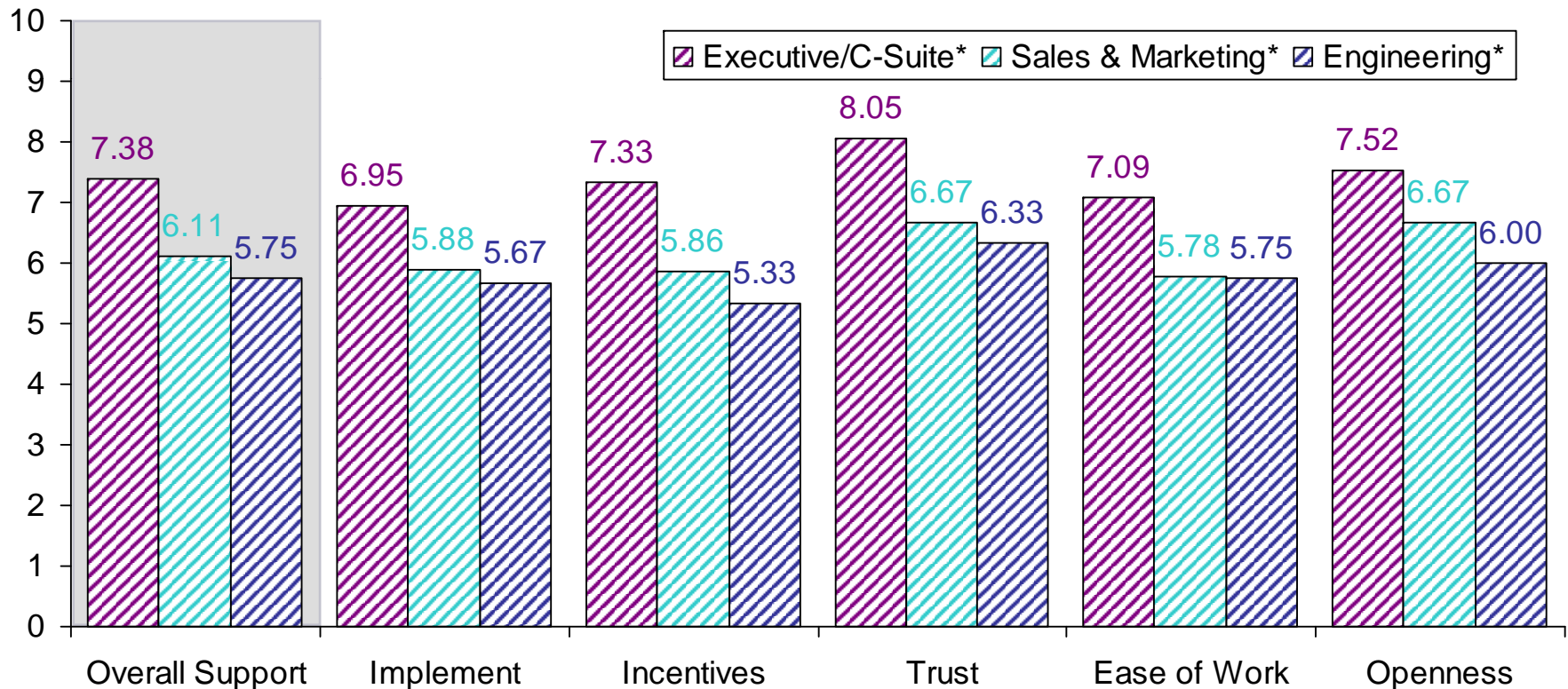
- In general, Toyota received higher marks from their North American and European based suppliers than from their Asian supplier base
- Asian suppliers score Toyota highest for Implement but particularly poor for Incentives, Openness and Ease of Work
- Trust is among Toyota's best rated factors, regardless for regional base



\*Small sample size

## Toyota Support by Supplier Respondent Role

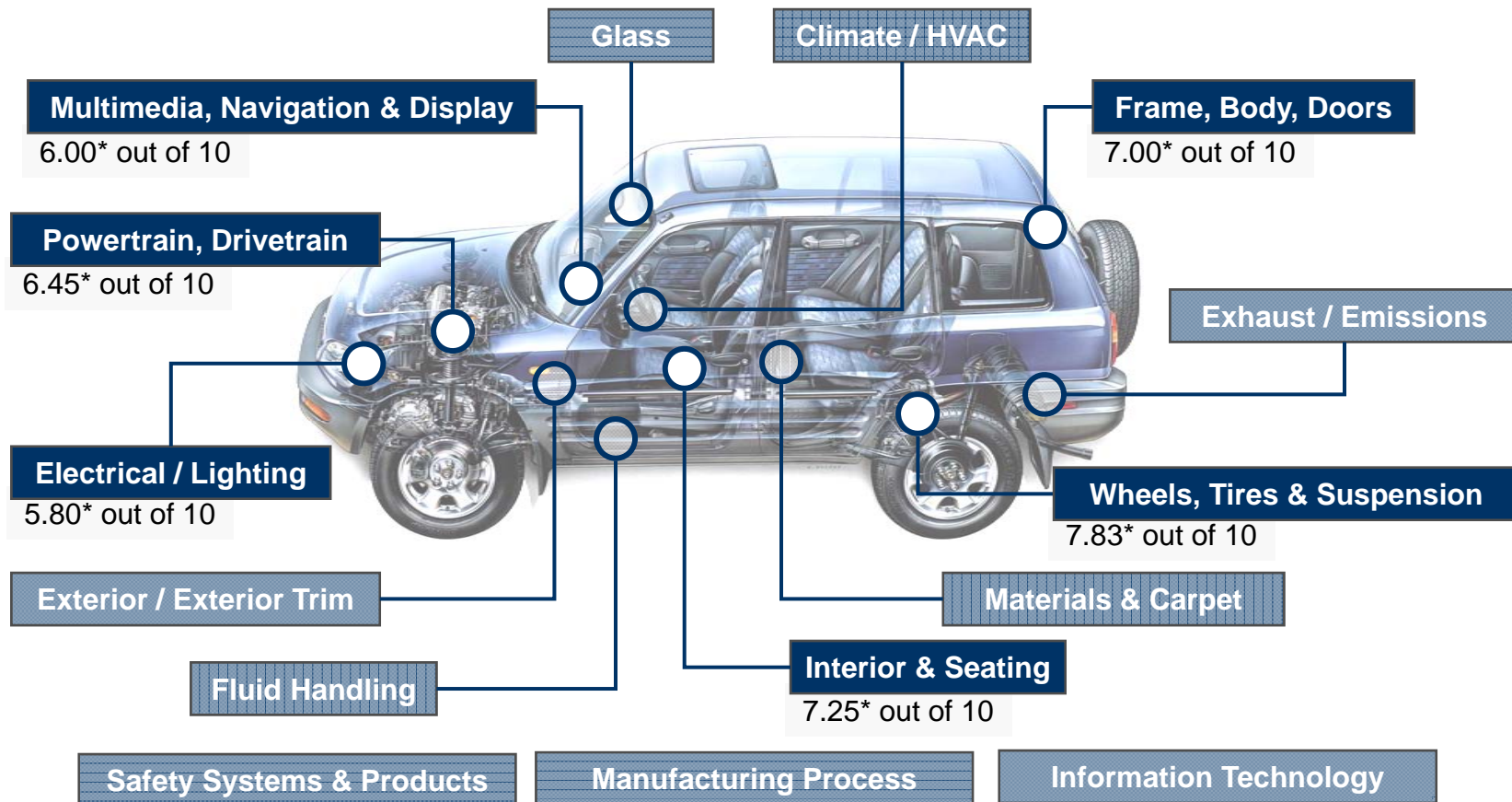
- Toyota received higher marks from supplier Executives/C-Suite
- Supplier Sales & Marketing and Engineering rated Toyota similarly poor overall and across all factors of innovation support



\*Small sample size

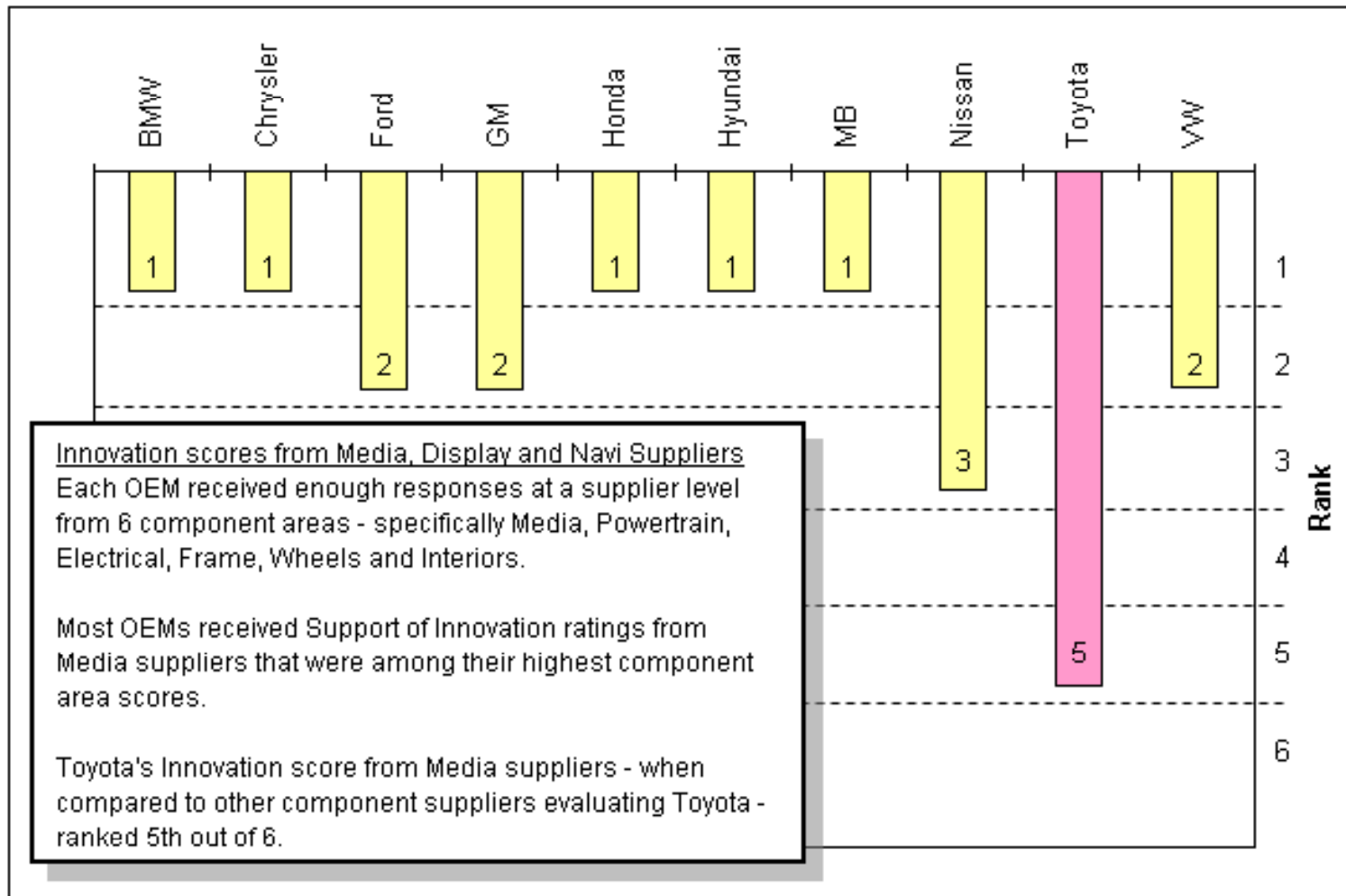
## Toyota Support by Product/Component Type

- Wheel/Tire, Interior/Seating and Frame/Body suppliers give Toyota its highest scores for support of innovation while lowest ratings are from Electrical, Audio and Powertrain suppliers



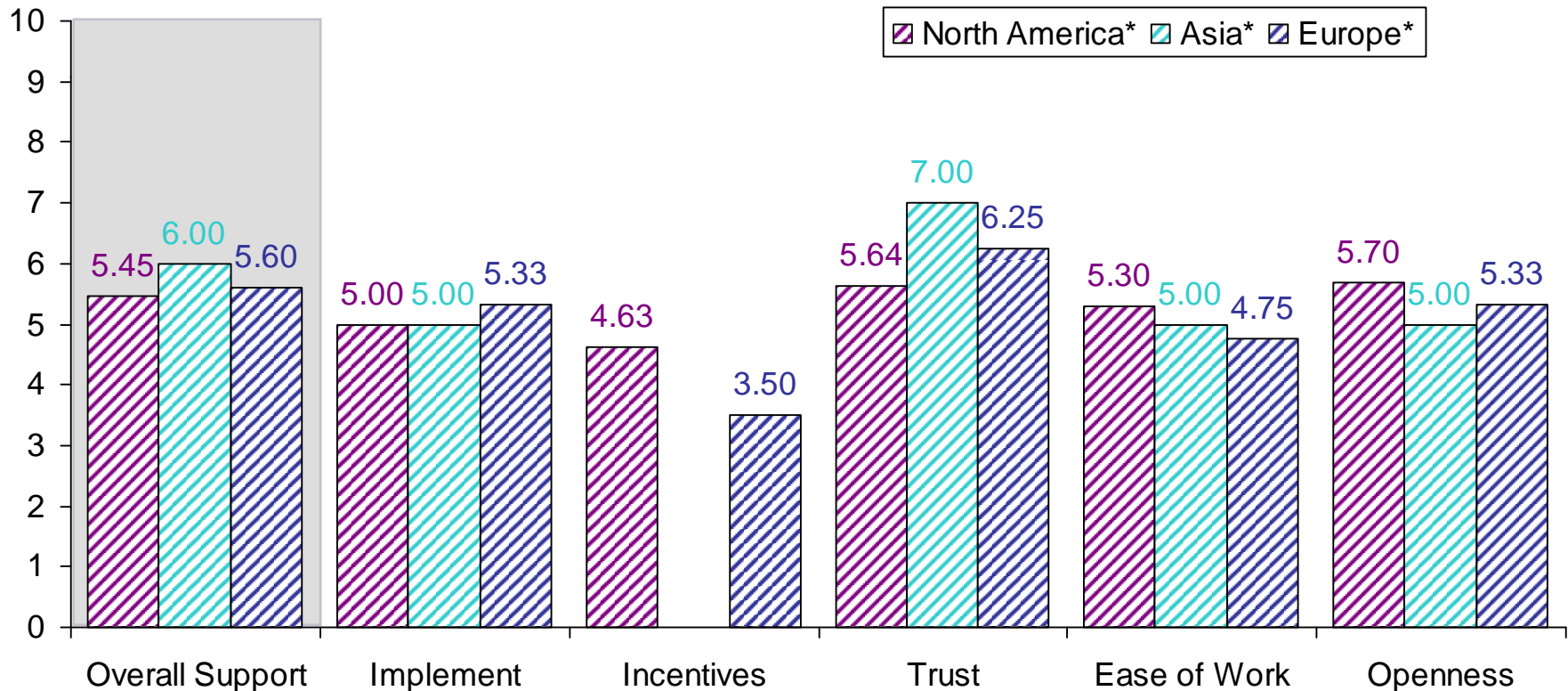
\*Small sample size

## Media Suppliers rate Toyota lower on Support of Innovation than do other component suppliers



## Volkswagen Support by Base of Supplier HQ

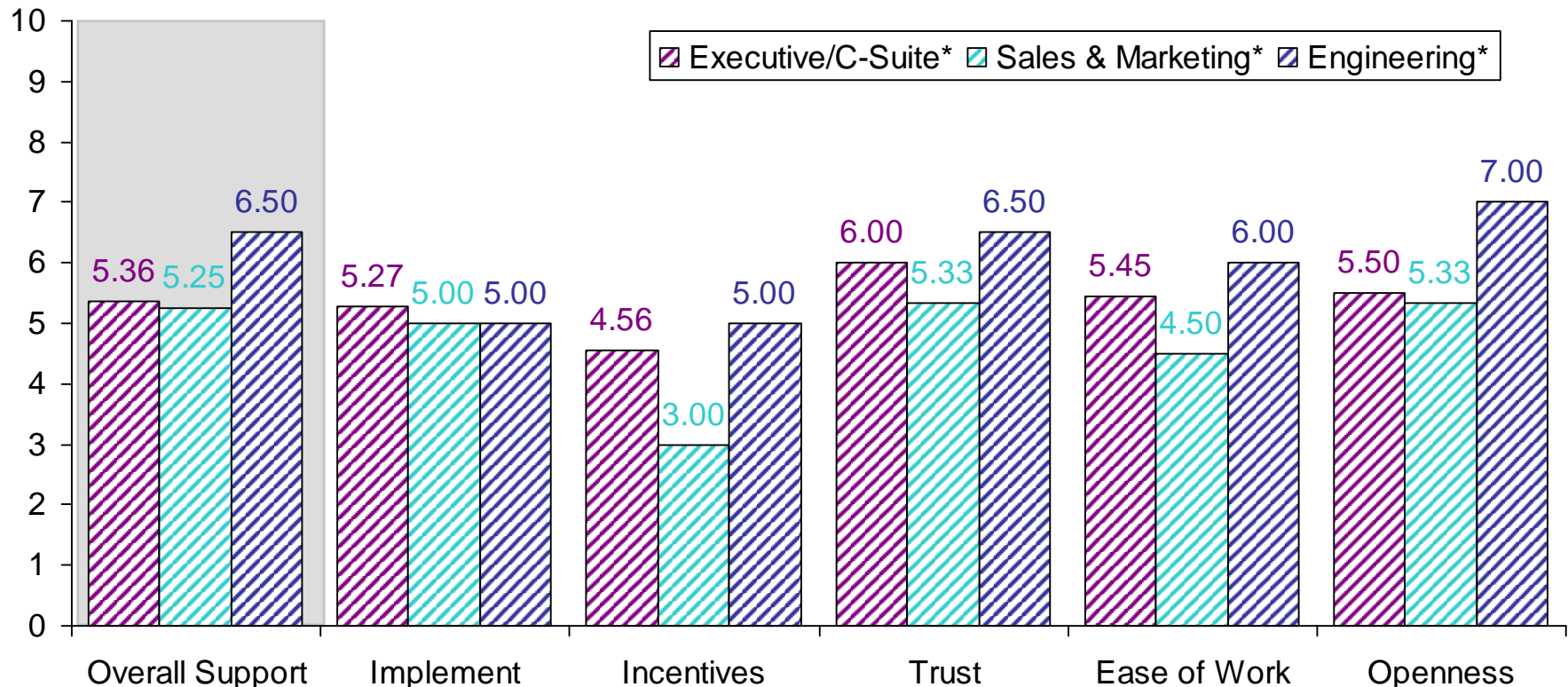
- Volkswagen received comparable scores from suppliers in each region with a few notable exceptions:
  - Higher marks from Asian suppliers for Trust
  - Slightly higher marks from North American suppliers for Openness and Ease of Work and from European suppliers for Implement



\*Small sample size

## Volkswagen Support by Supplier Respondent Role

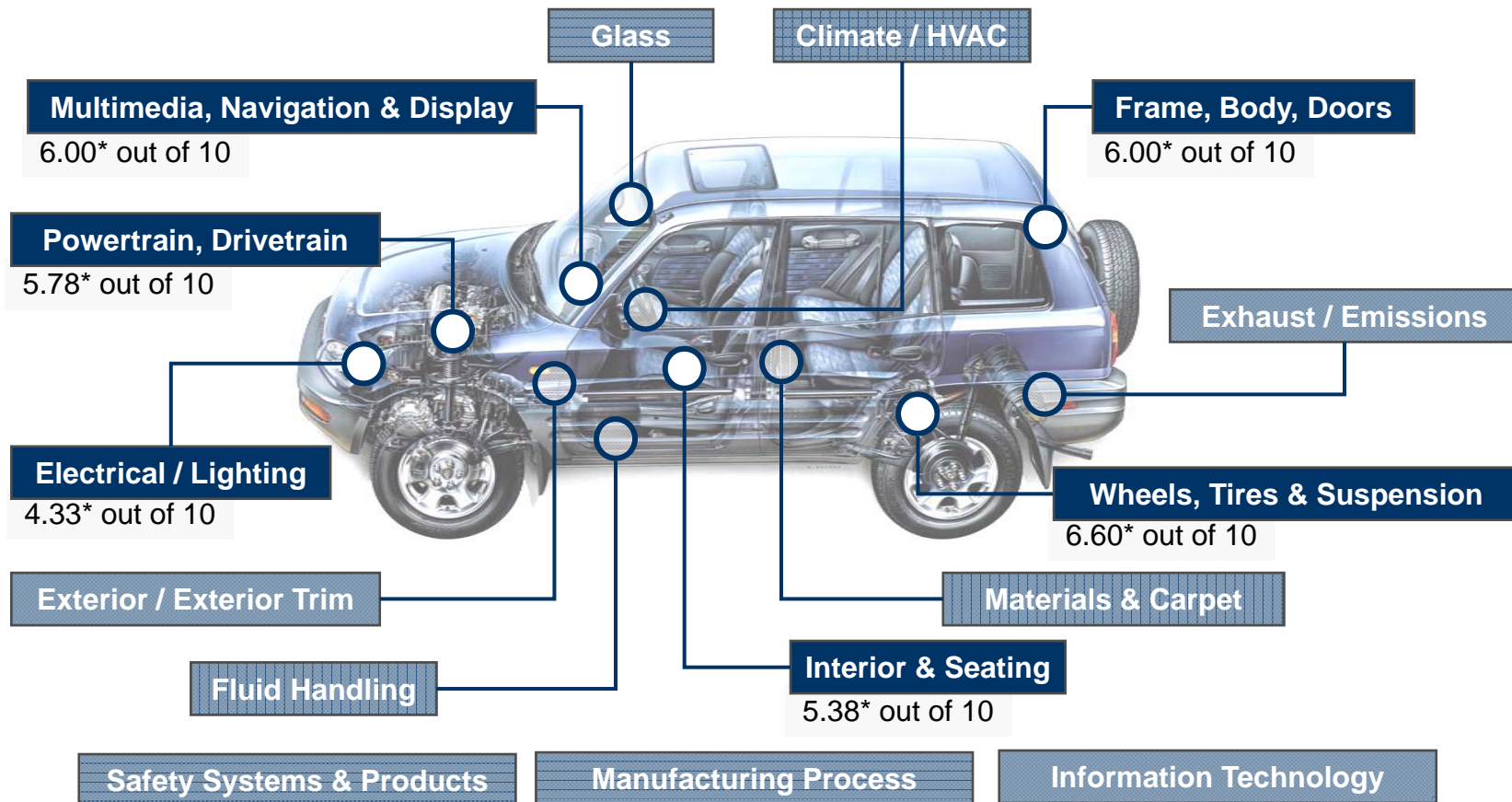
- In general, Volkswagen received higher marks from Engineering personnel
- Sales & Marketing rated Volkswagen poorer overall and for most factors, most notably for Incentives and Ease of Work
- Implement was rated equally among the three respondent role designations



\*Small sample size

## Volkswagen Support by Product/Component Type

- Wheel/Tire, Audio and Frame/Body suppliers give Volkswagen its highest scores for support of innovation while lowest ratings are from Interior & Seating and Electrical suppliers



\*Small sample size